SENTENCE OF THE COURT OF ASSIZES OF PERUGIA

(PRESIDED OVER BY DR. GIANCARLO MASSEI)

IN THE MURDER OF MEREDITH KERCHER

Translated from the Italian into English

Version 1.0

The collated posts from the PerugiaMurderFile forum translation thread.

Bolded numbers in square brackets, thus **[123]**, refer to the pagination in the original judgement. Words and phrases in square brackets [*xxx*] are technical terms in the original Italian.

The Conclusion is not marked explicitly in the original document, other than by the double-blank line that precedes it. Other sections in the judgement separated by blank double-line spacing are marked thus: (A), (B), (C).

Note

This translation was done by a group of unpaid volunteers who are regular posters on the Perugiamurderfile.org message board devoted to discussing the murder of Meredith Kercher in Perugia, Italy, in November 2007. The translation and editorial team was international in its make-up, with at least four continents represented including Europe, both North and South America and Australasia.

Some but not all of the individuals who worked on the translation are professional translators; others were asked to proofread sections of a technical nature because of their expertise in certain areas (forensics, DNA, molecular biology, IT, criminal law, etc.).

This was a daunting and complex task and was completed between March and August 2010, having been undertaken for the sole purpose of promoting a better understanding of this complex case, and to ensure that the facts are readily available to the English-speaking world without selective emphasis, misstatement or bias.

It has been translated on a "best efforts" basis, and has gone through multiple rounds of proofreading and editing, both to ensure its accuracy and to harmonise the language insofar as possible. Persons fluent in both Italian and English are invited and encouraged to contact PMF if they find any material errors that influence the meaning or intention of Judge Massei. All such corrections will be investigated, made as required and brought to the attention of the public. The print copy of pages 288 and 304 of the original Italian document were corrupted which has led to partial translation - we would be grateful to any person who is able to supply clean versions so that they may be translated and the document updated accordingly.

As with any translation, some terminology in Italian has no direct equivalent in English. For example, the charge of *calunnia* has no direct equivalent in Anglo-Saxon law. Explanations have been provided where relevant. Similarly, readers are encouraged to submit any questions about legal or other concepts that may arise as they peruse the report. Our goal is to make the report as clear and as accurate as possible; to this end, it will be amended whenever doing so promotes this goal.

As the report was written and published in Italian, that language prevails in the event of a dispute over interpretation. This English-language version is provided for readers' convenience only; accordingly, it is a free translation and has no legal authority or status.

This translation may be freely copied or otherwise reproduced and transmitted in the unedited pdf format, provided that the translation or excerpt therefrom is accompanied by the following attribution: "From the translation prepared by unpaid volunteers from http://www.perugiamurderfile.org to promote a better understanding of the circumstances surrounding the death of Meredith Kercher and the case against Amanda Knox and Raffaele Sollecito in the English-speaking world".

Original version published on August 8, 2010 in memory of Meredith Kercher.

Date(s) of subsequent updates: tba

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INTRODUCTION

Number 8 of 2008: RG Court of Assizes
Number 9077 of [20]07: RG Notice of crime Public Prosecutor

Republic of Italy
In the name of the Italian people

The Court of Assizes of Perugia composed of Their Honours

Dr Giancarlo Massei, President, and Extensor
Dr Beatrice Cristiani, Judge, and Extensor
Anna Maria Artegiani, Lay Judge
Giuliano Menichetti, Lay Judge
Maria Ludovica Morelli, Lay Judge
Angela Irene Ceccarini, Lay Judge
Andrea Valentini, Lay Judge
Palo Rapetti, Lay Judge

pronounced and published on December 4 and 5, 2009 the following

SENTENCE

against

(1) **AMANDA MARIE KNOX**
Born in Seattle (USA) on July 9, 1987
Currently detained in connection with this case at the Perugia Watch-house
Arrested on November 6, 2007

DETAINEE PRESENT
Retained defence counsel: Attorney Luciano Ghirga of the Bar of Perugia and Attorney Carlo Dalla Vedova of the Bar of Rome

(2) **SOLLECITO RAFFAELE**
Born in Bari on March 26, 1984
Currently detained in connection with this case at the Terni Watch-house
Arrested on November 6, 2007

DETAINEE PRESENT

Retained defence counsel: Attorney Giulia Bongiorno of the Bar of Rome substituted in hearing by Attorneys Daniela Rocchi and Luca Maori of the Bar of Perugia

Plaintiffs:
John Leslie Kercher, Arline Carol Mary Kercher, John Ashley Kercher, Ly[l]e Kercher all represented and defended by Attorney Francesco Paolo Maresca of the Bar of Florence

Stephanie Arline Kercher
represented and defended by Attorney Serena Perna of the Bar of Florence

Diya Lumumba
represented and defended by Attorney Carlo Pacelli of the Bar of Perugia

Aldalia Tattanelli
represented and defended by Attorney Letizia Magnini of the Bar of Perugia

CHARGED

(A)
with the felony to which articles 110, 575, 576 paragraph 1 section 5 of the Criminal Code apply, in relation to the crime listed under chapter (C), and 577 paragraph 1 section 4, in relation to article 61 sections 1 and 5 of the Criminal Code, for having, in complicity amongst themselves [*in concorso fra loro*][1] and with RUDY HERMANN GUEDE, killed MEREDITH KERCHER, by means of strangulation with consequent fracture of the hyoid bone, and deep lesions to the left antero-lateral and right-lateral regions of the neck, with a bladed weapon to which chapter (B) applies, and thus haemorrhagic shock with an appreciable asphyxiatic component secondary to blood loss (derived from the wounds from the bladed weapon present in the antero-lateral and right-lateral regions of the neck, and the abundant aspiration of haematic material in that context), and profiting from the late hour and the isolated location of the apartment held in tenancy by same KERCHER and same KNOX, in addition to

[1] *Concorso* (translated as "complicity") is a term in Italian law indicating that the actions and realised intentions which resulted in the event that occurred were shared, in such a way that there is shared legal responsibility for the crime. It is a technical term with its own jurisprudence, and is divided into sub-categories for the several kinds of *concorso* codified into law, each with different meanings. The possibilities include: having a role in the chain of causes that produce a crime, planning an action committed by others, sharing an intention different from the actual crime, lending moral support, being necessary to an action, or bringing support while not being unnecessary. For murder, the concept can be compared with the old common law felonies of murder-in-company, and robbery-in-company.

two Italian girls (FILOMENA ROMANELLI and LAURA MEZZETTI), an apartment located in Perugia, at number 7 Via della Pergola, committing the deed for trivial reasons (*motivi futili*), while GUEDE, in concourse with the others, was committing the felony of sexual assault

(B)
with the criminal offence to which articles 110 of the Criminal Code and 4 Statutes number 110 of 1975 apply, for having, in complicity amongst themselves, carried out of the residence of SOLLECITO, without justified reason, a large knife of point and blade comprising in total a length of 31 cm (seized at SOLLECITO's on November 6, 2007, Exhibit 36)

(C)
with the felony to which articles 110, 609(b) and (c) section 2 of the Criminal Code apply, in concourse amongst themselves and with RUDY HERMANN GUEDE (with GUEDE the material executor, in complicity with the co-accused), constrained MEREDITH KERCHER to submit to sexual acts, with digital and/or genital penetration, by means of violence and threats, consisting of restraining actions productive of lesions, in particular to the upper limbs, lower limbs and vulvar area (ecchymotic suffusions on the antero-lateral face of the left buttock, lesions in the vestibular area of the vulva, an ecchymotic area on the anterior face of the middle third of the right leg), and in the use of the knife under chapter (B)

(D)
with the felony to which articles 110 and 624 of the Criminal Code apply, because, in complicity amongst themselves, to procure an unjust profit for themselves, in the circumstances of time and place in which chapters (A) and (C) apply, took possession of a sum of approximately 300 Euros, two credit cards, from *Abbeybank* and *Nationwide*, both based in the United Kingdom, and two mobile phones, the property of MEREDITH KERCHER, removing them from same, who was in possession of them (fact qualified in the senses of article 624(b) of the Criminal Code, due to the reference to the place of execution of the crime contained in chapter (A), here recalled)

(E)
of the criminal offense to which articles 110, 367 and 61 section 2 of the Criminal Code apply, in having, in complicity amongst themselves, simulated an attempted burglary with break-in in the room of the apartment of number 7 Via della Pergola occupied by FILOMENA ROMANELLI, breaking the glass of the window with a

rock taken from the vicinity of the residence, which was left in the room, near the window, to ensure impunity for themselves from the felonies of murder and sexual assault, attempting to attribute the responsibility for them to persons unknown who penetrated the apartment to this end.

All of these events having taken place in Perugia, on the night between November 1 and 2, 2007.

AMANDA MARIE KNOX, in addition

(F)

to the criminal offense[2] to which articles 81 cpv., 368 paragraph 2 and 61 section 2 of the Criminal Code apply, because, with multiple actions executed under the same criminal design, knowing him to be innocent, with a denunciation rendered to the Flying Squad of Perugia on the date of November 6, 2007, falsely implicated DIYA LUMUMBA, called "Patrick", in the murder of young MEREDITH KERCHER, with the intention of gaining impunity for everybody, and in particular for RUDY HERMANN GUEDE, who, like LUMUMBA, is also black.

[Fact occurring] In Perugia, on the night of November 5 and 6, 2007

With the intervention of the public prosecutors: Dr Giuliano Mignini and Dr Manuela Comodi, the parties concluding thus:

The public prosecution *concludes* by requesting the affirmation of penal responsibility for both of the accused the sentence for all of the crimes to them ascribed *ex* Article 72 paragraph 2 and [Article]76, 2nd paragraph of the Criminal Code for Amanda Knox, to the penalty of life sentence with daytime isolation equal to 9 months, for the crimes under (A) and (C), (B), (D) and (F); for Raffaele Sollecito, to the penalty of life sentence with daytime isolation equal to 2 months for the

[2] The charge of *calunnia* (art. 368) has been commonly translated as "slander" in the English/US media. This translation is incorrect, however, as *calunnia* is a crime with no direct equivalent in the respective legal systems. The equivalent of "criminal slander" is *diffamazione*, which is an attack on someone's reputation. *Calunnia* is the crime of making false criminal accusations against someone whom the accuser knows to be innocent, or to simulate/fabricate false evidence, independently of the credibility/admissibility of the accusation or evidence. The charges of *calunnia* and *diffamazione* are subject to very different jurisprudence. *Diffamazione* is public and explicit, and is a minor offence, usually resulting in a fine and only prosecuted if the victim files a complaint, while *calunnia* can be secret or known only to the authorities. It may consist only of the simulation of clues, and is automatically prosecuted by the judiciary. The crimes of *calunnia* and *diffamazione* are located in different sections of the criminal code: while *diffamazione* is in the chapter entitled "crimes against honour" in the section of the Code protecting personal liberties, *calunnia* is discussed in the chapter entitled "crimes against the administration of justice", in a section that protects public powers.

crimes under (A), (C), (D). Barred from holding public office and legal interdiction. Confiscation of seized assets.

The defender of the civil parties: Attorney Perna for the civil party Stephanie Arline Kercher *requesting* compensation for patrimonial damages and *non,* to be liquidated in the amount of 5,000,000 euros or a higher or lower amount deemed appropriate, in the alternative to sentence the accused to the payment of a provisional amount deemed appropriate, in addition to the payment of procedural costs.

Attorney Magnini for the civil plaintiff Aldalia Tattanelli *requesting* the sentencing of all the crimes to them ascribed with sentencing to compensation for patrimonial damages and *non,* to be liquidated in a separate hearing; to the sentencing of the payment of a provisional amount, payable immediately, of 37,800 euros in addition to the payment of procedural costs.

Attorney Pacelli for the plaintiff Diya Lumumba

The defenders of the accused:

Attorney Bongiorno for the accused Sollecito *concluding,* requesting absolution in the senses of Article 530 paragraph 1 of the Criminal Procedure Code for not having committed the deed.

Attorney Ghirga for the accused Knox *concludes* for the crime of *calunnia* to which chapter (F) [applies] because the deed [committed] does not constitute the crime, for the remaining chapters of charges *concludes* requesting absolution for not having committed the deed.

[1] THE UNFOLDING OF THE TRIAL

On November 2, 2007, a little after 1:00 pm in the building at Via della Pergola 7 in Perugia, the body of the English student Meredith Kercher was found. She had come to Perugia at the end of the summer of 2007 under the auspices of the Erasmus Programme and was taking classes at the University for Foreigners of Perugia.

Her lifeless body was sprawled on the floor of the bedroom which she occupied, having rented the apartment, owned by Aldalìa Tattanelli and organised in particular for the reception of university students, with three other girls.

For the murder of Meredith Kercher and for the other crimes which the preliminary investigations shortly unveiled, the Public Prosecutor of Perugia initiated the criminal prosecution against Amanda Marie KNOX, co-tenant of the victim, a university student from Seattle (US) engaged in a plan of study in Italy similar to that of Meredith Kercher; against Raffaele SOLLECITO, a student at the college of Computer Engineering at the University of Perugia and the boyfriend of KNOX; and finally against Rudy Hermann GUEDE, a citizen of the Ivory Coast and a resident of Perugia since infancy.

The preliminary hearing against Amanda Marie KNOX, Raffaele SOLLECITO and Rudy Hermann GUEDE was held on October 28, 2008.

Rudy GUEDE opted for a fast-track[3] trial; for Amanda KNOX and Raffaele SOLLECITO the GUP[4] of the Tribunal of Perugia ordered the adjournment of the proceedings to the Court of the Assizes of Perugia for a hearing beginning December 4, 2008.

The accused are called to answer for the crimes indicated in the decree *ex* article 429 of the Criminal Procedure Code under which they are indicted.

In particular, under chapter A of the charges, in material complicity with Rudy Guede, the murder, with more than one aggravating circumstance, of Meredith Kercher (crime provided for under Articles 110 and 575 of the Criminal Code, the aggravation dealt with under Article 576, paragraph l, section 5 of the Criminal Code, being alleged in that the murder is held to have been committed in the context of the sexual violence suffered by Ms. Kercher ascribed to chapter C of the charges, this crime, murder, further aggravated by the notification under Article 61, sections

[3] The committal hearing becomes the trial of first instance based on the evidence as it then stands
[4] GUP, Judge of the Preliminary Hearings

(1) and (5) of the Criminal Code re trivial reasons [*motivi futili*] and re disabled defence).

[2] Under chapter B of the charges, KNOX and SOLLECITO are accused of the offence of carrying the alleged murder weapon, a knife (Exhibit 36 in the following account), outside the dwelling of Sollecito without justifiable reason.

Under chapter C is charged, in complicity with Rudy Hermann Guede in the guise of the material executor, the crime of sexual violence against Meredith Kercher, a hypothesis aggravated under Article 609(c), section 2 of the Criminal Code, the hypothetical use of the knife referred to under chapter B of the charges being used to threaten the victim and facilitate the conduct of violence.

Under chapter D of the charges, is ascribed to KNOX and to SOLLECITO, in complicity together, the theft of goods which belonged to Meredith Kercher (in particular two mobile phones, a sum of money, and two credit cards from British banks), in this case charged according to Article 624 bis of the Criminal Code.

Under chapter E of the charges is ascribed, in complicity together, the crime according to [*ex*] Article 367 of the Criminal Code, with the aggravation of the deliberate intention, alleging that the accused simulated an attempted theft inside the room of Meredith's and Amanda's co-tenant Filomena Romanelli – the signs and the means of the break-in are described in the charges – with the aim of attributing to persons unknown, who had entered the apartment, responsibility for the murder and the hypothetical sexual violence suffered by Meredith Kercher.

Finally, under chapter F of the charges is ascribed to Amanda Marie KNOX alone the crime of criminal defamation to the detriment of Diya Lumumba, known as "Patrick", a crime brought in by continuation [*reato contestato nella forma continuata*][5], insofar as the alleged false accusations in relation to the responsibility of Lumumba for the murder of Meredith Kercher is held to have been contained in several statements made by Knox to the investigators on November 6, 2007; a crime aggravated in the sense of Article 61 section 2 of the Criminal Code, it being

[5] *Continuation* means that the crime was committed repeatedly, implying multiple actions over a period of time but where those actions are part of a continuum of the same criminal action ("medesimo disegno criminoso"). For example, the stabbing of two people one after the other would be charged as 'killing in continuation'. The multiple criminal actions are, however, judged as one, with an overall assessment. Continuation is a legal category that also applies to different offences, meaning that different actions are logically linked in such way to be considered as a single case, and this may constitute aggravation, but also implies that evidence of the different crimes can be shared. Here the evidence that comes from the *calunnia* case is brought into the murder, and vice-versa, because of the aggravation link.

expected that, with this false accusation, Amanda Knox was allegedly attempting to obtain impunity for herself, for Sollecito, and also for Rudy Hermann Guede.

The crime allegedly committed in Perugia on the night between November 5 and 6, 2007.

[3] At the preliminary hearing the family of Meredith Kercher and, [as persons] damaged by some of the crimes respectively, Diya Lumuba, defended by Attorney Carlo Pacelli of the Perugia Forum, against Amanda Marie KNOX alone in reference to heading F, and Adalia Tatanelli, defended by Attorney Letizia Magnini of the Perugia Forum, against all the accused, constituted themselves as plaintiffs.

For the family of Meredith Kercher, with the office of Attorney Francesco Paolo Maresca of the Florence Forum, the parents of the English student, John Leslie Kercher and Arline Carol Mary Kercher, and the brothers John Ashley Kercher and Lyle Kercher constituted themselves plaintiffs.

The date of the first hearing, fixed by the decree which set the hearing for December 4, 2008, was changed with the permission of the President of the Court of the Assizes at the request of the parties, [both] public and private, for organisational reasons related to the preparation of the case for trial.

The date of January 16, 2009 was thus set as the first hearing, with the appropriate decree pursuant to Article 465 section 1 of the criminal procedure code, the installation of the civil judges of the Court of the Assizes had taken place previously, the actual and assistant members, who took the oath as_provided for under Article 30 of the Act dated April 10, 1951, section 287, and the appropriate trial record was compiled immediately, as per the aforementioned Article 30.

Present at the first hearing – and at all successive ones – previously transferred as [they were] remanded in custody, the accused Amanda Marie KNOX and Raffaele SOLLECITO, assisted by their Defenders (Attorney Carlo Dalla Vedova of the Forum of Rome and Attorney Luciano Ghirga of the Forum of Perugia for Amanda Knox; Attorney Giulia Bongiorno of the Forum of Rome and Attorney Luca Maori of the Forum of Perugia for Raffaele Sollecito), present the constituted plaintiffs and in person Diya Lumumba, in a preliminary step the Court of the Assizes deliberated in order the request to proceed in closed court and to authorise the audio-visual recording of the trial.

[4] In fact the petition was made by the Kerchers, plaintiffs, to hold the trial in closed court according to Article 472 paragraph 1 of the criminal procedure code, in the expectation that in the category of the charges the crime of sexual violence would also be treated. Following the discussion on the questions both as to derogation from the principle of a public trial and also of the eventual consent to audio-visual recording of the hearings, the Court deliberated according to the order in the trial records. On the one hand submission was made not to derogate from the principle of public hearings - the offended party not being a minor and furthermore no longer alive, the charge did not render it obligatory to proceed in closed court – in any case reserving the admission of evidence in the absence of the public for single activities for which a specific need arose; as for the possibility of audio-visual recordings of the trial provided by article 147 section 2 of the Criminal Procedure Code, in the absence of agreement between the parties, the Court did not opt to autonomously authorise the recordings according to the disposition of article 147 section 2 already cited. It was argued in fact that the public [nature of the] hearings from which it was not intended to derogate, would permit in itself on the part of journalists of the print media and of the television channels present in the court, the full and timely informing of public opinion, such as to satisfy the public interest in information pertaining to the trial. Nonetheless, a possible different determination was held in reserve should the parties later give their consent.

At the hearing of January 16, 2009 the Defence for Sollecito, *in limine litis*, inferred the nullity of the interrogatory session by the magistrate to which the defendant had been subjected because of the violation of his right to assistance – it was affirmed that the Prosecutor, when Sollecito had been subjected to police arrest, had deferred the exercising of the right to confer with his Defence, without however issuing the required decree with the report on the grounds for arrest, as is evidenced by the physical unavailability of the provision of Article 104 section 3 of the criminal procedure code, not present in the acts; for this reason the inefficacy of the remand measure taken out against Sollecito is pleaded consequent to the nullity of the interrogatory session taken at the hearing for the ratification of the arrest; the violation of the right to a defence is inferred, in so much as the obligation to **[5]** deposit the acts of the investigation before the admission of the interrogatory session itself.

The Court decided on the questions of nullity as a decree of which a reading was given. It was observed, on the one hand, that the nullity of the act, the interrogatory, ensuing from a violation of the right to assistance other than in the cases of the

obligatory presence of the defender, the violation had been pleaded late – for the first time only as the interrogatory on the merits, in process, admitted by the Judge of the Preliminary Investigation (GIP). And in truth, the two nullities (that of the provision of prohibition of the interview and the autonomous nullity of the interrogatory, in its turn deriving from the nullity of the provision which defers the meeting with the defender) are both provisioned by jurisprudence among those of the general order regulated by Article 180 of the criminal procedure code, and for them the relative exceptions must be proposed within the terms of forfeiture governed by Article 182 paragraph 2 of the criminal procedure code.

The nullity of the type of the interrogatory of the person arrested must thus be pleaded, at the risk of forfeiture, within the terms governed by Article 182 paragraph 2, previously cited, and thus before the formalities of the opening of the act, the interrogatory, which the party was attending (cf. Supreme Court of Cassation section 4, judgement number 39827/07 in the trial of Recchia).

In the case cited the inference was late and the nullity – particularly regarding the Magistrate's interrogatory – was found to have been repaired.

In relation to the failure to lodge the acts of the investigation before the assumption of the interrogatory, the Court finally cited the jurisprudence of specific legitimacy on the point, which does not provide for the obligation of such lodging in cases in which the interrogatory precedes the adoption of remand into custody, as happens when – as in the case under examination – the measure is put in place after the outcome of the validation hearing.

At the hearing of January 16, 2009, at the point of the preparation of the file for the trial, it was petitioned solely that the acts pertaining to the measure for remand into custody (an executive order, a provision of the Review Tribunal, and judgements of the Supreme Court *in materia de libertate*) should be eliminated from the facts comprising the file for the trial.

This Court ruled in conformity with the dictate of Article 432 of the Criminal Procedure Code.

[6] The trial finally being declared open, the parties articulated the types of evidence (lists of testimonies and of expert advisors having been lodged in due time by the prosecution, by the civil parties, with the exception of Tattanelli Adalia, and by the defence teams; the Prosecutor asked for the examination of the co-accused tried separately, Rudy Hermann Guede; the examination of Amanda Knox was requested

by the plaintiff Lumumba and by the Knox defence; each party offered immediately the production of documents, or alternatively their production was reserved) which were admitted.

At the hearing of February 6, 2009 the Court rejected the request by Knox's defence to expunge from the production of documents of the plaintiff Lumumba the hand-written memorial in the English language, written by Amanda Knox on November 6, 2007 at the Offices of the Flying Squad of Police Headquarters, handed over to an official of the judicial police before the person under investigation was transferred to prison on the execution of the decree of arrest, and also the other memorial written in prison on November 7, 2007.

For the memorial of November 6, 2007, which the Court indicated as admissible as part of the body of evidence of defamation, and on the basis of disposition of Article 237 of the criminal procedure code, the considerations evidenced were developed in the appropriate decree. The Court did not agree in fact about the relevance of the question of constitutionality proposed in reference to the combined disposition of Articles 103 paragraph 6 and 237 of the criminal procedure code for the presumed conflict with Articles 3 and 24 of the Constitution – if necessary the Defence for Knox looked forward to an additive intervention of the Constitutional Court such as to provide for the addition in the body of the disposition of Article 237 of the Criminal Procedure Code of the prohibition to deliver, without the assistance of the defender, defence documents created by the person under investigation, acts therefore of the private defence - the point being made that the code does not prohibit the performance of the private defence and at the same time does not provide for the penal incapacity of the person investigated, who on the contrary is called to answer for crimes committed by means of the spontaneous declarations. (cf. Supreme Court of Cassation number l0089/05 on the non-extension of the guarantee of non-usability of spontaneous declarations dealt with under Article 350, paragraph 7 of the Code of Criminal Procedure, insofar as it oversteps the right of defence, it being excluded that the guarantee under discussion can be valid in the case of spontaneous declarations with defamatory content).

[7] The trial proceedings finally began in the same hearing of February 6, 2009 with the examination of the first witnesses carried out by the Prosecutor.

The depositions of the witnesses and the expert witnesses of the Prosecutor continued until the hearing of June 12, 2009, when the examination of Amanda Knox began, concluding the next day, June 13. As of the hearing of January 16, 2009, Knox

had been provided with the assistance of an American English interpreter in the person of Dr Anna Baldelli Fronticelli.

In the course of numerous hearings the brief of evidence, as specified in the relevant trial records, was adduced.

The co-accused, separately tried, Rudy Hermann Guede, examined at the hearing of April 4, 2009 pursuant to Article 210 paragraph 1 of the Criminal Procedure Code with the assistance of his defenders, availed himself of the right to not respond.

The Defence teams began presenting their case, evidence, witnesses and experts on June 16, 2009.

In the meantime the Court had initiated, at the request of the Sollecito defence and in agreement with the Prosecutor, the expert task of a joint nature for the transcription of the tapped telephone conversations and voice recordings arranged by the Office of the Public Prosecutor in Perugia in the course of the preliminary investigations, the transcription of which had been requested.

(These voice recordings were made at Police Headquarters in Perugia, appropriately prepared, where the co-tenants of Meredith Kercher, the boys of the apartment below that one occupied by the murdered girl, and the English girlfriends of the English student involved in the Erasmus Programme, had gathered on the afternoon of November 2, 2007. Other voice recordings were made during meetings in prison between Amanda and her parents. Finally, phone tappings had been made of the fixed and mobile phone services of the family of Raffaele Sollecito.)

At the hearing of September 14, 2009 the defences of the accused objected, citing a breach to the right of defence which it claimed had taken place, stating in this regard that they be declared null and void. The other parties, who asked that this objection be **[8]** disregarded, having been heard, this Court issued the decree (which it read) in which the objection regarding nullity was rejected and in which it ruled to continue proceedings.

At the hearing of September 26, 2009, the examination of the expert witnesses and witnesses for the Defences came to a close (for witnesses who were not located or who had withdrawn following a waiver, on the consensus of the parties, the records of spontaneous declarations given to the judiciary police were admitted) after which, at the hearing of October 9, 2009 the Defences articulated requests for expert reports according to the provisions of Article 507 of the Criminal Procedure Code.

In particular, a medico-legal expert report was requested, with the aim of ascertaining in terms of greater practicability in respect of the indications furnished: the time of death of Meredith Kercher (once a time band narrower than that indicated by the technical consultants of the Prosecutor or of the panel of experts under the preliminary investigations judge [the *GIP*], it would be possible to verify whether Raffaele Sollecito had interacted with his PC within a more precisely defined timeframe); the dynamics of the action of the murder, also in reference to the infallibility of the presence, or otherwise, of a number of agents; the repetition of the genetic investigations, or at least the revaluation of the traces with reference to Exhibits 165B and 36, the procedures/methodology of the gathering of the exhibits undertaken by the genetics expert of the Scientific Police, Dr Stefanoni, who carried out the verifications, having been questioned; an expert audiometric test was sought, to be undertaken to establish whether the witness Nara Capezzali, on the premise of the presence in her dwelling of double-glazed windows, was able to hear the noises and the screams of which she had given an account in her deposition; an expert report on the computers of the accused was requested, the memories of which were found to have been damaged at the time of the analysis of the supports carried out by the Postal Police, such that the hard drives could not be duplicated/cloned for subsequent examination.

The Court disallowed all the requests, on the grounds that the additional expert reports requested did not appear necessary, since the very ample dialectic contribution from the expert witnesses of the private parties offered sufficient material to take a position without additional expertise.

[9] Consequently, the closure of the proceedings was declared and a timetable was set for deliberations.

The Prosecutors' closing arguments were presented on November 20 and 21, 2009. The civil parties made their closing arguments on November 27, and the lodging of the written conclusions followed this; the Defence for Sollecito took the floor on November 28 and 30, and the Defence for Knox on December 1 and 2.

December 3 was devoted to rebuttals, with both of the accused - as often happened in the course of the hearings – making spontaneous declarations.

At the hearing of December 4 the Defence for Sollecito concluded the rebuttals, submitting a memorandum evidencing that on the site of the inspection of May 25, 2009, on the pillowcase of the pillow found in the victim's room some stains had

been found with the "crimescope" that could have been spermatic in nature and that these had not been the object of any genetic analysis. In relation to this contention, various questions were raised as to the necessity of testing relative to these stains.

At the end of the discussion, at 10:39 am, the Court of the Assizes retired to the jury room, having previously dismissed the deputy civil judges. The purview of the determined decision was read in a public hearing on the date of December 5, 2009, the Court having returned to the courtroom at 12:06 am.

Given the complexity of the matter and the gravity of the charges, the deadline for drawing up the motivation report was set at 90 days, *ex* Article 544 paragraph 3 of the Criminal Procedure Code.

GROUNDS FOR VERDICT

The presentation of the ample material which emerged from the preliminary investigations set in motion as a result of the murder of Meredith Kercher, and the scrutiny of the outcomes of the hearings, suggest a subdivision into chapters of the matter, in the terms which follow.

[10]

ACCOUNT OF THE EVENTS

(A)

On November 2, 2007, in the house located at 7 Via della Pergola, shortly after 1:00 pm, the lifeless body of a girl was found, covered by a duvet from which protruded only a naked foot; in the immediate surroundings and more or less all over the room were large blood stains.

The body was identified as that of Meredith Susanna Cara Kercher. Meredith Susanna Cara Kercher, born in London on December 28, 1985, had studied the Italian language as well as Latin, and had come to Italy under the auspices of the Erasmus Programme.

She had chosen the city of Perugia because it was small and easily reached because of its airport. Every day Meredith called her family, with whom she had a very close relationship. She had taken classes in dance and played sports (football, karate); she was a strong girl, both physically and in terms of temperament (cf. statements by her mother and by her sister Stephanie, hearing of June 6, 2009). She had left for Perugia on September 1, 2007.

At first, she stayed in a hotel, until she had found the rental house in Via della Pergola, which she liked because of its location: near the university and offering a very beautiful view of the Umbrian landscape.

Having finished the Italian language course, she had begun to study other disciplines: politics, English, cinema, Italian language.

On September 28, 2007, Meredith returned to England to get warmer clothes, leaving again for Perugia on October 1. Both her mother and her sister knew about the housemate Amanda and about relationships with her; when Amanda had begun to work at a bar "Meredith and her friends had gone there to give her support, to be

with her" (cf. again deposition of her mother); Meredith, furthermore, said that Amanda was constantly singing (declarations of her sister Stephanie).

Her mother reported having heard from her the last time on Thursday, November 1, 2007, "the day she died", in the early afternoon. She had told her mother that she would be coming back home on November 9 and would thus be able to celebrate her mother' imminent birthday on November 11.

Meredith was very attached to her family and very affectionate; she had bought some presents and had a case full of chocolate she had bought in Perugia **[11]** that she wanted to bring for her sister, Stephanie Arline Lara Kercher. She was, furthermore, "very conscientious, very intelligent". She loved pizza very much and at times went dancing (see statements by her father, hearing of June 6, 2009).

When she moved into the house at 7 Via della Pergola, she occupied the room furthest from the entrance door, the one with the window that looked towards the valley below, from which, in fact, the panorama about which she had spoken to her mother could be appreciated.

(B)

Via della Pergola is a small street very close to the University for Foreigners and number 7 is almost hidden from Viale S.Antonio and from the car park which are in front of it. The dwelling was subdivided into two apartments, one in the basement occupied at the time by four young men from the Marches region, and the other on the ground floor occupied by four girls: Filomena Romanelli, Laura Mezzetti, Amanda Marie Knox and Meredith Susanna Cara Kercher. Each of the four girls had her own room.

The first two – who were the oldest and already working full-time – occupied the rooms nearest to the entry to the house: Romanelli occupied the room to the left in respect of the person entering and Mezzetti the one opposite.

These two rooms were separated from the living room by a kitchenette that the four girls shared. From this room a corridor ran to a small bathroom located near Meredith's room, almost in front of this room. It was usually used by Amanda and Meredith.

Amanda's room was in the middle, between Romanelli's room which was the first in respect of the entrance door, and Meredith's room, which was the last. All of them

were located to the left of the corridor in respect of people entering. Only the room occupied by Mezzetti was located on the other side (i.e., to the right of the corridor).

Romanelli and Mezzetti used a different bathroom, bigger than the one used by Meredith and Amanda, equipped with a small anteroom that contained a washing machine, which was entered by a door opening from the living room.

[12] At the moment when the lifeless body Meredith Susanna Cara Kercher was found, in the house at 7 Via della Pergola there were present, as well as the present accused, Filomena Romanelli, her friend Paola Grande and their boyfriends: Marco Zaroli and Luca Altieri. All had arrived at the house around 1:00 pm on the day of November 2.

Also present were an inspector and an officer from the Postal Police of Perugia: Michele Battistelli and Fabio Marzi, who arrived a little before 1:00 pm.

The presence of the Postal Police in the persons of Inspector Battistelli and officer Marzi had been occasioned by the discovery a few hours earlier of a mobile phone, and then of a second mobile phone, in the garden of the house of Elisabetta Lana, located in Via Sperandio, Perugia

This garden and the house, both hidden by trees, are in the area of Parco S. Angelo, a short distance from 7 Via della Pergola: a distance which would have required a very few minutes to cover by car (two or three minutes), about 15 to 20 minutes on foot (see statements by Fiammetta Biscarini, hearing of February 6, 2009) or less, (cf. statements by Dr Chiacchiera, who indicated that the time needed to reach Via Sperandio from Via della Pergola was 5 – 7 minutes, specifying that it was possible to go via Corso Garibaldi – which is 200 metres from Via Sperandio – or also via the park, declarations made by Dr Chiacchiera at the hearing of February 27, 2009, page 145).

(C)

Thus it happened that the evening of November 1, 2007 at around 10:00 pm, someone called and warned Elisabetta Lana not to use the toilet of her dwelling because it contained a bomb which could explode. Mrs. Lana immediately notified the police of this phone call; and they came to the house but did not find anything. Mrs. Lana and her husband were nonetheless asked to go to the Postal Police the next day to report said telephone call.

The next day (November 2), as they were preparing to go and file the report, their son Alessandro Biscarini found a mobile phone "in the garden, in the clearing in front of the house" at around 9:00 am (declarations of Alessandro Biscarini, hearing of February 6, 2009, page 166).

Thinking that it has been lost by one of the officers who had come the evening before, Mrs. Elisabetta Lana phoned Police Headquarters and was told to bring **[13]** this phone to the Postal Police, where she was going anyway and where she arrived, with her husband, at about 10:15 am.

Dr Bartolozzi, the officer to whom the mobile phone was given, traced its owner: Filomena Romanelli, residing at 7 Via della Pergola in Perugia.

Shortly thereafter, and after Mrs. Elisabetta Lana and her husband had left the Postal Police office, their daughter Elisabetta Biscarini informed them that she had found a second mobile phone in the same garden of the house on Via Sperandio, between 11:45 am and 12:00 noon, a short distance from where the first phone had been found. This mobile phone, taken into the house and placed on the table, had rung and, the name of the person calling had appeared in the display field: "The name of the person calling was Amanda" (declarations of Alessandro Biscarini, hearing February 6, 2009, page 167).

The circumstance of finding the second mobile phone was immediately reported to Dr Bartolozzi, who asked that this second mobile phone also be brought to him.

Around 12:15-12:20 pm, Mrs. Lana was thus once again at the Postal Police office, this time with the second mobile phone, which she handed over to Dr Bartolozzi.

Alessandro Biscarini specified that the place in the garden where he had found the first mobile phone, a Motorola, was about 15 – 20 metres from the road above and that the second phone had been found a short distance from the first. He specified that the second mobile phone had been found by his sister Fiammetta who, in testimony provided at the same hearing, reported that on the morning of November 2, 2007, she was in the garden of her own house around midday when she heard a mobile phone ringing. She took this mobile phone into the house, where it rang again, and in the display field appeared the name of Amanda.

Filippo Bartolozzi, at the time Manager of the Department of the Communications Police for Umbria, confirmed that on the morning of November 2, 2007 Mrs. Elisabetta Lana had brought the mobile phone with her to the Police office. It was a

Motorola that she said she had found in the garden of her own home. Using this mobile phone, Dr Bartolozzi had made a call to a number in the Office and had thus been able to identify Filomena Romanelli, resident at 7 Via della Pergola, as the owner of the number of **[14]** this mobile phone. This check was carried out at 11:38 am (page 54 of the statements of Bartolozzi, hearing of February 6, 2009). He then sent Inspector Battistelli and Assistant Marzi to 7 Via della Pergola: it would have been at noon (page 42 of statements by Bartolozzi).

Shortly after, he found out that another mobile phone, this one an Ericsson, had been found in the garden of Via Sperandio. This mobile telephone was brought to the office and kept with the other one.

He had tried to find the number and the owner of the service of this second phone as well, but without success.

He had then thought that "the mobile phone could have a SIM card belonging to a foreign telephone company" (declarations of Bartolozzi, hearing of February 6, 2009).

(D)

These then are the preceding facts and the reason for the presence at the house at 7 Via della Pergola shortly before 1:00 pm on November 2, 2009 of the Postal Police team consisting of Inspector Michele Battistelli and Assistant Fabio Marzi.

As stated by Battistelli (page 80, hearing of February 6, 2009) they had some difficulty finding the house, as they had gone along Viale S. Antonio, which is alongside and in part hides the house. Twice, Battistelli had had to get out of the car and walk along before finding the house, where he arrived with Assistant Marzi at a little after 12:30 pm, or so it seemed to the two policemen.

At said dwelling they did not find Filomena Romanelli, the person they were looking for, for the reason stated above, but rather the present accused, who were outside the house sitting near the fence located almost at the end of the lane that leads to the house itself, once past a gate. They were, then, outside the house, near the side of the wall where the window of the room occupied at the time by Filomena Romanelli is located.

Said window had two half-closed shutters, and the right-hand shutter (the right with respect to the person looking at it) was "slightly more open" (page 62, hearing of February 6, 2009, Battistelli's statements).

As soon as they arrived, the young people – Amanda Knox and Raffaele Sollecito – said that they were waiting for the *carabinieri* whom they had called since "coming back to the cottage in the morning because they had been away for the night" and finding "the entrance **[15]** door open and then the window broken" (see declarations by Battistelli, hearing of February 7, 2009, page 64).

Shortly after his arrival at the house in Via della Pergola, Battistelli was informed by his superior Dr Bartolozzi that a second mobile phone had been found. The checks carried out on this second mobile phone had not produced any results, as has already been recorded.

Nonetheless, the similar time and place of the finding of the two mobile phones made it reasonable to think of a similar cause and allowed it to be held that the owner of one – Filomena Romanelli – would have been able to provide information about the second as well. Michele Battistelli was thus informed as well about the second discovery.

(E)

At about 1:00 pm Filomena Romanelli, her friend Paola Grande and their boyfriends Marco Zaroli and Luca Altieri arrived at the house in Via della Pergola.

Inspector Battistelli and Assistant Marzi had come to the house in Via della Pergola precisely because of Filomena Romanelli, but when the latter arrived at about 1:00 pm on November 2, changing the plans she and her friend Paola Grande had made for that semi-holiday (the Day of the Dead) because she has been called by the Postal Police to give explanations about the Motorola phone registered to her and found in the garden of the house Via Sperandio.

(F)

Filomena Romanelli had been living in the house at 7 Via della Pergola since August of that year with Laura Mezzetti. Since there were two other rooms available and a second bathroom, they tried to find two other girls with whom they could share rental expenses, which amounted to a total of 1,200 euros a month.

At the beginning of September Amanda Knox arrived and said she was interested in living in the house. She had chosen her own room, the one located between Romanelli's room and the one that would be Meredith's room.

Amanda Knox had then left to spend a few days in Germany, where she had an aunt.

Meredith had arrived after this and also expressed interest in the house **[16].** She began to live there in mid-September 2007, occupying the room furthest from the entrance, next to Amanda's and in front of the small bathroom, the second bathroom of this apartment. It was generally and mostly used by the two girls, Meredith and Amanda.

Filomena Romanelli was mainly attached to Laura Mezzetti, her own age and like her, working full-time. All the same, she had excellent relations with all (the girls): on October 30, 2007, after returning from work in the late afternoon she had had a long chat with Meredith, and on November 1, 2007, before leaving the house to go with her fiancé, she had asked Amanda to help her wrap a present. She had also met Amanda's boyfriend, Raffaele Sollecito, on October 26, the day immediately after Amanda and Raffaele had met.

All four girls had the keys to the front door of the house, which was a little faulty: it was in fact necessary to use the key to close it. Indeed, when you only pushed it, it did not always click and therefore it did not always close.

Filomena Romanelli recalled that on that November 1 she had planned to go with her fiancé, Marco Zaroli, to the house of Luca Altieri, who was celebrating his birthday. As she had to change her clothes and wrap up a gift for Luca Altieri, she had gone home to 7 Via della Pergola with Marco Zaroli. In the house she found Amanda, who was having breakfast, and who told her that Meredith was asleep in her room (pages 28 and 29, hearing of February 7, 2009). She had thus left the house, spending the rest of the day and the night with her boyfriend Marco Zaroli. The next day, she had gone in her boyfriend's car to get her friend, Paola Grande, who was at the house of Luca Altieri, and with whom she intended to go to the area of Pian di Massiano where the Fair of the Dead was being held.

Around midday, at ten past twelve, when they had not yet arrived at the car park of the Fair, and she was in the car with her friend Paola Grande, she received a phone call: it was Amanda letting her know that there was something strange.

She had arrived and had found the door open: she had had a shower and it had seemed to her that there was some blood; moreover she said that she was going **[17]** to Raffaele's place (declarations of Romanelli page 31, hearing of February 7, 2009).

To her (Filomena's) question about where Meredith was, she had answered that she did not know.

Filomena Romanelli, disturbed by this phone call, had rung Amanda back without receiving a reply and when, a little later, she had succeeded in speaking to Amanda, Amanda had told her that in her room (i.e., in Ms. Romanelli's room) the windowpane was broken, everything was in a mess, and that she should come back home.

At this point she was extremely concerned; she had rung her fiancé, Marco Zaroli, reporting to him what Amanda had told her and asking him to go to the house in Via della Pergola to see what had happened.

Marco Zaroli, who was without a car because Ms. Romanelli had taken it, had called his friend Luca Altieri and they had gone together to the house in Via della Pergola, where they arrived around 1:00 pm, at almost the same time as Filomena Romanelli and Paola Grande. In the house there were the also the two present accused and – as we have seen – Inspector Battistelli and Assistant Marzi. The presence of the latter two was linked by Ms. Romanelli to what Amanda had told her about the open door, the broken pane, her own room in a mess.

She was therefore quite surprised when Inspector Battistelli asked her whether she knew the phone numbers he showed her, written on a piece of paper, one Italian and the other English.

Filomena Romanelli knew and thus in response answered that they were the numbers of the telephones used by Meredith: one for Italy and in her name, Filomena Romanelli, which she herself had given to Meredith for phone calls in Italy; and the other phone, which was used for calls to England, where Meredith had all her family.

The information about finding the two phones in the garden of a house in Via Sperandio significantly aggravated fears and concerns about what could have happened.

Filomena Romanelli knew that Meredith was never without her Ericsson mobile phone, the one for calling England, since she used it to be constantly informed about the condition of her mother's health, which was not good.

[18] Filomena Romanelli had ascertained from a quick check of her room, even though (it was) in a complete mess with the windowpane broken, that nothing was missing. Nonetheless, what Amanda had told her about the front door being found open, about the presence of blood stains found in the bathroom used by Amanda and Meredith, and about the discovery of the two mobile phones, created a worrisome situation, all the more so because there was no news about Meredith and the door of her room appeared to be locked.

This last circumstance, downplayed by Amanda, who said that even when she went to the bathroom for a shower Meredith always locked the door to her room (see declarations of Marco Zaroli, page 180, hearing of February 6, 2009 and declarations of Luca Altieri, page 218, hearing of February 6, 2009), had alarmed Ms. Romanelli more. She said she was aware of only once, when she had returned to England and had been away for a few days, that Meredith had locked the door of her room. (This circumstance was confirmed by Laura Mezzetti, page 6, hearing of February 14, 2009).

It was in this context, full of anxiety and concern, that the decision was made by the four young people – Filomena Romanelli, Paola Grande, Luca Altieri, and Marco Zaroli - to break down the door of the room of Meredith Susanna Cara Kercher.

Nevertheless, with regard to this specific aspect – the locked door and the decision to break it down – some - to say the least - contradictory elements had emerged: Amanda, as has already been reported, had stated that Meredith always locked the door to her room and therefore it was normal that it was locked; Raffaele Sollecito had tried to break down the door with a kick, thus putting in action behaviour which contradicted the normality of the locked door claimed by Amanda; strangely, however, he had not persisted in his effort to break down the door, which had suffered only a scratch, and notwithstanding that he had not been able to offer genuine resistance to a greater and effective determination – as is evidenced by the fact that Luca Altieri, a little later, had been able to force it with a kick and a blow from his shoulder – he had not tried again to force the door.

It must also be remembered that Amanda Knox, on this specific detail **[19]** in the e-mail sent on November 4, 2007 to 25 people in the US, after having referred to the

chaos in Filomena's room, the open window and the broken pane, continued in this way:

"I then went into the part of the house which Meredith and I shared and checked in my room whether anything was missing, and in fact nothing was missing. Then I knocked on Meredith's door. At first I thought that she was sleeping and for this (reason) I knocked quietly, but then because nobody answered I started to knock repeatedly until I began to bang hard on the door while I was shouting her name. No reply. Panic stricken I ran to the terrace to see whether I could see something over the window sill, but I could not see inside."

We will have an opportunity to return to this e-mail and other documents originating from Amanda Knox, as well as to her own statements made in the course of this debate.

Nonetheless, it appeared necessary to evidence, straight away, the attitude of panic affirmed in the e-mail referring to the locked door, which in contrast was completely lacking on the arrival of Ms. Romanelli and the other young people. Furthermore, it does not appear that either one or the other said a thing to Battistelli and Marzi about this locked door – which apparently had occasioned such panic in Amanda – or about the (timid) attempt of Raffaele to break it down, when the two officers arrived at the house; nor was any reference made to it by Amanda during her phone conversations with Ms. Romanelli.

(G)

Around 1:15 pm on November 2, 2007 the door to the bedroom of Meredith Susanna Cara Kercher was thus broken down. It was Luca Altieri who undertook to break it down; and before (them) there unexpectedly appeared a duvet completely spread out on the floor of the bedroom: this duvet covered the entire body of a person, except for one bare foot; and blood could be seen on the floor and the walls of the room.

Shouts of dismay followed and the four young people who were in front of the broken down door were simultaneously removed: Luca Altieri, Marco Zaroli, Paola Grande, and Filomena Romanelli. None of the four young people thus entered the room, other than Luca Altieri, who had ended up with a foot inside the room from the momentum of the effort used to break down the door. Furthermore, neither did

the accused, who were at the point the furthest away from the door to Meredith's room, **[20]** in the living room at the end of the corridor.

It does not turn out that either Raffaele Sollecito or Amanda Knox afterwards went into the room or near it. On the contrary, Inspector Battistelli has declared that as soon as the door was forced open, he ordered everyone to get out of the house; and it does not turn out that any one of the young people came back inside or went into Meredith's room or near it to look inside.

Inspector Battistelli has also ruled out having entered this room. On this point, Luca Altieri's version differed: he declared that he had seen Battistelli going in there, right along the wall. [This is] a memory which seems rather circumstantial and that was also communicated to Marco Zaroli, in respect of which, despite the confrontation set out, the version of Battistelli has remained unchanged and the request to check the eventual trace left on the floor (see declarations of Dr Chiacchiera) did not permit the acquisition of further clarifying elements.

The fact subsists nonetheless, confirmed by the various testimonies, according to which, after the door was broken down all the young people were required to get out of the house and Battistelli informed his own superior that the lifeless body of a girl, quickly identified as Meredith Susanna Cara Kercher, had been found.

It was about 1:30 pm on November 2, 2007: shortly after this the house situated at 7 Via della Pergola and its inhabitants became the centre of intense investigative activity. (page 20)

MEREDITH'S GIRLFRIENDS

The investigation about the last people whom Meredith could have met and the search to reconstruct her final movements, her last meetings, led to identifying and seeking out her girlfriends, the people with whom she mixed most of all, who had also come from England to Perugia to study.

Robyn Carmel Butterworth, who arrived in Perugia at the end of September/early October to attend the University, had found an apartment in Via Bontempi; she had straight away met Meredith, with whom she had started to mix, together with **[21]** Amy Frost, who was living with her in Via Bontempi, and Sophie Purton.

She had also met Amanda Knox on occasion. Meredith talked to her about her relationship with Amanda, telling her what was happening in the house, and said that at times Amanda did not leave the bathroom clean.

Meredith had also told her about certain private objects that Amanda had in the house inside a beauty case which she kept in the bathroom: a vibrator and some condoms.

She also remembered that Meredith, talking about what was happening at home, sometimes expressed uneasiness. ("My perception of their relationship was that at times Meredith felt a little uneasiness, that at times she had some doubts about Amanda.")

The night between October 31 and November 1, 2007 she had been with Meredith: after dining together they had gone together to the Merlin and then to another night spot, the Domus, and then around half past four and five in the morning, each had gone home to her own house.

She remembered that the evening of October 31 Amanda had asked Meredith to go out together.

The last time she had seen Meredith had been November 1 at her house in Via Bontempi, where there were also Amy Frost and Sophie Purton. Meredith had arrived at about 4 pm; they had prepared a pizza and had eaten; then they had looked at the Halloween photos on the computer before starting to watch a film; around the middle of the film they had prepared an apple crumble, a sort of apple

cake, which they had eaten with ice cream. And at around 9 pm Meredith and Sophie Purton had left.

She remembered that Meredith, that afternoon, was wearing a pair of rather loose blue jeans, fabric gym shoes, and a light blue sweatshirt with a zip fastener. Underneath she had a long-sleeved T-shirt and over this a top. She carried a cream-coloured bag with a long shoulder strap.

She did not really remember what time they had eaten, perhaps around six. They had only drunk water. Meredith did not appear worried; they were all quite calm and relaxed. They were to meet on the morning of the second at around 10:00 am for a lecture at the university, not knowing that it was a holiday. Around that time she had thus rung Meredith's mobile phone several times without getting an answer. She learned of Meredith's death in the afternoon and had to go to police headquarters, where she also met Amanda and Raffaele, whom she did not know.

She remembered that **[22]** Amanda's behaviour seemed strange to her, so much so that it was "difficult to be near her because she was not showing any feelings: everyone was very upset, while she did not seem to show any emotions or even to feel any emotions".

She remembered that Amanda was near Raffaele and that they "were kissing each other, they were joking. Every now and again they also laughed, I remember that Amanda poked her tongue out, she poked out her tongue at Raffaele".

She remembered having heard Amanda saying that "Meredith was inside the wardrobe with a blanket over her" and Raffaele "said that Amanda had slept at his house that evening".

She further remembered Amanda saying she had gone to the house in Via della Pergola at about 11:00 am; she had found the door open, had taken a shower and changed her clothes and then had gone to Raffaele's house.

She was not sure whether she also said that she had seen blood and faeces in one of the bathrooms.

She said that she had met Meredith through Amy Frost when she was in Perugia. Meredith often used to speak about her family; about her mother, her father, her brothers and her sister; and she had said that her mother was not very well.

She also knew that Amanda had met Raffaele for the first time one or two weeks before at a concert.

Amy Frost reported that she had met Meredith a little more than a month before her death and that they had attended a language class together. They often went to the pub together. She was living in Via Bontempi with Robin.

She had met Amanda and they had once gone to a pizzeria together and also once to a discothèque, the Red Zone. That would have been the third weekend in October. She had only met Raffaele at police headquarters.

The night between October 31 and November 1, after having had dinner at Via Bontempi with Robin, Rachel, Meredith, Sophie, Nathalie, Lina and Monica, they had gone to the disco, to the Domus. In addition to herself, Meredith, Sophie and Robin were there. They had stayed until after 4:00 am and together - she, Robin and Meredith - had gone as far as the basketball court in Piazza Grimana to accompany Meredith.

The last time that she had seen Meredith had been on November 1, 2007 in her own house in Via Bontempi. She remembered that they had seen a film and eaten pizza and dessert. She remembered that Meredith had left right after 21:00 pm in the company **[23]** of Sophie.

She was completely calm and they had looked at the photos which had been taken at the Halloween party.

She recalled that Meredith used to recount many things about Amanda, things which irritated her; Amanda played the guitar and she would always play the same chord and she would leave the toilet dirty.

She did not know Raffaele, she had seen him at police headquarters and he had introduced himself as Amanda's boyfriend and had said that Amanda had been at his house the evening and night of November 1.

When she had returned home the next day she had noticed that the entrance door was open; she had gone to the bathroom and had seen that there was blood there. Then she had gone to Raffaele's house in Corso Garibaldi and they had gone back together into the house in Via della Pergola.

She remembered that Amanda's behaviour at police headquarters seemed to be inappropriate: her attitude to Raffaele was affectionate and she was poking out her tongue and making faces.

On the contention of the prosecutor about what she had stated on February 8, 2008, page 15, where she said: "I remember having heard Amanda speaking on the phone, I think that she was talking to a member of her family, and I heard her say, 'No, they won't let me go home, I can't catch that flight'", she declared that she did not remember the circumstance, adding that anyway, if she said it "it must be true", since she was declaring true things.

Meredith had reported to her with a certain concern that the boys who were downstairs had asked her to water their cannabis plants and had moreover given her the keys to the apartment; she knew that perhaps she had "smoked on one occasion".

As far November 1 was concerned, she remembered that Meredith had arrived about half past four and that they had started eating the pizza they had prepared at around half past five or six.

She had never heard Meredith complain about missing money.

Sophie Purton declared that she had met Meredith on September 2nd and that they had taken to seeing each other nearly every day. Meredith was rather carefree and happy. Her relationship with Amanda was good, even though some things that annoyed Meredith. In particular, she was annoyed by Amanda's bathroom habits.

She remembered that on the afternoon of October 31 Meredith had sent her an SMS in which she said she was going into the apartment of the boys downstairs to water the cannabis plants.

The last time that **[24]** she saw Meredith was on November 1. They had gone to the house of Amy and Robin for dinner around three in the afternoon; then they had seen a film; then Meredith and she had gone off before 21:00 pm.

She remembered that they had eaten pizza and an apple cake. She did not know when they had finished eating; perhaps an hour before leaving; and she indicated that they had left the house at around 20:45 pm.

She said good-bye to Meredith about ten minutes later, at 20:55 pm. She remembered the time because she wanted to be home at 21:00 pm to see a television programme

she was interested in. That evening, Meredith “did not have any appointment, she just said that she was tired”.

She knew that Meredith had just begun to go out with a young man, Giacomo Silenzi, who lived on the lower floor of the same house in Via della Pergola. She was also aware that Meredith "smoked grass with the other tenants”; but she told her “that she only did it to socialise”. She was not aware that Meredith had ever complained about missing money.

Nathalie Hayward had known Meredith since September 2007. She had also met Amanda. She knew that Meredith had a boyfriend: she had met him towards the end of October. She had seen Meredith for the last time on October 31: they had dined together at the house of Amy and Robin and then they had gone to the Merlin Pub. But she had gone home quite early, around midnight. She had never seen Meredith again.

On the day of November 2, 2007 at police headquarters, Amanda was also there and she said that that night she had been with her boyfriend Raffaele and that the next morning at around 11:00 am she had gone back home to get changed. She had found the entrance door open and this seemed strange to her: she had gone into the house and into her room and she had taken a shower and had seen drops of blood.

She said that after the shower she got dressed and noticed that Meredith’s door was locked. She went into the other bathroom and said that there were faeces in the toilet. Then she went into another room and noticed that the window had been broken and that there was glass inside. She told these things to her and the other girls present. Then she related that she had gone back to Raffaele’s house and had rung Filomena. She remembered that on that occasion at police headquarters Raffaele was very calm, silent.

[25] All of Meredith’s girlfriends denied that Meredith had spoken to them about Rudy Guede, and they declared that they did not know who he was.

THE YOUNG MEN LIVING ON THE FLOOR BELOW THE APARTMENT AT 7 VIA DELLA PERGOLA.

Giacomo Silenzi: he related that had been in Perugia since 2006 and that he had always lived in Via della Pergola on the lower floor. He was living in this apartment with Stefano Bonassi, Marco Marzan and Riccardo Luciani. He knew that four girls - Meredith Kercher, Amanda Knox, Laura Mezzetti and Filomena Romanelli - had been living upstairs since September 2007.

He had had a romantic relationship with Meredith, which had begun a couple of weeks before she was killed.

There were no particular problems between the girls; the only complaint had been about cleaning the house.

The relationship between Amanda and Meredith was normal and friendly. Now and again, they would have dinner and spend time all together. This happened either in the girls' house or in theirs, downstairs. It happened that other guys took part in such gatherings, like Giorgio Cocciaretto, who used to visit the house.

The relationship with Meredith had begun after an evening spent at the Red Zone disco. Then this relationship continued and they would meet in Meredith's room or in his on the floor below.

Sometimes they happened to smoke hashish together at the house. On these occasions he recalled that all four girls were present. He had seen Meredith for the last time on October 29, 2007. On that day only he and Stefano Bonassi had remained in the house; before he left he had given Meredith the task of watering the marijuana plants which he had in the house. He learnt of Meredith's death on November 2 while in Porto San Giorgio and returning to Perugia with Stefano Bonassi on the train.

He had learned from Meredith that Amanda had started a relationship with Raffaele Sollecito.

He had known Rudy Guede since the year before "through the basketball court above the house at Via della Pergola ... we happened to go and play a few games on the little court **[26]** above the house, we knew him already because he was a guy who played there with us".

He recalled that he had been at their house one evening. They had found him going around and they had started to talk. They were going home and he went with them. He remembered that Rudy had asked for information about Amanda Knox and that he had showed interest in her.

This had happened towards the middle of October. He had asked for this information from him, from Marco and from Stefano. This happened when he had gone to their place. Amanda was there with them and Rudy had noticed her.

On this occasion Meredith was there too. Rudy had asked whether Amanda was involved with a guy or not. They were together at a pub, before going home. At this time Amanda had not yet met Raffaele, so they told him she was not committed. That evening Rudy had drunk at the pub and he was somewhat free and easy in the conversation. He remembered that when they arrived home he asked if he could use the bathroom and he fell asleep on the toilet.

He also recalled another time when Rudy went to their house; this was at the end of October, on the occasion of the Grand Prix, the Sunday after the Red Zone. He had come on his own, without being invited by anyone.

He recalled that on that evening, after being at the Red Zone, he had slept in his room with Meredith; Amanda had met a certain Daniel, and had spent the night with the latter in her room upstairs, according to what Daniel had told him.

Stefano Bonassi, originally from the Marche region, declared that he had been in Perugia for study reasons for four years now. He was living in the apartment in Via della Pergola with Giacomo Silenzi, Marco Marzan and Riccardo Luciani: all originally from the Marche.

He knew the girls who lived upstairs, with whom he had become close friends, and they spent time together. He believed that there was a good relationship between the girls.

He had met Raffaele Sollecito towards the end of the month of October 2007. After an evening at a disco, Meredith and Giacomo Silenzi had started a relationship. He knew Rudy Guede because he played at the basketball court above the house, in Piazza Grimana; he and the other boys from the house played at the same court.

One evening Rudy had gone to their house and **[27]** he, who had stayed home to sleep, had been awoken by noises. Rudy had shown a certain interest in Amanda.

That evening Rudy went to the bathroom leaving the door open; he fell asleep on the toilet and left excrement in the toilet bowl.

It had also happened that they all smoked joints together. He did not remember if Meredith was also present on that occasion. Anyway, Amanda, Filomena and Laura Mezzetti were there.

Giorgio Cocciaretto: heard in the interview of June 19, 2009, he declared that he was in Perugia to study. He knew the guys who lived at 7 Via della Pergola, being from the same town as they.

He was a visitor at the house; at first he only went to the apartment downstairs and then he also went to the one upstairs. This had happened when he had come to know the girls.

He knew Meredith; he had met her at the boys' house one evening, on the occasion of a dinner with friends.

He also knew Amanda Knox, Filomena Romanelli and Laura Mezzetti. He had met Rudy Guede at the little basketball court in Piazza Grimana and they often played basketball together.

He had also been present, once, at a party in the house in Via della Pergola where Rudy Guede was present. He recalled that one evening while they were walking around in the town centre, they had met Rudy Guede with some of his friends; they had been at the pub and around two in the morning, when they went back to the house in Via della Pergola, Rudy had gone there too.

Rudy had made a particular friendship with Marco Marzan and with him, "because playing basketball together every day we had developed this friendship, and then he was present also sometimes at the guys' house".

Visiting the house in Via della Pergola, he had seen Rudy there two or three times, and on these occasions Amanda and Meredith were also there; Rudy was talking to both of them and on one occasion he confided in them that he liked Amanda.

RUDY HERMANN GUEDE

(A)

In speaking of the guys living on the lower floor of the house on via della Pergola above, there came to be mentioned a certain Rudy Hermann Guede. This individual is expressly accused, in a trial parallel to this one, and together with the accused of the present trial, of the crimes of homicide and sexual violence.

[28] It appears that Rudy Guede assiduously frequented the basketball court located in front of the University for Foreigners in Piazza Grimana, just a few steps from the house at 7 Via della Pergola. He was acquainted with all the young men living in that house and also with some of their friends, such as Cocciaretto. He also knew the girls, Meredith and Amanda, who lived on the upper floor. Although he chatted with both of them (cf. declarations of Cocciaretto who stated that he chatted with both Amanda and Meredith), he displayed a particular interest in Amanda, whom he "liked" and about whom he had requested information as to whether she was already going out with someone. The negative response he received was true at the time, since the Amanda-Raffaele relationship only started on October 25, 2007, as will be seen in what follows.

The house at via della Pergola 7 was thus, for Rudy Guede, a friendly house, and so it must have appeared to him: it was inhabited by friends and girls with whom he could socialise, and in one of whom he was actually interested; in that house he could find easy hospitality, as shown by the fact that on one Sunday in the middle of October he went there to watch the Formula 1 races, and in that house he could spend a lot of time having fun (as shown by the episode recalled earlier in which, returning from a round of the pubs at around two in the morning, he went to the house and spent all night sleeping on the toilet), received by friends as a friend.

(B)

Although it is supposed that the homicide of Meredith Susanna Cara Kercher, and the sexual violence, were committed not only by the accused in this trial, but also by Rudy Guede together with them, Rudy is not one of the accused in the present trial. However, the reconstruction of the facts leads to the unavoidable conclusion that he was one of the main protagonists; thus it is not possible to avoid speaking of Rudy Guede in relation to the hypothesised criminal facts. The defence of the accused in particular have requested the examination of texts concerning only Rudy, and have demanded the results specifically concerning Rudy Guede of the investigative

activities carried out by the police in **[29]** general and by the Scientific Police in particular. In fact, they have expressly indicated Rudy Guede as being the author, and the sole author, of the criminal acts perpetrated on the person of Meredith Kercher. A first element to be established is thus the presence of Rudy in Perugia on October 29 and October 31, 2007. This presence makes it quite likely that he was also in Perugia on the following day and night. In any case, there is no element indicating the contrary.

Marta Fernandez Nieto and Caroline Espinilla Martin, after having declared that they did not know either Amanda or Meredith, stated having met Rudy around the end of September 2007, since he lived in the flat underneath theirs in Perugia, Via del Canerino 26. They also declared that they went out with Rudy on October 29 and 31, 2007; concerning the night from October 31 to November 1, the night of Halloween, they recalled that they had been with Rudy for almost the whole time, having met him at around 22:30 pm at the home of a compatriot of theirs, Adriana Vinuesa Molina, who lived in Campo di Battaglia. There were about thirty people there, and they entertained themselves there until about midnight. They then went to the home of another Spanish boy in Piazza Italia, and there again Rudy was with them, and when Carolina went on to the "Domus" club, Rudy was still there, always remaining with the young Spanish people. The only girl they saw him dance with was "a blond girl with long smooth hair" (cf. declarations of Marta Fernandez Nieto and Carolina Espinilla Martin from December 6, 2007, acquired for use in the hearing of July 3, 2009).

Multiple elements collected and analysed by the Scientific Police give further secure indications that Rudy was present in the house at via della Pergola 7, and in Meredith's room, when Meredith was killed.

The handprint found on a pillow in the room, on which the lifeless corpse of Meredith was found placed, turned out to have been made by Rudy Guede; the vaginal swab of the victim contained the DNA of the victim and of Rudy Guede; the DNA of Rudy Guede was **[30]** also found on the cuff of Meredith's sweatshirt found in her room, and on a strap of the bra that she was wearing, found cut off and stained with blood; the DNA of Rudy Guede was also found on Meredith's purse, which was also in the room that she occupied. Further biological traces of Rudy Guede were found on the toilet paper taken from the toilet of the larger bathroom. The faeces present in the toilet of that bathroom did not, however, yield any results, and Dr Stefanoni, the biologist of the Scientific Police, explained that the presence of numerous bacteria easily destroys what DNA might be found in faeces. Finally, in

the corridor leading to the exit from the house coming from Meredith's room were found prints from a shoe stained with the blood of the victim. At first, these prints were held to be compatible with the shoes of Raffaele Sollecito. Later tests (as we will see subsequently) finally ruled out this compatibility, showing that they were in fact actually from shoes of the same brand, type and size as a pair of shoes that might have been contained in a shoebox found in the home of Rudy Guede in via del Canerino.

(C)

The results of so many convergent facts have not been subject to criticism, and there has been no evidence that they might not be valid. Furthermore, the methods of collection, evaluation and examination, as we will later have occasion to explain, ensure that the aforementioned results are in fact valid.

From the elements just recorded, it then follows that Rudy Guede was in the house in via della Pergola when Meredith was killed. He went to the larger bathroom, the one generally used by Filomena Romanelli and Laura Mezzetti, and used the toilet without flushing, thus providing the toilet paper and the possibility of finding his own biological traces on it. He went into Meredith Kercher's room, and left his biological traces on the body of the girl (result of the vaginal swab), **[31]** and also on clothing (bra strap and sweatshirt) and on objects (the purse) belonging to the girl, which were in the same room. He left that room and went to the exit of the house, leaving behind the prints of one of the shoes he was wearing, prints made in the blood of the victim.

By their diversity and by the agreement of the results of all the tests performed on them, these elements and traces, as has been said, do not leave any doubt about the presence of Rudy Guede in the house and in Meredith's room on the night of the homicide. Said elements indicate the paths he followed within the house: the living room area which he crossed to reach the larger bathroom, the living room area and the corridor which he crossed to go to Meredith's room, the same areas, corridor and living room area, which he crossed after killing Meredith to reach the main door, without deviating from this direction to go anywhere else, given that the bloody shoeprints trace a line from Meredith's room directly to the exit. On this point, we recall the declarations of the witness Gioia Brocci, photographic agent of the *Questura* of Perugia, who was present in the house on the afternoon of November 2, 2007: in the corridor there were tracks which appeared to be in blood and showed

the prints of a shoe-sole "which left Meredith Kercher's room and went in the direction of the exit", becoming "continually fainter and sparser" (p. 138); by joining up these prints, it was possible to draw a line that went directly to the exit (p. 159 declaration of Gioia Brocci).

At this point it appears unavoidable to pose the problem of identifying the entry point used by Rudy Guede to gain access to the house on via della Pergola 7, on the night on which Meredith was killed.

The smashing of the window of the room of Filomena Romanelli, the disorder found in that room, and the presence of a large rock constitute elements which suggest an answer to the aforementioned question. **[32]** Furthermore, in one of the telephone calls to Romanelli, Amanda spoke of that smashed window and of the possibility that someone could have entered the house through the broken place; she said this also in the telephone call to 112 and in the first declarations to the Postal Police. Also in the e-mail of November 4, 2007, sent by Amanda to 25 people in the US (tendered *ex* article 234 of the Criminal Procedure Code and admissible), she hypothesises that a burglar could have entered the house and says she looked around to see if anything was missing. Moreover, the defence of the accused, especially the defence of Raffaele Sollecito, insisted strongly on the assumption that the hole smashed in one of the casements with a large rock found in the room would have permitted entry into the house at Via della Pergola 7. In support of this, there were declarations by certain witnesses concerning specific behaviour on the part of Rude Guede; and a consultant was appointed, Sergeant [maresciallo] Francesco Pasquale, who related with regard to the possibility of the breaking of the window pane from the outside of the house, to allow illicit entry into the house at Via della Pergola 7.

At the hearing of June 27, 2009, the witness Maria Antonietta Salvadori Del Prato Titone testified that on the morning of October 27, 2007, a Saturday, as she entered the nursery school at via Plinio 16, Milan, of which she was the principal, she noticed coming out of her office a person whom she didn't know, later identified as Rudy Guede. There were no signs of a break-in. There was some money missing from the money box, but just small change. Rudy Guede had a backpack inside which was a computer. Called at once, the police made him open the backpack, in which they found a 40cm kitchen knife. She recalled that there were other objects in the backpack: a bunch of keys, a small gold woman's watch, and a tiny hammer of the type found in buses to smash windows. The police told her that the computer had been stolen from a law office in Perugia. The witness stated that she was with her six year old son, with a smith [*fabbro*] who was there to do some work, and with a rep.

Rudy Guede justified his presence by saying that he had asked at the central train station of Milan where he could spend **[33]** the night, and that this nursery school had been indicated to him after he had paid 50 euros to his informant. The witness stated that the knife came from the kitchen; the kitchen door was not locked and Rudy Guede must have taken it from there.

The witnesses Paolo Brocchi and Matteo Palazzoli, lawyers, testified on the subject of the burglary of their legal office, located in via del Roscetto 3, Perugia, on the night between Saturday October 13 and Sunday October 14, 2007. The thief or thieves had entered through a window whose panes had been smashed with a rather large stone; the glass was scattered around, and they had found some of their clothing on top of the glass (p. 10, hearing June 6, 2009). From the first inventory they did, they found that a computer, a cell phone, USB keys and a portable printer were missing. On October 29, a colleague in the law office had called the lawyer Paolo Brocchi to tell him that in the corridor was a person who said that he had been found with some goods in Milan, goods that had been declared stolen by the lawyer Brocchi, but which he claimed to have purchased legitimately in Milan. Later, the lawyer Paolo Brocchi recognised this person as Rudy Guede (p. 20, hearing of June 6, 2009).

The lawyer Palazzoli, who testified at the same hearing, and who was a colleague in the same law firm as Brocchi, declared that the broken window was "a French window opening onto a small balcony overlooking the inner courtyard of the building; beneath it, corresponding precisely to our window, there is a door equipped with a metal grille..." (p. 41, hearing of June 26, 2009). He also stated that he had been notified that the computer which had been stolen from him had been found in Milan.

Cristian Tramontano, whose brief deposition the subject of July 1, 2008 was acquired at the hearing of June 6, 2009, testified about an [attempted] robbery in his home, carried out by a young man who, seeing that he had been observed, tried to exit the house and, finding the door locked, pulled out a jackknife with which he threatened Tramontano, who was following him to make him leave the house. Tramontano declared that he believed he recognised that the thief was Rudy when he saw his picture published in the newspapers.

[34] These episodes, concerning the Milan nursery school, the burglary in the law office in Perugia and the burglary of Tramontano's house (although for the last one, the identification of Rudy was expressed only by the phrase "I believe I recognise him") reveal obvious and notable differences with respect to the episode concerning

the broken window in Romanelli's room; even stronger differences emerge if one assumes that the person who made use of that entry was Rudy Guede.

Even if one accepts that Rudy was the burglar who broke into the law office of the lawyers Brocchi and Palazzoli and into Tramontano's house, it must be observed that Rudy was not known by these, nor by the director of the nursery school in via Plinio, Milan; this situation is entirely different from the one at via della Pergola (and the difference is not a minor one), where Rudy knew the boys from the downstairs flat and knew Meredith and Amanda, and they knew him.

In the nursery school, there was no breaking and entering and no violence with regard to any objects, or any climbing. In the law office of the lawyers in Perugia, the burglar was able to enter through "a French window opening onto a small balcony overlooking the inner courtyard of the building" (p. 41 hearing of June 26, 2009), so that he was able to make use of a surface (the balcony) on which he could move with reasonable ease. Objects were taken from the law office, glass was found on clothes and the first-aid box was ransacked (a circumstance which indicates a wound and related needs); at the nursery school in Milan, Guede was found with objects of illicit origin (like the computer) and with a knife taken from the kitchen of the school itself. In Tramontano's house, it does not appear that the thief entered with the smashing noise that would have been produced by breaking the window with a rock (Tramontano states that he was awakened by sounds coming from under the mezzanine bed) and, furthermore, in such a case the thief was caught rummaging amongst personal effects in order to find and carry away valuables.

The access to the house in via della Pergola was different; it appears that nothing was taken or even prepared to be **[35]** taken away (Romanelli, and not only Romanelli, spoke of a room turned upside down, but did not mention that any objects had been in any way gathered to be taken away, nor does such a circumstance appear to have emerged from the photos or from other sources), in spite of the presence in the house of tempting and easily transportable objects.

However, beyond the differences which can be compared in these different situations - and after all, one might observe that someone who wishes to enter illicitly into houses or offices can vary the way in which he does it - it is specific situations and concrete circumstances which exclude that at the time Meredith was killed, entry was made through the window of Romanelli's room after said window was broken.

(D)

It has already been stated that Rudy Guede was acquainted with the inhabitants of via della Pergola, and that he had a good relationship of friendship and fun with them (with all of the boys from downstairs; with Amanda, in whom he had actually shown some interest; and with Meredith). It thus seems unlikely that Rudy decided to enter this house in the illicit and violent manner shown by the smashing of the window. It is even more unlikely given that at least some of the residents of the house might have been home or might have turned up and surprised Rudy Guede, whom they knew, in the very act of burglary or just after committing this act. Filomena Romanelli stated (cf. declarations at the hearing of February 7, 2009) that when she left the house in via della Pergola 7 on the afternoon of November 1, 2007 she had closed the shutters of her window (p. 68); she had pulled them in (p. 95); "the wood was slightly swelled, so they rubbed against the windowsill" (p. 26), adding that "it was an old window...the wood rubbed". And on the day she went away, she recalled "having closed them because I knew that I would be away for a couple of days" (p. 96). She later added, when noting what she had declared on December 3, 2007, that "I had pulled the shutters together, but I don't think I closed them tight" (p. 115).

[36] It must be held that when Filomena Romanelli left the house in via della Pergola, she had pulled the shutters towards the interior of her room, although she did not think that she had actually closed them; furthermore, because they were old and the wood had swelled a bit, they rubbed on the windowsill; to pull them towards the room it was necessary to use some force ("they rubbed on the windowsill"); but in this way, once they had been pulled in, as Romanelli remembered doing, they remained well closed by the pressure of the swelled wood against the windowsill. Now, for a rock to have been able to break the glass of the window without shattering the outside shutters, it would have been necessary to remove the obstacle of the shutters by opening them up. The consultant for the defence actually assumed that this had been done; in his exhibit, he assumed that the shutters were not present [in front of the window]. Consequently, since the shutters had been pulled together and their rubbing put pressure on the windowsill on which they rested, it would have first been necessary to effect an operation with the specific goal of completely opening these shutters. The failure to find any instrument suitable for making such an opening (one cannot even see what type of instrument could be used to this end) leads one to assume that the wall would have to have

been scaled a first time in order to effect the complete opening of the shutters ("if the shutters were closed, he could not have passed through, that is obvious", cf. declarations of the consultant for the defence, Sergeant Francesco Pasquali, p. 22 hearing July 3, 2009), in order to enable the burglar to aim at the window and smash it by throwing a large stone - the one found in Romanelli's room. The "climber" (the window in Romanelli's room is located at a height of more than three and a half metres from the ground underneath, cf. photo 11 from the relevant dossier) would also need to rely on the fact that the shutters were not actually latched, and also that the "scuri" ,which are the wooden panels [*scuri*=non-louvered shutters in interior of room] that usually constitute the outer side (or the inner, depending on the point of view) of the window [attached to the outer edge of the inner side of the window-frame] had not been fastened to the window-frame to which the broken pane was attached; otherwise it would not have been possible to open them from the outside; nor would it have been possible, even breaking the glass, to make a hole giving access to the house, **[37]** since if these inner panels had been closed, they would have continued to provide an adequate obstacle to the possibility of opening the window, in spite of the broken pane.

Admitting that the climber decided to bet, in a sense, on the presence of both of these "favourable" - in fact, indispensable - conditions, the climber would then have had to climb up once, from underneath the window of Romanelli's room, in order to open the shutters; then he would have had to get the large rock, and having selected the point where he wanted to break the window, to throw it (it seems impossible to accept that he actually made the climb while carrying the large rock, and threw it against the window at the risk of being hit by glass falling from the pane thus shattered).

He would then have to have returned underneath Romanelli's window for the second climb, and through the broken glass, open the window (balanced on his knees or feet on the outside part of the windowsill) otherwise he would not have been able to pass his arm through the hole in the glass made by the stone) and reach up to the latch that fastened the window casements, necessarily latched since otherwise, if the casements had not been latched, it would not have been necessary to throw a rock at all, but just to open the shutters and climb inside.

This scenario appears totally unlikely, given the effort involved (going twice underneath the window, going up to throw the stone, scaling the wall twice) and taking into account the uncertainty of success (having to count on the two favourable circumstances indicated above), with a repetition of movements and

behaviours, all of which could easily be seen by anyone who happened to be passing by on the street or actually coming into the house.

It cannot be assumed - as the Defence Consultant did - that the shutters were left completely open, since this contradicts the declarations of Romanelli, which appear to be detailed and entirely likely, considering that she was actually leaving for the holiday and had some things of value in her room; already she did not feel quite safe because window-frames were in wood **[38]** without any grille. Also, the circumstance of the shutters being wide open does not correspond to their position when they were found and described by witnesses on November 2, and photographed (cf. photo 11 already mentioned).

(E)

But beyond these considerations, there are other elements which tend to exclude the possibility that a burglar could have entered the house through the window of Romanelli's room. The double climb necessary to attain the height of three and a half metres would have left some kind of trace or imprint on the wall, especially on the points on the wall that the "climber" would have used to support his feet, all the more as both the witnesses Romanelli and Marco Zaroli gave statements indicating that the earth, on that early November evening, must have been very wet (declarations of Marco Zaroli, hearing of February 6, 2009, p. 174, and declarations of Filomena Romanelli, hearing of July 7, 2009 p. 24; see also the document acquired at the hearing of March 28, 2009 concerning the fact that on October 30, 2007, it was raining). In fact, there are no visible signs on the wall, and furthermore, it can be observed that the nail - this was noted by this Court of Assizes during the inspection - remained where it was: it seems very unlikely that the climber, given the position of that nail and its characteristics, visible in the photo 11, did not somehow "encounter" that nail and force it, inadvertently or by using it as a foothold, causing it to fall or at least bend it. On this subject it is also useful to recall that at the hearing of April 23, 2009, the witness Gioia Brocci mentioned above declared that she had observed the exterior of the house, paying particular attention to the wall underneath the window with the broken pane, the window of the room then occupied by Filomena Romanelli. She said: "We observed both the wall...underneath the window and all of the vegetation underneath the window, and we noted that there were no traces on the wall, no traces of earth, of grass, nothing, no streaks, nothing at all, and none **[39]** of the vegetation underneath the window appeared to have been trampled; nothing" (p. 142 declarations of Gioia Brocci). She also recalled

the existence of a nail on that wall, which jutted out about 6cm, and added that "walking along the outside perimeter of the house" her shoes became dirty with "grass attached to the shoes" (p. 145, cf. also declarations of the assistant Zugarini, hearing of Feb. 28, 2009, p. 133).

The next fact to consider is that the pieces of glass from the broken pane were distributed in a homogeneous manner on the inside and outside parts of the windowsill, without any displacement being noted or any piece of glass being found on the ground underneath the window. This circumstance, as confirmed also by the consultant Pasquali, tends to exclude the possibility that the rock was thrown from outside the house to create access to the house through the window after the breaking of the pane. The climber, in leaning his hands and then his feet or knees on the windowsill, would have caused at least some piece of glass to fall, or at least would have been obliged to shift some pieces of glass in order to avoid being wounded by them. Instead, no piece of glass was found under the window, and no sign of any wound was seen on the pieces of glass found in Romanelli's room.

It can moreover be observed that the presence of many pieces of glass on the outside part of the windowsill increases the probability of finding some small pieces of glass on the ground underneath, since there seems to be no reason that so many pieces of glass would all stop just at the edge of the windowsill without any of them flying beyond the edge and falling down to the garden below. This situation, like all the other glaring inconsistencies, is adequately and satisfactorily explained if one supposes that the rock was thrown from the inside of the room, with the two shutters pulled inwards so that they blocked the pieces of glass from falling to the ground below. Once the glass had been broken from inside, the rock was set down at some place in the room, and the shutters were pushed towards the outside, being thus opened from within the room.

[40] The consultant for the Defence, Sergeant Pasquali, maintains instead that the rock was thrown from outside the room, and outside the house. He arrives at this assumption on the basis of various elements: the presence of fragments of glass on the inner and outer parts of the windowsill, and from the "intervention of fragments of glass that fell from high up down into the interior...of the room" all the way to the blue carpet, and to the bed (p. 47 hearing July 3, 2009).

These are elements and considerations which do not appear to deserve the emphasis given to them by the consultant.

Firstly, it should be observed that Sergeant Pasquali stated that he had never studied stone throwing apart from this case; he also supported the possibility of "making a parallel with investigations of ballistics and firearms"; the same consultant did, however, admit that, whereas ballistics is a science of precise data [*dati certi*] (p. 39, hearing of July 3, 2009), "here we have an infinity of possible variations" [*abbiamo delle variabili che sono infinite*](p. 40). Precisely in relation to these variations and to what has been observed above, the assertion and the explanation he offers for the stone having been thrown from outside cannot be shared by the Court. Indeed, if one supposes that the stone was thrown from the inside with the shutters pulled closed (as they must have been according to statements cited above), but with the casement holding the pane somewhat open, with the inner shutter behind it, then here is a situation analogous to that of throwing the stone from the outside (the rock would hit the window in the same place as if it came from the outside), and under the shock of the large stone, because of the resistance of the inner shutter behind the window-pane (the shield effect as one might say), the pieces of glass would necessarily fall down on the windowsill both inside and outside (considering the casement as having being only slightly open, and thus the smashed pane positioned near to the windowsill). The presence of the shutters pulled inwards, as described by Romanelli, would have prevented the pieces of glass from falling to the ground below, as indeed they did not, but as they surely would have had the stone been thrown from the outside. As for the presence of glass in Romanelli's room, the violence of the blow, the characteristics of the glass (which was rather thin as indicated by Romanelli and Pasquali), the large rock used, and finally the shield effect caused by the inner shutter hanging half-open behind the glass pane **[41]** (a position of the inner shutter which corresponds to the scratch on it visible in the photos) give an adequate explanation of the distribution of the glass.

(F)

But the fact that all this was in fact just a simulation, a staging, can be deduced from further circumstances. From the photos taken by the personnel of the Questura (photos 47 to 54 and 65 to 66) one can perceive an activity which appears to have been performed with the goal of creating a situation of obvious disorder in Romanelli's room, but does not appear to be the result of actual ransacking, true searching for the kind of valuable objects that might tempt a burglar. The drawers of the little dresser next to the bed were not even opened (photo 51 and declarations of Battistelli who noted that Romanelli was the one who opened the drawers, having

found them closed and with no sign of having been rifled: see p. 66 of Battistelli's declarations, hearing of Feb. 6, 2009). The objects on the shelves in photo 52 appear not to have been touched at all; piles of clothes seem to have been thrown down from the closet (photo 54) but it does not seem that there was any serious search in the closet, in which some clothes and some boxes remained in place without showing any signs of an actual search for valuable items that might have been there (photo 54). It does not appear that the boxes on the table were opened (photo 65) in a search for valuable items. And indeed, no valuable item (cf. declarations of Romanelli) was taken, or even set aside to be taken, by the - at this point we can say phantom - burglar. One last aspect which bears repeating is the presence, noted and checked by several witnesses, of pieces of glass on top of the objects and clothing in Romanelli's room. This circumstance, which also reveals an activity of simulation, although it is not decisive because it does not actually exclude that the phantom burglar first broke the window and then made the mess in the room, was rejected by the Defence of the accused, which showed photographs that did not show glass on top of the clothes and objects scattered around Romanelli's room, and observed that the documentary and crystallisation value of a specific situation as realised **[42]** through a photo should prevail over witness statements sworn into the record.

This claim is not held to be sustainable, since it does not take into account the events and their succession and chronology. On the subject of the contrast between the testimony and the documents (photographs of Filomena's room that do not show pieces of glass on top of the clothes and objects scattered around), Romanelli's own declarations are significant and decisive. In her questioning of Feb. 7, 2009, she recalled having left her computer in its case "standing up, not lying down" (p. 269), and then, when she returned to the house, she saw that in her own room, the window was broken and "everything was all over the place..." (p. 40) She checked that her jewellery was there, which it was, and she looked for her computer which she saw "from underneath" (p. 40), and continuing to explain, she declared that "I picked up the computer and perceived that in lifting it, I was picking up pieces of glass, in the sense that there was actually glass on top of it" (p. 41), and she noticed this circumstance so particularly that she added the following comment: "It was really a stupid burglar; not only did he not take anything, the broken glass was actually on top of the things" (p. 41). As she is usually very orderly, the witness also stated that she entered into her own room and searched around to see if anything was missing, and during that search she moved objects, thus changing the position of some pieces of glass. At that moment, however, only the Postal Police officers were present, and they were there to understand why two mobile phones had been

found in the garden of a house in via Sperandio; the broken window pane indicated a robbery which seemed entirely independent from the finding of the telephones; thus it seemed perfectly natural and almost automatic for them to enter the room with the broken glass without taking any particular precautions, focusing only on the task of finding out if anything was missing. Thus, the movement of objects was perfectly natural, as was the progressive modification of the situation in Romanelli's room with respect to the pieces of glass which, having been found and noted on top of objects, were then allowed to fall and moved around during the search which, it can be imagined, Romanelli made with a certain agitation and anxiety due to worry and the strong **[43]** disturbance that she was feeling. The photos, however, were only taken later, around 15:00 pm according to what can be inferred from the declarations of the personnel of the scientific section of the Questura of Perugia, Cantagalli and Brocci, when the discovery of Meredith's lifeless body imposed the use of care and circumspection in the necessity of crystallising the situation, avoiding any modification of the scene and acquiring every element which could be useful for the investigation.

Thus, the moments during which the witnesses found glass on top of the objects and the moments during which everything in the house was photographed and thus fixed were different moments.

Consequently, the visual and tactile observations of the witnesses and the photographs of the surroundings cannot be judged in parallel, given that they represent different situations at different times. It is enough to note that inspector Battistelli told everyone to leave the house, not when he saw the broken window in Romanelli's room, but when he realised that there was a corpse in Meredith's room.

Therefore, the declarations and descriptions of said room need not be accepted only insofar as they correspond to what is shown in the photographs, especially in regard to the presence and position of the pieces of glass. On this point, apart from Romanelli's declarations, which appear reliable because of their precision, and because the emotion of the event caused the images and memories to be imprinted in a very lively manner (as in the comment referred to and recalled above and which are thus valid to complete the memory recall), also the declarations of the assistant Fabio Marsi should be recalled. He declared that he observed "that there were clothes and other personal items on the floor with glass on top of them and the rock which, presumably, had broken the window" (p. 127 hearing Feb. 6, 2009); he also added that Romanelli "checked to see if anything was missing and said no, but look, everything is here, everything" (p. 129 hearing Feb. 6, 2009), an activity of checking

which necessarily, as has already been observed (the room was turned upside-down), involved the movement of objects and **[44]** thus also of pieces of glass, thus rendering the situation which was subsequently photographed somewhat different from the one described by the witnesses. Therefore, the presence of glass on top of the various objects scattered on the floor all over the place is considered as supporting proof of the testimony that is not falsified by the photos. It is certain that the presence of pieces of glass on top of objects found out of their place cannot but suggest a simulation, since the throwing of the stone and the breaking and falling of the glass must have happened when Romanelli's room was as she left it, and in particular pieces of glass should not have been found on top of objects supposedly thrown around by the phantom burglar, who was only supposed to have entered the room after breaking the window, so that the clothing and the objects would have actually been tossed down on top of the glass.

What has been explained up to now thus leads to the assertion that the situation of disorder in Romanelli's room and the breaking of the window pane constitute an artificial representation created in order to orient the investigations towards a person who, not having the key to the front door, was supposed to have entered through the previously broken window and then effected the violent acts on Meredith which caused her death.

RUDY THE SIMULATOR?

(A)

What has been said so far about the presence of Rudy Guede in the house in Via della Pergola and about the simulation of the theft (the breaking of the pane and the disorder created in Ms. Romanelli's room, as if a search had been put in motion inside the room, can only appear to have been aimed to create a semblance of attempted burglary) leads to consideration of the following question: could Rudy have been the author of the scenario created in Ms. Romanelli's room?

Such a hypothesis presupposes that Rudy entered the house at 7 Via della Pergola with Meredith or because Meredith opened the door to him. (page 44)

[45] It is a matter of a hypothesis which in some way appears to be aired and almost suggested in the recording of November 20, 2007 in which Amanda at a certain point has the following dialogue with her father, to whom she says, talking about Rudy:

Amanda: "Yes, I know, I know, I mean I hardly know him ... I never invited him to my house before."

Father: "Do you believe that Meredith did so?"

Amanda: "Ah, I know that she knows him through Giacomo ... therefore"

Father: "Is he one of the boys downstairs?"

Amanda: "Yes, he was her boyfriend ... therefore ... perhaps he was saying: I'm looking for Giacomo ... can I come in? Or something like that..."

Further on Amanda goes on, saying "That is, I know that she had seen him before, but I don't know why she let him into the house."

This Court holds that the hypothesis in which the scenario of the burglary took place through Rudy's doing, the one and only aggressor of Meredith, does not appear to be sustainable.

Rudy could well have believed that any of the occupants could have arrived in that house from one moment to the next and consequently waiting around there must have appeared very risky.

And then: why ever would Rudy, back just a few days after the kindergarten break-in in Via Plinio in Milan, where he had been surprised by the headmistress and, according to the defence for Raffaele Sollecito, the author of other thefts, both in the legal office of the lawyers Bronchi and Palazzoli and at Tramontano's house, have had to create the appearance of a burglary, in this way directing the investigations directly to the person who, furtively and in order to steal, enters someone else's property, when he had done just that recently?

Moreover Rudy did not have access to the key to the house at 7 Via della Pergola and he did not have special visiting relationships with the girls from upstairs, where it does not turn out he had ever gone, and thus there was no reason at all that suspicions about what had been done to Meredith, about whom, it must also be observed, he had never manifested any interest, should have been directed towards him.

[46] Consequently: a burglar who simulates a burglary to deflect suspicions (and who furthermore a few days before had been surprised on the property of someone else with objects belonging to other people and the police had been called) in itself seems absolutely unbelievable, and it is even more so when one considers that there were no particular reasons why suspicions could have fallen onto him.

In this regard, the circumstances recalled above, and because of which Rudy had not had any relationship or meeting with Meredith in the preceding days, can also be recalled: on the night of Halloween he had been with a few Spanish boys [*ragazzi spagnoli: it can be "boys and girls" as well*]; in addition, he had been with and had danced with a girl who, from the description given and recorded above, was certainly not Meredith; nobody mentioned seeing him with Meredith; on November 1st Meredith spent the morning at home and the evening with her English girlfriends. Even in relation to this, therefore, Rudy must have felt at ease and consequently no reason could have motivated him to simulate a burglary.

Under other circumstances, it seems unlikely that Meredith, alone at home at night (her coming home as has been seen took place no earlier than 21:00 pm) would have opened the door to the house to Rudy and let him come in.

Indeed, she had only had occasional meetings with Rudy, while she was with others and never alone. She did not talk about Rudy, and her English girlfriends declared that they did not know who he was and that Meredith had never said a word about him.

Besides, if Rudy had asked about Giacomo Silenzi or some other of the boys downstairs with whom he had some relationship, it would have been enough to let him know that there was nobody there, thus removing any reason that Meredith may have had for letting Rudy come into the house.

And even if it is admitted that Meredith could have allowed Rudy into the house, since Rudy went into the big bathroom (the one next to the living room) and all the action of the violence took place in Meredith's room (it is enough to consider that in that room the body of the victim was found, her clothes torn and removed, the blood) and that there are no signs indicating a different place for the action of the violence, it must be hypothesised that Meredith, alone in the house at night (after 21:00 pm) allowed Rudy to enter the bathroom and went back into her own room.

This too is **[47]** an unlikely hypothesis: the front door was defective and it would not have been enough to pull it in order to close it: consequently Meredith would have had to take herself from her own room into the living room and from there to the entrance door to lock up as soon as Rudy, leaving the bathroom, called her to say he was going away.

Better to wait in the living room and thus prevent Rudy, who was coming out of the bathroom, from being able to take himself into Meredith's bedroom and try to make a "move" on her.

It is held that this was a situation that Meredith, for several considerations which the exigencies permit to be evidenced, absolutely did not want to happen: Meredith was tired from the day before when she had come home about five in the morning; the next day she supposed that she had a lesson at the University at 10 am and she needed to prepare for this and she had to also think about resting; a few days ago she had begun a relationship with Giacomo Silenzi which she must have wanted to hang onto if she had convinced herself to water his marijuana plants to please him, in spite of the fact that this caused her a certain preoccupation (see Amy Frost's statements) and furthermore she had talked about this boy to her English girlfriends who were in Perugia: she was moreover conscientious and had never brought boys to the house (see statements made by Romanelli page 11 hearing of 7.2.2009) manifesting thus an attitude which shunned superficial and fleeting advances.

(B)

It must therefore be affirmed, drawing together somewhat the threads of what has

been said: that the breaking of the window pane and the disorder noticed in the room occupied at the time by Romanelli Filomena was the result of a simulated action aimed at directing the investigations and suspicions on to an individual who was supposed to have introduced himself into the house at 7 Via della Pergola, on the night of the murder, through the window situated in the Romanelli's room, previously breaking the pane, with the aim of committing a theft, as the disorder created inside the room was to make believe.

Such a cunning scenario cannot be traced back to Rudy Guede, who on the other hand, entered the house through the entrance door, without any **[48]** breaking in or forcing, but with the agreement of whoever had available the house and the key to the entrance door.

Whoever permitted Rudy Guede to enter the house that night was not Meredith but others who also had the house available and could freely gain access to it.

The scenario of the broken pane and the furtive access could therefore have only been carried out by someone who, having the house available and free access to it, tried to distance himself from all suspicion, directing it to a different person; that is the unknown criminal who, through a violent act (the breaking of the window pane) was supposed to have entered the house.

Other than Meredith the key of the apartment was available to Laura Mezzetti, who was however away from Perugia that day, at Montefiascone at her parents'; Filomena Romanelli, who was however with her fiancé at the house of her girlfriend Paola Grande and the latter's boyfriend, Luca Altieri, who was celebrating his birthday (see also the declarations of Dr Chiacchiera on page 150 hearing of 27.2.2009 and declarations of Napoleoni, hearing 27,2.2009 page 232) and Amanda Knox had it.

Amanda Knox too related that she had spent the night with Raffaele Sollecito at the house of the latter without having ever moved. This alibi, nevertheless, found no confirmation and rather found various denials which indicate its falsity and cause it to be held that Rudy Guede entered the house at 7 Via della Pergola because he was let in by Amanda Knox (the only one, Ms. Romanelli and Ms. Mezzetti being absent) who had the key to the entrance door to the house and who was staying with Raffaele Sollecito.

Amanda Knox, just for such a circumstance (she was the only one, except Meredith, who had the keys to the front door of the house) needed to distance from herself

every suspicion, and therefore together with Raffaele Sollecito, with whom she was staying, as will be said in due course, organised the scenario of the broken window pane, the disorder in the room of Romanelli Filomena with the aim of derailing the investigations and directing them towards the person who, not having the house keys, had to look for another way of getting in: breaking a pane and getting through the window.

[49] Against any such need to dissimulate, which Amanda would have had, it has been argued that the aim of sexual violence which the crime appeared to display (the victim was a young girl and her body was almost completely naked and was in her own bedroom) should have removed all suspicion from Amanda.

Such reasoning cannot be held to be tenable on the basis of the following considerations: Amanda was living with Meredith and had the key to the front door of the house where she lived and where she was staying on those holidays: Amanda was the only one, Laura Mezzetti and Filomena Romanelli being absent, who could have permitted entry into the house unless the front door had been forced, and there was no forcing evident; she would therefore had to think that the investigators would have been convinced that Meredith, entering the house, had inadvertently left the door open and had thus facilitated the access of her murderer: a doubly unlikely hypothesis since it would have been necessary to hypothesise such absentmindedness on the part of Meredith, an absentmindedness particularly difficult to be imagined with front door that, because of a fault in locking by pushing, had to be closed with the key; it would have been furthermore necessary to hypothesise that such a situation – the front door left open – would have been verified just when somebody, motivated by criminal aims, had found himself going by, and having decided to enter that house and having gone through the gate that opens onto the pathway, had found, what a coincidence it would come to be said, the front door open.

A doubly unlikely hypothesis as has been said, and then it would only remain to single out another access, the broken window precisely, to avoid that explanations about how the murderer could have been able to enter the house without either forcing the front door and without the key, should be asked of her, even though she was a woman and suspicions would have necessarily started to concentrate on her and thus the decision was taken to put into effect the simulated action described.

AMANDA KNOX AND RAFFAELE SOLLECITO

(A)

Amanda Knox decided to come to Italy for study purposes. She had chosen Perugia “because she wanted to learn about Italian people, culture; not live in a place too touristy" (statements by the mother, Edda Mellas, p.hearing.19.6.2009. 75). To be able to come to Italy she worked and **[50]** saved a bit of money, also the mother and father had given her and were given her money (page 76 Mellas statements). She had left the United States around middle of August 2007 and had stopped in Germany till late August or beginning of September had come to Italy, to Perugia together with her sister and she viewed over the house on Via della Pergola and returned to Germany and from there back to Italy, in Perugia, to the house that had already seen and found to her liking. She started attending the University, with diligence and punctuality, "a really good student, diligent, participant" (statements Antonella Negri, hearing 14.3.2009 p. 5). She also found a job at the pub Le Chic managed by Patrick Lumumba where initially she worked every day, from around 21.30, 22.00 and then two days a week: Tuesdays and Thursdays (see statements by Patrick Lumumba, hearing 3/4/2009 pp. 152 et seq.)

(B)

Raffaele Sollecito moved to Perugia in 2002 from his region, Giovinazzo, after which in 2002 obtained his graduation diploma. He enrolled at the faculty of informatics and chose Perugia because of the presence in the city of the ONAOSI college (see statements by the father, Francesco Sollecito, page 15, hearing19.6.2009) where he was boarding from 2003 to 2005. He was "taciturn, introverted, shy.... watched many films” and educators at the boy’s ONAOSI college were shocked by a film “very much hard-core ... where there were scenes of sex with animals” at which next they activated a monitoring on the boy to try to understand him. (p.130 and 131, hearing 27.3.2009, statements by Tavernesi Francesco). He had the habit "of carrying in his pocket a penknife" and this went back to his teens when he played with a penknife to record something on the bark of trees and modeling objects. (p.23 statements Francesco Sollecito, hearing 19.6.2009).

He had a brief affair with a girl from Brindisi and this was a few months before October 2007. This relationship had a very short duration, for few days and had no

involvement any more (see also the statements of the father at p.18, hearing on 19.6.2009).

He [RS] had known **[51]** Amanda Knox for a very short time, from the second half of October, and quickly established "a good understanding ... he treated her and cuddled her like a little girl" (see statements from the father of Raffaele Sollecito, page 17).

(C)

From the time Amanda and Raffaele met, on October 25, 2007 at a classical music concert that Amanda had gone to with Meredith, their relationship and their meetings were very frequent and constant, such that every time his father called Raffaele – which he did daily, even several times a day – his son talked about Amanda (Francesco Sollecito statements, p.16). Amanda, during a conversation on November 13, 2007 with her parents in prison (intercepted on November 13, 2007, RIT 397/08), said that they were going out together as if they were a couple and that she spent most of her time outside school with him. She also said that he was kind and "caring", and that he cooked for her and always wanted to hug her and help her.

Both Amanda and Raffaele were using drugs; there are multiple corroborating statements to this effect (page 19, statements of Romanelli, hearing of February 7, 2009; statements of Mezzetti, hearing of February 14, 2009; page 164, hearing of March 27, 2009, statements of Antonio Galizia, Carabinieri [*C.ri*] station commander in Giovinazzo, who testified that in September 2003 Raffaele Sollecito was found in possession of 2.67 grams of hashish; in the tapped intercepts, Amanda had several times made reference to marijuana use).

That the Raffaele-Amanda relationship, begun only on October 25, was very close is also corroborated by Filomena Romanelli, who recalled that on October 26, 2007 (a very precise memory, because it was tied to the date of a [girl] friend's graduation) and then in the days immediately following the first encounter between Amanda and Raffaele, she saw Raffaele in the house on Via della Pergola and Laura Mezzetti told her that he was a friend of Amanda's. She saw him again at the house on two or three other occasions (page 15, Romanelli's statements, hearing of February 7, 2009). Laura Mezzetti also recalled having seen Raffaele Sollecito other times at the house in Via della Pergola, "about four times" in all (page 8, hearing of February 14, 2009);

very often, Amanda slept at Raffaele's house (see Mezzetti's statements, hearing of February 14, 2009).

[52] These statements, considering that only a few days had elapsed since they had started dating, October 25, indicate a particularly intense and surely frequent relationship, as if they were a couple, using the description provided by Amanda in the interception mentioned above. Laura Mezzetti would later say, in this regard, that "they were constantly hugging each other... Raffaele was particularly tender; to me, he seemed at times almost a bit possessive; it would have annoyed me, to say the least,; (he was) very attached to Amanda" (statements by Mezzetti, hearing of February 14, 2009, page 25).

(D)

Even on the evening of November 1, when Francesco Sollecito called his son (it was at 20:42 pm, to tell him the plot of the movie he had just seen, "The Pursuit of Happiness"), Raffaele was with Amanda and told his father that the next day he would also be with Amanda: they had in fact planned a trip to Gubbio. He recalled as well that it was on the evening of November 1, when he phoned his son at 20:42 pm, that Raffaele had told him that "while he was washing the dishes he had noticed leaked water…that had spilled onto the floor", and that he had specified that he was with Amanda (p. 45, statement by Francesco Sollecito).

That Amanda and Raffaele were together on the evening of November 1 is also indicated by Jovana Popovic in her testimony (see statements made at the hearing of March 21, 2009). She reported that on the evening of November 1 she went to the house of Raffaele Sollecito on Corso Garibaldi twice; on both of these occasions, she met Amanda. Jovana Popovic also testified that on October 31, 2007 her mother, who was in Milan, told her that she was sending her a suitcase on the coach departing from Milan and arriving in Perugia at midnight. So on November 1, 2007 she therefore stopped by Raffaele's (page 6, Popovic statement, hearing of March 21, 2009) and asked if he would accompany her to the coach station. She came by around 5:45 pm and in any case a little before 6 pm. At home there was Amanda, who opened the door to her, and there was Raffaele.

A short while later, her mother had called her back saying that she was not able to send the suitcase because the coach driver refused to take it.

[53] So Jovana Popovic, after finishing her lesson at the Tre Archi, which ended at 8:20 pm, returned on foot to the home of Raffaele, to tell him that she no longer needed to be accompanied to the station. It took her about twenty minutes to walk the distance, so she arrived at around 8:40 pm, again finding Amanda, who opened the door and let her know that Raffaele was in the bathroom.

A relationship, therefore, which had sprouted between Amanda and Raffaele recently enough but especially intensely during the immediately succeeding days, a fews days, in fact hardly any, because the tragedy that followed occurred barely a week after their first meeting. On the afternoon and in the evening and night of November 1, 2007, Amanda and Raffaele were together.

The obligations of one or the other would have separated them, even if only for a little while, but events completely independent of their choices kept them together, almost as if making an attempt on their freedom and putting them to the test:

Raffaele Sollecito, as noted above, was to accompany Jovana Popovic, a medical student, to the Perugia station to pick up the suitcase that the girl's mother wanted to send to her by coach from Milan. The driver, however, refused to accept it; so Popovic Jovana had made it known that she no longer needed a ride to the station. As for Amanda Knox, she was scheduled to work that night at the Le Chic, the pub managed by Diya "Patrick" Lumumba. However, he had sent her a text message – at a few minutes past 8 pm on November 1, 2007 – telling her that there was no need for her to go to work that evening (see statements by Patrick Lumumba, hearing of April 3, 2009, pp. 160 and following).

And so Amanda, like Raffaele, came to be free of any commitment for the evening and night of November 1, 2007.

AMANDA KNOX'S ACCOUNT

(A)

Amanda Knox, in the e-mail dated November 4, 2007—(This is) admissible insofar as it is a document of record, acquired in the course of the present hearing just like the so-called **[54]** *memoriale*[6], which will be addressed later – which she sent to friends and/or acquaintances in the U.S., refers to having seen Meredith for the last time on the day immediately following Halloween. She was with Raffaele and they ate lunch together in the house on Via della Pergola. Meredith said goodbye to them and left the house. "It was the last time I saw her alive" (said Amanda).

Soon thereafter, she and Raffaele also left and went to Raffaele's house "to watch a movie, have dinner and spend the evening and the night at home. We did not go out." The following morning she got up around 10:30 am to go to her Via della Pergola home: to take a shower and change clothes. She also had to get a mop, because the evening before, Raffaele, after dinner, had spilled water from the sink and was not able to clean it up.

Upon returning home, she noticed that the door was wide open. She thought someone had gone to take the trash out or gone to the floor below, closing the door behind them but not locking it. She asked loudly whether anyone was at home, but no one answered. The door to Meredith's room was closed, and this meant she was sleeping. She undressed in her own room and took a shower in the bathroom, (the one) nearest to (both) her room and to Meredith's. When she got out of the shower, she realised that on the little bath mat where she had placed her feet, there was blood and also, there were drops of blood on the sink and the faucet. She left the bathroom and went to get dressed in her own room. Then, she went in the other bathroom to dry her hair, where there was a blow dryer. It was at this time that she noticed feces in the toilet, which surprised her. She then took the mop and returned to Raffaele's home, locking the door (on the way out.)

She told Raffaele what she had seen and he suggested that she call one of her friends. She then called Filomena Romanelli, who said that she had been out with her boyfriend and that Laura Mezzetti was also away, in Rome with her family. She then realised that the only one to have spent the night in Via della Pergola was Meredith, about whom, however, nothing was known. Filomena seemed worried, so Amanda

[6] a statement or recollection made by someone who was there

told her that she would call Meredith, who would then call her back. She then called the two cellphones that Meredith had, but without getting any response (from her). She then returned home, this time with **[55]** Raffaele. Upon returning home, she opened the door to Filomena Romanelli's room and saw that the window was open and completely broken: there was chaos, "but her computer was in its place on the desk." Convinced that there had been a burglary, she went into the other rooms: Laura's room was in order, and nothing was missing from her own room. However, Meredith's door was closed. She began to knock and to call out, without receiving any answer. She was then seized with panic and went on the balcony to see if she was able to see anything, but she couldn't see anything. She went down to the apartment below to ask someone, but no one was there. She therefore went back inside and Raffaele said that he wanted to try to break down the door of Meredith's room, but he wasn't able to. It was then that they decided to call the police, which is what Raffaele did. She let Filomena know about this, asking her to come home. While they were waiting, two police officers arrived (at the scene) and she showed them all that she had seen. Then Filomena arrived with her boyfriend and two other friends, and they broke down the door of Meredith's room.

(B)

On November 6, 2007, soon after a police arrest warrant [*fermo*] was served to Amanda, while she was waiting to be transferred to Capanne Prison, "she asked for some blank paper for the purpose of producing something written to deliver to yours truly {translator's note: a female person) meaning, to the Chief Inspector of the State Police, Rita Ficcara (see service notes on November 6, 2007).

In that piece of writing, Amanda Knox prefaced her explanation of the various circumstances with the following phrase: "in my mind there are things that I remember and things that are confused." She then wrote of having seen Meredith for the last time on November 1, 2007 in the afternoon, around 15:00 pm or 16:00 pm; they were at home at Via della Pergola, and Raffaele was also there. She and Raffaele stayed a little longer, and then, together they went back to his home (on Corso Garibaldi) to watch the movie Amelie. She then received a message from Patrick telling her it wasn't necessary for her to go to work at the pub, since no one was there. Therefore, she stayed with Raffaele, with whom she smoked some marijuana. They had dinner together, but quite late, perhaps 23:00 pm.

[56] After dinner, she noticed a bit of blood on Raffaele's hand and had the impression that "it had to do with blood coming from the fish" that they had cooked. Raffaele, after having eaten, had washed the dishes, but a break in the pipes had occurred under the sink. And water was leaking, with flooding on the floor. Since they didn't have a mop, they decided that they would do the cleaning the next day with a mop that she could get from her house. She added that they were very tired and that it had to have been quite late (at that point): her next memory brought her to the morning of November 2, around 10:00 am, when she woke up and took a plastic bag in which she placed her own dirty clothing to take home. She then made reference to the statement she had made in the Police Headquarters during the night between November 5 and 6, as well as on the morning of November 6. She explained that she made those statements under stress and (in light of) the particular situation that had arisen. In her own mind, she was seeing something like flashbacks which, however, seemed unreal to her, like a dream: e.g., Patrick near the basketball court, near the front door of the house: of herself crouched down in the kitchen with her hands over her ears because in her own head, she had heard Meredith scream. She added that she wasn't sure of the truth and that she was confused. She knew only that she had not killed Meredith.

(C)

In the June 12-13, 2009 hearing, Amanda Knox underwent questioning , requested by the civil party Patrick Lumumba and by the defence.

She professed to know Rudy Hermann Guede, although just "a little." She remembered that she had met him in the center of town, during the course of an evening in which she had (also) met the guys who lived in her same house at Via della Pergola-- but they lived downstairs-- and they had introduced her to Rudy. Then she had spent most of the time with Meredith and they had returned home, all together. On another occasion, she met him (i.e., Rudy) at the "Le Chic" pub. She also remembered attending a party in the second half of the month of October 2007, together with the guys who lived downstairs. She had smoked a joint and every so often, with friends, she used narcotics, marijuana.

[57] She had met Patrick Lumumba through a friend, and she had worked at Le Chic pub, which was run by Patrick. She had begun to work in this pub around the middle of October. In the beginning, she worked there every day, then, later, two

times a week, Tuesdays and Thursdays. Her relationship with Patrick was good, and she was never treated poorly by him.

On the evening of November 1, 2007, she was supposed to have gone to work at Le Chic pub, but she didn't go (there), since Patrick had sent her a message telling her that she didn't have to go to work. That message was sent to her around 8:15 -8:30 pm. At that very time, she found herself in Raffaele's apartment, and when she answered that message, she thought that she had been in his apartment. The evening of November 1, she did not encounter Patrick. During the night of November 5-6, 2007, she had stated something different to the police, but that occurred because of the persistence of the questioning and because of the situation that had been created in the course of the questioning and it was at that time that she began to imagine what could have happened.

She reported that she had the keys to the home on Via della Pergola, 7, being the house where she lived. Meredith, Laura and Filomena were also in possession of the keys. On November 1, 2007, as far as she knew, Filomena was with her boyfriend; Filomena had also told her that Laura was in Rome. She denied being in the home in Via della Pergola, 7, on the evening of November 1, 2007, after 21:00 pm. In the questioning that occurred during the night of November 5 –6, 2007 she had stated that on the evening in question, after 21:00 pm, she had gone with Patrick to the Via della Pergola 7 home, (but only) because she was under pressure and confused. Even the matter relating to the fact that Meredith, before being killed, had had sex, she had reported that, too, "under pressure" and for this reason, she had imagined many things, of which had included Meredith's scream, and the fact of having held her ears closed, so as to not hear her. On November 5, in the evening, she had not been summoned by the Police, but she went to Police Headquarters to accompany Raffaele because she didn't want to be alone. Regarding the record on November 6, she remembered in the late morning of that day she had asked members of the criminal unit police for sheets of paper to write on and she wrote in English, without anyone having suggested to her what she should write. Since she was **[58]** confused, she wanted to explain to the police her own confusion. That account was written completely freely and voluntarily. She remembered having said in a conversation with her mother that she "felt horrible because Patrick was stuck in prison and it's my fault." She denied having accused Patrick in order to save herself. She accused him because of that particular situation that had been created during the course of the interrogations during the night of November 5-6, 2007.

Returning to the facts of November 1, she remembered in the morning that she woke up after having spent Halloween night at Raffaele's home; she had returned home to change her clothes and get some things for studying. At home she hadn't seen anyone; the door of Meredith's room was closed and she assumed that she was sleeping: she had put away some clothes that she had on the clotheshorse, and she had started to study. While she was studying, Filomena returned with her boyfriend. They asked about Meredith and she reported that she probably was still sleeping. She helped them wrap a gift for a party. At that point, Meredith had gotten up and had greeted her, asking her how the Halloween party had been. Raffaele had then arrived and he made lunch. Meredith had gone into her room to change; perhaps she had had a shower. She then left and after that she never saw her again.

She knew that Meredith had a romantic relationship with Giacomo Silenzi, who lived with three other guys on the lower level of the very same house. In time, she revealed to Meredith that she had become Raffaele Sollecito's girlfriend. Raffaele Sollecito had met her when she and Meredith had gone together to a classical music concert. Initially, Meredith had been with her, but after the intermission Meredith had to go home and Raffaele sat down near her. That happened 8 or 10 days before November 2 (page 73). When she met Rudy, she hadn't yet met Raffaele. In the house at Pergola 7, she had a room that was near Meredith's room. In this apartment, there were four girls. In addition to herself and Meredith, there was Filomena Romanelli and Laura Mezzetti. When she had to pay the rent, she took the money and gave it to Filomena, who made the payment. Each girl **[59]** paid 300 euros. In her own bank account, she had 4,457 US dollars. She had arrived in Perugia at the beginning of September with her sister and had looked for an apartment. That's how she met Laura Mezzetti. With Meredith, the relationship was good and they were on friendly terms. On November 1, after having had lunch with Raffaele and having played a little (guitar)[7], she and Raffaele had gone to his house on Corso Garibaldi and had watched her favourite film 'The Fabulous World of Amelie." They ate dinner, "but very late" (page 77). They ate fish and salad. Then, while Raffaele was washing the dishes, from the sink, a leak was noticed: "water was leaking below and he looked at it; he turned off the water and then looked below the sink, and this pipe had become loose, so the water that was coming from the faucet was leaking out." (page 77). It would have been around 21:30-22:00 pm. She remembered that Raffaele was very upset about that inconvenience and he told her that the pipe had recently been repaired. Then they went to Raffaele's room: she on the bed and

[7] implied

Raffaele at the desk, and "he prepared a joint and we smoked together…we made love and then we fell asleep."

Patrick's message had arrived before they had dinner. She had been happy to receive such a message because she didn't want to go to work that night, and preferred to stay at home with Raffaele. The next morning, was November 2: she woke up around 10-10:30 am and Raffaele was still sleeping. After a bit, she told him that she was going back to her house to take a shower and change her clothes, and that when she returned they would leave. For that day, in fact, they had planned to go to the nearby town of Gubbio. When she arrived home, she saw that the front door was open. This situation surprised her, because usually the door was locked. She thought, nevertheless, that someone had not closed the door very well or had left quickly or had gone to look for something or take out the trash (page 80). Entering the house, she had asked if there was anyone home, without receiving an answer. She nevertheless left the door ajar, without locking it, thinking that "maybe someone is coming, maybe they went to get some cigarettes or who knows what" (page 80). She then went to her own room, undressed and went into the bathroom. She had some earrings, piercings **[60]** that she had gotten a short while ago, and she had to wash them constantly "because one had gotten a bit infected. So I had to take out the earrings and then clean my ears….when I saw that there were drops of blood in the sink, at first I thought that it came from my ears, but when I scratched I saw that they were still dry, and so I thought, well, whatever, strange" (page 80). Then she took a shower and, getting out, not having "remembered the towel" she decided to use the bath mat to go into her own room. At that moment, she noticed the blood stain on the mat. She thought, however, that "maybe there was some menstrual problem that wasn't cleaned" (page 81). She used the mat to go to her own room, and then she put the mat back in its place. She put her earrings back on, she brushed her teeth, and then she went back to her room "to put on clean clothes." And then she went in the other bathroom to dry her hair and when she put the hairdryer back in its place, she realised that there were feces in the toilet. She thought that to be very strange, considering that it was Filomena and Laura's bathroom "who are very clean" (page 81). She then went back to Raffaele's, closing the door to her own house behind her because, in the meantime, no one had returned home. Raffaele was in his bathroom; he had begun to dry the kitchen floor, though by that point it was fairly dry. After Raffaele left the bathroom, they made lunch and she told him what she had seen. Raffaele had suggested that she call her flatmates. She had then called Meredith, who, however, did not answer; she had then called Filomena, who told her that Laura was in Rome and that she should call Meredith again, and that she

should return home to see if anything was missing. Then she left with Raffaele, and together they went to the house in Via della Pergola. They opened the doors and in Filomena's room they saw that the window was broken and there was a big mess. They then thought that there had been a burglary, and they went to have a look in the other rooms. Nothing was missing in the various rooms, but the worrisome thing was "that Meredith's door to her room was closed, and when I called, she didn't answer" (page 83). She remembered, however, that the door had been locked before. She then left the house to see if the guys from downstairs were home, but it was dark and **[61]** when she knocked, no one answered. She told Raffaele to call someone and she called Filomena, telling her what she had seen and asking her to return home. After that, they left the house, one reason being to look at the broken window from the outside; and while they were outside, two individuals from the police approached them. She thought that they had arrived (on the scene) because Raffaele had called them. She told them what she had seen. A short time later, Filomena's friends arrived, and then Filomena .When Filomena found out that Meredith's door was locked, she was astonished and she began to speak rapidly in Italian. Amanda could not understand, so she withdrew from the conversation and stayed with Raffaele near the main entrance. The group of people wanted to open the door to Meredith's room; as soon as the door was knocked down, she heard Filomena scream: "a foot, a foot!" When the door was knocked down, Amanda stayed near the entrance and she didn't see the inside of the room. Outside the house, everyone was talking, especially about what they had seen, and Raffaele had asked what they had seen in order to explain it to Amanda, who had heard that there was a corpse inside the wardrobe, covered by a blanket, with a foot extending out (from underneath it).

She had returned to the house on November 4, 2007 with personnel from the Police Headquarters. Laura and Filomena were already at the site; she had a crying fit thinking of what had happened and she was also afraid of approaching; moreover, they had asked her to look at all the knives and this had really affected her. She had never thought of returning to her house in the United States, even if her relatives had told her to go to her aunt's in Germany to feel safer and she had asked the police if she could leave "for two weeks with my aunt or with my Mom and they [the police] said: no, no, it's better if you don't and so I continually said to them, no, I can't go" (page 100). She reaffirmed, however, that she intended to stay in Perugia and this is what she had written for an assignment on November 5 at the University, where she also wrote that "Perugia is a beautiful city I want to stay (sic)." Then, with regard to the intercepted conversation with her mother and father, in which she said " I was there I have no interest in lying, I'm not afraid of the truth" and "It's stupid, I can't

say anything but the truth, because I know I was there, I mean, I can't lie there's no reason to **[62]** do it," she explained that the reference to the fact that "she was there" meant that she was in Raffaele's apartment. She denied that at 7: 45 am on November 2 she had been at the Conad store, which is located in the vicinity of Raffaele Sollecito's apartment. She had previously been in this store, together with Raffaele. She denied having had a red coat during that time period. The mark on her neck that appeared in a photo from those days that was published on the Internet, was "a love bite" (page 107). Speaking of her own family, she stated that "my family is huge, my Mom and my father haven't been together… since I was a year old, but they are neighbours and they did this on purpose, for me and my sister, because they wanted to make us feel that we were a family, even if we were in two different houses…so I always had these two families, growing up, but a huge family together, nearby: then, there's my grandmother, my aunt, my uncles, they are all around (page 108)…I have three younger sisters, and then I have my cousins who are like siblings…an aunt in Germany" (page 109). She had come to Italy to study the Italian language and creative writing. She was very friendly with Laura, with whom she got on well. With Meredith, she spoke mostly of literature, "because she read a lot, even when it wasn't for school; she read mysteries and then, often we would be together on the balcony, sunbathing, and she would have a book and I had a guitar, and we would hang out together like that" (page 117). She remembered that on October 30, she had spoken with Laura, Filomena and Meredith to ask their advice regarding Raffaele, because she had felt a little guilty, since she still had feelings for an ex-boyfriend that she had left in the United States named DJ. She also recalled that they had also talked about the rent payment, and that Meredith had offered to pay immediately but was told instead to wait and pay at the same time that they would all be paying, on the due date. On October 31, the evening of Halloween, she had gone to Patrick's pub and spent some time there; then she caught up with a friend, Spiros, near a place called Marylin (sic), but "we didn't go in since Spiros was leaving"; they went to another place and then, being tired, she stopped in the center of town, where Raffaele had caught up with her and she went with him to his house. It must have been around 2 am. She knew that Meredith went out with her **[63]** English friends. She had sent her a text message that evening asking her what she was doing and whether that evening they would be seeing each other (page 125). She remembered that Meredith had begun her relationship with Giacomo Silenzi one evening when they had been together at the Red Zone discothèque, which had occurred around the middle of October, before she had met Raffaele Sollecito. She admitted that sometimes she smoked joints with the guys who lived downstairs. She

pointed out that she had the house key, but not also a key to her own room. She remembered that on November 1, when she was at Raffaele's house and a short while before beginning to see the film "Amelie", a girl had rung the bell, Jovana Popovic, whom she did not know; Raffaele explained to her that he had to take her to the station around midnight. Then this girl had returned, to tell (Raffaele) that she no longer needed to be taken to the station. She didn't remember when she returned. "I think we were making dinner, but I'm not sure" (page 133). She remembered that she had turned her mobile phone off that evening because "I didn't want to be called back to work, I didn't want to be disturbed….I received the call, I received the text message, I was so happy that I wanted to spend the entire night with only Raffaele and so I turned off the phone, so as not to be called and called again" (page 134). She added that when, on the morning of November 2, she had seen Meredith's door locked, she had tried to climb over the balcony to see if she could see through the window and to see if Meredith was inside but, not being able to do so, Raffaele told her to come away and then he tried to break down the door with a kick, and also using his shoulder to open it, because they didn't know why the door was locked. In the following days, she planned on looking for another house, and she would like to have remained with Laura and Filomena. In the meantime, she stayed at Raffaele's house. During the time that she was in Perugia, she had never needed to ask for loans from anyone: she had (access to) an ATM (cash machine) from which she withdrew her cash. She denied ever having gone around with a knife in her pocket or in her handbag. She recognised the knife that had been sequestered, Exhibit 36, and claimed that she had used it for cooking, being in the kitchen of Raffaele's house. But she never carried it around. She denied that **[64]** someone had been able to put that knife in her bag without her being aware of it. She knew that Meredith had credit cards and she (also) knew that she had two cellphones, one for England and one for Italy. She had the numbers of both of them. The relationship with the guys in the apartment below was relaxed and they saw each other regularly. She confirmed that she became aware of the broken glass when she returned home the second time, along with Raffaele. She remembered that when she called Ms. Romanelli the first time, on the morning of November 2, she was in Raffaele's house. When Ms. Romanelli called her back, she was on the way back home with Raffaele.

Returning to the episode of the water leaking from the sink of Raffaele's house, she stated that that (leak) had happened after dinner: she didn't specify the time, but it was late: they had eaten around 22:30 pm, so it would have been around 23:00 pm. On November 1, she had left the Via della Pergola house, along with Raffaele, around 16:00 pm, and before leaving she had been in the small bathroom and the

spots of blood had not been there. Neither she nor Raffaele had seen the inside of Meredith's room after the door was broken down. The news reported about this was what they had heard from the people who were present, and who were talking about it. As for the black lamp discovered in Meredith's room, she couldn't give an explanation. She remembered that she had an identical lamp, but she didn't know if it was still there, since she didn't pay attention to it. She had heard that the guys downstairs had wanted to "celebrate Halloween in some way-- but I didn't understand, I didn't know where they were going and how long they would be away" (page 65). On the morning of November 2, she nevertheless went to see if they were there because she didn't know if they were there or not. As for Meredith, she stated that on the morning of November 2 she was worried; she had thought that she might be in her room and have injured herself-- in her house, there were some very strange things, it's possible she wasn't even at home. She didn't know what to think, but she was worried and wanted to break down the door. She denied that she wanted to break down the door to get her lamp back. Anyway, they did not even know that the lamp was missing from her room.

[65] She remembered having called her mother a number of times on November 2. The first time was as soon as they were sent outside the house. "It was after they knocked down the door and they sent us outside (page 73). At subsequent times, when informed of the criminal charges against her, she confirmed having called her mother "only to say that we'd been sent outside the house, and I heard something about a foot" (page 74). She didn't remember calling her before (that particular instance), during the course of that morning. She didn't even remember that during the course of a discussion which she had with her mother in prison, on November 10 — she [*la stessa*: the mother] apparently told her: "But at 12:00 noon, nothing had happened yet" (page 76). She confirmed that on the evening of November 1, from the time she had turned off her mobile phone until the following morning, she had been with Raffaele Sollecito the entire time, and she had fallen asleep with him.

Raffaele had marijuana but she didn't know who he bought it from.

She considered Meredith Kercher to be a friend. As for the accusation that she had made regarding Patrick, she made reference to the particular situation which had been created, as well as to her imagination: "I was really forcing myself, because they were saying that I had to remember something else, to remember something else. I was therefore forcing myself so much, trying to imagine what the reality that I'd forgotten was, then I was mixing up whether the thing that I imagined really was a memory or a figment of my imagination, because (the images) were fragmented.

So they were only pictures, I suppose, (of the things) that I saw in my life. For example, Piazza Grimana, I saw every day, Patrick I saw almost every day. These things were interposed, I don't know whether they belonged to that evening… and so, not knowing what was reality, what was my imagination, this state of confusion" (page 88). Furthermore, she stated that there hadn't ever been times in which she had had a similar state of confusion. She pointed out that after having met Raffaele on October 25, she had begun to spend a lot of time with him; almost every day, they had prepared either lunches or dinners, at his house. Raffaele had met Meredith when she had brought him to the Via della Pergola house and that had happened perhaps three times. Sometimes she smoked a joint with Raffaele, and that had happened as well on the evening of November 1. She had brought home other guys, to the house in Via della Pergola: Djuve (*sic*) with whom **[66]** she worked in Patrick's pub, and once in a while accompanied her home after work.

Also, Spiros who wanted to hear her play the guitar, and then another young man who was named Daniel, and Ratzon.

She recalled that on the morning of November 2 she had taken a shower and had used the sink; she had not used the bidet. She cleaned her ears using a cotton swab. She didn't remember having turned on the bathroom light. As for her own room, she hadn't taken note of the missing table lamp. The main light didn't work. In order to get dressed she didn't need to turn on the light because it was late morning and natural light came in from the front balcony to her room. She doesn't remember whether she opened the shutters. After becoming aware of the broken window, she checked in her own room to see if her computer was there and, since it was, she calmed down. She didn't check to see whether other things, like money, were missing. She recalled that she had told her mother that she was worried "because there's a knife at Raffaele's." She was worried because she didn't know how to explain such a thing.

Answering a specific question on the matter, she stated that she did not have a relationship with Rudy Guede; she remembered that someone had introduced him to her and she had seen him around on a few occasions. Once he came into the pub where she worked. As far as the statements made by Kokomani, she stated that all of it was completely false. She remembered that when she had returned to the Via della Pergola home on November 4, "there were at least five (people), but I'd say, even more, who were already in the house, because there were so many people, in the hall, in the other room, in another room" (page120). Raffaele Sollecito, she added, did not know Rudy Guede. With respect to the audio surveillance of November 17,

2007, relating to a conversation with her mother, in the course of which she had said, among other things, that she was worried about a knife, "for this knife thing, because there's a knife at Raffaele's", noting that she had found out from a police inspector, while she was in prison, that, in an article, they said there was blood on a knife found at Raffaele's house and she worried about it, not being able to provide an explanation for it.

[67] She pointed out that Meredith had never been at Sollecito's house and she had not ever taken kitchen items from the Via della Pergola house to Raffaele's house. On the morning of November 2, when she awoke around 10:00 am, Raffaele Sollecito was still sleeping. After dinner, Raffaele had sat at his desk while she was on the bed, looking at a book. Raffaele Sollecito was at the desk rolling a joint, and they talked. They had smoked the entire joint after dinner, "then we made love and then we fell asleep" (page 155). On November 2, they were supposed to have gone to (the town of) Gubbio when they woke up. When she woke up, she decided to go home to Via della Pergola because Raffaele "was still asleep" and she thought she'd have a shower before leaving, and she wanted to change her clothes (page 156). At Via della Pergola, the door was wide open. Ms. Romanelli's (bedroom) shutters didn't attract her attention and when she had returned with Raffaele, "they were kind of so-so, they weren't totally closed, but they weren't wide open, either" (page 158). The house was cold and, upon arrival, she had not turned on any type of heating. When she called Ms. Romanelli, around 12:10 pm, Amanda was at Raffaele's house, though she wasn't sure (about that). When she left the Via della Pergola house, there wasn't anybody home, and since no one in the meantime had re-entered, obviously no one had locked the front door. She denied that on the evening of November 1 she had been at the basketball court in front of the University, around 22:00 pm and therefore, what the witness Curatolo had maintained about this matter, did not correspond to the truth. She had seen Rudy Guede on various occasions: "there was the time, below the house, there was a time, I think, at my job and then I saw that he played basketball, but, that's how it was" (page 167).

INCONSISTENCIES AND DENIALS IN AMANDA KNOX'S TALE

(A)

The recollection by Amanda Knox of the period between the afternoon of November 1 and the morning of November 2 presents some variations [*i.e. changes or fluctuations in the story*].

However, one constant is the affirmation of her non-involvement in the murder of Meredith Kercher: she says she left the house in Via della Pergola 7 on the afternoon of November 1 and did not return until the following morning at about 10:30 am; she also maintains that she spent the evening and night with Raffaele **[68]** Sollecito who, when she woke up on the morning of November 2 around 10:00 am, was still asleep in his home on Corso Garibaldi.

The affirmations regarding the presence of Amanda Knox outside her house of Via della Pergola 7 are deemed to be consistent with what really happened only in respect of the afternoon and the evening of November 1, 2007 until about 21:15 pm. The same, in fact, while they are not denied by other investigation findings, are corroborated by what was declared by Ms. Jovana Popovic and Mr. Francesco Sollecito (which we have already indicated above: the 20.42 phone call and the two visits by Popovic to the Corso Garibaldi's apartment) and by the location of the cell towers that were logged in by the sms exchange between Patrick Diya Lumumba and Amanda Knox, which put Amanda in a place other than the one served by the cell serving via della Pergola 7 and, in addition, by Raffaele Sollecito's computer, indicating that the last interaction took place at 21:10:32 pm; that computer was definitely not in the house on Via della Pergola.

As for the issues concerning the identification of the logged phone cells and the computer interactions, we will deal with them at greater length and depth further on in this report. With regard to the time period subsequent to 21:15 pm and until shortly after midnight, no element confirms the presence of Amanda Knox and Raffaele Sollecito in the house at Corso Garibaldi. No evidence confirms that the two remained until 10:00 am on November 2, 2007 in the house at Corso Garibaldi; indeed, on the contrary, a number of findings belie this.

We already mentioned that, at around 21:15 pm, all interaction with Raffaele Sollecito's computer stops, and that Amanda and Raffaele were both freed from the commitments previously made and assumed to be set: in fact, neither Lumumba nor

Popovic needed either of them any longer that evening. Amanda Knox claims that at this point, freed from the commitments that would have forced them to go out, they remained together in the house at Corso Garibaldi. In fact, Amanda specifies that she was so happy about the message sent by Patrick Lumumba that, to avoid the risk of being called back, she turned off her mobile phone. She also maintains that, after 21:15 pm, she and Raffaele had dinner at the Corso **[69]** Garibaldi house.

In the course of her witness examination she indicated that they had dinner around 21:30 pm to 22:00 pm; then she put the time further out, at about 23:00 pm. But this claim is contradicted by the declarations made by Francesco Sollecito. He, as noted, stated that he spoke with his son on the phone at 20:42 pm (phone records corroborate his statement), who told him "he was with Amanda" (p. 16, hearing of June 19, 2009). Indeed, later on, around midnight of that "November 1", knowing that he was with this girl, he limited himself to just sending him a text message (p. 19, hearing cited above). Francesco Sollecito also explained that, during the 8:42 pm call, his son mentioned "that while he was washing dishes he realised he had a water spill" (p. 45). This fact, which was also mentioned by Amanda Knox (who links it to the need to fetch the mop to dry up the floor), is relevant because it allows us to determine the time of dinner as being around 8:30 pm and before the call at 8:42 pm, in which Raffaele tells his father that while washing the dishes he had a leak from the sink.

Therefore, the statements by Amanda Knox in which the hour of dinner is postponed until 10 pm or even 11 pm constitute an attempt to reduce insofar as possible the length of time devoid of activity that could be documented in some way, during the final hours of November 1, 2007, thus creating an alibi that could put her and Raffaele away from the Via della Pergola house where, precisely during that time, the murder of Meredith Kercher was being perpetrated.

But the time of the dinner is not the only [fact] indicated by Amanda Knox that is contradicted by the investigative findings. Though both alleged that they remained together in the house at Corso Garibaldi until around 10 am of the next day, as Amanda awoke first and went out to the house in Via della Pergola, this claim is also contradicted.

Witness Antonio Curatolo, examined at the hearing on March 28, 2009, reported that on the evening of November 1, 2007, after 9:30 pm, he saw Amanda Knox and Raffaele Sollecito in the area of Piazza Grimana, the tiny square in front of the

University for Foreigners where there is a basketball court and where there were also other young people.

[70] Mr. Curatolo said he lives in the street in the area around Piazza Grimana and Corso Garibaldi: a way of life different from the usual one but not for this his testimony may be considered unreliable as this way of living one's life does not affect ones' ability to perceive events and be able to report them.

On the other hand should be observed that the habit of frequenting places such as Piazza Grimana and Corso Garibaldi gives reliability about giving indication about people by Curatolo and specifically relative to places usual for him and that constitute his habitats: in fact he lives near the University for Foreigners and on Corso Garibaldi, he appears as a qualified observer of the people whom he reports having noticed and recognized.

Curatolo Antonio then said that on the evening of November - the specification of the date seems to be certain because it was the night immediately preceding the day on which, as always reported by Curatolo, police and carabinieri began to crowd the area due to the Meredith murder – at about nine-thirty, ten o'clock he was on the bench in Piazza Grimana reading the articles of his interest in L'Espresso weekly magazine. Every now and then he smoked a cigarette, stopped reading the magazine and looked around at the people who lived in or around the Piazza Grimana.

He perceived the presence, at the end of the basketball court, of "two young people that were looking like two sweethearts discussing a bit in a heated way amongst them ... every some time one would get up and walk on the way where is the railing and look down" (page 5 hearing of March 28, 2009). He stated he had not seen them coming and when he looked down at the basketball court they were already there (p. 19). He remembers also the presence of other people. He reported of having seen the two young people until before midnight. He recognized the two people as the two defendants, who were in the room, he indicated them and specified he already knew them having seen them before, although never together but each on their own. (page 18 hearing of 28.3.2009). He added, as he left the Piazza shortly before midnight the two youngsters were not there anymore.

He went to sleep and he came back to Piazza Grimana on the same bench the following day, towards 13:30 or 14:00 some Carabinieri came and asked him about whether he heard saw anything strange and so, as he stood to look down the road he noticed **[71]** it was full of police: "people dressed in white, police, Carabinieri, a

hubbub of people down there, they were by the entrance of a house, standing there". It was the house where the murder had been committed. There was an ambulance, too.

Responding to questions from the defence, he stated that, about the current defendants, he had not seen them also in the afternoon of November 1st. When he saw them they were yet on the low wall near the basketball court and he was on the bench. Responding to further questions from the Public Prosecutor he stated he noticed the two young people at about nine and a half / ten in the evening. He stated he was not looking at the two youths all the time since he was reading and he used to see them as he took pauses from reading the magazine he had with him. The last time he saw them it was "before eleven, eleven and a half, the last time I saw them". (page 18 hearing of March 28, 2009). He stated that the bench where he was placed is the one close to the newspaper kiosk. He added that that evening the area was lit and he remained sitting on the bench until he could see the buses that drive students to the disco. That it was the evening of November 1 the one when Curatolo, as stated by himself, saw the current defendants near the basketball court at Piazza Grimana, does not show to be doubtable: this specification was anchored by Curatolo, as we have seen, to the presence of policemen, people dressed in white, an ambulance, of many people whom he noticed the day immediately following at the house where the murder had been committed.

From the statements just mentioned it is so found that between 9:30 pm - 10:00 pm, when Curatolo arrived at his bench in Piazza Grimana located next to the newspaper seller Amanda and Raffaele were together already there and he stated that the afternoon of that same day he had not seen them. His are claims which do not conflict with any other finding. In the afternoon of November 1st Amanda and Raffaele could not be chatting in Piazza Grimana and Curatolo in fact declared he didn't see them. With respect of the evening around 21:30 – 22:00 pm, it should be noted that the phone call he received from his father while Raffaele was at home happened at 20:42 pm, and the last computer interaction occurred at about 21:15 pm as already mentioned, and as **[72]** will be better shown in the following part as we will deal specifically with Raffaele Sollecito's computer, and there are no phone calls that in relation to the logged-in cell may lead one to think that the current defendants could be a in a place other than the area of Piazza Grimana where Curatolo said they've been seen. Moreover the home of Raffaele Sollecito located in Corso Garibaldi is really close to Piazza Grimana and a few minutes are sufficient to cover the distance. That evening Amanda and Raffaele were together as reported by

Popovic "visually" and by the father of Raffaele via phone: it is therefore entirely plausible that they both left Raffaele's house, especially since they found themselves suddenly devoid of those commitments that would have lead both of them to leave home.

Next, as regards the point: until what time did Curatolo see Amanda and Raffaele that night? It should be noted that Curatolo, in the course of his examination, with special regard to this aspect said he could see these people until before midnight. He also said that about when he left Piazza Grimana, this happened before midnight, the two young people were not there anymore.

So we have the same expression, 'before midnight', repeated twice but with a meaning that is necessarily not coincident but that can be derived, on the basis of the same statements by Curatolo. If in fact as Curatolo left – and that happened before midnight - he didn't see the two young people any more, the last time he saw them was - albeit indicated with the same expression 'before midnight' as well - at an earlier time. That could be thus about 23:00 or 23:30. Moreover during the same testimony (page 18) Mr. Curatolo provides right such an indication: it was "before eleven, eleven and a half, the last time I saw them". It is also possible to further restrict the range on the basis of additional elements. Mr. Curatolo said he remained on the bench until he saw the buses driving young people to a disco and witness Maurizio Rosignoli (see page 131, hearing of 19.6.2009) reported that from Piazza Grimana buses depart to the disco and at a time between 23.00 and 23.30 they are already there.

[73] Based on these elements it is therefore considered that the Curatolo left the bench in Piazza Grimana between 23.00 and 23.30 (where he could see the buses leaving for discos and that Rosignoli has located precisely in that time frame) and when he left the bench the young couple were gone. Therefore at about 23:00 pm (minute by minute) Amanda Knox and Raffaele Sollecito were no longer in Piazza Grimana where Curatolo had seen them several times starting from 21:30 pm to 22:00 pm of that November 1st. The declaration of Maurizio Rosignoli just mentioned is also important in another respect. Mr. Rosignoli, who runs the kiosk in Piazza Grimana held that in fact in that that period Antonio Curatolo used to frequent that area. A similar statement was made by Alessia Ceccarelli, also occupied in the management of the kiosk. Alessia Ceccarelli therefore reported she knew Mr. Curatolo and she specified that at that time he was placed on the bench next to her kiosk. She added that when she opened the kiosk on November 2 2007

Curatolo was there (statements by Alessia Ceccarelli, hearing of June 23, 2009, pages 122 and 126).

The statements by Rosignoli and Ceccarelli show thus how in that period Curatolo frequented the area as indicated by Curatolo himself, and that one by Ceccarelli gives confirmation of Curatolo being in the area of Piazza Grimana on November 2 2007, as reported by Curatolo and that assumes some importance because it is valuable to confirm that the evening when he saw the defendants was precisely November 1.

But the version provided by Amanda Knox and by which she remained at the house of Raffaele Sollecito Corso Garibaldi from the evening of November 1st to 10:00 am the following morning, is not only contradicted by the statements of Mr. Curatolo, but also from further findings:

Raffaele Sollecito's computer appears to have been activated in order to listen to music at 5:32 am on November 2 for a period of about half an hour (as discussed in more detail in the part devoted to this aspect) after which he switched on his mobile phone again and he could receive, at precisely 6:02 am, the SMS sent to him by his father at 23:14 pm on November 1 (also on this issue we will return in the **[74]** section dedicated to the cellular telephone traffic by Raffaele Sollecito): these circumstances, while they indicate the peculiarity of that night due to something very unusual happening in it, it does not seem possible that they may have escaped from Amanda Knox's attention, who instead makes no mention of them, and she claims her waking up was at 10:00 am in Raffaele's arms as already mentioned. Such activation on the computer and the switching on of the phone that took place between 5:00 and 6:00 am on November 2, were also followed by the call at 9:30 am to Raffaele Sollecito by his father who, knowing that his son on November 2nd had plans for a trip to Gubbio along with Amanda, had called to see if they had left, he understood by how his son answered that he was still in bed. Well, even about this call, and the response to the same by Raffaele, Amanda gave no word, sticking to tell about a long sleep since the evening of November 1st till 10:00-10:30 am of Nov 2nd when, after leaving the house in Corso Garibaldi she went to her own house in Via della Pergola.

Yet such a circumstance, the call of 9:30 am by Raffaele's father could have been reported without assuming that the same could have any indicating significance in itself (as opposed to computer usage at 5:32 am and the switch on of the cellphone soon after, behaviours symptomatic of particularities difficult to explain).

If then Amanda Knox has been silent about this phone call it is because at that time she was already out of the Corso Garibaldi house, and therefore she had no knowledge of that call.

The fact just mentioned also allows us to give mention to the declarations given by witness Marco Quintavalle on the hearing of March 21, 2009. He reported that on the morning of November 2, 2007 as he went like every morning to his shop, a "Margherita Conad" food store located in Corso Garibaldi no. 6/8, he raised the automatic security shutters at 7:45 from inside the shop, he specified that the switch that activates the rolling shutters is located between the wall and the side of a refrigerator, while pressing the button he could see "the silhouette of a young woman who was waiting for me to open the store" (page 71 hearing of March 21, 2009) and in fact this girl came in and he could see her a distance of one metre and perhaps less. A short time after, perhaps after one minute he saw this girl who was again outside the store on **[75]** the street and was walking in the direction of descent "towards Piazza Grimana" (page 118). This young woman remained impressed in his memory because of her very light coloured eyes, *azzurri* [light blue]. She was wearing jeans, a gray coat, a scarf, a hat. ("I say hat; I don't remember if it was a headset/cap or something else, however she had a head cover" page 73), she could have been 1.65 to 1.67metres tall. Her face was *bianchissimo* [very light skin colour] and she apparently was about 20-21 years old.

She went into the store department that had groceries on sale, and detergents and toilet paper. He did not know if she bought anything (page 85 hearing of March 21, 2009). He recalled that a few days after his employee told him that she had heard of the arrest of Raffaele Sollecito, who was well known by Quintavalle because he used to go into his shop almost every day. Quintavalle so asked her to go out to buy any newspaper and when he saw all the pictures that were there, he said to himself: "but this is the girl of the other morning" and the reference was to the picture of Amanda Knox published on a newspaper (page 76 hearing of March 21, 2009.) He also recognised this girl in the defendant present in court (page 80).

He added that one evening, a little after eight o'clock, Raffaele came in - he knew him by sight because he often went to the store - and he let him in. And "with him there was Ms. Knox" (pages 76 and 77 hearing of March 21, 2009).

Witness Quintavalle, at the hearing on March 21, 2009, was asked many questions to uncover elements of information that would be useful in verifying his reliability. This was mainly because though his meeting with Amanda occurred early in the

morning (at 7:45 am) on November 2, 2007, he only made a statement about it in November 2008 and did not mention it earlier, even when Inspector Volturno questioned him a few days after Meredith's murder.

This Court deems that the testimony of Quintavalle is reliable. It was discovered that Inspector Volturno did not ask Quintavalle if, on the morning of November 2, he saw Amanda Knox in his shop.

He was asked – so Quintavalle recalled - about purchases made by Raffaele Sollecito. Mr. Quintavalle did not say anything about having seen Amanda Knox on the morning of November 2, 2007 in his **[76]** shop because he was not questioned about this and because, as indicated by Quintavalle himself, he considered this fact to be insignificant.

He later spoke about having seen Amanda Knox because a young man who used to live above his shop, who he knew, Antioco Fois, had just graduated and had become a freelance reporter for the newspaper *Giornale dell'Umbria.* When he passed him, he would sometimes ask: "But do you know anything? Did you see something? Did you hear something?" So one day Quintavalle told Fois that he had seen Amanda Knox on the morning of November 2; later he decided to go to the Public Prosecutor's Office because Antioco Fois convinced him that this fact might be important.

Consequently, the fact of not telling Inspector Volturno about seeing Amanda on the morning of November 2 and the fact of having come forward only after having been convinced by Antioco Fois about the possible significance of this event, do not reduce the reliability of the witness, since these facts do not affect the genuineness of the memory.

Conversely, it is worth observing that the witness gave a precise description of what he saw on the morning of November 2 and also provided a description of certain physical features of the woman he saw (light blue eyes and pale face) which, together with the unusual time, may well have fixed in his memory what Quintavalle said he saw. In addition, it should be added that one evening prior to November 2 and shortly after 20:00 pm, he noticed the young woman when she came into the shop with someone he knew well (Raffaele Sollecito) after the shop had closed. To this it should be added that witness Ana Marina Chiriboga, at the time an employee in Quintavalle's shop, said that Quintavalle asked her whether that morning she had seen Amanda and Chiriboga answered no (page 74, hearing on June 26, 2009). This question necessarily presupposes that Mr. Quintavalle had seen

Amanda Knox that morning. And since he did not know whether or not she had bought anything (see above-mentioned statements by Quintavalle, hearing on March 21, 2009), he was asking his employees in order to gather information on that subject.

These elements contradict the version provided by Amanda of a peaceful night of continuous and prolonged sleep that she and Raffaele allegedly spent together; elements which also show a peculiar condition in which both Amanda **[77]** and Raffaele must have found themselves: at 5.32 am, Raffaele Sollecito went to his computer and listened to music for about half an hour; he also turned on his cellphone; at 7.45 am Amanda was already out of the house and entering into Quintavalle's shop, showing a particular urgency to buy and do something; the trip to Gubbio had by now been forgotten and when Francesco Sollecito phoned his son at 9:30 am about that trip, his son was still in bed.

(B)

But Amanda Knox's story also has significant inconsistencies.

First, the reason given by Amanda Knox for which she would return to the house in Via della Pergola 7 on the morning of November 2 does not appear credible. She states that she went back home to change her clothes, take a shower and fetch the mop to dry the floor.

Since she knew she and Raffaele had made plans for a trip to Gubbio on November 2nd, she could well have brought the clothes with her that were going to be needed for the next day, and there were no circumstances shown that, occurring and unforeseen, may have given rise to such needs; on the evening of the same November 1st, she had already showered and washed her hair at Raffaele's house, and therefore it is hardly credible there is a need to repeat both those actions, and it is not understandable why, in addition, she would have to repeat all this somewhere else and not where she already just had a shower and washed her hair, especially since for the scheduled trip it would have been advisable to save time.

Fetching the mop to dry the floor also seems to be a scarcely credible action: at Raffaele Sollecito's there was someone attending to the cleaning; it is therefore considered that everything needed to clean up some water was already there, such that on the morning of November 2, not much could have been left on the floor, as was also reported by Amanda Knox herself.

Waking up 10:00 - 10:30 am – as was claimed – also seems rather unlikely if one considers that, as reported by Laura Mezzetti, Amanda was a morning person and

should have been such, perhaps with even stronger ground, on that November 2, having **[78]** planned the trip to Gubbio. In this regard, the call of 9:30 am from Raffaele's father appears significant, indicative of his knowledge of when his son was habitually awake, even though he was with a girlfriend, this circumstance being known to Raffaele's father, as evidenced by statements made by same and mentioned above. Since he was still in bed, however, something different must have happened to alter the normally planned events.

THE BEHAVIOUR OF AMANDA KNOX AND RAFFAELE SOLLECITO ON THE MORNING OF NOVEMBER 2, 2007

(A)

The defences of both defendants have evaluated as positive in terms the behaviour had by Amanda and Raffaele on the morning of 2/11/2007, pointing out, that when nothing was still known, [Amanda and Raffaele] went into the house on Via della Pergola, called the Carabinieri, waited for their arrival and when Battistelli and Marzi of the Postal Police arrived, they escorted them into the house making them look at the broken glass, the up side down mess in Romanelli Filomena's bedroom, the spots of blood in the smaller bathroom and in spite of the two Postal Police [officers] not having asked what had happened.

This Court retains not shareable the defensive assessment proposed by the defences in relation to such behaviour.

Amanda and Raffaele were seen together, constantly and by several people on November 1, 2007: Filomena Romanelli and her boyfriend Marco Zaroli had seen them together in the afternoon in the house in Via della Pergola; Jovana Popovic saw them together in the house in Corso Garibaldi.

Amanda Knox and Raffaele Sollecito lived, in those days, like in symbiosis, as if they were a couple according to what has already been presented and Amanda lived in the house on Via della Pergola, occupying the room closest to that of Meredith, and the evening of the first of November, both her and Raffaele found themselves without any commitments and had both remained in Perugia, therefore, even if they hadn't been found [by the police in the house], they would have nevertheless, as soon as the lifeless body of Meredith was discovered, be interrogated about their movements, about the inhabitants of the house, about Meredith and on her acquaintances, about how they had spent the evening and the night of November 1. Therefore, they might as well have let themselves be found straight away at the house.

Moreover, in doing so, **[79]** both could have, from one side, pointed out such own behaviour claiming that they had maintained it because they had nothing to hide about what happened to Meredith, trying -also like this- to convince the investigators of their total non-involvement and lack of knowledge of the death of Meredith and, from another side, could have been for them to be aware of what

direction the investigations were pointing. Adding to this that, having set up the [staging] scene mentioned above, it must be considered that, both relying on the good success of the simulating activity they could well let themselves be found on the place [*farsi trovare*] and call Romanelli to ask her to return home and call the Carabinieri because they had taken part: in such way they would have also strengthened their position of innocence and non-involvement and give more power of persuasion to the staging activity without which, lacking signs of forced entry at the door, Amanda Knox and with her Raffaele Sollecito would have been the first under suspicion.

The phone calls made to the *Carabinieri* just mentioned were at 12:51 pm and 12:54 pm on November 2, 2007 by Raffaele Sollecito. During the course of the trial, the recordings of parts of those conversations were heard, and Officer Daniele Ceppitelli recognized it as the call to 112. In that call to 112, Raffaele Sollecito (the male voice calling from the house in Via della Pergola) said that someone had entered the house by breaking the glass of a window and the premises had been turned upside down (page 72, hearing of February 14, 2009). It should also be emphasised that he specified nothing was missing ("no, there has been no theft," page 74 of that hearing). Now, if in fact in the room of Filomena Romanelli – the one that was turned upside down and with the broken glass pane – a person had gone in through the broken glass and created the mess that appeared, it is not understood how Raffaele Sollecito could rule out that something (money, jewellery or valuables that Romanelli Filomena could have kept in any box in her own room) had not been stolen. It is not understood where he could arrive at the categorical assurance he expressed to the *Carabinieri*: "No, there has been no theft".

Certainly, he could have seen the computer and the photo camera; in the room of Romanelli but there could well be valuables that only the owner [*l'interessata*] **[80]** could have known about, and only the owner could have verified whether they were still there or not. Only the owner could have therefore excluded the burglary once the bedroom had been checked and verified the presence of all things belonging to her; rather than it could be excluded by those who, as pointed by Raffaele Sollecito, knew that the broken glass had been staged as well as the [room] disarray and so could affirm to the *Carabinieri* that there had been no theft.

At this point, however, the following question naturally arises: if Raffaele Sollecito participated in staging the scene of broken glass and disarray in Romanelli's bedroom, why say that there had been no theft?

This Court holds that the apparent contradiction finds an adequate solution in the following considerations:

The problem for Amanda and Raffaele in distancing themselves from being suspects was, in the absence of a forced front door, the need to create another possibility of access into the house; broken glass and disarray in the room of Romanelli seemed to fit this purpose independently of the theft of actual objects. Raffaele Sollecito therefore could think that, saying there had been nothing stolen (which was true and shortly would actually be checked out) would not compromise the aim of the staged scene and would also gain additional credibility in the eyes of the carabinieri – as indeed there had been no theft – and that in little time this fact would be confirmed anyway: might as well, then, say immediately that there was no theft.

However, the question that the police officer in the second phone call to 112 at 12:54 pm again put forward, relative to what had been taken ("what have they taken?" page 77, hearing of February 14, 2009), also elicited a similar response from Raffaele Sollecito ("they have not taken anything"); it ought to have made him realise that to so quickly exclude the theft of any object would make the staged scene not as believable and could highlight the difficult-to-repair contradiction that is emphasised above: how could Raffaele Sollecito have excluded the possibility that something had been taken from Filomena's bedroom? And then, a change of version takes place and he tells the Postal Police (who it can be held that, according **[81]** to what is maintained by the defendants' defence, arrived after Raffaele Sollecito's telephone call to 112, and this by nothing other than the fact that regarding these calls to 112, the Postal Police say nothing; in the same way that they said nothing about those that preceded them, at 12:40 pm and at 12:50 pm; each of these phone calls being of a not brief duration that, therefore, would not have escaped the attention of the two police officers) that there has been a burglary. Fabio Marsi in fact testified that they two young people told him "they were awaiting the arrival of the Carabinieri because there had been a burglary inside the house" (page 122, hearing of February 6, 2009). While Marsi was accompanied by Amanda to see the traces of blood in the smaller bathroom (page 123, hearing of February 6, 2009), Battistelli was taken to Romanelli's bedroom and expressed perplexity about the burglary (page 65) because he noticed the presence of the computer and digital camera. In addition, when Raffaele Sollecito was showing Romanelli's room to Fabio Marsi, he said: "very strange, nothing has been taken, there's still a portable computer and a digital camera" (page 124).

(B)

Amanda, after seeing the door open, the blood stains, the bigger bathroom dirty, returned to Raffaele's house and he, according to what Amanda explains in her e-mail of November 4, 2007, suggests that she call one of her housemates; so it was that she called Filomena, who was worried. Amanda told her then that she was going to call Meredith and then she would call back. So, Amanda called Meredith on both cellphones without getting an answer ("Filomena seemed really worried so I said to her that I would call Meredith and then call her back. I called Meredith on both cellphones, first on the English one, then on the Italian one, and then again on the English one…" (see p.3 of the e-mail dated November 4, 2007). Filomena Romanelli, in recalling the first phone call received that morning at a little after 12:00 pm from Amanda, does not say that Amanda told her she had already called Meredith and then, in the immediate version that Amanda gives to both Romanelli and the recipients of the November 4, 2007 e-mail, the chronological order of the phone calls would be the following: phone call to Romanelli and next to Meredith.

[82] Things, however, went differently because the first phone call that Amanda made on November 2, 2007 (see the specific chapter dedicated to an examination of the cellular telephone traffic of Amanda Knox) at 12:07 pm was to Meredith's English subscriber line. And even this circumstance does not appear to be without significance. In fact, Amanda and Raffaele (the calls to Meredith and Romanelli occurred while Amanda was at the home of Raffaele Sollecito), before calling Romanelli and recounting the situation, wanted to make sure that Meredith's mobile phones had not been found by someone who had reported the discovery leading to the start of an investigation and search.

Once they had that reassurance (the phones not being answered by anyone), they could raise the alarm, beginning with the notification of Romanelli to whom, however, and as has been seen, the unanswered call made to Meredith's phone was left unsaid, and of this call, preceding that made to Romanelli, no mention was made in the email, as we have seen.

Also, at that time no call was made to the second phone used by Meredith and registered to Filomena Romanelli; this not only remains relevant to what has been just noted but allows other considerations: If the call made to Meredith's English subscriber line had been determined by a real and genuine interest in knowing where Meredith was, another call should have followed directly to the other subscriber phone [Italian] line also used [borrowed] by Meredith. The explanation as to why the other call was not made immediately once there was no answer on the

English phone is that Amanda and Raffaele knew very well that Meredith could not answer; their concern and interest were not for Meredith, but instead to see if the phones, thrown away together, had been found by someone. Therefore, the fact that the other call was not made to the other subscriber line indicates that Amanda and Raffaele knew that the two phones had been discarded together (in fact they were found in the same place, a very short distance apart) and that therefore there was no need to establish the failure **[83]** of finding each phone by making two calls, first to one phone and then to the other.

(C)

As was already mentioned, when Amanda returned to the house on Via della Pergola 7 she detected a particular and strange situation, difficult to explain: the house door open, blood stains in the bathroom used by her and Meredith, feces in toilet in the other bathroom. In addition – sticking with her story – when she returned to the house together with Raffaele, which would have been about 12:30 pm, she realised that Filomena's room was turned upside down and the window had a broken glass pane.

In the already mentioned e-mail Amanda Knox thus writes:

"... Filomena's door was closed but when I opened it I saw that her room was in a mess and that the window was open and completely broken ... convinced that we had been robbed I went to Laura's room and looked quickly in, but it was spotless… I checked my room for things missing, which there were not. Then I knocked on Meredith's [bedroom] door. At first I thought she was asleep, so I knocked gently, but when she didn't respond, I knocked louder and louder until I was really banging on her door and shouting her name. No response. Panicking I ran out to the terrace to see if I could see inside… Raffaele told me he wanted to see if he could break down Meredith's door. He tried and the door was cracked but we couldn't open it. It was then that we decided to call the police.... At first Raffaele called his sister for advice, and then called the police. I then called Filomena who said she would be on her way home immediately. While we were waiting, two plainclothes policemen came to our house. I showed them what I could and told them what I knew".

In this email, Meredith's locked door therefore acquires a central importance,even fundamental, by which, however, for that scenario, it would have had to have occurred if Amanda and Raffaele had truly spent the night at Corso Garibaldi without having entered the house of Via della Pergola again but for the morning of

November 2; precisely for this **[84]** logical requirement in this writing, to affirm their extraneity to the murder and to convince the recipients of the e-mail of this, Amanda cannot help but give central importance to this locked door and writes, therefore, that this fact induced her to run to the terrace, and to position herself on the window ledge to see if she could see something, and writes that this door being locked created in her a state of absolute panic, she "was panicking" and continues, writing that Raffaele tried to break down the door but couldn't open it, which is how they came to decide to call the police ("It was then that we decided to call the police"), as well as to call Romanelli and tell her to come to the house.

Yet when the Postal Police arrived, the panic caused by that locked door was not expressed in any way and Amanda did not speak of that locked door in the phone conversation she had with Romanelli; it was instead Romanelli who asked Amanda about Meredith, as mentioned above.

Both Raffaele and Amanda drew attention to the broken glass and the disarray in Romanelli's room; to the open front door; to various bloodstains in the bathroom. A behaviour that places itself in line with the staging created in Romanelli's room [is this one]: someone entering through the bedroom window of Romanelli who, because of the broken glass, injured himself (spots of blood in the bathroom) and who then exited the house leaving the door open.

This is the interpretation of the story that Amanda and Raffaele wanted to offer, consistently with the staging created, expecting and hoping that the locked door of Meredith's room would be inserted into the interpretation [reading] of clues organised by them with the simulation of the burglary and in the call to 112 by Raffaele Sollecito, drawing attention to the locked door, the context in which he places it, and to the broken glass, the room in disarray, the blood stains. And in one of the calls exchanged with the 112 policeman, in response to the explanation given by Raffaele Sollecito, the policeman asked him this: So they cut themselves breaking the glass? (From the testimony of Cepittelli, hearing on February 14, 2009, page 74.)

Inspector Battistelli recalls that when he arrived with assistant Marzi "they told us they were waiting for the police because they had found the door open **[85]** when returning to the house in the morning and the window broken, and they took me to see the broken window in Romanelli's room" (Hearing on February 6, 2009, page 64, pages 86, 87). Neither of them asked him to break down the door of Meredith's room (page 114). Battistelli has also stated in the same hearing that it was Romanelli who noticed that Meredith's door was locked (page 118).

On this point, it is possible that Battistelli's memory is not precise. It does indicate how no importance was given to the locked door by Amanda and Raffaele when Battistelli arrived with Marzi shortly after 12:30 pm, and this is confirmed by Fabio Marzi, who recalled that "we were told that they were waiting for the *Carabinieri* because there had been a burglary inside the house ... Amanda told me that they had found the door open and there were bloodstains, which she showed me in the bathroom" (hearing on February 6, 2009, pages 122 and 123). The same Marzi also stated that "the problem of the locked room was raised when the other youngsters arrived" (p. 130).

This locked door in Meredith's bedroom was also discussed by the young people who came to the house around 13:00 pm. Marco Zaroli, at the time Romanelli's boyfriend, arrived with Luca Altieri, the boyfriend of Paola Grande. In the same hearing on February 6, 2009, he declared: "I believe it was one of the officers of the postal police that said there was a locked room and Amanda said however that Meredith was in the habit of locking the bedroom even to go to the shower and this reassured us". The same Zaroli has stated that it was Luca Altieri who asked about the door and the response about the normality of it being locked he got it from Amanda and we were reassured (p.181).

Luca Altieri also stated that when they arrived they saw the room of Romanelli in a mess and then Meredith's room locked with a key. They asked if this was normal and Raffaele, "translating Amanda's answer told me that she usually locks the door even when she goes into the bathroom to take a shower ... so there was no concern arising about the fact that the door was locked" (p. 218, hearing on February 6, 2009, see also statements of Paola Grande, p. 254).

[86] The reassuring answers given by Amanda and Raffaele, which strongly clash with the panic that Amanda writes about in the e-mail of November 4, 2007 and also with the kick Raffaele Sollecito is alleged to have given to that door (on this point see also Luca Altieri's statement, page 219, hearing on February 6, 2009).

The conduct of Filomena Romanelli when she came back to the house, saw the situation and learned that Meredith's door was locked was very different. Romanelli knew that Meredith locked the door to her room only if she was going away for a few days and that she had locked it only once, precisely when she had gone to England; therefore, disagreeing that Meredith normally locked her door, she was alarmed by the locked door (see also Luca Altieri, page 218). And the decision to break down the door of Meredith's bedroom was made immediately.

Even in this sad situation the conduct of Amanda Knox and Raffaele Sollecito was absolutely different from that of the other young people; they remained distant, almost disinterested and out of possible range of vision to see inside the room once the door was open. "When we broke down the door I don't know where Amanda and Raffaele were, but certainly they were not in a position to see inside the room" (statement by Luca Altieri, p. 220; see also statements by Paola Grande in the same hearing, on February 6, 2009, page 254). Marco Zaroli declared that when the door was broken down Amanda was beyond the reach of the kitchen door. He couldn't say where Raffaele was, though he ruled out that he could have been in the corridor (p. 183) and similar statements were made... by the assistant Fabio Marzi: "When about to break down the door… Battistelli was by the dining room table and I was further away, almost at the front door entrance of the house, near the outside; and next to me was Amanda" (p. 133, hearing on February 6, 2009). He couldn't say where Raffaele Sollecito was. However, both Amanda Knox and Raffaele Sollecito were far away from the door when it was broken down (see also Battistelli's statements, page 74), in a location that would not allow them to see what was inside that room.

Yet no one had told them to stay away. And the friendship, the socializing and the fact of living [one girl with the other] side by side in the same house should have **[87]** made Amanda the most interested to see what could be hidden behind Meredith's locked door. Moreover, given the liaison between Amanda and Raffaele, he should have stood next to Amanda to be as near as possible, both of them near the door that was about to be broken down.

The conduct they both exhibited, consisting of staying away from Meredith's door, in a position which would not allow them to see inside the room, seems explicable only if we admit that Amanda and Raffaele already knew what was beyond the door and therefore had no reason to look inside the room; on this point, some parts of the [prison] conversation between Amanda and her mother and wiretapped are rather telling:

M. "You called me one time saying…"

A: "I was in shock you know"

M: "But this was before anything happened except for the fact that the house was…" (RIT 397/08, of November 10, 2007).

The mother, who says to Amanda that at the time nothing had happened, demonstrates a significant contradiction in this sequence of events, of which the daughter would have progressive knowledge.

This conversation [the first call] between mother and daughter was not intercepted. The first call, to U.S. phone user 00120069326457, was made at 12:47 pm on November 2 and corroborated by analyzing the telephone traffic of Amanda Knox's cellphone. However, the perplexity shown by the mother indicates that in this phone call Amanda had told her of circumstances which, if she was a stranger to what had occurred, she could not have known.

DEPOSITIONS BY NARA CAPEZZALI AND ANTONELLA MONACCHIA

(A)

At the hearing of March 27, 2009, Nara Capezzali, a resident for almost 20 years of an apartment in Via del Melo, located above the S.Antonio car park, from which she was able to see part of the roof of the dwelling at 7 Via della Pergola, was heard.

She specified that she was widowed in June 2007 and that she lived with her daughter.

She remembered that on the evening of November 1, 2007 she went to bed around nine or nine thirty in the evening.

[88] She did not look at the clock but she usually went to bed about that time.

She remembered that she had gotten up to go to the bathroom after sleeping for a couple of hours or a little more. She stated precisely that when she went to bed she would take some pills which she needed to make her go to the bathroom and they took effect after about two hours.

The habit of taking this medicine went back to when her husband died. She specified that the noises of cars and people reached her from the car park underneath her residence, and this generally went on until one o'clock in the morning.

Returning to November 1, she stated that, having gotten up to go to the bathroom, when she was near the window of the dining room she heard "a scream, but a scream that was not a normal scream" (page 16, hearing on March 27, 2009).

She looked out the window without opening it and saw nobody, only two or three cars; when she was about to return to the bedroom to go back to sleep she heard running on the steel staircase and running on the gravel path, among the leaves and the gravel of the cottage, on the path in front of the cottage in Via della Pergola. The scream was that of a woman, a protracted one, but just one scream.

She specified that with respect to the window from where she had heard this scream, the steel stairs were to the right, towards the part of the S.Antonio car park where the cars exit.

She specified that she could also see the gate of the house in Via della Pergola. She added that "the iron there makes a tremendous noise during the night, then, when you don't hear cars going by or such things" and while she heard running on the steel stairs "from the other way they were running on the path. It was almost at the same moment ... while I heard the one on the steps, because they were making more noise, then straight away after I heard this other one" (pages 19 and 20, hearing on March 27, 2009).

After that, she had gone back to sleep, but she had to make herself a chamomile tea because she kept hearing that scream and it was upsetting her. Her daughter was in the house but had not woken up, however; neither had Mrs. Capezzali woken her.

She further specified that "that night there was that scream and in the morning they found that girl dead" (page 51, hearing on March 27, 2009).

She specified that she had never heard such a scream before, if not perhaps in films "but it wasn't even like that because films don't do anything to me whereas this gave me goose bumps" (page 85).

[89] In spite of some inaccuracies in the presentation, especially in reference to the time when the newspaper kiosk posters published news of the homicide, it is held that the deposition of the witness is reliable with regard to the scream and to the noises then heard on the iron staircase and in the square in front of the house in Via della Pergola.

Several times in the course of her own deposition Mrs. Capezzali spoke of a special scream, heart-rending to the point that after she heard it she could not get back to sleep; a scream the likes of which she had never heard before. If there had not been such a scream, and if Mrs. Capezzali had not actually heard it, then the Court can see no reason why she would have spoken about it.

The fact that other people, who were heard on this point, stated that they did not hear any such scream, does not detract from the reliability of the statements of Mrs. Capezzali, having declared that she had heard a scream when she had woken up to go to the bathroom.

It is also held that the indication given by Mrs. Capezzali at some points of her deposition, according to which the day after she heard the scream she is supposed to have seen the posters with the news of the murder, should not weigh upon the reliability of the deposition and on the exactitude of her memory relating to the scream and its date.

In fact, Mrs. Capezzali specified and made clear that at night there was the scream and in the morning there was the finding of dead girl. (page 51) It is therefore to be held that the strong impression made by the scream heard that night and the succeeding discovery of the lifeless body of the girl, with the significance given to the event by the newspapers for days and days, catalyzed the attention of Mrs. Capezzali, making it difficult for her to reconstruct the precise sequence in regard to the newspaper posters which continued to give news of the murder.

Furthermore, the scream which Mrs. Capezzali talked about found confirmation in the deposition of the witness Antonella Monacchia, which was taken at the same hearing (page 99 and following). She also spoke of "an extremely loud scream" heard that night.

Monacchia Antonella, after stating that from her own residence located in Via Pinturicchio she sees the "terrace, the window of the balcony and, to the side, the kitchen and the garden" of the house in Via della Pergola, declared that on the evening of November 1, 2007 she went to bed at 22:00 pm. She then continued, adding what follows:

[90] "I looked at the clock and it was late; after, I can't say the precise time, I woke up hearing two people arguing in an animated way, a man and a woman in Italian; after which I heard an extremely loud scream and, seized by anxiety, I opened the window and looked to see if there was someone outside, but I couldn't see anything and I closed the window" (page 100).

In answer to specific questions she also stated that the scream was from a woman and came from below and (from) the house at 7 Via della Pergola, which in respect to her own residence is below. She learned about the crime the next day, at about 15:00 pm (page114).

The declarations of the witness Maria Ilaria Dramis, given at the same hearing on March 27, 2009, also appear to be significant.

Maria Ilaria Dramis, after stating that she had lived for ten years at 12 Via del Melo - the same street as Mrs. Capezzali, who lives at number 26 – and that she could see from her own residence the roof and part of the small courtyard of the house at 7 Via della Pergola, as well as the car park of S.Antonio (page 89, hearing of March 27, 2009), recalled that on the evening of November 1, 2007 she had returned home about 22:20 pm after seeing a film which began at 20:30 pm with her sister at the Pavone cinema. She had gone to bed about 23:30 pm and while half asleep had the feeling of hearing running footsteps under the window of her bedroom, which looks onto Via del Melo and which is on the opposite side to the car park (page 91).

She could not say precisely if they were from one person alone or from several people. She clarified that Mrs. Capezzali's house is to the right in respect of hers and is therefore closer to the iron stairs of the S. Antonio car park. She did not remember hearing people running in the same way on other occasions like that night (page 99).

(B)

On the basis of the declarations just recorded, given by Nara Capezzali and by Antonella Monacchia, it can thus be held that, in fact, towards 23:30 pm on November 1, 2007 there was a loud, long scream from a woman which came from **[91]** the house at 7 Via della Pergola.

After this scream, Nara Capezzali heard running on the metal stairs located below her residence in the S. Antonio car park towards the section used as the exit for the cars, and straight afterwards she heard running on the path situated in front of the house in Via della Pergola.

The harrowing scream heard a little before must have caused a strong agitation in Mrs. Capezzali, who was rendered particularly sensitive and attentive to what might happen and who knows the area; therefore, it is to be held that she referred to noises on the metal steps and on the path because there actually were such noises and she was able to hear them.

Furthermore, the deposition of the witness Dramis, who referred to "running steps" heard about 23:30 pm on that same November 1st in Via del Melo, which is very

close, almost a continuation of the path of the house in Via della Pergola, could constitute some confirmation of this.

The running on the path in front of the house at 7 Via della Pergola shortly after the heart-rending scream leads this Court to hold that the heart-rending scream came from the house at 7 Via della Pergola; likewise, whoever's running steps were heard on the metal steps and whoever's running steps were heard a little later on the gravel path and leaves in front of the house at 7 Via della Pergola lead the Court to hold that more than one person came out of that house.

INVESTIGATIVE ACTIVITY

(A)

The house of Via della Pergola 7, when the lifeless body of Meredith Susanna Cara Kercher was discovered, it become – as noted – the center of an intense investigative activity and evidence bagging.

On the afternoon of November 2, 2007 personnel of the Perugia Police headquarters went to said house. The 118 and Coroner Dr. Lalli also came; a few hours later, the Forensics staff from Rome arrived.

They then proceeded to perform an initial review of the house; Forensics proceeded with findings in their area of expertise that took up the afternoon, evening and the night of November 2, 2007 and subsequent days until Sunday, November 5, 2007.

[92] While Forensics activity was still in progress, the house was accessed on November 4, 2007 involving, accompanied by staff from the Perugia police headquarters, the three occupants and housemates of the victim: Laura Mezzetti, Filomena Romanelli and Amanda Knox.

The days of November 6 and 7 were taken up by the search activity by personnel from the police-headquarters of Perugia, which took place on November 6, involving the house in Corso Garibaldi occupied by Raffaele Sollecito, an activity that brought about the discovery and seizure of a large kitchen knife. This find was forwarded to Forensics in Rome for the appropriate examinations: Exhibit 36. In the bedroom of Sollecito Raffaele was found another knife with a blade 8 centimetres long.

The house in Via del Canerino used by Rudy Hermann Guede was searched on November 16, 2007.

On December 18, 2007 the Scientific Police from Rome ensured additional access into the house on Via della Pergola 7; the area of focus was the room occupied by Meredith. During this search additional items were acquired, including the piece of bra with hooks, Exhibit 165.

(B)

The timetable of the aforementioned activities has been reported by various police officers.

Domenico Giacinto Profazio, at the time head of the Perugia Flying Squad, heard at hearing of February 27, 2009, stated that he arrived at the house on Via della Pergola on the afternoon of November 2 after the Flying Squad had reached the place. That evening he did not go inside the house, where an inspection by the Scientific Police… of Rome was already under way (p. 7, hearing of February 27, 2009). He recalled the access on November 4, 2007 during which "we all had shoe covers and gloves on" (p. 13). On the morning of November 6, he went to the house on Via della Pergola – which he had not entered before – together with Napoleoni, Inspector Bigini, Gubbiotti, Zugarini and Barbadori. He stated that the house "had never been abandoned, in the sense that the Questore …. had arranged for surveillance [*piantonamento*][8] of the house at our request" (p. 15).

They went inside wearing shoe covers **[93]** and gloves, and they divided the rooms among themselves: besides Profazio, Meredith's room was entered by Napoleoni and Bigini; Amanda's room was entered by Zugarini and Gubbiotti; Barbadori dealt with Romanelli's room. They also had a quick look at the two bathrooms. The following days, another entry was made to get the items that were in the washing machine located in the room adjacent to the bigger bathroom, the one with the feces. On said occasion, besides Profazio, there was Giobbi and other two colleagues; Profazio and Giobbi "approached" Meredith's room and removed the portable computer.

Subsequently, another entry was made into the house on December 18, 2007, to collect further material by the Scientific Police. On that occasion, full protective gear was worn and a prepared van was provided in which a television monitor was installed to allow the various parties to see what was happening and what was being accomplished inside the house, in particular inside Meredith's room.

In reply to a specific question from the defence of Raffaele Sollecito and relative to the period of November 2-6, 2007, it was specified that there was a permanent service arrangement of guards whose duty was "not to let anyone inside" (p. 37). He also stated that the entry on November 4 was in the presence of the Public Prosecutor, for the purpose of showing the knives to the three occupants; they all remained in the living room-kitchen and all had shoe covers and gloves. The Scientific Police were still in the house, in the murder room, and nobody approached this room (page 40, hearing of February 27, 2009). Recalling the search entry on November 6-7 by staff of the Perugia police headquarters and the one on December

[8] Surveillance based on the services of round the clock armed guards (piantone)

18 (page 39), it was stated that objects were moved, drawers opened, clothes looked through and that all of this was done with gloves and shoe covers on and in compliance with the agreed upon allocation of areas between the various operators, as already specified. Nothing was collected from Meredith's room on that occasion.

It was also stated that whoever was doing evidence collecting in one room did not enter any other rooms and that the objects being moved were moved only inside the room in **[94]** which the various staff were working, without moving them from one room to another (page 116).

Profazio did not recall the presence of a rug in Meredith's room and did not see the bra piece with hooks (p. 49). He added that he did not change the gloves for each object he touched and that for every entry he used the same pair of gloves (p. 52).

To a specific question by the defence, he declared remembering that on the days when Rudy was brought back to Italy – he could not say whether it was before or after – the German authorities sent "evidence made on the hands of Rudy Hermann Guede… not so visible … they told us that it was him who wanted to say something and then consequently they took these pictures of his hands… these hands I might remember ... showed very tiny marks" (p. 77).

He also recalled that when Rudy was still in Germany his friend, Giacomo De Benedetti, successfully got in touch with him through the internet (p. 105).

"I did not enter the small bathroom at via della Pergola at all on November 4, and I only saw it on the 6th when it was totally pink because an appropriate substance had been used to enhance the forensic traces".

He was aware that the bra piece with hooks was seen as early as November 2. He knew this not because he had seen this piece directly but because he had been told by Dr. Stefanoni, who had stated that it had been seen but not collected (p. 126).

Dr. Marco Chiacchiera, at the time deputy director of the Perugia Flying Squad, stated that he had arrived at the house on Via della Pergola first on the afternoon of November 2, at about 13:30 pm (page 159), and that when he arrived Raffaele Sollecito and Amanda Knox were outside the house and remained there until they were taken to the police station (page 162). The front door of the house did not show signs of forced entry and the blinds of a bedroom window "at the time occupied by Romanelli, the green wooden ones, were semi-closed" (page 139, hearing on February 27, 2009). Romanelli's room was completely **[95]** upside down; the clothes

were on the floor and pieces of glass were on top of the clothes and also on top of windowsill (pages 141 and 190).

He recalled the stone present in Romanelli's room and declared that there is an ample rural area around the house with similar rocks (page 223). Also in attendance on November 2 were the technical video engineers: inspector Cantagalli and assistants Montani, Calmieri and Brocci, who were charged with documenting the inspection (page 191).

He recalled that he was outside Meredith's room "in a way as to observe everything that was inside" but that he did not enter the room (page 176).

He specified that to arrive by foot from Via della Pergola to Via Sperandio where two mobile phones had been found would require a 5-7 minute walk via Corso Garibaldi or through the park (page 145).

The house and garden where the phones had been found were hidden by a dense row of conifers (page 223).

He added that on the morning of November 6 the search of the house on Corso Garibaldi used by Raffaele Sollecito, included inspectors Finzi and Passeri, superintendent Renauro and assistants Camarda, Rossi, Sisani. During this search, the knife that became Exhibit 36 was found by inspector Finzi and seized, as well as comic books that "mixed pornography and horror" (page 157).

He recalled that everyone had gloves and shoe covers on. The knife was put in a bag, closed, sealed and taken to police headquarters (page 158).

Monica Napoleoni, Deputy Commissioner of the State Police, arrived at the Via della Pergola house around 13:30 pm, and colleagues of the postal police gave information about the discovery of the body of a girl. Arriving almost at the same time as the staff from 118, there was a female doctor and a nurse. In Romanelli's room, she saw the break-in and glass "that had fallen on top of the stuff lying on the floor" (page 226). She approached Meredith's room with the chief assistant Buratti, who remained at the door as Napoleoni took one step inside the room "while the 118 doctor uncovered the corpse" (page 228, hearing **[96]** on February 27, 2009).

She was wearing shoe covers and sterile gloves. "I then saw this girl who was on the floor with her face lying towards the right of the viewer, with a terrible wound. Was semi-naked, had the t-shirt rolled up above the breast and lots of blood and spatters of blood even on the breast" (page 229).

Everyone who entered had gloves and shoe covers on except the 118 personnel who certified the death. Soon afterwards, Dr. Chiacchiera and colleagues from the Scientific Police arrived.

Neither the key to Meredith's room nor the front-door key given to Meredith was found (page 234). She returned to the house on Via della Pergola on November 4.

She recalled that they had called Romanelli, Mezzetti and Knox to the police station. At some point Raffaele Sollecito arrived and "he wanted at all costs to pair up with Amanda ... then Raffaele went to get a pizza and we went, with the public prosecutor, with the chief of SCO, with Profazio ... with the [three] occupants to Via della Pergola to identify the knives in the kitchen", and the girls (Mezzetti, Romanelli and Knox) revealed that they were not missing any knives (page 237). All had on gloves and shoe covers, and all remained in the kitchen area. Only Romanelli was asked whether she recognized the clothes in the washing machine positioned in front of the larger bathroom, which [clothes] could be seen through the porthole thereof.

The scientific personnel remained in the house until 17:00 pm; they went into the house to make the first search at 6 in the morning. Besides Napoleoni, there was Profazio, Bigini, Gubbiotti, Zugarini and Barbadori. They divided the rooms as follows: Meredith's room was inspected by Profazio, Napoleoni and Bigini; the others dealt with other rooms. She excluded that there was a movement of objects from one room to another and noted that whoever was in Meredith's room did not go into any other rooms or vice versa. She then returned to the house for the forensic inspection on December 18, putting on "the white suit". On that occasion, a van had been set up to allow everybody to follow what was happening inside the house, and no one put forward any objections as to how to proceed. **[97]** (page 246). On that occasion, "they were all wearing the white suits and gloves", and the bra piece with hooks was collected then (page 247).

She specified that during the search she touched various objects with the same gloves without stopping to change gloves each time an individual object was touched. She insisted on having searched Meredith's room: that she was in the corridor and left without going into any other rooms, adding that "every time we entered and left the house we changed shoe covers and gloves" (page 261). She recalled that when she entered Meredith's room "there was a black lamp that had fallen behind the door. Then there was Meredith's lamp, which was by the bedside; it was on the floor between her bedside table and bed" (page 268). She also recalled

the presence “of a bluish mat” but did not notice at that time the piece of cloth with hooks (page 268). Nor could she say if such piece was involuntarily “moved" (page 272).

On November 6, no one entered Meredith’s room other than the three performing the search (Profazio, Napoleoni and Bigini). On November 7, there was another entry into the house “for the problem of the washing machine, to collect the clothes; but I also know that they did not go into other rooms” (page 273).

The witness testimony of Monica Napoleoni proceeded in the hearing on February 28, 2009. She declared that she did not touch the window shutters in Romanelli’s bedroom when she found them, as shown in the related dossier photo, slightly open.

To a related question put forward by the defence of Raffaele Sollecito, she confirmed the information content of November 5 in relation to which, upon arrival at the house in Via della Pergola on November 2, Raffaele Sollecito had told her: "My girlfriend has now remembered and told me that when she went into the bathroom this morning by herself there were feces in the toilet and that when we returned to the house it was no longer there” (page 22, hearing of February 28, 2009). She recalled that below Romanelli’s window “there was even a nail in the wall that remained intact ... in addition to there not being any signs of climbing, the thing that we noticed by sight, there was a rusty nail that was straight”, not bent (page 46).

[98] She recalled that on the morning of November 6 a flick knife was confiscated from Raffaele Sollecito while at the police station (page 47). She recalled as well that a mop was seized which was kept inside the closet in the hallway in front of Amanda’s room. On this mop nothing in particular was found.

Mauro Bigini, chief inspector in service at the Flying Squad in Perugia, who was heard on February 28, 2009, confirmed what already had been testified to by Profazio and Monica Napoleoni in terms of the order of the activity on November 6, 2007 in the house on Via della Pergola. The Scientific Police had ended their activity there the previous day. When they entered on November 6 they wore gloves and shoe covers. Upon the recommendation of Dr. Profazio they split up the areas: Dr. Profazio, deputy chief Napoleoni and Bigini searched Meredith’s room; Zugarini and Gubbiotti that of Amanda; and Barbadori that of Romanelli. In Meredith’s room there were bloodstains "even for this we moved with some caution, trying not to disturb too much” (page 111, hearing on February 28, 2009).

The officers assigned to Amanda's room did not move from there to go into Meredith's room: "no one went from one room to another" (page 112); when the search was finished the seals were affixed to the house.

The only area where various officers walked was the corridor. She recalled in Meredith's room the presence of a mat in front of the wardrobe (page 118). She did not see the piece of cloth with the hooks.

Armando Finzi, chief inspector of the Flying Squad of Perugia, said that on the morning of November 6 he was ordered by Dr. Profazio to perform a search of the house of Raffaele Sollecito in Corso Garibaldi (number 110). Before entering the house, they all put on gloves and shoes covers. There was also the deputy chief of police Chiacchiera, Passeri, Ranauro, Camarda, Rossi and Sisani. In the house there was a strong smell of bleach. He remembered the terms following the first action that he reported at the time: "I was with my back to the door; there was the dishware drawer; I opened it. I opened the top cutlery drawer ... we had clean gloves on, new. The first thing **[99]** I saw was a big knife. Let me state beforehand that it was extremely clean".

The witness recognized it when shown Exhibit 36 as that same knife (pages 176 and 177, hearing on February 28, 2009). He remembered that in the drawer there were other knives, but he collected what was later indicated as Exhibit 36. It had the following dimensions: blade 17 cm. and handle of dark colour 14 cm. He recalled that in Sollecito's bedroom they found another knife whose total length was 18cm, with an 8cm. blade.

The 31cm knife [kitchen find] was the first item touched and was "the first knife arranged on top of the other cutlery" (page 178). As soon as the knife was picked up he put it in a new paper bag[9] that he had with him and then in a folder.

The sealed bag with the 31 centimetre knife inside was handed over to superintendent Gubbiotti. The bag the knife was put in was new and had never been previously used; in the same [bag] there was never any other item.

Stefano Gubbiotti, heard in the same hearing of February 28, 2009, confirmed, as did assistant Zugarini Lorena (pages 129 and following, hearing of February 28, 2009) the formality of the search on November 6, 2007.

[9] *busta di carta* is a paper envelope, of a closed type

He said that upon returning to the police station, inspector Finzi handed him the material seized in the home of Sollecito Raffaele. The first thing he handed over was the knife which was inside a new bag that was well wrapped and submitted closed, and thus had no contact with the exterior (pages 201 and 223). He specified that when handing over such knife he had new gloves on, which he had not used on other occasions and which he took from the office.

Therefore, with those gloves, he removed the knife from the bag and put it inside a box that he sealed with scotch-tape. He specified that such box previously contained a desk diary and no other items apart from "the new desk diary offered" by a bank (page 202). This box was then sent, along with other findings, to the Scientific Police in Rome (page 203).

Brocci, assistant chief employed at the Perugia police station, heard in the hearing on April 23, 2009, recalled that on November 2, 2007 she arrived at the house on Via della Pergola No 7 at 14:30 pm, together with inspector Cantagalli. At the door they met another colleague, Palmieri or Montagna. Then they put on **[100]** shoe-covers and gloves and they all went into the house. They decided to do a round inside the house, and once they had finished this round, they divided the tasks: inspector Cantagalli passed all the material needed for the setting up the crime scene to Brocci and two other colleagues. She stated that setting up the crime scene means documenting their findings and thus, for every room seen, letters or numbers are affixed on all the items that are deemed relevant and significant.

Setting up [documenting] the crime scene makes it possible to describe the rooms in the house. She stated that the forensic colleagues from Rome had not yet arrived; Fabio Palmieri performed the photographic activity and Raffaele Montagna the video recording. Cantagalli handled it at a later time, after 17:00 pm.

The personnel of the Scientific Police in Rome arrived about 17:00 pm and began their own activity: the detection of latent prints under the direction of Dr Giunta, search and finding of biological traces under the direction of Dr Stefanoni.

The witness Brocci specified that she was the one who did the evidence collecting in the small bathroom, the one adjacent to the room of Meredith. She stated that in this bathroom there were blood traces that appeared haematic [bloody] in nature and a follicle formation; she indicated this with the letter E, located inside the washbasin. In this bathroom there was also a bathmat “soaked with blood substance where there was printed a shape which morphologically could seem like a foot” (page 134,

hearing of April 23, 2009). With specific reference to blood traces she stated that they were drips of pink colour "not characteristic of the red blood substance" (page 134). Only on the washbasin faucet was the substance blood red in colour; all the others were pink. About the procedure of evidence collection using one single absorbent paper, she did it because "the upstream drops and the downstream drops had the same continuity; there were small drops on the same line, therefore by colour and continuity drippings I regarded it as appropriate to collect them with a single paper disc" (page 134, hearing on April 23, 2009).

Traces that appeared to be of a blood nature **[101]** were also present on the box of cotton buds, on top of the toilet seat, on the light switch and in the bidet, "and there was always the drop upwards, really on the edge and the same continuity up to the bidet siphon, of the common colour and in the same line" (pages 134 and 135). Traces were present also over the bathroom door, not watered down but a vivid red colour. She specified that she had attended a course where "collecting biological substance is taught" (page 148). She was equipped with gloves, overalls and shoe-covers. She could not remember how many times she changed her gloves but if she noticed that they were spotted proceeded to change them. The evidence collecting in the small bathroom she did it with a '*carta bibula*', which is an absorbent paper [disc] and to a question put to her by the defence of Amanda Knox, she stated the following: "when we say finding a drop upstream and a drop downstream ... on the inside for example of the sink ... a drop on the edge of the sink and for continuity there was a drop that ended up towards the sink siphon and had a continuity, is not that one was to the right, one to the left, one here and one over there; it had its own continuity, I had deemed it proper to use the same disc of absorbent paper, as they were equal in colour, pink". Such material singled out was pink, of "washed blood ... in the sense it did not have the characteristic red colour of blood". The same colour other than in the bathroom sink was noted inside the bidet (p. 152). She specified further that it was not a strip, but "more little specks … with the same continuity" (page 153): they were "drippings… that gave this continuity" and the colouring was the same, always pink. She did not believe then it might be different traces because of the continuity between the different drops.

Dr. Stefanoni collected the toilet paper smeared with feces present in the other bathroom.

She spoke also of the presence of traces that appeared to be blood and looked like an imprint of the sole of a shoe; with regard to this matter she specified that "exiting from Meredith Kercher's bedroom and going towards the [house] exit, **[102]** these

marks became increasingly fleeting and faint" (page 138). Connecting the various points of those tracks, a line could have been drawn that was directed towards the exit (page 159, Brocci's statements).

She added that she was present when the body was removed and everything under the body was observed: huge patches of blood and a pillow. "Lifting this pillow we realised that there was the piece of bra we found that was not attached to the rest of the bra near the feet of the body" (page 156). We did not indicate that small piece of a bra with a specific letter because the letter had already been set on the bra. They proceeded, though, to photograph that particular item (page 157).

In the large bathroom there were no traces of blood ("absolutely none" page 158).

(C)

Other investigative activity concerned the telephone traffic checks of Amanda Knox, Raffaele Sollecito and Meredith Kercher's cell phones, with the identification of network coverage, in particular in the house at Via della Pergola 7, and Via Sperandio where two cellular phones used by Meredith had been found.

Also examined was Raffaele Sollecito's Apple laptop computer.

SURVEY AND EVALUATION OF THE FORENSIC RESULTS

(A)

At the hearing of July 3, 2009, Dr. Lalli explained, in substance, what he had already written in the consultancy report dated December 12, 2008, made on behalf of the Public Prosecutor. He arrived at Via della Pergola 7 around 14:00/14:40 pm, where the corpse of a female subject had been found and identified as Meredith Kercher. He was wearing single-use protective gloves and shoe-covers. He entered the room in which the dead girl was lying on the floor, almost entirely covered by a duvet, leaving visible only "a part of the head stained with blood and the left foot, which was sticking out from the lower edge of the duvet" (page 2 of the report). He did not do any tests, as he had been asked to preserve the crime scene as perfectly as possible in order to allow the scientific police to carry out their work.

[103] However, he did note (at around 14:40 or 15:00 pm) that the girl's foot presented "cadaveric rigidity...of the ankle and the toes" (page 6, hearing of April 3, 2009).

He recalled that the entrance to the flat was restricted to Scientific Police personnel, first from Perugia and subsequently from Rome, who were wearing suits, shoe-covers and gloves. Dr. Lalli remained in the immediate vicinity of the house and stayed in contact in case his presence was needed and he could make his own verifications.

The inspection of the corpse was postponed, and was finally performed at around 0:30 am on November 3, 2007. At this point, it was possible to uncover the body completely and note that it was indeed "a female subject aged around 21, height 164cm, weight around 50 kilos; naked except for a shirt that she was wearing but that was pulled up over her breasts and was heavily soaked with blood". Also, her hands were bloodstained and were protected with plastic bags in order to allow sample collection, as some hairlike fibres could be seen.

At around 0:50 am, the following time-of-death data was determined: rigor mortis was present in all muscular regions; wine-red hypostasis staining was located in the posterior region of the corpse, which became white when pressed with a finger; rectal temperature was 22 degrees Centigrade and the ambient temperature was 13 degrees Centigrade (pages 9 and 10, hearing of July 3, 2009).

From a brief external inspection, he noted diffuse blood staining on the face and the presence of some wounds on the neck. The main wound was located at the level of the left side of the neck; from this wound issued "what is called a mushroom" of air mixed with blood (page 11). The same "mushroom" issued from the mouth and nostrils.

From what could be observed in that setting, there were no significant injuries to the chest, abdomen or lower limbs.

The cadaver was then transferred to the morgue of the Perugia Polyclinic for further observation and tests. The next day, with the assistance of a **[104]** gynaecological specialist, an inspection was made of the vulva, the vagina and the anus, and swabs were taken in order to test for the presence of sperm or other substances.

Following divarication of the major and minor lips, it was possible to note small areas of bruising, coloured darker than the surrounding areas. The hymen was

indented without any lacerations or traumatic injuries, indicating that the young woman was sexually active. Nor did the vaginal canal or the cervix present injuries "of any pathological or traumatic significance" (page 13). The anus appeared slightly open, which was compatible with the time elapsed since death, and free of pathological or traumatic injuries.

The significant elements discovered by this examination were described as follows:

a fine pattern of petechiae on the internal eyelid conjunctive;

the presence of tiny areas of contusion at the level of the nose, localised around the nostrils and at the *limen nasi* [threshold of the nose];

inside the mucous membranes of the lips, injuries compatible with a traumatic action localised in the inner surface of the lower lip and the inner surface of the upper lip, reaching up to the gum ridge [*fornice gengivale*];

also found on the lower side of the jaw were some bruising injuries, and in the posterior region of the cheek as well, in proximity to the ear;

three bruising injuries were present on the level of the lower edge of the right jaw with a roughly round shape. In the region under the jaw an area with a deep abrasion was observed, localised in the lower region of the middle part at the left [*parte mediana sinistra*] of the jaw.

Once the neck had been cleaned, it was possible to observe wounds which Dr. Lalli attributed to the action of a pointed cutting instrument. The main wound was located in the left lateral region of the neck, and was **[105]** 8cm in length; the width could not be measured because the edges had separated due to the elasticity of the tissues both in relation to the region and to the position of the head, which could have modified the width. These wounds had a small "tail" at the posterior end. The wound "penetrated into the interior of the structure of the neck in a slightly oblique direction, upwards and also towards the right" (page 15). Underneath this large wound another wound was visible, rather small and superficial, with not particularly clear edges "becoming increasingly superficial until they disappeared", in the reddish area of abrasions.

Other wounds were present in the right lateral region of the neck, in particular a wound (also attributable to a pointed and cutting instrument) that appeared to "penetrate into the deep structures". Above this wound were "superficial, slight areas of excoriation which appear to be parallel to each other".

There were no noticeable injuries to the chest or abdomen.

The presence of two relatively slight areas of bruising, with scarce colouring and barely noticeable, were detected in the region of the elbow.

On the hands were small wounds showing a very slight defensive response.

A small, very slight patch of colour was noticed on the "anterior inner surface of the left thigh" (page 16). Another bruise was noted on the anterior surface, in the middle third of the right leg" (page 17).

The doctor also stated that, after sectioning the corpse, he noted at the level of the head "a very slight area of bruising" in the region just below the top of the head; around the tongue were small and very superficial signs as of biting. He then proceeded to open the layers of the neck and this operation revealed a series of small internal haemorrhagic swellings caused by the action of the cutting instrument.

He stated that he had examined the hyoid bone and found it to have an "interruption of continuity" (page 83 of the transcripts). He stated that the hyoid bone is located at the back of the tongue muscle, and that such an interruption of continuity could have been **[106]** caused by an action of gripping of the neck, or by the action of the cutting instrument (page 83 of transcripts).

He stated that the results of the toxicological analyses revealed the absence of psychotropic drugs and a blood alcohol level of 0.43 grams/litre.

Tests of histological preparations of fragments of the organs taken during the autopsy were also performed. They revealed the presence of "pools of blood" inside the lungs. The other organs were normal (page 19, hearing of April 3, 2009).

(B)

In relation to the elements he observed using these methods, Dr. Lalli made the following conclusions with regard to the cause and time of death; and to possible sexual violence that the victim may have suffered or not; and to the presence of one or more agents.

The cause of death was attributed to acute cardio-respiratory failure caused by the combined mechanism of haemorrhaging of the vascular lesion in the neck and asphyxial mechanism. This latter could have been caused by the aspiration of blood

or by a further action of strangulation or suffocation. Such asphyxia mechanism was confirmed by the presence of subconjunctival petechiae and the presence of intra-alveolar pools of blood.

As to the means which caused the cluster of lesions, Dr. Lalli discussed a single-bladed cutting tool with a point, and assumed that those injuries were consistent with a virtually infinite number of instruments provided they had a blade with only one cutting margin, provided that the blade was not serrated (page 61, hearing on April 3, 2009). He recalled that in the Questura he was shown a pointed knife compatible with the wounds that was in an envelope; he thought he had not manipulated [the object] since he had not taken note of any specific feature of that knife (page 62).

As regards the action [that] produced contusions, he noted that the same could have been achieved even with bare hands since none of the ecchymotic lesions detected **[107]** had particular characteristics indicative of a specific wounding instrument.

With reference to the time of death he took into consideration the various criteria for its determination developed by forensic medicine science (pages 59 and following of Lalli's report dated December 2, 2008, and pages 28 and following of the transcript of the hearing).

Highlighting the difficulty and uncertainty of applying the same criteria, especially since it was decided to preserve the biological traces without modifying the crime scene, delaying the examination of the corpse by about 11 hours from [the time] the body was found, Dr. Lalli (in his report - usable since it was included in the trial file - and also in explanatory testimony) demonstrated that at 0:50 am on November 3, 2007 the rectal temperature was 22 degrees Celsius and the ambient temperature 13 degrees Celsius. There was a "rigor" ubiquitously valid and hypostasis [areas] "of limited extension, by the lower spots of the supine position, partially imprintable in their perimeters".

At 12 noon on November 3, 2007, he noted the following: rectal temperature of 19 degrees Celsius, ambient temperature of 18 degrees Celsius; rigor valid except the upper and lower right where it had already been passively resolved to allow the handling and transportation of the corpse; hypostasis always of limited extension to the areas still partially turning white with the application of peripheral pressure. At 10:00 am on November 4, 2007: "rectal temperature homogeneous with

environmental, ubiquitous hypo-valid rigor; hypostasis of limited extension stabile to digital pressure in every point".

In relation to the development of various elements and phenomena, the related evaluations were exposed.

The criterion of temperature, given the normal cooling curve of the body (loss of 1/2 Celsius degree/hour during the first three hours, of 1 degree per hour in the following 8 hours and subsequent gradual levelling between environmental and body temperature within 20-24 hours from death) the influences of various factors (blood loss, place and conditions **[108]** where the body itself was found) and also the application of the Henssge nomogram, lead Dr. Lalli to place the time of death between 21 hours and 30 minutes and 30 hours and 30 minutes prior to the first testing, thus between 20:00 pm and 04:00 am on November 1, 2007 and November 2, 2007. He also pointed out that the intermediate value - equal to 26 hours before the first survey – placed the time of death at 23.00 pm on November 2, 2007.

He stated that in the Henssge nomogram the calculation of the weight of the body is used, and weight he had indicated in the report was an estimated weight based on the anatomical structure, and not the actual weight (page 51 of the transcript).

The criterion of hypostatic stains: there were indications that the hypostasis appear 1-2 hours after death that and their fixation on the central part of the stain starts between the sixth and the eighth hour following death, while full fixing to acupressure occurs 24 -36 hours after death (report, page 62). On this point, during the hearing on April 3, 2009 Dr. Lalli stated that when the first survey occurred, at 0:50 am on November 3, 2007, the hypostatic stain still showed assessed ability to fade and thus reduce the intensity of its colour without disappearing after digital pressure. In the ensuing investigation, which occurred at 12 noon on November 3, 2007, hypostasis "was now fixed to finger pressure", thus indicating a time of death between 24 and 36 hours prior (page 35 of transcripts). Signs indicate that the time of death was between 12 noon on November 2 and midnight on November 1. However, the specific time from which date back to the 24 or 36 hours was set at 12 noon on November 3, 2007 as an extreme limit, but it was not known at what time the fixation of hypostasis occurred in the time frame between 01:50 am and 12:00 noon on November 3, 2007, and therefore a sure indication of a time from which to count back this time lapse of 24-36 hours was lacking. The criterion of hypostatic stains in this case could not therefore provide more accurate information.

With respect to the criterion of rigor mortis Dr. Lalli showed that by the check at 0:50 am on November 3, 2007 this was ubiquitous and valid in all districts "was solved at the upper and lower right limb to allow handling **[109]** and transportation to the morgue, had not reformed in such districts" check of 12 noon on November 3, 2007 but was still valid in other districts and at the last check at hour 10.00 am on November 4, 2007, appeared at resolution. He then mentioned that rigor mortis begins 2-3 hours after death. It is completed by the 12th hour and it remains in effect until the 48th hour, and it then begins to dissipate and disappear by the 80th - 90th hour. Consequently, the indications given by this criterion are not in contradiction with the indications given by the criterion of temperature.

Dr. Lalli also took into consideration the state of digestion. He stated that solids are ingested into the stomach and are not able to reach the pyloric sphincter until they are reduced to a semi-fluid or fluid consistency; the emptying of the stomach then begins to occur when some of the contents have become sufficiently fluid to reach the pylorus, which happens the third or fourth hour after eating. This is when one can find food material at the level of the duodenum (page 63 of the Lalli report). It was also pointed out that a meal consisting of sugar would leave the stomach faster than a meal consisting of proteins which, in turn, are digested faster than a meal of fats. "Therefore, if undigested foods are found during the examination, signifying a more or less accentuated incompleteness of the kimification process, we can deduce that not more than 2 to 4 hours have elapsed since the last meal".

In the autopsy, Dr. Lalli noted the following: "... oesophagus containing a fragment apparently a piece of mushroom (page 46) ... stomach containing 500 cc alimentary bolus, green brown in which were recognizable caseosis (mozzarella?) and vegetable fibre ... empty duodenum, small intestine containing digested material in the last loop ..." (pages 47 and 48 of report).

These claims were essentially repeated at the hearing on April 3, 2009 (see pages 36 and following the hearing transcripts, April 3, 2009) in which the presence of a fragment of mushroom in the opening of the lower stretch of oesophagus was confirmed, thus in a phase of non-digestion; Dr. Lalli specified that **[110]** death was considered as occurring not more than two to three hours after eating (page 47 of the hearing transcript, and the adjustment described in the footnote on February 13, 2008). He stated that the emptying of the stomach occurs between a minimum of two hours and a maximum of four hours after the meal is consumed (page 62, transcripts) and also confirmed that the duodenum was empty (page 63). Answering specific questions from the defence of Raffaele Sollecito, Dr. Lalli stated that death

had intervened two to three hours after eating (page 47), while reaffirming that the emptying of the stomach generally occurs between two hours and a maximum of 4 hours after eating (page 62, hearing on April 3, 2009). He added, however, that the digestive process is influenced by many factors like the type of meal, cold, stress, physical conditions and so on, and that to his knowledge there were no reliable studies that could establish "by how much the digestive process can be changed by these factors" (page 86).

As for possible **sexual violence,** he highlighted that the gynaecological examination did not establish whether the victim had suffered sexual violence or not. The circumstances relating to a certain dilation of the anal sphincter and the presence of tiny purple bruises on the back side of the anal ring could result from issues such as styptics and could therefore be meaningless to a finding on sexual violence. More emphasis was given to purple stains of ecchymotic type present on the inner surface of the labia minora, which could suggest hurried intercourse, with no signs indicative of the physiological availability and preparation of the female subject for this act of intercourse. Then the consultant concluded that "in the absence of vaginal lubrication the introduction of the penis or even just some fingers of a person [*soggetto attivo*] can cause these ecchymotic lesions due to the action of compression and/or rubbing" (page 51 of report). Such conclusions were further explained at the hearing of April 3, 2009, in which it was highlighted that signs were present of sexual activity with characteristics of non-cooperation by the young woman, which can be derived from the "lesion pattern at the vulvo vaginal level" (page 40 of transcripts).

[111] These signs were present in the purple ecchymotic type spots detected on the inner surface of the labia minora, the area where they are usually produced. It is the first point of contact for the sex organ or object - including fingers – penetrating the vagina and therefore the point at which an action ... performed without the full cooperation of both actors would produce purplish spots of this kind" (page 42).

He excluded, finally, that the biological data alone could indicate the presence and action of several people against the victim. The only thing he could affirm in this regard was that the victim was not under the influence of psychotropic drugs or ethanol, and thus could not be considered as unable to respond due to loss of full awareness/capability"; and that there had not been an active and valid defence on the part of the victim (page 44, hearing on April 3, 2009). On this point, he further specified that in an action "performed even with repeated blows ... much greater defensive actions are detected on the hands from trying to block the instrument of

assault" (page 105), adding that "the more intense the assault, the more repeated and violent the blows ... the greater the defensive lesions" (page 106).

He was unable to specify how long the overall assault on Meredith had lasted, but he did state that from the moment the major injuries were inflicted it would take a relatively short time, just a few minutes, for death to result (page 113). The victim could have screamed "theoretically when ... she was struck at the region on the right side of the neck" (page 114). As for the signs of lesions on the inner labial mucosa, Dr. Lalli stated that they could be assumed to have been caused by an "action of compression from the outside, which compresses the mucosa against the underlying structure made up of the teeth and the gum line ..."this action of compression was to be deemed that was determined by a hand grabbing her mouth (pages 121 and 122).

(C)

[112] The consultants appointed by the Public Minister - Mauro Marchionni, Mauro Bacci and Vincenza Liviero - were heard at the following hearings (April 4 and 18, 2009).

They stressed that they had been appointed after the inspection and the autopsy on the corpse had already been done and therefore performed their evaluations based on what had already been initially acquired by Dr. Lalli.

Professor Marchionni stated he dealt with any possible aspect of sexual violence ,and with reference to the ecchymotic areas described Dr. Lalli that were predominantly located within the vestibule, he ruled out that they resulted from a "normal but rapid rapport, meaning without lubrication or preparation" (page 20 of transcripts, hearing on April 4, 2009). He noted in this regard that, even without lubrication injuries of this nature are not the result of consensual sexual intercourse, and he argued that the cause of these lesions had originated from a "forcing" that could have been done by the penis or by hands (page 21, hearing on April 4, 2009). He stated with regard to timing that they must have been very recent "because you still see the redness, as if just beyond the mucosa there were small haemorrhagic extravasations and there was obviously no time to repair it – in short, because she died"(page 22, transcripts). He ruled out that these areas could be ecchymotics of hypostasis (page 27, transcripts), clarifying that "that is not the most declivous region of the body where they go ". He

also noted that it was not possible for hypostatic stains to form “only in a few tiny spots" (pages 32 and 33).

Dr. Liviero, examined at the same hearing, reported that in order to carry out their assignment commissioned by the Public Prosecutor, video photos were used as well as the consultancy report by Dr. Lalli.

As to cause of death she confirmed Dr. Lalli’s assessment of a dual mechanism of suffocation and bleeding.

She discerned the mechanism of asphyxia as very evident in the numerous round-shaped bruises located on the chin, both right and **[113]** left, which appeared to be of the "fingerprint type, such as by the grasping of a hand by fingertip" (page 50, transcripts). The presence of "haemorrhagic suffusion by impression" on the labial mucosa showed "an attempt to suffocate ... with the strength of a hand pressing the mucosa inwards against the teeth" (page 51, transcripts). She also recalled the presence of petechiae as highlighted by Dr. Lalli, symptomatic of a violent mechanical asphyxia. To this mechanism of suffocation and strangulation as a cause of death a haemorrhagic shock was added, [which was] determined by an extensive lesion caused by a single-lip cutting and pointed weapon.

She dealt also with the fracture of the hyoid bone that was highlighted by Dr. Lalli, observing that the fracture could be compatible with both actions of a hand - or more hands - that grabbed the neck, and/or both the action of a knife that had penetrated into the underlying tissues (page 53). Moreover, she indicated these two mechanisms as being 50% consistent with the fracture of the hyoid bone (page 83). She also said she believed that the lesions of an ecchymotic and contusion nature must have been produced before the injury that caused haemorrhagic shock “because had this cutting injury been there before the blood would have smeared the region .... and made it a slippery area" (page 56, transcripts). She also argued that the knife seized and shown as Exhibit 36 "brought by the personnel from forensics" was to be considered "clearly compatible" with the deepest wound inflicted on the victim. In this regard, she noted that when the blade " enters and totally deepens ... the part where the blade is fixed to the handle hits [the surface] causing a bruise on the tissue" so that "you can also find an ecchymotic area around it but, in this case, there wasn’t any" (page 58, transcripts). With reference to the exhibited knife, she noted that it had some fine scratches [*zigrinature*] on the blade, at a distance of two, eleven and four centimetres (pages 82 and 83).

As for the dynamic of the homicide, with particular reference to whether the action was performed by one or more persons, Dr. Liviero ruled out the existence of scientific elements that would allow us to formulate a response to this question.

[114] Professor Bacci, a consultant appointed by the Public Prosecutor together with Professor Marchionni and Dr. Liviero, gave his assessment at the hearing on April 18, 2009.

With reference to the problem of the time of death, after assuming that the temperature of the body and its progressive change constitute one of the most important parameters, he noted that the delay in the measurement of temperature, together with several other variables related to the specific situation (a body which was covered with a duvet, the presence of haemorrhaging, changes in external temperature, from 13 degrees to 18 degrees after transfer to the morgue) had affected the application of the most accredited mathematical methods/systems.

Then he explained that the datum relating to the contents of the stomach had also been considered, and in relation to [the fact] that material in advanced digestive status was found in the stomach, he thought the meal had been eaten three or four hours before death. With regard to a piece of mushroom near the pre-cardio region that Dr. Lalli had spoken about, he said that this could not have been consumed during the afternoon/evening meal because it was in a different digestive state; therefore, he believed that some other food must have been eaten after the meal which, according to statements made by the British friends of Meredith, occurred between 6 pm and 8 pm and did not include mushrooms. However, given the inherent status of the last meal which Meredith's English girlfriends spoke about, it was possible to place the time of death between 3 to 4 hours later: therefore, this [time] could fall between 21:00 / 21:30 pm and 23:00 to 24:00 (pages 7 and 8 of the transcripts), a timeframe that appeared to be consistent with indications that other thanatological criteria could provide.

As to the cause of death, Professor Bacci reasoned from the injuries that were found, some major and some less so. Among those worth mentioning were those on the face and neck. As for the minor ones, which nonetheless were significant in terms of the dynamic of events, **[115]** he recalled the little bruises in the nose area, bruises in the lip vestibular area, some small scratches, and a series of bruises around the lower jaw region and also the neck. He noted the presence of a wound in the left cervical area of the neck, about 8 cm long and of equal depth. Below this wound, almost

parallel, there was another smaller wound but its path [*tramite*][10] ended by intersecting the cut of the more serious wound above it. Between these two wounds there was a deeply excoriated area.

In the region on the opposite side, i.e. the right, there was another cut-wound about 1 cm and a half long and some 4 cm deep. These wounds are consistent with the photos showing the result of substantial blood loss and must have caused significant anaemia.

Professor Bacci also highlighted the presence of ecchymotic prints clearly symptomatic of a violent grasping. In relation to this, it was thought that a compressive action occurred on the neck and mouth over the nostrils, indicating a coercive action which could have constituted a certain asphyxiating element. Based on these factors, he deemed that her death was to be traced back to the joint mechanism of anaemia and the asphyxial component.

As for the timeline, Professor Bacci believed that the constrictive action on the neck must have preceded the wound made by the cutting implement for two reasons: the wound in the left lateral region of the neck was very deep and very wide, and a hand gripping there would have inevitably ended up inside it given the positions of the bruises with respect to the wound. In addition, since blood is very slippery, a somatic region covered with blood would never have allowed a constriction with such outlined imprints, because it would have caused the hand to slip and prevented the grasping necessary [to produce the imprints]. He also noted that, from a psychodynamic perspective, it was very unlikely that an attacker, armed with a wounding implement such as a knife, would decide at some point to set the knife down and switch to [the use of] hands.

[116] With respect to the lesions detected on the inside of the lips, he believed they were not necessarily indicative of an attempt to suffocate and may instead have been connected with the intention of silencing the victim.

He also addressed the question of the kind of knife that could have caused the injuries observed and, given that it would have to have been a sharp instrument with a cutting edge, he answered questions concerning the compatibility with the knife that was seized and shown as Exhibit 36 in the following terms:

[10] The word *tramite* is translated often as "depth", sometimes as "cut" or "wound". It is literally a geometric term to indicate the depth, shape and direction of a void path across a solid material, as in the case of a penetrating wound. It is thus the wound's third dimension, what is not visible from the surface cut.

This knife was a kitchen knife with a very voluminous blade. In relation to the biggest wound the compatibility was deemed to exist on the grounds that although he was aware of the arguments against such an assessment, it was not possible to be certain in terms of attribution or exclusion "because the *lesività* [wounding phenomenon] is dependent on too many factors: the moment … in which the events takes place, the force that the sharp/cutting object has, movements of the victim, of the perpetrators, their physical positions"(page 12, transcripts). On this specific point, he concluded substantial compatibility.

He ruled out that the knife (Exhibit 36) could have caused the wound on the opposite side (still inflicted on the neck but on the right side) because of the size of the wound (1 cm and a half with a depth of 4 cm) and the fact that at 4 cm from the tip the width of the blade of the knife is about 3 cm and therefore much larger than the width of the wound (as indicated, 1.5cm).

With regard to sexual violence, he referred to the inspection of the genital area conducted by Dr. Lalli at the morgue operating room. On the internal surface of the labia minora, attention was focused on areas of discolouration, which can be interpreted as small bruises, small abrasions associated with small haemorrhages indicative of "small lesions" (page 16, transcripts) consistent with a violent action of friction, pressure and compression and, while affirming the absence of "glaring signs typical of sexual violence "(page 16, transcripts) he concluded compatibility with "non-consensual sexual intercourse" (page 16, hearing on April 18, 2009).

[117] He dismissed the possibility of interpreting these ecchymotic areas in terms of hypostasis [death lividity], noting that "such peripheral areas are ... typical of scratches and small haemorrhages and small abrasions" (page 16, transcripts). Professor Bacci also considered it possible that there was violence and anal type penetration, highlighting the presence of small pinpoint haemorrhages, small bruises that other consultants attributed to constipation: he was not fully convinced by this interpretation, since there was no evidence of such constipation, which would have been a very important issue (page 18). While concluding that sexual activity in the vicinity of death took place, an event that had a non-consensual connotation, he highlighted the absence of accessory injuries (bruises to the legs or arms caused by grasping action) of any particular importance. There were bruises present at thigh level that might have indicated an action of grasping; however, the injuries were quite different from those that one is accustomed to seeing in [cases of] violence in the strict sense (transcripts, page19).

As to the presence of other injuries, the following were recalled: bruising of the right upper limb at the elbow; one bruise at the level of the arm; on the right hand, small cuts were present that could have defensive significance but not obviously so.

The hyoid bone was fractured. He noted that "usually these fractures result from a constrictive action on the neck"; it could not, however, be excluded that it could have been severed by the knife, though this could not be affirmed with certainty because the morphology was not clearly visible and did not allow for a response in sure terms. He observed, however, that the most important wound inflicted with the knife, on the left lateral neck area, “discontinued the airway" and "cut the larynx"; in this regard, he drew attention to a photo showing the presence of "a foam *fungus*”. In view of this, with regard to the major wound on the neck, he expressed his deep perplexity that an attempt at strangulation could have taken place, adding that it would be as if someone were trying to strangle a person who has had a tracheotomy (page 21).

[118] He indicated that the biological data did not allow for a determination of whether the injuries were caused by one person or by several people, claiming they were compatible with both possibilities "because one person could have acted and hit at [different] times in a kind of struggle, if we can use the term in quotation marks; he might have been one person acting alone and that would be compatible, or it could be with the *avvicendamento* [joining or alternation] of several people and this also would work" (page 22).

To a question about the last time the victim would have been able to scream or emit a loud shout, the consultant replied as follows: "before being hit by the cutting injury blow", the most important one, which also cut off the airways. While answering questions from the defence of the accused, he explained he had been shown only one knife, Exhibit 36, but he had not examined it because it was handled only by police and he did not perform scientific measurements or examinations. It was enclosed in a plastic bag and shown to him at a distance of more than a meter.

Answering questions about possible sexual violence, he highlighted that possibly we would find actual lacerations and much greater bruising [than this] even if the most serious situations are found in [the case of] minors, while in [the case of] an adult who has a regular sex life the injuries, even if caused by violent acts, are much smaller. He also said that in case of group violence the signs are very obvious and that, in the case at hand, such evident injury signs were absent.

Turning to the issue of the time of death and to temperature criteria applicable in this case, he underlined the uncertainty arising from available elements. Temperature measurements were made with reference to diverse situations that didn't allow for "the inscription in the context of the typical curve of temperature decrease. The corpse, in fact, from an outside temperature of 13 degrees was moved to another environment with a temperature of 18 degrees. Even within the room, the inspection activity **[119]** and the presence of more people could have altered the corresponding and relevant framework.

With regard to the stomach contents he indicated the following:

The stomach was not emptied and still contained an abundance of material. In general, he observed, the stomach takes 2 to 3 hours after eating to empty. He wanted to stress, however, that this was a subjective indication that may vary depending on the subject's condition, as well as on the amount and kind of food consumed. He also stated that while it takes 2-3 hours for emptying to take place, "when it starts the emptying is fairly quick, when food has reached ...that semi-liquid or fluid aspect... emptying happens quickly" (page 32, transcripts).

(D)

The consultant [expert witness] for the civil party, forensic police doctor Professor Gianaristide Norelli, testified at the hearing of June 5, 2009.

With regard to the time of death, he stressed that the data gathered did not allow one to express oneself in definitive terms, but gave indications [allowing one] to place it [the death] "in the late evening, the very late evening of the 1st or the earliest hours of the morning of the 2nd [of November], more or less" (page 18 of the transcripts). With regard to the gastric contents, he stressed that this finding could not be used conveniently to establish the time of death, due to the variability of digestion times, both from the physiological point of view and because of situations which may cause variability of these [digestion] times; above all, because of the impossibility of ascertaining when a meal was actually consumed "because it is clear that if I know for certain when the meal was consumed, then the situation can have significance with reference to the time of death, but if I don't know with certainty that the meal was consumed at a given time or what [kind of] meal was consumed at that time, it is obvious that I can say very little on the basis of the digestive datum".

He concluded affirming the impossibility of "making a parameter say something which the parameter is not in a position to say".

With reference to the sexual assault, he highlighted the particular complexity **[120]** of the case. He pointed out, in this regard, the absence of vaginal lesions or of other lesions which might point towards a precise diagnosis of sexual assault. He underlined, however, the presence of small marks in the area of the "*osteo vaginale*" (page 19, transcripts). With regard to the outcome of the histological examination and to the fact that an ecchymotic lesion [bruising] should give evidence of a loss of blood from the vascular bed which cannot be seen histologically [i.e., at the level of the cells], he pointed out that it could also be checked whether the area affected by this ecchymotic extravasation [i.e. loss of blood/fluids from the vessels containing them towards the outside/exterior] had not been made the sample point for the histological examination; the aspect, which it was possible to see from the photographs, also made one think more of an ecchymotic type lesion rather than of a hypostatic type phenomenon [i.e., where the red blood cells settle and pool after death] since "they were rather displaced with respect to the hypostatic area, which should instead have been the lower part". Furthermore, he also observed that "hypostatic marks have a tendency to be contiguous … it is unlikely that the hypostatic marks would take the shape of a localized morphological square" (page 20 of the transcripts).

He further underlined the presence of a slight bilateral suffusion in the area of the iliac spines, i.e. in the areas corresponding to the anterior lateral part of the flank, which represent the end/terminal parts of the wings of the [pelvic] basin and the fact that "lesions in this area are fairly characteristic of seizure [grasping] and immobilization"; [it is] an area which is "highly suggestive" in the context of the investigation of sexual assault.

With regard to the cause of death, Professor Norelli underscored the necessity of evaluating the case "as a continuum, a sequence within which, with various overlaps, several damaging moments were identified, the most important of which could be seen to be the asphyxia, which could be established through three distinct mechanisms.

The first was represented by a mechanism of manual compression, the signs of which were the ecchymotic type areas situated in the region under the chin and bilaterally in the area of the neck, and were indicative of the grasping action which the victim was subjected to (page 27, transcripts).

The second was deduced/inferred from the presence of blood in the area of the **[121]** airways. It was, in fact, determined histologically that there was blood in the bronchial branches of the lung, and for this reason inhalation of haematic material was mentioned: this mechanism is also important, but is secondary with respect to the other more evident mechanisms of asphyxiation. In fact, when death by asphyxiation is caused by obstruction of the airways, this obstruction arises from a notable quantity of blood and an abundant amount of haematic material would be found in the upper airways; on the contrary, in the upper airways there was a very scant quantity of blood, and this led [one] to conclude that the said asphyxiation mechanism was secondary in the dynamic of the death.

The third mechanism is that concerned with compression and obstruction of the external airways, [and] of the respiratory orifices in particular, and is therefore a mechanism of suffocation. This was considered to be the most important among the causes of death: an obstruction of the airways with compression, and associated with this are the lesions typical of this manoeuvre in the labial area [around the lips], in the area of the tongue and in the area of the mucous membrane of the lips, with compression on the dental arches. Therefore a mechanism of obstruction with compression of the external structures and of the respiratory orifices, which caused the characteristic asphyxiation lesions, represented by the small sub-conjunctival haemorrhages, [which are] typical of asphyxiation mechanisms.

An asphyxial cause [of death], therefore, [which was] composed of three mechanisms: a grasping of the chin and also of the neck, and immobilization; lesions from a pointed and cutting weapon; and compression and obstruction of the external airways (page 29 of the transcripts).

(E)

In examining the various wounds, Professor Norelli confronted the problem relative to the compatibility of the most important wound, the 8cm-long wound, with the sequestered knife, Exhibit 36. He pointed out , in the first place, that a point [i.e. stabbing or puncture] and cutting wound [i.e. a wound inflicted by a pointed and cutting weapon] may have a length greater than the width of the blade because a pointed and cutting weapon, as it enters and above all when it exits, lengthens the wound with respect to its width, such that "a weapon which has a width of 3 cm may easily cause an 8cm-wide wound" (page 30 of the transcripts). Then, with

regard to the **[122]** alterations present on the sides of the wound that might make one think of a characteristic of the back of a serrated blade, Professor Norelli considered that such an explanation was possible, and considered it possible also to hypothesise a "rotation of the weapon … which these traced aspects may have been caused by" (page 31 of the transcripts).

The depth of the wound being less than the width of the blade did not impose an assessment of incompatibility, since "it is not said that a blade is always embedded [plunged into] the target right up to the handle [literally, to where the blade is inserted into the handle]; the blade may also go [in] only to a certain portion of its length, and not right up to its end" (page 31).

He excluded, however, compatibility between the sequestered knife (Exhibit 36) and the 4cm-deep wound inflicted on the right latero-cervical part. In fact, "if we consider the knife in judicial attachment, in order to have a depth of four centimetres, the wound would have had to be wider than the not even two centimetres which characterise it".

The stabbing and cutting wounds, he observed conclusively on this point, had caused the haemorrhagic-type mechanism which, however, was overlaid on the more important asphyxia mechanism; in fact, it could not be held that the young woman had died because of the haemorrhage; the haemorrhage, however, should be considered as a joint causal phenomenon.

With reference to the manner in which the wounds on the neck were caused, it was not possible to establish this since it was possible "that there was an active movement by someone when inflicting the wound; it was possible that there was a movement of the passive subject who impaled herself on the weapon; it was that there was a combined movement which made these wounds even more damaging" (page 33 of the transcripts). In relation to this, the "traditional dynamic of aggression with a stabbing and cutting weapon" where "repeated strikes are inflicted with the aim of killing" could not be hypothesised, and in fact, he further observed, "the classic defence wounds on the outer side of the forearm, on the hands" were not found, and this was because [they/we] were dealing with "a situation in which the stabbing and cutting weapon was not used in the traditional aggressive manner found in a homicidal dynamic …". A situation, therefore "which is not the traditional homicidal dynamic of **[123]** a stabbing and cutting weapon with characteristic defence wounds: in this case, if the weapon was not used in the traditional way, nor can the wounds be traditional defence wounds". These were

therefore interpreted as being separation/distancing/pushing-away wounds, fairly scarce, found on the palm of the hand and on the surface of the fingertips. This was not, therefore, aggressive-type damage/harm with a stabbing and cutting weapon carried out with the aim of killing the subject in this manner, but aimed at intimidating in order to force the subject to do things which she did not want to do.

The consultant further pointed out that when a subject struggles and writhes, and there is the possibility of struggling and writhing, the harm that is suffered is considerably greater than that found in this case. He pointed out, moreover, that everything had taken place in an area that was territorially fairly definite; therefore, the subject had not attempted to escape, to go into other rooms or any such thing. He also pointed out that there had not been a specific repetitiveness of the action: "if a subject carries out a harming/detrimental/damaging action he/she is compelled to reiterate the harming/detrimental/damaging action in qualitatively analogous terms"; in this case, on the contrary, there had been several harmful actions, [which had been] reiterated, but [were] each different from the other. All this led to the conclusion that one single person could not have carried out all the harmful actions which had occurred in this case.

At the request of the accused's [masculine, therefore Raffaele's] defence team, he [the consultant] explained that the breaking of the hyoid bone would not allow [the victim] to scream. He further specified that one and the same knife, smaller than that of Exhibit 36, could in principle have caused both wounds, that of the larger one on the left and that of 4 cm depth on the right.

With regard to the time of death, he reaffirmed that it could be situated between 23:00 pm on the 1st and 1:00 am on November 2.

With regard to the state of digestion, he highlighted zones of uncertainty which would not allow the time of death to be pinpointed. He indicated two to four hours as being the time required for the stomach to empty, underlining however that the situations vary in function of the foods, of the type of subject [i.e. of person], and of possible forms of intolerance for some foods which may be harder to digest than others.

[124] The temperature is an important criterion because during the first three or four hours it falls by about half a degree every hour; during the following eight to ten hours, one degree per hour, and then gradually until homogenization with [i.e., until

it reaches the same temperature as] the ambient [temperature]. Even the temperature, however, may be influenced by very diverse factors and events.

He specified that he had taken all the parameters into consideration and had examined Dr. Lalli's report and the report of the expert witnesses.

With regard to the weight, he recalled that the expert witnesses had said that they had not been able to apply a Henssge nomogram since the young woman's weight had not been noted precisely. He highlighted the relevance of the weight in order to be able to apply the nomogram and specified that in this case he would have applied a weight of roughly fifty kilograms, considering that this could be the young woman's weight, and that if the corpse is weighed this does not correspond to the weight when alive.

He reaffirmed that he held suffocation would have been the final mechanism, subsequent to the steel weapon [i.e. knife] lesions, and that the aggressor would have held the respiratory orifices blocked for the time necessary to cause death, that is for five or ten minutes.

He could not exclude that all the actions were carried out by one single subject.

He excluded that the suffusion in the area of the iliac spines could have been caused as a result of falling forwards, because when one falls, in order to have bilaterality and symmetry, particularly symmetry of the damaging/wounding/harming configuration [i.e. symmetry in the shape of the lesions], one would have to fall in a manner absolutely perpendicular to the ground and it was held to be nearly impossible that such a hypothesis would happen. Furthermore, when one falls, defensive and instinctive mechanisms come into action which protect one from the crash/knocks/bumps and which deflect [the impact] and this brings one back, therefore, to the argument of the limited plausibility of the symmetry of the damage. In a backwards fall it [i.e., the damage/lesions] would have been absolutely impossible, given the position of the iliac spines.

The most damaging wound inflicted on the neck would not, in itself, necessarily have required considerable force. In this regard, he reaffirmed that he could not interpret it in terms of a typical "throat-cutting" wound inflicted **[125]** with a homicidal intention "because it is in a completely different place/area with respect to those which are [on] the base of the neck, which are more lateral" and consequently, he further observed, should be considered as "two actions which probably were carried out in this case and do not occur in the traditional throat-cutting lesion and

that is the active movement of the subject who inflicts the lesion and the active movement of the subject who suffers the lesion" (page 55, transcripts). He explained that the wounds in question could not be defined as throat-cutting because this happens when the [blood] vessels of the neck are cut; the lesion in question, on the contrary, was a stabbing and cutting lesion.

With regard to the asserted compatibility of the 8cm-deep wound with the sequestered knife (Exhibit 36) with the 17.5 centimetre-long blade, he noted that "if I insert a centimetre of blade in the knife [sic: of course, it should be: "if I insert a 1 cm of the blade into the victim"] and the victim suddenly moves towards me, how much of the blade will be driven into the inside of the body surface area is absolutely unpredictable and depends on the action of both" (page 57, transcripts).

With regard to the scarce evidence of defence wounds and of lesions indicative of a sexual assault, he observed that "if the subject is not in a position to defend herself in a determined manner, in a marked manner, in a specific manner, it is clear that the necessity of grasping her to hold her still is much less with respect to another. Thus, if we actually had to do a ranking of the assault, while yet remaining in the sphere of subjectivity, this is one of the reasons for which, personally, I am not convinced that there was only one person carrying out the combined damaging/detrimental/wounding action" (page 60 of the transcripts).

Concerning the wounds which the victim had on her hands, the consultant highlighted that these showed no signs of scarring and therefore could not have arisen earlier, or at any rate more than 12 hours [earlier]. With regard to the dynamism which had caused the death, Professor Norelli further underlined that "throat-cutting is a lesion which typically is manifested due to a stabbing and cutting weapon or a cutting weapon, in which the action of cutting is that which plays the most important role and which causes a lesion on the vascular trunks, that is the carotid and the **[126]** jugular which pass through the neck." In this case, the vascular trunks were saved and the weapon was not used to cut but was plunged into the neck and therefore one could not speak of a throat-cutting lesion. The action which had caused the death consisted of the asphyxial action which was carried out manually; the action of the knife had instead caused only a lesion of the right-hand superior thyroidal artery and had in a certain manner also played a part in the anaemisation at death, but as an absolutely marginal element (pages 68 and 69 of the transcripts).

He also demonstrated the full compatibility with the reconstruction outlined (time of death and dynamics of this last) of the victim's loud scream at 23:30 pm. He clarified that the knife which had caused the 8cm-deep wound must have been suitable to cause death and moreover the part/area which was struck should be considered vital.

He indicated, moreover, that it was possible that the blade of the knife might have met an obstacle[s] such that, even though it was longer than the 8 centimetre depth, it had inflicted a shallower wound. He made mention, in this regard, of the lesion in the ortho-larynx region and also indicated another structure which had been damaged by the passing through of the blade, clarifying how [it was] "that same oro-pharyngeal structure that was damaged by the blade [which] caused a resistance [a resisting action]". He also observed that even the epiglottis, which was shown to be injured, exerts a certain resistance. He highlighted, nonetheless, the difference between a projectile which strikes a bone and stops there, and a blade subjected to unspecifiable variables. He clarified that the different colouration of the areas which he had indicated as ecchymoses on the iliac spines with respect to [the colour of] other ecchymoses/bruises was due to the different cutaneous structure (page 73). He excluded that the ecchymoses on the iliac spines dated from a few days earlier since, otherwise, they would already have begun to change colour to yellowish, greenish-yellow.

(F)

Professor Francesco Introna, forensic pathologist and consultant for Raffaele Sollecito's defence, testified at the hearing of June 20, 2009.

He stated that he did not participate in the autopsy, and that his consulting activity was based entirely on the examination of the photographs present in the dossier, the videos of the autopsy, the videos taken during the inspections, the testimonies of the other consultants, and the tests contained in the dossier which were relevant to biological aspects of the case.

He then indicated the points on which he focused his attention in the course of his own investigation: the time of death, the cause of death, the means of death, the hypothesis of sexual violence and a possible reconstruction of the course of events.

Time of death: In studying this aspect, Professor Introna started from the established fact that on November 1, 2007 at 21:00 pm, Meredith Kercher was seen alive for the last time and accompanied home. Towards 13:30 pm her lifeless body was found, and the first serious attempt at determining the time of death was made by Dr. Lalli at 00:50 am on November 3rd, a second at 12:00 noon and a third on the following day, at 10:00 am.

Recalling Dr. Lalli's findings, Professor Introna observed that neither the hypostatic stains nor the state of rigor mortis could offer useful indications for determining the time of death. He thus concentrated his attention on the cooling of the corpse and on the stomach contents, which, he observed, "have great value in forensic medicine, when analysed correctly, as compared to simple analysis of the hypostasis and the rigor mortis" (page 10 of the transcripts).

With respect to the cooling, accepting the data supplied by Dr. Lalli at 00:50 am on November 3, that the surrounding temperature was 13 degrees and the temperature of the body was 22 degrees, he testified that these data were susceptible to different interpretation, because of the fact that "the body was found under a duvet" and because the degree of humidity in the surroundings where the body was found was unknown. At this point, he recalled the same formula used by Dr. Lalli, Henssge's nomogram, used with corrective factors. The application of this formula, he explained, requires knowledge of certain reference values: **[128]** the ambient temperature of 13 degrees, the initial body temperature of 37.2 degrees which is considered standard, the rectal temperature of 22 degrees. It also requires a corrective factor which takes into account the special conditions in each situation, which in this particular case consist in the fact that the body was covered by a duvet and was thus placed in a thermally protected microclimate. The corrective factor of 1.7 used by Dr. Lalli was judged "very high". Then, he observed, the weight of the body must also be used. Dr. Lalli had guessed at a weight of 55 kilos, obtaining a Gaussian (bell) curve whose centre indicated the time of 22:50 pm as the most probable time of death, with the "range of times of death lying between 21:30 pm and 03:30 am the following day" (page 12 of the transcripts).

With respect to these indications given in Dr. Lalli's report, Professor Introna stated that Dr. Lalli was not able to weigh the body. He observed that for a girl whose height was one metre and sixty centimetres, weight tables predict a normal weight of slightly over the 55 kilos guessed by Dr. Lalli. He also observed that "two kilos more or two kilos less usually escape attention altogether", but they have a significant effect in the use of Henssge's nomogram. He added that Meredith Kercher was not a

weak, thin girl, and if Dr. Lalli had guessed her weight as 57 kilos rather than 55 kilos, the centre of the Gaussian curve indicating the probable time of death would have been at 21:50 pm, and if he had entered the value of 56 kilos, it would have been at 22:20 pm; for 54 kilos it would have been at 23:20 pm.

Professor Introna ended his discussion on this subject by stating that since the actual weight was not known, the application of Henssge's nomogram pointed at around 22:50 pm as the most probable time of death.

He paid particular attention to the digestive process, preceding his explanations with the following **[129]** critical remarks: "the stomach contents represent a concrete problem...because there are so very many variables, above all at moments of stress...the analysis of the stomach contents implies technical knowledge, is physiologically quite difficult, and the results are always open to some doubt..." (page 15, hearing on June 20, 2009). Professor Introna maintained that in order to apply these criteria, it was necessary to know the values of certain initial parameters: the time when the last meal began; whether the stomach had any pathological problems which might slow down the digestive processes; whether the stomach was quite full or had already begun to empty itself.

He recalled the data from various testimonies, from which, as he observed, it emerged that at around 18:00-18:30 pm, Meredith began to eat a homemade pizza with various toppings (cheese, mozzarella, eggplant and perhaps also onions) and then ate apple crumble with ice cream. This meal ended at about 20:30 pm, so he considered that the mealtime lasted from 18:30 to 20:30 pm.

He recalled the reports by Dr. Lalli and the other experts stating that under macroscopic examination, the stomach contents revealed a piece of apple and floury fragments which might have been from the crumble or from the pizza. He also recalled that the emptying of the stomach under standard conditions starts around three and a half hours after the start of a meal, say between three and four hours after, and that the term "emptying" indicates the stomach emptying its contents (into the duodenum). He asserted that "knowing that Meredith's meal started at 18:30 pm, knowing that there were about 500 cc of stomach contents, and knowing from the autopsy that there was no pathology of the stomach...which could slow down digestion, and above all", as reported by Dr. Lalli, knowing that the duodenum was still empty "because the stomach had not even begun to empty itself" (page 19 of the transcripts), the time of death must lie between 21:30 pm (three hours after 18:30) and 22:30 pm (four hours after 18:30), and that this timing agreed with the less rigid

data provided by the analysis of the hypostasis, of the rigor mortis and of the body temperature, considering the uncertainty of the body weight which was guessed without weighing the body. He also observed **[130]** that the beginning of the attack must have been a moment of tremendous stress for Kercher and may have arrested the digestive process. One could and should obtain a precise indication from this, in the sense that the stress to which the victim was subjected must have started between 21:30 pm and 22:30 pm.

Proceeding to an examination of the wounds, he noted the following:

* scraped and bruised areas around the wings of the nose, but these were of little or no relevance.

* Very small bruised areas around the lips.

He emphasised that death by suffocation "is a death which implies a tremendous fight between the victim and the attacker" since "no one lets himself be killed willingly, no one lets himself be suffocated willingly. Suffocation implies the blocking of the respiratory passages by a strong attacker on a victim who must be inert for a long time - five or six minutes - until the subject is no longer breathing" (page 24). This fight between the victim and the attacker is visible during autopsy "by an enormous region of injuries on and around the inner and outer parts of the lips. There are fractures or lacerations of the fraenum of the upper lip, which is unharmed in this case, and fractures or lacerations of the fraenum of the lower lip; the fraenum is the little flap of tissue attaching the inside of the lip to the gum, which is extremely easily torn under lateral friction. There are fractures of the dental alveoli and inward projection of the teeth, and lacerations and contusions on the surface of the labial mucosa caused by its being pressed against the teeth, but in the present case, there is nothing of all this", just the tiny scrapes around the nasal orifices, tiny bruises without even a tear in the lower fraenum, and two tiny bruised areas around the outer parts of the lips.

He thus excluded the possibility of manual suffocation, contending instead that there was a brief shutting off of the respiratory passages, probably in order to make the victim be quiet or stop her from screaming.

Similarly, he excluded that an act of strangling could be recognised. He stated that strangling "usually implies an attacker much stronger than the victim, who takes the neck of the victim and blocks the respiratory passages with the hands by an act of lateral gripping/squeezing". On Kercher's neck there were three small abrasions

which could be "the result of a **[131]** wounding action of the nail of the attacker on the neck of the victim" (page 25).

As for the infiltrations of blood in the tissues under the abrasions, "they are placed almost at the centre of the stab wounds" and probably indicate secondary haemorrhages of the stab wounds rather than a strangling or gripping of the neck. Thus, according to Professor Introna, the comprehensive picture characterised by three small nail scratches and some hints of bruising does indicate that the subject was seized by the neck; however, this seizing could not possibly indicate that death was caused by strangulation. Nor would it be possible to cite the broken hyoid bone as an indication of strangulation. Given that the hyoid bone is a very delicate and very tiny bone and that the external part (the cornu) of the hyoid bone is only completely ossified from the age of 30, homicide by strangulation implies a lateral grip on the victim's neck exercised by an attacker who grips the central portion of the neck. What is broken in such cases are the cornua of the hyoid bone in their posterior portions, but never the main body of the hyoid bone, which is anterior. In the present case, however, there was an oblique fracture of the central portions which was described as a clean break, slanted from from the back to the front, from the left to the right and from the lower part to the upper part. Consequently, it must be excluded that what happened to the hyoid bone could have been an effect of death due to asphyxiation by strangulation.

Professor Introna maintained, however, that the neck was seized within the context of a harmful dynamic during which the respiratory passages were blocked, the neck was gripped and the victim was stabbed.

He noted the presence of five bruises underneath the jaw. These bruises could not be considered as belonging to a moment of intentional strangulation, since "someone who wants to choke or strangle presses on the central part of the neck where the respiratory passages are, not the part underneath the jaw; this has another purpose, that of holding the subject". These bruises are so slight as to be scarcely visible (page 28 of the transcripts), indicating a momentary choking off of the victim's respiratory passages by seizing **[132]** her neck, without this act representing an attempt at strangulation.

The victim also had injuries inflicted by a cutting instrument; a large stab wound in the left part of the neck and a second, smaller stab wound whose path crossed the path of the larger wound.

Dr. Lalli had described the path of the wound as being from left to right, upwards, and back to front; the same inclination as the fracture of the hyoid bone. The path of the wound stopped there, and the blade entered entirely into this wound, and there was a harmful interaction between the attacker and the victim due to the persistence of the attacker with the knife stuck into the neck and the movements made by the victim trying to free herself from it.

The second stab wound was much smaller, with a path that crossed the larger wound. He noted the presence of a reddish, scraped area, indicative of the fact that "there was an impact on this region of skin by the near part of the handle of the knife, and," he emphasised, "this is the sign that the knife blade penetrated completely" (page 31 of the transcripts). He added that "on the other hand, it makes absolutely no sense during a fatal attack...for the blade to be thrust only partially into the wound as if it were some kind of game. When an attacker strikes in order to kill, he strikes completely and with all the strength he has, and that means that the blade entered completely." The abrasions were present only around the lower edge of the wound, and this indicated that what caused the abrasions was the impact against the skin of the lower edge of the knife handle, and thus, as described by Dr. Lalli, the path of the wounds must necessarily incline upwards. If the blade had entered perpendicularly to the skin, we could have expected scrape marks on both edges of the wound. And furthermore, the penetration must have been by the complete blade of a length of at most 8-9 cm: "If the blade had been longer, it would have gone through the neck and come out the back and there would have been an exit wound from the blade in front of the hyoid bone; the hyoid bone is not a suitable structure **[133]** to stop the path of a knife...the hyoid bone is so easily broken and so small, so important but still so fragile that it could not possibly stop the thrust of a knife blade or a knife point. So the knife actually sectioned the hyoid bone, which means that this wound, the main wound in the left part of the neck, was caused by a knife with a 9cm blade" (pages 31-32, hearing on June 20, 2009).

The stab wound corresponding to the injuries on the right side of the neck was indicated as being a little wound of very small dimensions with a very small path. The path of the wound is 4cm long and only 1.5cm wide. The blade used to make this wound must have had a width of 1.5cm at 4cm from the point. This blade only entered 4cm into the neck "because it encountered the angle of the jaw" (page 33 of the transcripts).

There was another small wound on the left cheek; this was a tiny wound which could have been caused by the point of a knife simply to threaten the victim at some moment of the attack.

A knife of the brand Marietti Stiles was then shown to the consultant; a knife of a total length of 31.2cm with a single-edged blade of length 17.5cm; a knife which had the same characteristics as the sequestered knife identified as Exhibit 36.

Recalling the circumstances explaining why the wound on the left side of the neck was 8-9 cm long, and the fact that "at the edge of the wound was the sign of the entrance, of the impact of the nearest part of the handle of the knife against the skin which tells us that the knife blade entered completely into the wound and that the wound is thus an exact [mirror] image of the length of the blade", Professor Introna excluded that a knife with the given characteristics could be compatible with the said wound. He added that it was also impossible that such a knife could have determined "the injury on the left side of the neck, since this one must have been caused by a knife with a blade at most 8-9 cm long and 1.5cm wide at a distance of 4cm from the tip, with a regular and homogeneous spine" (page 36).

[134] He then proceeded to describe the two bruised areas present on the left elbow of the victim, and with regard to these, he stated that these were not marks caused by restraining, but hypostatic stains. But since he could not absolutely exclude that they might be bruises stemming from an effort of the victim to defend herself, he noted that the fact that they were present only on the left forearm at the level of the elbow would mean that the forearm remained free, making it difficult to attribute the bruises to the fact of having been restrained.

The injuries around the pelvis, described as extremely slight, and around the iliac crest, could absolutely not be considered contemporaneous with the other bruises present on the body, since they had a different colouring.

He also mentioned bruising infiltrations on the scalp at the occiput.

As for the wounds on the right and left hands of the victim, Professor Introna expressed strong doubts about the fact that these might be defence wounds. The wounds are extremely tiny, whereas defence wounds are wounds caused by an instinctive action by which the victim being stabbed stops the blade of the knife with the hand and thus suffers enormous cuts. He advance the hypothesis that the victim had received the wounds to the hands by falling onto all fours and encountering tiny fragments of glass on the floor, and in regard to this, he noted that during the

inspection, the video of the Scientific Police showed a fragment of glass near a footprint.

Sexual assault: The only signs of this were three small scrapes at the vaginal entrance. He advanced the hypothesis that Meredith Kercher was the object of "digital penetration...but the state of the body does not allow us to say whether this digital penetration was long, protracted, non-consensual, unwanted" (page 46 of the transcripts), even if, as he added, the very presence of scrapes and bruises do indicate **[135]** a lack of consent since otherwise there would be neither scrapes nor bruises. He concluded his arguments on this subject in the following terms: "The injured regions of the vagina or rather, outside the vagina...indicate a violent action exercises with the hands on the portion exterior to the vagina, the vaginal vestibule" (page 47 of the transcripts).

He also stated that the action was that of a single attacker. Firstly, he stated this by taking into consideration the size of the room in which the entire episode took place and the presence of furniture in the room. He stated that the free space was very small, so that "there was no possibility for three attackers to have accomplished the homicide together" with the girl in the position where her body was subsequently found (page 52 of the transcripts).

(G)

He described the action which caused the death of the girl in the following terms: the victim was seized by the neck, and by the mouth, closing off her respiratory orifices, and stabbed. Death occurred by haemorrhage and by asphyxiation due to the inhalation of her own blood, and by the breaking of the hyoid bone with consequent dysphonia, dysphagia and dyspnea (page 52). Thus, a double asphyxiation represented by the collapse of the laryngeal function and the inhalation of the subject's own blood. The inhalation probably lasted around ten minutes (according to what could be inferred from the fact that at the alveolar level a concentration of particular cells was found microscopically), and thus the death throes of the subject from the moment of the stabbing which caused the largest wound lasted at most fifteen minutes, followed by death.

He excluded the presence of injuries due to gripping or seizing, as only banal contusions were found, and these were not specific and not necessarily attributable

to a sexual activity without the consent of the subject consisting in a violent digital rape of the vagina (page 53).

[136] In answer to a specific question posed by Raffaele Sollecito's defence, he declared having seen the photos of Rudy Guede's hands sent by the German police, in which signs of "healing of the skin in a very advanced stage...of tiny scratches which were present on the little finger of the right hand, the second phalange of the middle finger of the right hand and the palm of the right hand" (page 54), all injuries compatible with inflicting a knife wound with the right hand.

In response to further questions, also during the cross-examination, Professor Introna stated that if Meredith weighed 52 kilos, then Henssge's nomogram would indicate the time of death as 24:20 pm, whereas if she weighed 53 kilos it would be indicated as 23:50 pm. He also stated that the correction factor of 1.7 was near the maximum.

With respect to the stomach contents, he clarified that he took the start of the meal as a parameter and never the end, "because at the start of a meal, the first bolus arrives in the stomach, starts to be attacked by the gastric juices and will be the first chyme to pass the pyloric sphincter into the duodenum. The stomach does not wait for the last mouthful before starting digestion; the stomach starts the digestive process from the first mouthful" (page 82 of the transcripts). According to the data reported by Dr. Lalli, the duodenum was empty and the stomach contained 500 cc and thus "the stomach at the moment of the attack still held all of the gastric contents and had not even begun to empty" (page 83).

He reaffirmed that the sequestered knife (Exhibit 36) was not compatible with the main wound, both because of the bruising showing that the blade had entered completely, and because an attacker with homicidal intentions stabs with all of his strength.

He reaffirmed that the homicidal intentions could be inferred from the repetition of the blows, and on this aspect he explained that on the epiglottis there were "two parallel injuries which indicated that the knife made two stabbing motions, two actual cuts from the same large stab; this is the repetition" (page 92). With respect to this, he recalled what had been described as a "visible irregular cut [*cincischiamento*] **[137]** made by the weapon in the neck of the subject caused by the aggressive movements of the attacker and the movements of retraction and disengagement of the victim. This interaction created the three, at least three different cuts created by

the one stab...the third one being the one which is also due to the confluence of the lesser wound with the greater one on the other side, as the two actually come together..." (page 93 of the transcripts).

He explained that the piece of glass was placed near the feet of the victim.

With respect to the piece of mushroom mentioned in the consulting report of Dr. Lalli, he advanced two hypotheses. One was that upon arriving home, the victim had already completely digested the pizza and ate something else with mushrooms; this hypothesis is, however, not acceptable because there was only a single mushroom and also because of the fact that pieces of apple could be distinguished in the stomach contents, indicating that they came from the victim's first meal. The second hypothesis was that in the pizza, there was also a mushroom. He recalled that Dr. Lalli had indicated the victim's weight as 50 kilos, whereas by Henssge's nomogram one could hypothesise that her weight was nearer to 55 kilos.

He explained the presence of small spots inside the eyelids by the fact of death by asphyxiation, which, as he had already explained, depended on the mechanism of the attack consisting in being seized by the neck while the respiratory orifices were blocked, not for the purpose of suffocation but in order to prevent the victim from screaming, followed by stabbing, probably after the manual rape. The stabbings of the victim would have occurred very quickly from the right and from the left with the breaking of the hyoid bone and injuries to the upper thyroid artery. This stabbing caused an arterial haemorrhage which constituted the primary cause of death, which would also have been caused by the inhalation of blood protracted to such a point that the extent of the macrophages at the level of the alveoli filled with blood was significant enough to justify a long agony, of around ten minutes. "Thus, the inhalation of her own blood as an asphyxiating medium and above all great difficulty in breathing"; on the breaking of the hyoid bone: "my larynx opens, I have a closure of the laryngeal inlet, a closure of the respiratory paths, I have **[138]** dysphonia, I can no longer speak, my vocal cords are no longer extended, I cannot scream, I can't breathe any more or at best with difficulty since I can only breathe through the laryngeal dead space and I slowly die of asphyxiation" (page 117 of the transcripts).

He reaffirmed that the scrapes underneath the most important wound was caused by the impact of the handle of the knife on the skin, a knife which must thus have sunk the entire length of its blade perpendicularly in.

As for the possibility that the effect of stress on the victim had stopped the gastric emptying [of the stomach], he stated that "in the literature it is absolutely not said that stressful events correspond to blockage of the gastric emptying; it is possible that it corresponds to nothing, a slight lateness in emptying, blockage of the emptying...Hypothesising...that the gastric emptying was never actually inhibited...and that the gastric emptying was in fact normal, then that would mean that it was not the acute stress which occurred between 21:30 and 22:30 but death which occurred between 21:30 and 22:30" (page 123 of the transcripts).

(H)

During the course of the hearing therefore, as an experiment, a reconstruction of the dynamic of the act of the murder on the basis of the indications of the expert witness Professor Introna was proceeded with.

It was therefore hypothesised that the victim gets undressed; she is naked from the pelvis down. The aggressor arrives from behind, already armed. The victim is not seized, her airways are closed, and this accounts for the minimal abrasions found at the level of the nose and the minimal bruising found at the level of the mouth.

The aggressor blocks the airways so that she cannot scream. He then proceeds to an attack on the neck, immobilising it and inflicting on her the bruises and the abrasions present on the neck; then he frees his right hand and “attempts to finger her because she is without panties and he throws her down into a position on all fours. At this point the victim is overpowered and he passes on to the damaging action, he pulls back the victim’s head, grasping it by the edge of her jaw, the three bruises which we notice under the jaw: he pulls her head and stabs her on the left. The victim reacts because the blow she has received is serious but it is not immediately fatal; **[139]** she moves, we have the repetition of the injury; the head escapes from the grip under the jaw; a second stab, with the cut which stops against the angle of the jaw. At this point we have the injury to the hyoid bone; the victim can no longer speak, she cannot scream any longer, she is bleeding from an arterial wound, she is no longer breathing and she falls. She strikes her head in the occipital seat, turned around automatically by the attacker, who was holding her towards the right”. In this manner, observed Professor Introna, "we have recreated all the injuries which we have described, including those to the hands, obviously hypothesising that there was glass in the areas where [the hands] were balancing" (pages 128 and 129).

He specified that the bra had been cut after the victim had suffered an injury; otherwise there would not have been blood on the outside of the bra cups. He added that the attacker must have pulled the back strap[11] of the bra "because if he had slipped the knife under the fastener we would have found cutting injuries corresponding to the fastener of the bra ... This forced action also determined that deformation of the hook. He inserted the knife and cut it, the same [way] as the straps, why cut and not torn? The bra straps are extremely strong ... the bra straps were cut near the bra fastener and the bra was removed when the body was already on the floor face down" (page132).

As for the breaking of the hyoid bone, this would have taken place "in the moment when the victim is in an all fours position on the floor – *we have the victim already wounded in the face, the subject cut off her bra from the back, there are some moments which escape us, which could have been the recognising of the aggressor ...words spoken...*[12] – the aggressor moves from the attempt at violence to the murder and stabs the victim, who is now on the floor, with the knife held in dagger fashion. He raises her head, bruises under the jaw, he stretches her neck and stabs her ... This is the major injury, there is a movement of interaction between victim and attacker, the back of the blade is to the front as everyone has said, the edge of the blade, the cutting edge of the blade is to the back, in this moment there is the cut which affects the pharynx, the larynx, the cartilage of the epiglottis and the body of the hyoid bone, which fractures. The subject reacts and is still jammed against the thorax of the victim who is above him (her)[13] and who continues to be stabbed with the knife grasped in the same manner, so that the back of the blade corresponds **[140]** with a cut that goes backwards, directed from the right towards the left and which stops in correspondence with the angle of the jaw to the right.

[This is] a small and short cut [*tramite*], which severs the upper thyroid artery. At this point the victim can no longer breathe, she is defenceless, seconds before she has already been struck in the hyoid bone, the subject gets up, the victim falls and knocks her head in the occipital region as we then find her, even if [she has been] moved" (pages 133 and 134).

With reference to the wound depth [*tramite*] of 8 centimetres, he recalled that it had been described by Dr. Lalli [while] doing the autopsy and "at a certain point when

[11] The word *fascia* designates the back strap with the fastener, while *bretelline* are the shoulder straps
[12] Original text is in italic
[13] This misstatement is in the original quoted transcript of prof. Introna's words (saying "victim" when he meant "aggressor"?).

they are doing the sectioning of the upper respiratory ways, Lalli says that the body of the hyoid bone is affected by the cut. He says this and then does not record it in his report, but on the soundtrack of the film of the autopsy it can be heard perfectly, body of the hyoid bone affected by the cut" (page 137).

To the question with which it was asked whether at one moment the attacker would have to have had both hands involved with the bra since he was pulling with one and cutting with the other, Prof Introna replied claiming that the victim, in spite of this, could not get free since "the aggressor had overcome the victim, the victim was immobilised by the aggressor, by the legs of the attacker ... She was on the floor ... He further affirmed that the aggressor had intervened in the victim's room with sexual aims and he had the knife to threaten .

The cutting of the straps, he reaffirmed, would have been undertaken from the back, with the aggressor on the victim who is on the floor on hands and knees ... he pulls the bra, he cuts the bra which, nonetheless, remains because the bra is however covered at the level of the shoulders by two cotton t-shirts which the victim was wearing; it doesn't fall off on its own; a bra cut from the fastener of the straps must be taken off from the front, which will happen after (page 154).

(I)

Forensic pathologist Professor Carlo Torre, consultant for the defence of Amanda Knox, testified at the hearing of July 3, 2009.

He stated that he had not been able to attend the autopsy, but qualified the documentation from the autopsy as excellent, and specified that he had been able to examine and participate **[141]** in the various hearings of the trial on aspects concerning forensic pathology. He began his explanations by discussing the **cause of death**. He gave testimony on the presence of injuries concentrated on the neck region, with three knife wounds and "traces suggesting a constriction of the neck" (page 7 of transcriptions). He gave evidence of the fact that "white foam...known as a foamy mushroom" emerged from the main wound, and explained that this was "a foam which is formed in the lungs, in the bronchi, in cases of asphyxiation, in particular when this asphyxiation is produced by inhalation of a liquid, but also in cases of strangulation or choking" (page 7). Another sign of asphyxiation was indicated as being the fine spots on the inner eyelids. He stated that "both a

haemorrhagic mechanism and an asphyxiative mechanism participated in or caused this death" (page 8), and maintained that the asphyxiative mechanism had a double cause: abundant inhalation of blood into the respiratory passages, as in a sort of drowning, and constriction of the neck.

On the subject of the time of survival [after the wounds], he limited himself to asserting that the presence of spotting indicated a time of survival of at least two minutes from the start of the asphyxiative action (page 9). He attributed the cause of death to the double mechanism of haemorrhage and asphyxiation.

He recalled that there were three wounds from a cutting instrument, and stated that the paths [*tramite*] of these wounds were all essentially similar in direction; with respect to the body, they all went from left to right, upwards, and towards the back. He also stated that in the major wound, apart from a very clear print of the edge of the blade - the wound was 8cm wide and 8cm deep - there were two very obvious additional incisions which signified that the blade of the knife went in, came out, went in and came out, two or three times, making the first secondary cut on its way back in and the second one on its way back in again. He emphasised that the insistence of the knife inside this wound, apart from the fact that it was manifestly and unequivocally proven by the presence of the secondary incisions, was also confirmed by "the examination **[142]** of the internal injury caused to the muscles and viscera of that region of the neck that were completely mangled; it is impossible that a single stab could have determined this set of lesions, causing the muscles to retract; this is case in which someone went back and forth with that knife in the wound for 8cm" (page 14 of the transcripts).

Professor Torre interpreted the wound underneath the main wound as having been produced by a dragging action of the point of the blade of the knife, and by a little prick probably determined by a movement of the victim's neck.

On the third wound, inflicted on the other side of the neck, Professor Torre gave evidence that the wound encountered the solid bone of the jaw, a very robust bone which had blocked the knife from going deeper.

He then considered the knife identified as Exhibit 36: this is a knife whose blade is 17.5 cm in length, with a thickness of 1 - 1.5 mm everywhere, and a maximum height of 3 cm. He excluded the compatibility of this knife with the last-mentioned wound

above because of its dimensions; one centimetre, or [maybe] even one centimetre point 2 [millimetres][14], and a depth of 4 centimetres.

He also maintained that the same small knife [*coltellino*[15]] which made this wound of 4cm in depth may have caused the more serious wound of 8cm in depth "by sawing back and forth, mangling the deep tissues, and this made the wound that it could make, namely an 8cm wound" (page 17 of the transcripts).

The main wound - the 8cm one - could not have been caused by the sequestered knife (item 36), because in that region "there is nothing resistant, only the hyoid bone which is just a fragile little thing... [*è roba proprio da poco*]". Thus, not encountering any resistant structures, especially during an insistent action, the use of a knife with a blade 17cm long would "certainly have gone right through the neck" (page 17).

[143] Also the other wounds could be absolutely compatible with a pocket knife with a blade 8cm in length and 1cm or 1.5cm in height.

The deep abrasions under the main wound could have been caused by a strong fingernail: "fingernails", he observed, "can produce deep scratches with half-moon shapes like these" (page 19).

The injuries on the mouth and nose he interpreted as bruises due to compression: a hand and fingers placed on a mouth with the goal of silencing it; this was a sign of the neck having been held.

It did not seem likely that the injury to the left elbow could be caused by grasping, since it is not particularly meaningful to grasp someone by the elbows. It could have been caused by a bump.

The bruises on the iliac crest appeared difficult to see, and with a different colouring, and did not yield any positive information about their nature or significance.

As for the wounds on the hands of the victim, the consultant Professor Torre gave evidence of the smallness of these wounds. This smallness could not be explained by the fact that the girl had been restrained, since if one is restrained it is not the case that one is only slightly wounded; one is not wounded at all. He also observed that if one is faced with a knife having a large and long blade, then defence wounds - due to an action of holding off the blade which would be easy to grab due to its large size - should be quite large. He maintained that "these very tiny wounds are compatible

[14] Between 1cm and 1.2 cm
[15] *Coltellino*, "a small knife", e.g., a pocket knife

with pricking by a small knife or with the serrated spine of the blade of a small knife" (page 24).

As for the dynamic of the crime, he held a stabbing from the front to be more likely than a stabbing from behind as Professor Introna hypothesised; above all because of the traces and squirts of blood which were left in the room.

On the subject of the main wound, he emphasised that the region concerned by this wound is a "zone consisting of soft parts, containing the little hyoid bone", which, **[144]** he indicated, would be "insignificant in terms of being able to stop the blade of a knife". He reaffirmed that it was "incomprehensible that such a long knife would not have made a deeper wound, because the repeated stabs suggest an intensity of violence; Professor Introna suggested, and he may be right, that the scrapes under the main wound...could be due to encountering the end of the blade, and perhaps the scrape was even left by the finger grasping that blade, meaning that the blade went completely in" (page 34 of the transcriptions).

As for the hyoid bone, Professor Torre expressed perplexity in determining whether "the hyoid bone was fractured by a manual strangulation or by the knife". But, hearing the comment by Dr. Lalli during the filming of the autopsy, who said when describing the wound: "the path passes through the hyoid bone which is severed", he leaned towards that hypothesis, although noting that "actually cleanly severing a bone is not easy" (page 34).

As for the bruises on the nape, Professor Torre emphasised their importance, maintaining that they were "due to bumping into a flat surface, but not from a fall by a standing person, because if I'm standing and I fall down and hit my head from behind, I will easily get a wound of laceration-contusion type [*una ferita lacero contusa*]; but if I am already sitting or leaning back, I hit the ground and get exactly that beautiful bruise in the region of the nape, and this is the other element which...indicates to me an action from the front" (page 36).

The consultant held it to be possible that the victim might have screamed, observing that "if I see a person in my house I could very well scream; a hand placed on my mouth could prevent me from screaming, and likewise a wound like the one on the neck..." (page 38).

He maintained that "in any case there is nothing there which could lead me to think that there was more than one attacker" (page 43).

As for the compatibility of the wounds with the sequestered knife, Exhibit 36, which was the object of further questions [posed to the consultant], he stated that whereas in the case of the smaller wound there was absolute material incompatibility, with regard to the larger wound it could not be excluded that it could have been caused by that knife, but no more so than by **[145]** a myriad of other knives. He did, however, specify that that knife was compatible with the morphology of the wound but not with the depth of the path of the wound, since "with a knife with that cutting edge and that length, it would be impossible for it to have entered so little, because in that region of the neck it would only encounter soft parts" (page 45), and moreover there had been "a back and forth motion of the knife... someone who tenaciously persists in pushing in a knife yet never goes in deeper even after three tries, but stops at a depth of 8cm every time..."

On the abovementioned subject of the presence of three different paths within the same wound, indicating that the knife entered three times, the consultant gave the following explanation: "I say that the internal parts of this wound are very chewed up; if I was seeing just one stab into the interior of that muscular system, I would see sliced muscles, but here, having gone back and forth several times, I say three times because I say that one time was the initial stab, then an extraction and a re-penetration making a new incision, I say three times because it's all mangled and there are three incisions of the cutting edge of the knife so I imagine they correspond to three paths...On the photo one does not see three incisions...it is a little risky to say that number. But inside, it is clear that this is not a wound from a single stab, there are strands of muscle [*lacinie muscolari*] all over the place; this is a wound inside which one seems to perceive another wound; but above all, examining the surfaces of the edge of the wound I have this...I have this principal cut which is this one here, when the knife penetrates, its cutting edge makes this very clear incision, and when I penetrate again or pull it out or insert it, I make these secondary injuries with the blade, meaning that the cutting edge of the blade went in and out several times, because if it hadn't, it would be impossible to have these different secondary incisions clearly left by the cutting edge of the blade" (page 79). The wound 4cm deep has a single path in contrast: "the incision caused by the cutting edge of the blade is very clean..."

He explained the difference between the dynamics of the two wounds by the fact that while the 4cm wound encountered the jawbone, in the other part of the neck no such obstruction was encountered and there was a persistent action. He considered it to be possible that during this persistent activity, the victim may have **[146]** "made

some head-turning movements". He did not exclude that through these rotations the victim may have caused the “mangling” that Professor Torre explained by the hypothesis of three penetrations, but in that case, he observed, "we have to imagine a stabber holding the knife immobile and a head which is moving around in that direction; it seems more reasonable to me altogether to imagine the action of a hand stabbing" (page 80 of the transcripts).

(J)

Professor Vinci testified at the hearing of August 18, 2009. He considered the subject of the "bloody stains" found on the undersheet in Meredith Kercher's room. In relation to these stains, on the basis of graphics given in the report dated June 30, 2009, he asserted that the knifeprint found on the undersheet in Meredith's bedroom could have been made either by an 11.3cm knife blade, or by a 9.6cm knife blade together with a mark 1.7cm long left by the handle of the same knife. In either case, the blade could not be wider than 1.3/1.4 cm.

He emphasised that all the wounds inflicted by a cutting instrument would be compatible with a single knife.

(K)

At the hearing of September 18, 2009, Professor Vinci was heard. He also dealt with the aspect relative to these “haematic stains” found on the mattress cover in the bedroom of Meredith Kercher and in relation to them, on the basis of graphic elaborations which he reported in the statement given on June 30, 2009, he affirmed that the prints found on the mattress cover found in the bedroom of Meredith Kercher could have been in relation to the dual placing of the blade of a knife 11.3 centimetres long, or of a knife blade 9.6 centimetres long and with a section width (of 1.7 centimetres) at the top of the same knife.

In each case the blade must have had a maximum width of 1.3 / 1.4 centimetres. He stressed as well that all the wounds of a stabbing and cutting weapon were compatible with the use of a single knife.

(L)

At the hearing of September 19, 2009 the experts appointed by the judge (GIP) at the sitting of the preliminary hearing were heard: Professor Anna Aprile. Professor Mario Cingolani, Professor Giancarlo Umani Ronchi.

Professor Umani Ronchi stated that he had dealt with in particular the problem relative to the time of death, taking into account what had been established by Dr. Lalli, and the gastric content. He claimed that the gastric content, which came to the examination of the experts, was about 200 cubic centimetres; that indicated by Dr. Lalli's report was 500 cubic centimetres. This gastric content was essentially made up of digested matter and not distinguishable as much as concerns a part which Dr. Lalli had recognised as shortcrust pastry and as mozzarella [cheese]; a part was however more clearly distinguishable and recognisable as slices of apple.

[147] He noted that from the witness depositions it had emerged that the victim had consumed various foods (pizza with mozzarella cheese, ice cream and apple cake) and had consumed various drinks, but not alcoholic drinks. He specified that gastric digestion is very much debatable insofar as time is concerned. The presence of 500 cubic centimetres of material in the stomach meant that a large part of the stomach had not emptied. He could not, however, say whether it had partially emptied. On this particular point he specified as follows: "It is true that the duodenum was empty; however, it is also true that there was some alimentary content before the ileoececal valve, alimentary content which is defined as digested ... that of the stomach was also digested for the most part and since the examination performed by the person who carried out the autopsy does not appear to have been conducted according to the prescribed techniques of forensic pathology, i.e., the ligature of the various segments etc. ... usually ligatures are done to see how far food has reached to prevent the passage…of any ingested food into lower zones during the lifting up and turning over of the intestinal ansae loops" (page 21 of the transcripts).

He further stressed that precise indications which would enable specification of the time needed for the alimentary material to reach the ileoececal valve did not exist and that this was because digestion is determined by a whole series of conditions which are absolutely individual and which are not consistent, even for the same person. However, it can take three, four, five hours for the stomach to empty, although it could also take much, much longer (page 22, the hearing of September 19, 2009).

He also added that, since ligatures had not been made, a certain downward slide could have occurred.

As far as the time necessary for gastric emptying, he stated that three or four hours could be necessary, or even more, such as five or six (page 24); under standard conditions, the time would be four or five hours, or even three. In this regard, he mentioned what was contained in the expert report (ordered by the preliminary hearings judge (GIP), acquired by the Court and admissible) on pages 44 and 45.

[148] He specified that three or four hours after consuming a meal, "there should already be some material in the duodenum ... and that it still should not have passed down" (page 38 of the transcripts).

He confirmed that the time of death, on the basis of the elements available, should be indicated as having occurred from twenty to thirty hours before 12:50 am on November 3, 2007; thus between 20:50 pm on November 1 and 04:50 am on November 2. He did not remember whether traces of mushrooms had been found. He confirmed the difficulty of using digestion as a parameter for deriving an exact time of death.

He further specified that the three or four hours needed for digestion and for the stomach to empty should be understood as beginning to take effect, so to speak, when eating begins.

As far as the knife which had been seized, Exhibit 36, he declared that he had seen this knife, but from a certain distance, without holding it in his hand or gauging its weight. He had not seen the streaks. He recalled the opinion expressed in the expert report where the absence of significant elements to establish whether one or more than one knife had been used was affirmed, "the only possible judgement being that of the non-incompatibility of the wounds with the knife under judicial seizure", an opinion that he confirmed. In this regard, he stated that the judgement of non-incompatibility had been based on the fact that the knife was single-bladed; "as far as the discussion about the length of the blade, of the width of the blade, etc. ... we recalled that compatibility can hardly be established from the length and the width of the blade for one very simple reason: because of the human factor ... of the person who has the weapon in hand to exert the pressure, the direction ... the going backwards and forwards..." (page 60).

Following relevant questions by the defence for Raffaele Sollecito regarding the gastric content, he explained that there had been a whole series of hypotheses

“because unfortunately concrete elements were missing” (page 68); on the possibility that a sliding of the food from the duodenum to lower parts had occurred, he specified that it was not easy to hypothesise that the examination had taken place in such a way as to avoid that such an eventuality had been detected (“because the **[149]** intestinal skein is a skein and therefore at a certain point it is necessary to pull on it to open it..." page 69); in this regard he testified to the presence of alimentary residuals in the small intestine.

With regard to the time of death, he confirmed the range indicated in the expert report and noted that the hypostatic stains did not allow the reduction of this range because they had been identified too late; the only datum which had been noted quite early was that of the rigidity of the foot, but that alone, without considering the rigidity of the other joints of the body, could not be considered a significant element to apply the criterion of rigor mortis”, also because the foot was on the outside with respect to the blanket which was covering the victim. Henssge’s nomogram could not provide sure indications because it “requires that the temperature be constant over time. If there are variations in the ambient temperature, this leads to situations which are not what we would call reliable”.

Prof Cingolani was then heard during the same hearing.

He declared that the available written and computerised material had been used to draw up the report. They were also able to view some of the histological specimens described in the report of Dr. Lalli and 200 cubic centimetres of the gastric content out of the 500 indicated by Dr. Lalli as present in the stomach. He mentioned, moreover, that they had had access to a container in which there was some blood, on which toxicological investigations were then conducted at the Laboratory of the Institute of Forensic Medicine of Macerata, as well as on parts of the gastric content and on a part of the frozen liver.

As far as the cause of death was concerned - although he testified that the fact of having worked on the documentation and not directly on the body did imply some limits to the investigation and the analyses – he stressed that the lesions which appeared significant and important were those located around the region of the neck and the orifices, that is the mouth and the nose, and they were wounds which were partly contusive. But above all, there were three fundamental lesions which had the characteristics of stabbing and cutting wounds, all three penetrative, two more so and one less. Two had the cuts **[150]** substantially on top of one another or

intersecting, and they were to the left of the median line of the neck; the third was to the right.

He referred as well to the presence of tiny spots under the serous membrane and under the eyelids, which he indicated as possible elements identifying asphyxiation.

He also mentioned the pulmonary profile, which alternated zones of thickening and zones of emphysema: this also, he observed, was coherent with a possible death by asphyxia.

The largest lesion was on the left and high up, in correspondence with the zone below the jaw-bone, and inserted into the organs of the neck, and from the examination carried out in the established preparation it was observed that "it crossed or damaged the anterior surface of the epiglottis ... and it disappeared in the right wall of the oropharynx ... this was the largest lesion: it did not affect any large... vascular structure of the neck; however, it affected the interior of the muscles and affected the airways ... the depth of the cut was 8 centimetres"; he added that "the superficial lesion was very relevant". This circumstance was not of much importance, however, since it could have been caused by a weapon "positioned in a very oblique manner in respect to the surface of the skin..." (page 86 of the transcripts).

A little lower, in the mid-cervical region, another stabbing or cutting lesion was present, with a cut 4 centimetres long, and this reached and affected the upper thyroid artery. Then there was a series of contusive lesions in the [lower jaw area] and small contusive lesions on [note: or near] the internal mucosa of the lips.

On the basis of the total picture, the cause of death was identified in the coming together of two elements: asphyxia and haemorrhagic factor.

The asphyxia was traced back "in part to the mechanical activity exercised in correspondence with the neck and with the breathing orifices and in part also to what in nosographic terms is defined as internal submersion, connected, that is, with pulmonary aspiration of blood, originating in this case from the lesions produced, and this clearly emerged from part of the histological picture" that showed "areas of alveoli full of haematic material" (page 87 of the transcripts).

[151] On the point regarding compatibility of the wounds with the knife Exhibit 36, he affirmed that this had to be ruled out for the lesion on the right, 4 centimetres deep and 1.4 centimetres wide, and recalling the assessments made on pages 47 and

48 of the report, he stated that at 4 centimetres from the point of the blade, the blade is wider by 1.5 centimetres, and therefore a blade of those dimensions penetrating for 4 centimetres would have had to cause a bigger "breach"; therefore it could not have been the blade of the knife which was Exhibit 36. He did not, however, have elements of certainty to establish that the blade which had caused the wound 4 centimetres deep had stopped at the said depth because [it was] stopped by the jawbone.

In analysing the major wound, the one on the left, he examined the aspect relative to possible anatomical obstacles, such as to have been able to impede the complete penetration of the blade, and he recalled the presence of the hyoid bone and the epiglottis, which is cartilaginous and has a certain resistance. He stated that there was a lesion on the hyoid bone which could be consistent with the passage of a blade. As far as the epiglottis was concerned, he made the observation that the cutaneous lesion was a little above the epiglottis, but it was not possible to know in what position the neck was in (page 93 of the transcripts). "Therefore, the lesion of the hyoid bone can also be due to the passage of the blade ... since ... the blade had continued its course into the body"; there certainly had been resistance, but not such as to stop the blade. He therefore reaffirmed that the hyoid bone is not such as to prevent a blade going beyond it.

With regard to the contusion which appeared underneath this major wound, to the apposite question of the defence of Raffaele Sollecito (asking whether it could have been caused by the handle of the knife) the expert replied that this was possible ("it could, yes" page 97). He specified, replying to further questions on the point, that it was an abrasive lesion, i.e., compatible with all the means capable of producing an abrasive lesion.

He then went on to detail the outcome of the alcohol level test. He recalled that the level of alcohol found in Perugia at the Institute of Forensic Medicine was 0.43 grams per litre; the [level] that had been **[152]** detected in the blood, however, at the headquarters of the expert report commissioned for the pre-trial hearing [*incidente probatorio*] was 2.72 grams per litre. On the basis of such contrasting results, a check was carried out on the alcohol percentage in other regions: in the gastric content and then in the liver. A value substantially of zero had been found in the gastric content and, he stressed, "in the gastric content the quantity of alcohol is frighteningly greater than in the blood" (page 106). In the liver too a very slight quantity had been detected, equal to 0.2, which was comparable from the pharmacokinetic point of view with the 0.43 verified by Dr. Lalli at the Institute of Forensic Medicine of

Perugia, rather than with the value of 2.72. He concluded on this point that that was no pharmacokinetic condition which could justify all three of these values, that is zero in the stomach, 2.72 in the blood and 0.2 in the liver. On the basis of these elements they had concluded that Meredith was not in a condition of alcoholic intoxication.

He could not indicate why the analysis of the blood had given a particularly high value, "close to ethylic coma," (page 108) other than in terms of a simple hypothesis: the exchange of samples; a contamination with the passage of alcohol to the sample, taking place when the exhibit was in the refrigerator.

He indicated the percentage of alcohol detected by Dr. Lalli and equal to 0.43 as compatible with the consumption of one beer or of one glass of wine. That there was then found to be zero in the gastric content could be explained by the fact of evaporation or by the fact of the digestion of the alcohol.

With specific reference to the wound 4 centimetres deep, he clarified that from the description provided by Dr. Lalli, the angle of the jawbone did not seem to have been reached and [it was] "quite distant in respect of the plane of the cut" (transcripts, page 124). He further declared that there was a disproportion between the lesions suffered by the victim and the defensive lesions, which could be interpreted as lesions [sustained when trying to] get away. He was unable to provide an explanation for such a disproportion, which he held to be compatible with the presence of more than one person, but also with the action of a sole person who acts in a progressive manner (pages 128 and 129).

[153] On requests for further clarifications about the biggest wound, the one 8 centimetres long and 8 centimetres deep, Professor Cingolani pointed out that "at least a pair of incisions are observed ... there is this rippling of the upper edge, this could be indicative of an insistence on the penetration of the blade" (transcripts, page 132).

The measurements of the confiscated knife, Exhibit 36, indicated on page 18 of the expert report, were recalled; "along the knife irregularities in the form of thin reeding were observed, respectively at 2.2 centimetres from the point and in continuity with it, and at 11.4 centimetres from the point" (page 136). He specified that these irregularities were "on both sides ... on one side of the blade and also on the other" (page 135) and that these irregularities were present on the edge of the

blade. He stated that on the face of the blade he had not noticed any reeding or any particular sign, except for the impression indicating the brand of the knife.

He confirmed that the lower wound joined up with the major one.

The expert declared, on the express question of the defence for Sollecito, that if the intent is to kill, then it is obvious that the weapon is pushed in until it stops for some anatomical reason (page 148).

In confirming the judgement of the non-incompatibility between the confiscated knife, Exhibit 36, and the major wound, he repeated that the abrasion under the wound could also have been caused by the impact of the handle of the knife on the skin, but also by other causes having equal validity. That the abrasion then was present only lower down, observed the expert, could have depended on the inclination with which the blade penetrated: on one side, the handle can compress more; on the other side, it may not compress. Therefore, it is the sign of half handle (page 157).

With reference to the section in the expert report dedicated to the toxicological investigation, the expert gave evidence that that use of drugs, especially by people who are not used to consuming them, can loosen inhibitions and detract from the awareness of what is being done (page 163).

He clarified that irregularities present on the blade, on the edge of the blade, could have created the rippling in the wounds.

[154] In the course of the examination, the confiscated knife, Exhibit 36, was then shown to the expert. The expert declared that he could not see any irregularity on the face of the blade: "on the face of the blade there does not seem to be anything ... I do not see any particularly relevant things ... it seems to be smooth to me" (page 165 and following).

He specified that the hyoid bone can constitute an obstacle to the penetration of a weapon, but a modest [one]; [it] offers less resistance than that normally offered by a bone but greater resistance than other structures present in the human body (page 179).

He further specified that the abrasion underneath the biggest wound could have been caused by the handle of the knife or by any other cause capable of producing the rubbing of that part of the skin against a body, which could be the hand or the fingernail (page 184).

Professor Anna Aprile was examined next, on questions relating to the sexual violence.

She gave evidence of the presence of signs, which led to the assertion that Meredith Kercher had been sexually active shortly before dying. She pointed out these signs in images which documented a colouring at the level of the sexual organs and furthermore in a swab taken from the level of the vagina, which was negative in regard to the presence of biological material identifiable as sperm, but positive for the presence of biological material identifiable as belonging to a male subject, and she observed, "finding in the vagina ... biological material traceable to a male subject...permits us to say that biological material belonging precisely to this subject came in contact with the vagina ... It could be saliva, they could be epithelial cells flaking from the hand, or it could be indicative of penetration ... that occurred without ejaculation or on the part of an aspermic subject" (page 194). Furthermore, "from the photos and from the description of the advisors of the Prosecutor, one can infer, with reasonable certainty, the presence of a pattern of small spots of bruising at the level of the entrance to the vagina, just as there is evidence of some small spots of bruising at the level of the anal sphincter". In particular, Professor Aprile stressed that while the second exhibit mentioned was a little less significant, the pattern of small spots **[155]** of bruising at the level of the entrance to the vagina led to the conclusion that an action of rubbing and contusion had occurred.

She also confirmed the presence of elements which led to the conclusion that Meredith had had activity of a sexual nature shortly before dying. On the consent or otherwise to this sexual activity, precise answers could not be given because, she observed, violent sexual relations can be verified without lesions, and vice versa.

As far as the specific case was concerned, she recalled that there had been histological investigations made on the genital samples conserved in formaldehyde and that therefore the "anatomical preparation" was no longer under optimal conditions; the histological investigation had nonetheless indicated "the presence of congested blood capillaries, replete with red globules, not with haematic overflows" [*stravasi ematici*]. Consequently it could be affirmed that the macroscopic data of the pattern of small spots of bruising or of the congestion had found partial confirmation in the histological examination (page 197). In relation to this and considering the complex context of the event, it was held that Meredith had been the object of sexual acts committed against her will. Therefore confirming [what was written in] the explanatory relevant report.

In reply to the specific question asked by the defence for Amanda Knox, she took note that in two passages of her examination, which took place during the pre-trial phase [*incidente probatorio*], she had spoken about hypostasis; she clarified that this had been a mere material error, as she had meant to say that they could not be taken as hypostasis. She therefore specified that "the photos and the investigations lead to the conclusion that it was a matter of patterns of small spots of bruising, suffusions, small haemorrhagic suffusions, and not hypostasis" (page 202 of the transcripts).

(M)

At the hearing on September 25, 2009, Dr. Patumi, a consultant for the defence of Amanda Knox, was examined. He recalled that the victim presented three wounds in the region of the neck: two on the [victim's] left side, one on the right side. In relation to the two on the left side of the neck, the more cranial one, i.e., the one positioned higher, was surely the more important one; that one, together with other mechanisms, had caused the girl's death. This wound **[156]** was 4cm wide, 8 cm long, with a cut 8 cm deep. The superior rim, the upper margin, of this wound presented two accessory incisions, signifying that, certainly, the victim was not struck by a single blow "but rather by multiple blows, not fewer than three, i.e., the blows were repeated after the first knifing at least two more times" (page 87 of the transcripts). On the lower edge was noted "the presence of this area contiguous with the lower cutaneous rim of the wound, which is an area we can define as excoriated contusions" which, maintained Dr. Patumi, "represents in all likelihood the anterior face of the handle of the grip of the knife, of the cutting implement that was used…in the moment in which the knife wound was inflicted, the anterior part of the knife came into close contact, in strict contiguity with the skin, pushing it [the skin] inwards, rubbing against the skin creating this type of image" (pages 87 and 88). Consequently, the confiscated knife, Exhibit 36, with a blade length of a good 17cm, could not have caused a cut of 8cm. The final argument supporting its incompatibility was constituted by the repetition of blows and their violence, deducible from the fact that a bone was directly pierced that, although not having the consistency of a femur, does possess a boney component that renders it resistant [to the knife]. He thus argued that there was great violence, which had to lead to excluding the possibility that the blows were not thrust into the full length of the blade, as if the attacker [the person inflicting the wounds] "had...for whatever reason

not wanted to attack furiously... but limited it [the depth of the cut] to just 8cm" (page 89).

As for the possibility that the victim could have made an attempt to "distance her head and thus her neck from the cutting implement, which could have reduced the blade penetration," he observed that "the head of the victim and especially the mandibular region were subjected to a strong grasping action: the victim presented the characteristic signs of a hand which gripped and violently blocked the mandible" and, moreover, observed the consultant, she did not have much chance of distancing herself and fleeing from the cutting implement at the time of the aggression" (page 89).

[157] The hypothesis of the complete penetration of the cutting implement remained therefore quite valid.

That this knife was absolutely incompatible derived from the examination of the wound on the right part of the neck, which had absolutely incompatible dimensions: 1.5cm long and 0.4cm wide with a depth of 4cm. The cutting implement seized, Exhibit 36, in producing a depth of 4cm, presents a height of 2cm.

He specified that in many cases there was no correspondence between the length of the blade and the depth of the cut.

He affirmed that, in this murder, he found no sign of sexual violence; [or] of physical abuse whose goal was sexual violence.

Regarding the cut, he stated that it would be possible to have an even longer wound than the actual depth of the cut, given the nature of the tissues, and thus the possibility for the knife to plunge and press on the skin (page 137).

EVALUATION OF WHAT HAS BEEN SET FORTH BY THE EXPERTS AND FORENSIC CONSULTANTS

The opinions given by the experts and by the forensic consultants make it possible to confront the problems posed by the present event. Those problems which concern the forensic aspects are the following:

1) Was Meredith Kercher subjected to sexual violence or not?

2) What were the causes of death and how was death inflicted?

3) When did the death of Meredith Kercher occur?

4) When Meredith Kercher suffered the injuries and the violent acts which caused her death, was she in a state of alcoholic intoxication?

The Court holds that the first of these questions must be answered in the affirmative.

During the course of the examinations performed on Meredith's lifeless body, Dr. Lalli made a gynaecological examination and took vaginal swabs which were then given to Dr. Stefanoni for biological analysis. In one of these swabs was found biological material belonging to a male subject identified as Rudy Hermann Guede. This material, which turned out not to be spermatic, **[158]** could be from saliva or from epithelial cells from exfoliation, or, as Professor Aprile pointed out, could also indicate "penetration which occurred without ejaculation or by an aspermic subject". In any case, the objective fact remains that biological material from a male subject came into contact with Meredith Kercher's body, and with a definitely erogenous zone, as shown by the positive result of the vaginal swab. The region of the body in which these biological traces were found leaves no room for doubt as to the type of behaviour which rendered such an eventuality possible: this was a typical act manifesting the sexual impulse of the agent, a male subject, through the invasion of Meredith Kercher's sexual sphere, and thus it was a sexual act. In this regard, it seems sufficient to note that the notion of a sexual act contains all those behaviours which express the sexual impulse of the agent and which consist of an invasion of the sexual sphere of another subject, including touching, feeling, rubbing of intimate parts (Cass. 3.10.2007 n. 3447). Thus, an activity of penetration which left biological traces inside Meredith's body is behaviour which rightly belongs to the category of sexual acts.

The fact that this behaviour occurred against Meredith's will can be derived from what was observed in the course of forensic pathology examinations and also from the comprehensive evaluation of the scene as immortalised in the photos, which showed the almost entirely naked body of Meredith Kercher, the bloodstains, and the cut and torn bra.

In his study of the body, Dr. Lalli noted the presence, in the lower region of the vagina, of small areas of ecchymosis indicative of a non-consensual sexual activity on the part of the girl.

In regard to the ecchymotic areas, it is excluded that they can be interpreted as areas of hypostasis. In fact, these are peripheral areas typical of grazes and small abrasions

(see the observations of Professor Bacci) which are rather spread out in location, with respect to the posterior sloping surface on which **[159]** hypostatic stains would naturally appear, and they do not have the continuity and homogeneity that are encountered when it is a matter of hypostatic stains (see the observations of Professor Norelli). Nor, differently, can it be argued on the basis of the histological result that this did not make it possible to determine a flow of blood from the vascular bed. It can in fact be verified that the histological examination, relative to a small part, to be sure, and not to the entire area, concerned a zone not concerned by blood flow from ecchymosis. To this it can be added that, as Professor Aprile noted, the histological examination was conducted on a "preparation" preserved in formalin, which was no longer in optimal condition: this examination did however reveal the presence of congested blood vessels filled with red blood cells indicative of a pattern of tiny spots as noted by Professor Aprile.

[The Court] does not hold that this non-collaboration in the sexual activity could be indicative of a rushed sexual act, accomplished without any "preparation" of the female subject, as proposed, though in purely hypothetical terms, by Dr. Lalli. Such an interpretation, which would presuppose consent to the [sexual] act, and would attribute the cause of the ecchymotic areas to a lack of adequate physiological preparation for the [sexual] act, is clearly contradicted by the context of serious and widespread harm manifested by the body of the victim, which has been discussed and to which it will be necessary to return. It is also clearly contradicted by the strap of the bra that the victim was wearing, which was found stained with blood, indicative of the violent action which others performed on that garment before removing it and uncovering the victim's chest.

THE CAUSE OF DEATH AND THE MEANS BY WHICH IT WAS OCCASIONED

(A)

The wounds found on Meredith Kercher's body by the experts and the consultants have already been discussed.

Concerning certain of these injuries, marginal in determining the cause of death but undoubtedly significant for reconstructing the dynamic, dissimilar interpretations

were advanced. This was the case for the small areas of contusion **[160]** confirmed in the vaginal region for which a reading was hypothesised in terms of hypostatic marks, different from that which this Court believes, of small lesions following from a violent action.

Dissimilar interpretations have also been advanced with regard to signs found on the iliac spines, the upper limbs (signs of falling or gripping), and to certain small wounds found on Meredith's hands, which Professor Introna attributed – although in purely hypothetical terms – to a fall of the girl who, by placing or, in any case, by bringing her hands to the floor, would have suffered a few small wounds on them due to a piece of glass present on the floor of the room.

This piece of glass (which in the film of the November 2, 2007 inspection, as indicated by Professor Introna, appears at 19:26 and 42 seconds) is noticeable as being quite close to a print left by a bloodied shoe and deprived of any stain which would have led to a discovery of whether the origin of the small cuts on the hands was really this piece of glass. Above all, the reason given to explain the wounds on the hands as coming from the harmful action of this piece of glass appears unlikely, both in itself (as it is quite difficult to imagine that one would fall precisely onto that little piece of glass, injuring oneself again) and also considering that there were multiple wounds to the hands and only one little piece of glass in the room.

Neither can one put aside the fact that during the course of the event Meredith Kercher received several wounds from a pointed and cutting weapon; it is therefore likely that she had tried to interpose her hands to attempt some deflection of the blows that were being inflicted on her neck, receiving in this way some defensive wounds as well.

Rather, the presence of this small piece of glass in the victim's room allows for another consideration. The itinerary that the phantom burglar would have taken, entering via the breaking of the window and window-pane, has already been mentioned: Romanelli's room; the living room space crossed to go into the larger bathroom in which he left his sign of usage by not flushing; exit from the larger bathroom; another passage through **[161]** the living room to go along the hall and enter into Meredith's room. If it were so, one is unable to comprehend how it was possible that a piece of glass was dragged from Romanelli's room in various places and made to arrive in Meredith's room. It is more logical to think that, after the simulation of the burglary and the breaking of the window, the person who did this went into Meredith's room – to close the door and/or to cover her lifeless body with

the duvet – and the glass fragment – which could have ended up, hypothetically, in a fold of the clothing being worn or in some other place – came to fall, or rather it came to be brought in Meredith's room, into which, immediately after the breaking of the glass, it was carried by whoever broke that glass.

Turning to the question of the cause of Meredith Kercher's death, and the means which led to it, it is noted that, beyond the variations of interpretation mentioned above, the description of the lesions as given by Dr. Lalli has not been significantly contested by the experts and consultants.

However, with regard to these lesions, represented also in the relevant court documents, reference must now be made in order to address the question now before us.

Dr. Lalli has identified the cause of death as acute cardiorespiratory failure provoked by a dual mechanism:

haemorrhaging derived from the vascular lesion at the level of the neck;

asphyxia due to the inhalation of her own blood and a to further action of strangulation or suffocation. Dr. Liviero concurred with this assessment, maintaining that the action of suffocation can be determined by the numerous rounded ecchymoses present in the submandibular area and by haemorrhagic suffusions detectable on the inner labial mucosa, typical of a suffocation attempt.

Professor Bacci has attributed the cause of death to anaemia due to abundant blood loss and to asphyxia. In regard to this, he noted the presence of ecchymotic imprints at the level of the neck, the oral cavity and the nostrils. His opinion therefore was that a compressive action on the neck, mouth and nose occurred, capable of causing a certain asphyxial component [of demise or death].

[162] Professor Norelli identified the cause of death as attributable to three mechanisms, all of them of asphyxial in nature: manual compression of the neck deducible from the ecchymotic-type areas therein present; the presence of blood in the air passages caused by the neck wounds inflicted upon the victim; compression and obstruction of the external respiratory passages.

He further specified that the suffocation must be considered as the last mechanism, succeeding the lesions from the weapon and the aggressor must have held the respiratory orifices closed for 5-10 minutes.

In his turn, Professor Introna has identified the cause of death as haemorrhaging and the asphyxial component due to blood inhalation and to the breaking of the body of the hyoid bone with consequent dyspnea. Blood inhalation must have been protracted for approximately 10 minutes according to what could be inferred from the presence of macrophages in the blood-filled alveoli. The victim, therefore, must have been wounded on the neck, and on the mouth with closure of the respiratory orifices, and stabbed.

Professor Torre also spoke of asphyxia, attributing it to the cause of death and stressing the presence of so-called "mushroom-shaped mucus" which could be seen protruding and coming out of the major wound, and which is symptomatic of death by asphyxia, as well as the occurrence of an invasion of the airways by liquid, in this case by blood. He identified other signs of asphyxia in the subconjunctival petechiae and the dark colour of various hypostatic marks. He further specified that subconjunctival petechiae signified survival of at least two minutes from the beginning of the obstruction of the airways.

The experts nominated by the GIP, who were examined at the hearing of September 19, 2009, attributed the cause of death to the concurrence of asphyxia and the haemorrhagic factor. The asphyxia was produced by physical activity on the neck and air orifices and also, according to what could be derived from the histological picture, which revealed how the pulmonary alveoli were full of haematic material, by the aspiration of blood that was produced by the lesions sustained.

[163] Based on the conclusions and evaluations of the consultants and the forensic pathology reports, this Court finds that the death of Meredith Kercher was due to asphyxia caused by the wound of greater gravity inflicted on the neck, subsequent to which blood finished up in the airways impeding respiratory activity, a situation exacerbated by the breaking of the hyoid bone – this action also attributable to the action of the cutting instrument – with consequent dyspnea.

The signs of this death by asphyxiation are the pulmonary alveoli full of blood, the foamy "fungus" that one of the photos shows coming out of the neck wound, and the subconjunctival petechiae.

As regards the compressive action applied to the neck and respiratory orifices (the nose and mouth) indicated by the ecchymosis present in the submandibular zone and the ecchymotic suffusions present on the nostrils and in the inner labial region, while such action could constitute a further asphyxial component in the cause of

death, this Court does not hold that this occurred in the present case. In fact, the various harmful actions must be seen within the comprehensive dynamics of the event, in the temporal sequence of their occurrence.

It is held, therefore, that the submandibular ecchymosis was caused by a compressive action carried out prior to the stabbing. That such compression preceded the wound from a pointed and cutting weapon comes from various considerations:

the regions traversed by the neck wounds made these regions fill with the blood that was issuing abundantly from those wounds, and a compressive action would therefore have been rather difficult to perform on that part of the body after the action of the knife (regarding this matter, see Professor Bacci's observations on the slippery nature of blood);

moreover, one sees no reason why – after inflicting the wounds on the neck which, due to the vital part of the body struck, the breaking of the hyoid bone and the blood flowing out, must have appeared particularly serious, preventing the victim from being able to scream (with reference to the most serious wound, see what the various Consultants have observed in this regard, particularly Professor Bacci) **[164]** – it would also have been necessary to seize and strangle the victim's neck.

The compressive actions carried out on the neck must therefore have preceded the action of stabbing; thus they must have stopped at a certain point, and they must have occurred when Meredith was still alive because the wounds, considering the blood that came out of them, were inflicted on a person who was certainly alive. If it is thus, the neck compression action, because of its temporary nature and the fact that it preceded the other harmful actions, cannot be held to have had any efficiency as a cause of death by suffocation, at least if one does not associate it with the fracture of the hyoid bone and the effect of dyspnea that it would have caused, this last certainly not temporary. However, what the various consultants noted about the characteristics of the hyoid bone, its position, and the fact that it was broken in its central part rather than the lateral parts leads us to exclude this possibility.

Nonetheless, the ecchymosis visible in the submandibular area and also the circumstance by which certain forensic pathologists hypothesised that the grasping of the neck constituted a causative contributing factor to death by asphyxiation, connote such an activity as having significant relevance, and at this point it appears useful to recall the observations made during the discussion of the sexual assault

carried out upon Meredith Kercher, as shown by the penetrative activity documented by the outcome of the vaginal swab, in order to identify the probable dynamics of what occurred.

Meredith Kercher, returning home around nine in the evening, and without anything in mind other than having a rest (the night before, Halloween, she had stayed up very late) and doing some studying. Like her English friends, she thought she had a class at 10 the following morning, and would not have had any intention of acquiescing to the demands, held to be of an erotic-sexual nature by what has already been observed, of whoever entered her room.

Besides, she felt attached to Giacomo Silenzi, with whom she had just started an intimate relationship, and she was serious young woman with a strong temperament. She had also practiced football and karate.

[165] It is therefore to be considered that invitations of an erotic-sexual nature would find a proud refusal in Meredith Kercher, and the grasping of the neck – so violent as to produce ecchymosis and even to be indicated by some of the consultants (such as Professor Norelli) as the principal factor in death by suffocation – must have been for the purpose of intimidating her, in addition to limiting the girl's freedom of movement, in order to convince her to not offer resistance and allow her attacker to give free rein to the impulses that must have dominated him in that moment.

The neck hold was not, in any event, sufficient to bend Meredith's will and reduce her to the mercy of her attacker. It is possible even to think that such opposition led to an escalation of violence and, instead of persuading the one carrying out the aggressive act to withdraw from the attempt at abuse, was taken as a challenge; thus more harmful actions were accomplished, with more serious intimidation, and the neck compression must have thus ceased. Thus, such action, which certainly was performed as shown by the submandibular ecchymosis, had no causative effect on the death by suffocation, nor did it succeed in taming the young lady's resistance; she was therefore struck on the right latero-cervical region with a single-edged blade which produced a wound with dimensions of 1.5cm by 0.4cm, with a penetrating depth of 4cm: an action not relevant in determining the cause of death but intended, as before, to subdue Meredith Kercher's resistance.

It is likely that it was at this point that her trousers and underwear were removed and she was made the object of the sexual assault described above, probably preparatory to further aggression and violence, also of a sexual nature. In fact, her

top, which she was still wearing, was lifted up and rolled up towards her neck and, therefore, her upper trunk freed in such a manner; there was an attempt to unfasten her bra which, almost like the girl herself, provided such resistance that to remove it, it was necessary to apply force and cut it off.

The bra and the cut bra fragment were thus removed and discarded; the pillow was taken on which they evidently wanted to position the girl **[166]** to allow and facilitate (one can see no other purpose) further sexual activity. This pillow was in fact found under the young lady's buttocks and the handprint, from Rudy Guede's hand and stained with the victim's blood, shows that Meredith had already been struck and was bleeding; it is also observed that the bra fragment with the clasps was found under the pillow, which indicates the moment, following the forcing of the bra and when this garment was removed, in which the pillow must have been positioned, and leads one to hold as probable the above-mentioned purpose of positioning of the pillow: the girl was stripped almost completely and had been wounded; a pillow was placed on the floor probably to lay out the young girl and sexually abuse her with greater ease. But the sexual violence to which the girl was subjected, and the pain that such violence must have produced; the neck wound inflicted on her and the actions of constricting and stripping (when her bra was also removed) that followed, are to be held as leading to the girl's scream: a cry of pain and extreme effort, in the hope that the loudest possible scream would interrupt the criminal activity in progress.

The response was the compression of the upper airways (the ecchymosis in the labial region and under the nose constituting the signs of this) accompanied by the last wound, deep and grievous, to the right side of the neck, inflicted immediately after the bra was cut off, removed and thrown aside, such that a large portion of the bra came to be stained and almost soaked in blood (see the right bra strap in particular). It was this wound and the compression of the upper orifices done by a hand that, to prevent further screams, pressed to close the mouth and ended up against the nostrils impeding the breathing, that led to the death by asphyxia that would occur a few minutes later.

Professor Introna, in his reconstruction of the events, hypothesised that the attacker – and he holds that it is a case of the action of a single attacker – found the girl naked from the pelvis down. He surprised her from behind and, grasping her by the neck with one arm and holding her firmly in this way, applied violence with the other, taking advantage of the situation where the girl was completely naked in her private parts.

[167] This assumption cannot be shared by the Court. It would in fact be necessary to think that the young woman was undressing herself exactly at the moment in which there was the entrance of others into her room, and that she was undressing herself starting by completely removing clothing from the pelvis down; to which can be added that her two shoes, while [found] fairly close to each other, were found in the room in an area nearly opposite to the clothes that Meredith supposedly removed straight afterwards, namely her trousers and underwear (see photo 104 in the photographic evidence binder, volume 2). To which can be added that such a reconstruction presupposes that entry into the house occurred in a furtive and violent way and it has already been seen how such a hypothesis does not appear logically and objectively sustainable.

We consider it therefore much more likely and logical to think that Meredith was still dressed and it was whoever attacked her that removed her trousers and underwear as explained above.

At this point we must confront the question of the means by which the wounds and the death were caused. The question can be posed with specific reference to the wounds present in the neck region and which were attributed by various consultants and experts to a pointed and cutting weapon. The relevance of this question is tightly bound to the discovery, in Sollecito Raffaele's house after the arrest of the current accused, of a knife, Exhibit 36 already mentioned multiple times, on which, during the genetic investigations, was found biological traces which the scientific police attributed to the biological profile of Amanda Knox (on the handle) and of Meredith Kercher (on the blade). With reference to the outcome of these analyses, questions and doubts were put forward, to which we will return. However, it is clearly evident that should one conclude during the forensic pathology investigations, that the knife is incompatible with the wounds – with all the wounds – inflicted on the victim, it would be pointless to consider the further question, of the genetic examination (also) conducted on the said knife.

It must immediately be stated that said knife has a length of 31.2cm and is furnished with a single-sided blade of length 17.2cm, embedded into a black-coloured handle. The thickness of the upper [non-cutting] edge of the blade is 1.5mm, and the width of the **[168]** proximal third [blade one third of the distance from the handle] is 3cm. Along the edge, there was evidence of irregularities in the form of thin ridges at 2.2cm and at 11.4cm from the tip.

The experts and consultants who were examined during the course of the trial, taking into examination the various wounds present on the neck, excluded the compatibility of the knife Exhibit 36 and the wound inflicted on the right latero-cervical and having the following dimensions: 1.5cm by 0.4cm, with a depth of 4cm in an oblique upwards direction. They in fact showed that the confiscated knife, at a distance of 4cm from the tip, has a width of approximately 3cm and thus almost double the 1.5cm width of the wound, a width thus incompatible with the dimensions of the blade of this knife.

The Consultants for the defence(s) also excluded compatibility with reference to the wound present in the left latero-cervical. A wound with a depth of 8-9cm and which Dr. Lalli in his report described in the following terms "in the left latero-cervical, 8cm inferior to and 1.5cm anterior to the external *acoustic meatus*, a wide wound with clean edges of length 8cm, obliquely positioned, in the caudal and lateral directions widely gaping, exposing the underlying tissues which appear to be sectioned right up to the osteo-cartilage. The edges present minimal haemorrhagic infarction predominant at a distance of 3cm from the extreme lateral edge, where a small tail is detectable. Very small excoriated and ecchymotic edge with maximum width of 0.2cm is present at the extreme anterior of the upper edge. This wound followed a trajectory [*tramite*] which reaches deep into the soft tissues with an apparent oblique direction front-to-back, from left-to-right, and slightly from low to high [upwards]" (pages 26 and 27 of the Lalli report). Said description was repeated also by the experts appointed by the GIP at the pre-trial hearing [*in sede di incidente probatorio*] (see page 10 of the forensics report).

Various arguments have been advanced by the defence consultants, particularly Professors Introna and Torre, ruling out the compatibility of the confiscated knife with the aforementioned wound.

[169] In the first place, Professor Introna maintains that the ecchymotic area underneath the wound constituted a sign of the impact of the proximal part of the knife handle against the skin. He had to necessarily derive from this that the entire length of the blade must have penetrated and thus, that the wound with a depth of 8-9 cm could not have been caused by a knife with a blade of 17.5 cm in length.

He also asserted that an attacker with homicidal intentions would strike with all their force, and thus, in making use of a knife with a 17.5cm-long blade, there was no reason to limit himself to producing a wound equal to half of what such a knife was

capable of. Under this outline, he pointed out the presence of two parallel lesions on the epiglottis, symptomatic of repeated thrusts, with clear homicidal intention.

Professor Torre also emphasised the repeated thrusts, and the circumstances by means of which the cut would have reached a depth of only 8 cm indicates the blade could not have been longer than that. He also pointed out the fact that in that region [of the neck] there is no substantial obstacle apart from the hyoid bone which could not constitute a serious obstacle, and thus, especially considering the repeated action that was accomplished, deducible from the presence of a real butchering in that area, the use of a knife with a blade nearly 17 cm long would have caused a wound much deeper than the approximately 8cm-long one observed. He considered it possible, furthermore, that the ecchymotic area underneath the wound had been caused by the stopping of the blade, or rather by the hand holding the knife pushed in for the entire length of the blade and thereby ending up impacting against the skin and producing the underlying ecchymosis.

Professor Torre considered it also possible that the same pocket knife could have caused the various wounds, citing the homogeneity of their trajectories, all from left to right and upwards. Dr. Patumi, Amanda Knox's defence consultant, also asserted that the ecchymotic area underneath the most serious of the wounds represented in all likelihood the anterior face of the grip of the knife handle, which therefore implied that the entire blade had penetrated. He added also that the repeated thrusts and the fracture **[170]** of the hyoid bone which, although not having the consistency of other stronger bones such as the femur, for example, is still a bone, signified that the thrusts were inflicted with great violence and intentionality, so that the entire blade would have had to have penetrated, and would have penetrated.

The alleged incompatibility of the wound caused to the neck in the left latero-cervical with the knife Exhibit 36 was, instead, excluded by the GIP-nominated experts, the consultants of the prosecution and of the plaintiff, albeit each with different emphases, which led some to speak of definite compatibility (Dr. Liviero), some of compatibility (Dr. Lalli and Professors Bacci and Norelli), and others of non-incompatibility (the GIP-nominated experts).

On the basis of the indications and explanations given by the various pathologists, and in consideration of the documentation brought to our attention by the same, this Court makes the following observation:

the set of lesions caused in the submandibular zone labelled by the GIP experts with the numbers IE-14, IE-15, IE-16, and IE-17 (see photo on page 11 of the GIP experts' report) reveal a comprehensive injury pattern which is inhomogeneous, making it difficult to hold that the same knife, used therefore by the same person, could have produced an injury pattern that does not appear homogeneous and such as to make it possible to accept that it was used by a single attacker.

With specific regard to the knife indicated as Exhibit 36, its incompatibility with the right latero-cervical wound can be affirmed in relation to the comparison of the dimensions of the said wound with same knife, according to what we have already had the occasion to observe, recalling, on this point, the apparent agreement of the consultants and experts, an agreement which appears convincing and which is accepted in light of the unarguable, even geometric as one might say, reasoning brought to sustain it.

The Court does not believe that this incompatibility is present with regard to the two wounds in the left latero-cervical, one with a depth of about 8cm, and the other 1.4 cm. We will return later to the latter wound, which appears to have been caused by the point of the knife which remained almost stuck [*impuntatura*].

[171] With reference to the largest wound, the incompatibility with the confiscated knife, Exhibit 36, had been affirmed with regard to the homicidal intent, to the absence of structures able to stop its course, to the presence of two incisions on the epiglottis indicative of repeated thrusts, to the presence of an underlying ecchymotic area which would have constituted a sign of the impact of the knife handle onto the skin.

None of these arguments appear acceptable.[16]

The two epiglottal incisions cannot be held to signify the behaviour of a person who, animated by intent to kill, repeats the knife thrusts, extracting the knife from the wound and striking again, according to the description offered by Professor Torre in particular. Such a reconstruction does not give a reason, it is held, as to why the blow arrived at the same place: if this blow is to be anchored in the homicidal intent and in the observation that the death had not yet occurred, the attacker would have had to direct their action towards another bodily region instead of insisting on this region, which had already been attained and revealed itself as unsuitable; on a different note, it appears difficult to imagine that the knife, once extracted, could

[16] *i.e.*, *condivisibile*, "shareable", i.e. reasoning that is the court does not concur with is not upheld

have ended up in the same wound just produced, which would have been covered by blood that would have hidden it.

The two epiglottal incisions noted by Dr. Lalli and the butchering mentioned by Professor Torre cannot therefore have derived from the repeated action of a person extracting the weapon and striking again; it seems much more logical to consider, therefore, that what was observed in the depths of the wound in question was the result of the victim's reaction who, in desperate defensive movements, tried to draw back the part of the body that had been struck, succeeding, however, in making only small and limited displacements, so that the knife, which, lodged in her neck, created a kind of butchering in the affected tissues, and at the same time, a small withdrawal from the weapon (defensive action) coincided with an opposite action of approach by the person who was attacking her and holding her, causing the additional incision on the epiglottis.

Also, the line of reasoning which holds that in homicidal intent, the offensive instrument available would be used with the greatest offensive capacity **[172]** that the said instrument is capable of, does not appear acceptable. It in fact makes an assumption which finds no confirmation in the depths of the cuts of the various wounds which can be attributed to a pointed and cutting weapon and which have been confirmed as being present in Meredith's body. Sufficient for this to consider the one underneath the one now being examined, with cut of a depth of approximately a centimetre and a half , in respect of which it cannot certainly be sustained that there was an impact with a structure that would have prevented greater depth. It must also be observed that wound-depth depends also on the type of reactions that the person being struck can bring to bear, and by the positions that the one doing the attacking and the one being attacked are able to assume during the course of the action. And the assumption by which the homicidal intent must correspond with maximum offensive blade use does not take into account the various shades of the psychological factor, and of the various intensities of harm. There are, as has been noted, various increasing levels of intensity of malicious intent, and one speaks of reckless, direct and intentional malice [*dolo eventuale, dolo diretto, and dolo intenzionale*] (see Court of Cassation, Section *Un.* 12-10-93 no.748), and in the present case, the elements supporting the contention that Meredith Kercher's attacker was animated by intentional malice [*dolo intenzionale*], so the maximum degree of intent to kill. The sexual violence to which Meredith was subjected points, in fact to a different aim than that of killing, and even the ecchymosis and certain superficial lesions inflicted on the young woman exclude the

possibility that the death of Meredith was the ultimate goal of the aggression that was accomplished against her. Rather, it should be held that in the development of the action, a crescendo of violence was reached (as per what was observed above) such that, in relation to the body parts that came to be and which were vital (the neck) and [in relation] to the weapon that was being used, there was the mere acceptance of a risk of death that was becoming concretely possible. An homicidal intent characterised, then, by reckless malice [*dolo eventuale*] and thus of the acceptance of the risk of possible death as a consequence of actions directed towards other goals (the bending of the victim's will; forcing her to submit to an action she did not want to submit to; preventing her from screaming and putting up further resistance), behaviour thus accomplished notwithstanding the awareness of the **[173]** possibility of death itself ensuing, an event therefore which came to be accepted (see recently also Court of Cassation, Section 1, no.12954 of 2008): an intensity of the will to kill not at the maximum degree and therefore the asserted equivalence between the homicidal intent and the use of a blade to its maximum offensiveness – such that the blade ought to have "plumbed the depths" to its total length, not encountering any substantial obstacles in its course – is considered misleading and not acceptable.

The argument regarding the broken hyoid bone, holding it to signify the large amount of violence that was carried out, can be turned on its head to affirm that the force used was not so very great, so that the impact with the hyoid bone did not allow the blade to produce a wound as deep as the length of the blade itself.

The incompatibility of the knife Exhibit 36 can be asserted, as has already been said, also on the basis of a further argument, illustrated in particular by Professor Introna, who, after having pointed out the presence of an ecchymotic area beneath the wound in question, advanced the hypothesis in which that ecchymotic area was a sign of the impact of the proximal part of the knife handle against the skin, a knife that therefore would have produced a cut as deep as the blade was long, thereby allowing the handle to impact the skin.

Such an explanation of the ecchymotic area underneath the wound present on the neck in the left latero-cervical region, with a length of 8cm and a depth of 8cm, is not held to be convincing.

In the first place, it must be observed how the said ecchymotic area does not have a shape that allows it to be attributed to the print of the handle of a knife, as the outlines of this area are not well-defined, which one would expect if the cause were attributable to a knife-handle impact on the skin. It must also be added that, if the

print were produced this way, it would also have done so on the upper part: the wound in the middle, and the handle print on the two edges between which the knife blade found itself engaged. However, there is no ecchymotic area to be found on the upper part of the wound corresponding to that on the lower part. Certainly, it may be objected that the blade of **[174]** that knife was not engaged in the centre of the handle, but on one of the two faces of the handle itself: a hypothesis that was not put forth and which is unlikely in that it presupposes a very specific knife of which nothing has been made known as to whether, effectively, it may exist. To explain the absence of a counterpart on the upper side, it was also affirmed that the blow was not done perpendicular to the skin. Even in this case, though, given the rather small area of the knife handle, and the violence which was hypothetically used, and the natural elasticity of the part of the body that was struck, some ecchymosis would have been produced if the whole blade had been inserted fully into the wound and the knife handle had ended up on the skin, "impacting" on it.

Instead, it must be observed that said ecchymotic area appears to have a continuation into the zone beneath the wound positioned in the same left latero-cervical region of the neck and having dimensions of 1.4cm x 0.3cm: it would, thus, be part of a much larger ecchymotic area (see, in this regard, the photo to be found on page 26 of Lalli's report), whose cause – surely different from that attributable to a knife penetrating for its entire blade length – must therefore be identified as the same one that produced this much larger ecchymotic area. For the rest, in the same region of the neck, on the left and right, there are present numerous and large ecchymoses occasioned by an action of a grasping and of finger-press quite widespread and insistent, as can be seen from their number, and in some of these ecchymoses may have also been the impact on the skin of fingernails which, as found by Professor Torre, are able to produce excoriations of the type found on Meredith's face (page 19, hearing 6 July 2009).

In relation to the above, the thesis of the incompatibility of the most serious wound and the knife Exhibit 36 is held to be unacceptable, though this knife is incompatible with the 4cm-deep wound, as we have seen. Nor does this conclusion contrast with the circumstances illustrated by Sollecito Defence consultant Professor Vinci in his report relating to the "analyses of the haematic stained shapes discovered on the mattress cover in Meredith Kercher's room".

[175] The reconstruction offered by Professor Vinci certainly appears suggestive. Some doubt remains in the reconstruction of the dimensions of the knife derived in relation from the marks found on the bed sheet. If these marks indeed derived from

the knife placed on the bed sheet, then they should in fact have been more abundant, and should have outlined the shape of the knife with greater precision, for the following reason: the knife, if it was placed on the bed sheet, was placed there immediately after it had been used to strike Meredith; therefore, the fresh and abundant bloodstains present on the blade should have been imprinted onto the bed sheet in a more evident and copious way than is actually appreciable. It cannot in any case remain unobserved that, if one of the knives used had a blade length of 11.3cm, or else 9.6 cm – according to what was indicated by Professor Vinci in the conclusions to his report – the argumentation set forth to sustain the incompatibility of the knife Exhibit 36 would not, on this alone, have any foundation.

(B)

Regarding the aspects of forensic pathology concerning this event, the question relating to the determination of the time of death remains to be examined.

The various consultants and experts heard on this point have all emphasised the difficulty of this issue. Indeed, there is a high level of difficulty in the application of the complex criteria of forensic medicine, arising from the presence of variables which are not always determinable and measurable with the necessary precision. In the case at hand – as Dr. Lalli has shown – the difficulty was increased by the decision to give priority to the collection of biological evidence, which postponed the examination of the body until 11 hours after its discovery.

The application of criteria usually used in determining the time of death (temperature decrease, taking the Henssge nomogram into account; rigor mortis; hypostatic marks) led Dr. Lalli to conclude that "death may have occurred between 21 hours 30 minutes, and 30 hours and 30 minutes, before the first measurement, and thus between approximately 8 pm on November 1, 2007 and **[176]** 4 am on November 2, 2007. The intermediate value also indicated by the mathematical reconstruction (26 hours prior to the first measurement) puts the time of death at approximately 11pm on November 1, 2007 (Lalli report, page 61).

These conclusions were re-affirmed during the April 3, 2009 hearing, during which it was also shown that the calculation of body weight was used in applying the Henssge nomogram, and this weight had been determined by a [visual] inspection

of the victim's morphology. Dr. Lalli also took the state of digestion into consideration.

In his turn, Professor Bacci pointed out that body temperature, and its progressive variation, constituted the most important criterion for determining time of death. The delay in measuring the temperature, and the variables connected to that particular situation did not allow for the use of more accredited and otherwise applicable mathematical techniques. The time and quantity of gastric emptying and the observations of Dr. Lalli on this point, allow for a time of death of between 9 pm and midnight on November 1, 2007: this data is consistent with what can be gleaned from other thanato-chronological criteria.

Professor Norelli, a consultant for the plaintiffs, underlined that the collected data did not make it possible to pinpoint the time of death precisely; it could only allow us to situate TOD as being in the late, very late evening of November 1, or perhaps in the earliest hours of the following day. As for the stomach contents, he was highly perplexed about the use of this parameter to establish the time of death for various reasons: digestion times vary from person to person, and even for the same person vary depending on conditions that can have an influence on digestion times. He added that the final difficulty was related to the determination of the exact time of the last meal, which is not always possible. He concluded, therefore, that this parameter could not supply information that would be useful in solving the problem of determining time of death.

[177] Professor Introna revealed how, in the case at hand, due to the lateness of the collection of the relevant data, the criteria of rigor mortis and hypostatic marks were not able to provide useful indications for solving the problem in question.

He also took note of the range indicated by Dr. Lalli, with which the other consultants agreed, and maintained the possibility of reducing this range by means of applying Henssge's nomogram, and also based on the observed stomach contents, on the time for gastric emptying and on the circumstantial elements that have emerged in this regard (the last meal consumed).

He observed that Dr. Lalli had used a computer program which made it possible – given the rectal temperature of the body, the outside temperature, the ambient conditions to which it was exposed, and its weight, – to obtain indications of the time of death.

He recalled, the data input by Dr. Lalli: ambient temperature 13º C; initial temperature (standard) 37º C; rectal temperature 22º C; correction factor taking into account the ambient conditions 1.7; body weight 55 kg.

This data, he observed, produced a curve, called a Gaussian curve, the middle of which indicated 22:50 pm as the most probable time of death, with a 95% tolerance level; the range had to be between 21 and a half to 30 and a half hours from the [time of] measurement: the time of death being thus circumscribed within a temporal region ranging from 18:20 pm on November 1, 2007 to 03:30 am on November 2, 2007 (page 16, Professor Introna's report).

In his own report, Professor Introna explained that the tolerance represents the fixed probability shown by the numerical percentage index given. Thus, in the present case, the hypothesis that the death occurred around 23:00 pm on November 1, 2007 is at the 95% level of probability (see Professor Introna's report, page 16, note 3). He added that Dr. Lalli had not weighed the body and had given an approximate weight of 55kg. If Meredith Kercher had weighed two kilos more, that is 57kg, the time of death with a 95% tolerance level would be moved back to 21:50 pm (see table on page 17 of Introna's report, where it can be seen that for each additional 2 kg of body weight the TOD must be moved back by one hour **[178]** and vice versa). Professor Introna criticised Dr. Lalli's assessment of Meredith's weight based on the standard weight formula applied to a 21-year-old woman measuring 1.64 metres. In this regard, he mentioned various formulas which give results that oscillate between 57kg (Lorenz's formula) and 60kg (Broca's formula). He affirmed, therefore, that, had Meredith's weight been only 2 kg more (that is, 57kg instead of the 55kg used by Dr. Lalli), the time of death with 95% tolerance-level would have been moved back to 21:50 pm on November 1, 2007 (page 8 of the report).

Regarding these observations, it must above all be observed that the indication of the tolerance at the 95% level of the time death, as the outcome of various values considered and input , is within a curve, at the top of a curve; as a consequence, other indications of the time of death, inclusive within the indicated range, have a rather high tolerance; the minimum tolerance is positioned at the extremity of the range and, treating it, as has been seen, as an extended range, it is possible to formulate hypotheses of the time of death that lie some "tens of minutes" before or after 22:50 pm, and that have a fairly high tolerance, near the 95% that is indicated as the maximum tolerance.

On another point, and relating to the formation and construction of the Gaussian curve, it was emphasised that it [the curve] is subject to substantial and significant modifications whenever any of the parameters are modified even by a very small amount. In particular, in the present case, the correction factor indicated as 1.7 could be somewhat lower, and in this regard we recall the measurements performed by Professor Norelli, who considers the correction factor of 1.7 used by Dr. Lalli to be unacceptable, while Professor Introna evaluated it as correct. In this regard, Professor Norelli recalled (see report dated June 29, 2009) that "concerning the typology of coverage of the body in compiling the nomogram, various hypotheses are available, and each of them corresponds to a correction factor… In the case in question, the covering was represented by a duvet which, at the most, may by analogy be assimilated to the 1-2 thick covering shown in the table, for which the consequent **[179]** corrective factor is 1.2; making the body coverage conditions extreme, one could assimilate it to the 3-4 layer thickness, whose corrective factor is 1.3 (see Professor Norelli's report, sheet 3 and sheet 4). The application of these different correction factors produces, as is evident, a different Gaussian curve, and the time of death with 95% tolerance can no longer be indicated as being 22:50 pm.

The relevance of the body weight has already been explained by Professor Introna, such that a difference of 2kg produces a displacement of one hour in the time of death with 95% tolerance: if Meredith had weighed 52kg, keeping the correction factor set at 1.7, the time of death with 95% tolerance would have been at 00:20; if 54kg, at 23:20; if 56kg, at 22:20; if 58 kg, at 21:20; if 60kg, at 20:20.

Professor Introna made reference to what would have been the "ideal weight" for Meredith and – taking into account her age of 21 years, her height of 1.64m and of the Lorenz formulas used to calculate the ideal weight – he concluded that Meredith would have weighed 57kg, resulting in an indicated time of death with 95% tolerance of 21:50 pm on November 1, 2007. However, other formulas used to calculate ideal weight give substantially different results; and Professor Introna himself recalled Broca's formula, according to which Meredith's ideal weight would have been 60kg. Using this datum, the time of death with 95% tolerance would have been 20:20 pm—when Meredith was very much alive, since she did not arrive home at via della Pergola before 21:00 pm. Therefore, it appears from all the evidence that basing Meredith's weight on formulas used to calculate the ideal weight does not produce reliable results. At this point, it appears extremely useful to recall that Dr. Lalli, in his report, indicated Meredith's weight as 50kg. This indication, even though purely approximate, turns out to have been derived by an external

examination of the body, in the [crime scene] inspection on November 3, 2007 at 00:30 am, from which was also furnished the height (strictly no longer a height but a length) equal to 164 cm. It is true that later, in applying the nomogram, Dr. Lalli gave a value of 55kg. Considering that when he estimated the body weight as being 50kg, **[180]** Dr. Lalli had the body in front of him and was particularly careful in observing it just as it was, it is to be held that this weight measurement does not depart much from the reality and, taking into account the subsequently supplied 55kg datum, it is held that Meredith's weight may be indicated, with a good approximation, as 52-53kg, a weight which, applying the nomogram and taking into account the indicated parameters, therein including the same correction factor of 1.7, it would give as a time of death with 95% tolerance, midnight, or ten minutes to midnight.

Another criterion on which Professor Introna placed great value for establishing the time of death is that consisting of the stomach contents and the times of the emptying of the stomach. As this concerns an aspect which has already been discussed, it is considered sufficient to recall the essential elements of the evaluation offered in this regard.

A first datum consists of what Dr. Lalli verified with respect to the presence of a quantity amounting to 500cc in the stomach; another element is the absence of material in the duodenum. Professor Introna therefore recalled the witness depositions of Meredith's friends, from which it would have resulted that Meredith began eating her last meal at around 18:30 – 19:00 pm on November 1, 2007 (page 25 of the report already cited several times, and the declarations made in the court hearing of June 20, 2009). Based on these elements, and considering a time of gastric emptying of 2 to 3 hours after the commencement of the ingestion of the last meal, Professor Introna asserts that the violence suffered by Meredith, and which probably caused the cessation of the digestive process, began between 21:00 pm and 21:30 pm.

This court does not hold such a prospect to be sustainable.

In the first place, we recall what has been explained by the various consultants and forensic pathology experts concerning the difficulty in establishing digestion times, these being influenced by multiple factors. Thus Dr. Lalli, while affirming that gastric emptying begins as soon as one part of the stomach's contents has become sufficiently liquid to pass through the pylorus, and that this occurs around the 3rd to 4th hour after the meal, made a point of adding that **[181]** many factors influence the gastric emptying times, such that any deduction of time of death based solely on this data is rather unconvincing (page 64 of the Lalli report).

Professor Norelli emphasised the difficulty of [using] this parameter to determine the time of death, stressing the variability of digestion times and also the possible difficulty in establishing with certainty the time that the last meal began. Furthermore, Professor Introna did not fail to emphasise the difficulty of conducting an analysis performed on gastric contents and their emptying times due to the numerous variables by which they are influenced (page 15, hearing on June 20, 2009).

However, it was the experts appointed by the GIP for the pre-trial phase [*incidente probatorio*] who in particular emphasised the unreliability of such a criterion.

Professor Umani Ronchi testified that digestion is determined by a whole series of absolutely individual conditions and that these are not constant even for the same person. Moreover, he added that the stomach may need three, four, five, or even more, hours to empty itself (hearing on September 19, 2009). Even under standard conditions he indicated that a considerable and variable period of time was necessary. In the report lodged during the pre-trial phase [*incidente probatorio*] there was also a table and the [reference] literature relating to gastric emptying times, from which it followed that variability is substantial, depending on the type of meal, with the opinion that the said indications were of "dubious value". In any case, it was indicated that a farinaceous meal would require 6 to 7 hours (see report of Umani Ronchi, Cingolani, April, page 45). Consequently, assuming that Meredith began to eat at around 6 pm, the gastric emptying could have occurred around midnight, or even later. The responses given by experts, on precisely this point, at the November 27, 2007 hearing before the GIP during the pre-trial phase were even more clarifying. Specifically, with reference to the pizza and thus to the foodstuffs that Meredith would have begun to eat at around 6 pm on November 1, 2007, Professor Umani Ronchi spoke of a gastric-emptying time of 6 to 7 hours (page 46 of the transcripts of the **[182]** statement of said hearing). With even greater expository efficiency, Professor Cingolani emphasised that the criterion of stomach contents is the most untrustworthy, the most unreliable criterion for determining the time of death, since it can result in variations that can go from 1 to 12 hours, or even more (see the hearing testimony of November 26, 2007, page 55).

Besides this, the alimentary remnants in the small intestine must also be considered, and thus, as hypothesised by Professor Umani Ronchi, it would be possible to think that these remnants could have been found in the duodenum either because of an imperfect apposition of the ligatures, or because of an apposition of the ligatures that took place with such manner and timing as to make it impossible to avoid a sliding

of material from the duodenum to the small intestine. The fact [that the] duodenum [is] empty is not [necessarily] fully reliable.

The following considerations add a further element of uncertainty to using the criterion of gastric emptying: Meredith's friends, in speaking of an afternoon meal on November 1, 2007 that was eaten with Meredith, stated that no alcoholic substances were consumed; they drank only water. According to statements by Dr. Lalli, based on the toxicological tests, the presence of ethyl alcohol in a concentration of 0.43gram/litre was found (Lalli report page 54); Professor Cingolani declared that it was a quantity equivalent to about a glass of beer or wine. During the autopsy, Dr. Lalli discovered a vegetal fragment in the oesophagus, apparently a piece of mushroom (page 46, Lalli report). In relation to this data, it is possible that Meredith, arriving home around 21:00 pm, ate something to accompany this meal – the last one of her life – with a bit of wine or a beer. This eventuality, with regard to hypothesising based on the above-mentioned objective elements, adds a final uncertainty to the notion of using the criterion of gastric emptying to determine the time of death with any certainty.

In relation to the above, from the difficulty of restricting the range by using the criterion of gastric emptying as well as Henssge's nomogram, it is held that the time of death must be indicated by the time range for which the various experts as well as the consultants substantially **[183]** agree, and that is from 20 to 30 hours before the first examination on the body took place at 00:50 am on November 3, 2007 (on this point, see also page 47 of the transcript of the November 26, 2007 hearing, in which even the Sollecito defence consultant, Professor Vinci, declared himself in agreement with this range).

Taking only the thanato-chronological data in account, the time of death can therefore be situated at between 04:50 am on November 2, 2007 back to 18:50 pm on November 2, 2007. This range can be further restricted, therefore, only on the basis of circumstantial evidence, according to which, as has been seen, Meredith was still alive at 21:00 pm and on her way back to her home at number 7, via della Pergola.

Finally, it is excluded that, when Meredith suffered the lesions and the violence that caused her death, she was in a state of alcoholic intoxication. Dr. Lalli already arrived at this conclusion, having found an alcohol level equal to 0.43gram/litre. As [we have already] seen, the GIP-appointed experts also reached the conclusion that Meredith was not alcoholically intoxicated, and that the quantity of alcohol found by Dr. Lalli corresponded to the consumption of a glass of wine or beer.

GENETIC INVESTIGATIONS

(A)

Dr. Patrizia Stefanoni, a biologist working with the Forensic Genetics section of the Scientific Police of Rome, testified at the hearing of May 22, 2009. She explained that she works in forensic genetics, and thus performs DNA analyses with the goal of studying findings and specimens found in various crime scenes. She testified that DNA can be analysed from many points of view, including medical/health. With reference to forensic analysis, DNA analysis can be useful whenever (or if) it is possible to make a comparison. Indeed, the analysis of an unknown specimen alone does not yield the identification of an individual; the technical data thus obtained is only of value if the same technical data is possessed for a given person and one can make the comparison. Thus, if the DNA of a suspect is known, then it is possible to compare that DNA with DNA found in a specimen "using the same methodology, **[184]** with the same analytic means, and state whether the sample does or does not belong to the suspect. Also the victim of an attack can be compared with a specimen taken from a given place in order to determine whether the specimen leads back to the victim or not" (pages 6 and 7 of the transcripts).

Turning to the event which is the subject of this trial, she stated that during the early afternoon of Friday, November 2, 2007, following notification of a technical inspection in Perugia due to a homicide, she went to the house at via della Pergola 7, arriving at around 19:00-20:00 pm, together with other personnel from the Scientific Police of Rome, and immediately started working on the place where the victim had been found, work which continued on the following days, and consisted of individualizing and acquiring investigative elements which could turn out to be useful.

This activity also concerned the car, an Audi A3, owned by Raffaele Sollecito, and on November 13, 2007, a search took place at the Perugia flat at Corso Garibaldi 110 inhabited by said [Raffaele Sollecito]. On November 14 another search was made at Patrick Diya Lumumba's pub, Le Chic, located in Perugia at via Alessi, and on November 20, a search was made at the studio at via del Canerino 26 leased to Rudy Hermann Guede.

On November 12, laboratory testing commenced on the material acquired up to then; on November 22 a second phase of laboratory operations began, and continued on November 27. Another start was made on December 10, 2007, and continued on December 14, 2007.

On November 18, 2007, there was a further search at the house at via della Pergola 7, and the laboratory testing relative to the results of this search started on December 21, 2007. The whole operation ended with the official viewing [*presa visione*] of the results by the technical consultants on May 20, 2008. Subsequently, Dr. Stefanoni handed in the technical report and the printout of all the analytical results obtained from the analysed findings. The report was dated June 12, 2008 and it was deposited with the Office of the Public Prosecutor (page 39 and following of the transcripts).

[185] With respect to the activity of searching for and collecting the various specimens, she emphasised that she operated according to selective criteria, as it was not possible to collect everything. Thus, she proceeded by first giving precedence to collecting the obvious biological specimens, then seeking non-obvious biological traces and, above all, potential specimens of blood, using the customary due care and precaution necessary to ensure optimal preservation of the crime scene, and to avoid "any careless handling of things which might cause contamination" (page 44, transcripts); the purpose of this was both to protect the collector who might come into contact with pathogenic substances and to protect the biological specimens. The collector "must take care not to contaminate any possible findings and traces with his own DNA...for this reason he uses personal protective devices which are gloves, suits, shoe-covers and masks, in order to avoid any exchanges between himself and his surroundings; obviously he must also prevent the findings from contaminating each other" and to this end "each separate specimen or trace is preserved...in a safety bag" (page 45); for the sample gathering phase sterile single-use material was used such as tweezers, scalpels and test tubes.

During the first search in via della Pergola the technical operations were carried out, proceeding from the most interior part of the house and going outward towards the exit; this was done because the corpse was in the farthest room at the end of the corridor, and also to avoid crossing several times over the same point. Before carrying out any technical activity, she pointed out that every area of the house had been filmed with the Spheron a device that allows filming as if it were a sort of video camera which rotates on itself. In this way, the state of every room was "frozen", so that it would be possible to see the positions and the scene as it was at the beginning.

The search in via della Pergola 7 started at around 19:00-20:00 pm on November 2, 2007; the personnel of the Provincial Cabinet [*Gabinetto Provinciale*] of the Scientific Police of Perugia and the forensic pathologist Dr. Lalli were already on the scene and had shown them the various areas of the house, in addition to the corpse, which was still covered. Together with Dr. Lalli, they agreed on a timetable for the various operations and relative tasks. **[186]** Indeed, there was forensic evidence right at the feet of the victim that needed to be sampled and there was little room; it was necessary to gather all the forensic evidence in the victim's room and the corridor which went from Meredith's room to the living room "because it was very obvious that there were bloody shoeprints " (page 47 of the transcripts). It was thus necessary for the activities relating to the inspection to be carried out in such a way as to preserve those shoeprints, indicating them numerically during the re-creation [*allestimento*] of the crime scene.

Thus, Dr. Stefanoni added that, before proceeding with the removal of the corpse, it was necessary to start with "the floor of the corridor and the room of the victim, with the bloody shoeprints and the objects on the floor at the feet of the corpse" (page 48); immediately afterwards the corpse was removed by the forensic pathologist and the first biological specimens were obtained from it, in particular the swabs among which were the vaginal and rectal swabs.

She stated that the bloody prints in the corridor were very visible and clearly shoeprints. These very obvious prints became fainter as they went towards the exit, towards the main door, becoming progressively "fainter and almost filiform" (page 49). There were no visible prints of bare feet.

Once the corpse was removed, the search in the victim's room took place, starting at the end of the evening and continuing on into the night, until about 02:00 am on November 3. Dr. Stefanoni pointed out that the clock of the video camera used for the filming was an hour ahead. The search continued the following day with more gathering of evidence. They then moved on to the gathering of evidence from the small bathroom, the one which was next to the victim's room, and then from the larger bathroom, which was situated next to the house's main entrance door. The living room-kitchen corner [*angolo cottura*] was last examined in which bloody prints were present on the floor. In this area, a few cigarette stubs, which were in an ashtray on the table, were also bagged as evidence [*repertati*].

(B)

With reference to the non-visible biological traces, she explained that the methodology used to detect this type of specimen consists of using a reactive chemical called Luminol which, due to a chemical reaction, reveals, by fluorescence (sic, actually chemiluminesecence), **[187]** traces of blood which may be present but are invisible to the naked eye (latent). Revealing such traces not only helps to reconstruct the dynamic of the events, but can also allow analysable DNA to be found that may yield the genetic profile of the individual who left it. She specified, however, that positive results from Luminol were also given by animal blood and by certain other elements such as rust, fruit juice, vegetal chlorophyll, bleach, etc.

Dr. Stefanoni then proceeded to explain the technical tests performed in the laboratory and the results of the analyses, indicating the items from which the biological specimens being tested were taken.

She recalled that 460 specimens were found and analysed, and the analytical activity was entirely detailed in the paper copy of the report (deposited and constituting part of the trial dossier).

Before presenting the results, she gave an explanation of some general knowledge notions in regard to DNA analysis.

She first explained that the examination of DNA gives no temporal information: one cannot establish when a specimen or two specimens found at a crime scene were actually left there, or if they were left at the same time, or one later than the other.

She explained that DNA is a biological molecule found in the nucleus, which is a tiny organ present in the cells of nearly all tissues, with the exception of t red blood cells, since red blood cells lose the nucleus at a certain point during their differentiation process.[17] Thus, apart from red blood cells, practically every cell of our organism (seminal fluid, saliva, organic tissues in general, teeth, white blood cells etc.) can be used for genetic testing insofar as it is possible to examine the DNA contained in its nucleus.

She also explained that the DNA in the cells is subdivided, so to speak, into twenty-two pairs of chromosomes, which are like short sticks with a threadlike structure, which are the same as each other (*autosomes*) except for one pair, the *sex chromosomes*, which determine the sex. The DNA of a **[188]** woman, she added, has two sex

[17] *i.e.*, during their development

chromosomes of type X (XX), and the DNA of a man has a Y and an X sex chromosome (XY). As for the structure, she continued to explain, the DNA molecule can be visualized like a long threadlike chain, and the analysis examines "certain zones of the DNA; we don't analyse the entire DNA, it would be impossible; we look at certain characteristic features of the DNA in each person" (page 10). These zones are called "loci" [*loci genici*] The form of DNA is identical in every cell of a given person: every one of our cells has the same DNA and "it contains the molecular information to recreate all of the living processes of all organisms; thus, every organism has its own DNA...until now, no two individuals have ever been found to have the same DNA, with the exception of identical twins" (page 10). The DNA is inherited at the moment of conception, with an equal contribution from each parent. The Y chromosome, one of the two chromosomes from the pair determining the sex, is transmitted unchanged from father to son throughout all the generations, so that every male actually carries a piece of his own origin, since his Y is identical in the father, the paternal grandfather, the great-grandfather and so forth; it will be transmitted to all his sons and he will therefore share it with his male cousins and uncles from the father's side.

She then pointed out that the biological items which arrive at the laboratory must first be catalogued so as to be unequivocally identified right through the final phase of testing, and that every item from the same event is given a number and a minimal description indicating briefly what the single item is. She specified that the Scientific Police uses the information system SQL LIMS, in which LIMS stands for Laboratory Information Management System. The catalogued items are then photographed.

The first treatment consists of extracting the DNA from the content of the cell; it is only the DNA that is of interest and not the other cell components or other contaminating substances. Biological specimens are obviously taken from a surface such as a floor, **[189]** or a car, which are by their very nature contaminated with dust, from dirt spread over several surfaces, and from microorganisms such as bacteria, yeasts [*lieviti*] and moulds which begin to degrade the trace at the very moment in which it is created. The extraction of DNA is mechanical, using automatic systems. In this case, she explained, a biorobot was used; this was a machine called the EZ1 workstation made by the firm Qiagen.

At this point, the DNA is subjected to a next phase of analysis, which consists of determining whether DNA is present in the test tube and if so, in what quantity. The DNA, if present, is immersed in an aqueous solution, colourless and absolutely non-

identifiable to the naked eye. There are instruments which detect the DNA concentration.

[The DNA] is then subjected to another process known as amplification, which consists of making copies of this DNA. The DNA specimen can be quantitatively extremely small, but this method PCR (polymerase chain reaction) makes it possible to increase the number of copies.

Finally, there is the stage of "electrophoresis, which is another analytic procedure that allows a visible picture of the genetic profile to be obtained", and then "the reading of the results which are determined by the electrophoresis" with the determination of the genetic profile (pages 13-14).

The procedure which makes it possible to amplify the genetic points, and thus to view them specifically, is a process called "*polymerase chain reaction*"(PCR). Once the DNA is amplified using this PCR procedure, it is subjected to the method of analysis called capillary electrophoresis, which uses movement of the DNA charges in an electric field to derive a picture of the genetic profile to be seen. This genetic profile is transmitted from the software which processes the data as a series of fluorescent peaks.

The process of amplification known as *PCR* is the heart of the analysis. This process allows 16 DNA points, which are present on both pairs, to be duplicated: 32 points total, which contain, each one, many variations and this is the basis on which the identification process is founded, since the combination of **[190]** these numerous variants is unique for every individual, and thus determining them makes it possible to identify that individual. These variants are expressions of the paternal and maternal heredity, with the exception of identical twins.

The need to “duplicate” the DNA stems from the fact that the quantity of DNA which is normally available and analysed is very small, sometimes just a few tenths of a billionth of a gram. To this regard, the unit of measure used is the nanogram, which corresponds to one billionth of a gram. Thus, in order to see a genetic profile, it is necessary to make copies of those regions which are called "loci" [*loci genici*]. Returning to the PCR process, that is the polymerase chain reaction, Dr. Stefanoni pointed out that the polymerase enzyme is the heart of the reaction: various chemical substances are added, among which is a certain protein which catalyzes and causes the DNA amplification, helped by various molecular substances (page 20, hearing on May 22, 2009): "Suppose we have a genetic locus, for example TPOX,

which is one of the several loci...then, by means of a thermal process, these two helical strands – that is the DNA which, in fact, can be visualized as two adjacent ribbons - separate because the heat makes them move apart from each other; and at a certain point, another molecule attaches itself to the end of each helix...it is as though it were searching for exactly the region that interests it, and from the chemical point of view that is what it is does;...the two molecules carry this out in order to "see" each other, they do see each other and, after they have seen each other, the enzyme, namely the polymerase...sees the molecule, and sees what is written on the piece and produces exactly the sister molecule", stated the witness on page 21. Therefore, this process creates two identical molecules from a single molecule, and thus from just one molecule one obtains two, and the process starts again: each of these small pieces of helix detaches itself, the duplication occurs and thus from each one of them one obtains two, always identical to the original one, and so forth. Therefore, in each cycle there is an exponential increase of the number of copies of each of these points (there are 16 different points on each chromosome in the pair), and at the 28th cycle, which is the one where the reaction is made to take place because the kit is calibrated to attain the **[191]** optimal result at 28 cycles, 67 million copies are obtained for each point of the DNA of interest. Thus, for each point that originally came from a very small quantity of DNA, after 28 cycles one has 67 million copies.

The result of a sample of blood found at the crime scene and analysed is represented by the loci labeled as: TH01, VWE, TPOX, FGA and so forth. The characteristics individualizing the DNA from the single trace are given as pairs of numbers: 6-8, 16-19, 8-8, etc.

It was also observed that, if one considers two people, if the DNA of these two people were to be analysed only at the three points at which there are pairs of equal numbers, they would be indistinguishable from each other. The presence of these pairs of equal numbers derives from the non-anomalous fact that many people share part of the information contained in their DNA. But if additional points of the DNA are then analysed, differences emerge, and it is thus possible to associate a trace to a specific person. Thus, the more points are analysed, the more likely it is to be able to associate a trace to a specific person.

All the possible variants that can occur at each point of the DNA can be represented graphically, and the association of the different numbers, and the combinations of numbers from each locus gives the complete genetic profile.

Thus, every individual has, in his own genetic profile, at least one of these fluorescent peaks. At least one, because in the case where there are two equal numbers (for example TPOX has 8-8), one does not see two peaks but just one, since the other one which is superimposed over it has the same size, so that one only sees one peak even though there are two. There are two because one comes from the father and one from the mother.

Accordingly, "each peak represents a characteristic of the DNA in that point and is thus defined as an allele" (page 24 of the transcripts).

In the graphs which represent the result of the electrophoresis, there are peaks of varying height at the different points. These heights come out of the machine and it is possible to state that the higher the peak, the more DNA is present.

[192] A complete genetic profile, consisting therefore in 16 points from 15 pairs plus the pair of sex chromosomes, yields the identity of a specific person so precisely that to have a probability of finding another person with the same genetic profile, one would have to imagine seeking that individual in a population of a trillion people.

It can happen that not all 16 points are amplified, so that it is not possible to see all 15 pairs and the sex pair, but only some of the pairs. This can happen if the sample is too scarce or if the DNA was “damaged” by some external cause (excessive heat or contamination by bacteria, which begin to cut up the DNA immediately...). However, with more than 11 or 12 pairs of alleles, the probability of identification remains high, and it is even higher if a rare characteristic is found (for example, if a rare allele is found in one locus, [for example] the one determining that an individual has grey eyes).

It is also possible that two traces of DNA lie on top of one another at a crime scene. In this case, the two DNAs are mixed and it is not possible to distinguish them at first. But when the analysis is performed, in the end it reveals that the DNA is actually a composition of two DNAs from two people, or three, or four. In this case, the analysis is much more complicated. This event is commonly observed in cases of sexual violence; in the vaginal swab taken on the victim it is frequent to find her DNA (from her own vaginal cells) and the DNA, which can be spermatic, of the attacker.

This situation is visible from the graphic representation of the analyses, in which at certain points one can perceive more than one fluorescent peak, though not necessarily at every point, since it is possible for two people to have the same genetic

characteristics at certain points. It is also possible to know whether a male or a female is represented, by the sex chromosomes: if it is a mixture of DNA from two females, there will be no Y chromosome, if two males (in a **[193]** fight or a stabbing it is possible to obtain mixtures of the blood of two people) the Y would be more or less at the same height as the X, due to the fact that the alleles, at every gene locus , are of about the same height. An imbalance between the alleles belonging to the same locus arouses strong suspicion that the mixture may be of a male and a female. The imbalance derives from a quantitative difference in the DNA from one person and from the other (page 30). However, in such a mixed trace, one must take into account that the female DNA has two X chromosomes and the male DNA has an X and a Y. Therefore, if for example there are 100 cells from the woman and 100 cells from the man, in order to establish the proportion of X to Y chromosomes one must take into consideration the total amount of X's and the total amount of Y's. Therefore, "a dose of X's and a dose of Y's gives three doses of X for one dose of Y...if in height, therefore in RFU, the peak of X is 900 and the peak of Y is 100, this does not mean that the quantitative relation of the two DNA's is 9 to 1, as one might think, but it is 4 to 1" (pages 31- 32).

The part of the DNA analysis concerning the Y chromosome is particularly important. In this regard, Dr. Stefanoni emphasised that, apart from the analysis of the complete profile, it is possible to analyze specifically the peaks, those STR[18] that are specific to the Y chromosome. It is thus possible to complete the same analysis which is normally done on the whole DNA on just the Y chromosome. Obviously this analysis is only possible on male DNA since female DNA does not have the Y.

The characteristic of the Y is that it originates uniquely in male DNA, and is shared by all the descendants of a family from the father's side. It contains certain regions of the DNA, the loci, which are analysable by the same methods as those used to analyze the complete DNA, which yield the genetic profile.

In forensic genetics, this analysis of the Y makes it possible to identify the male DNA principally in a mixed trace, and to give the precise characterisation of the male DNA alone. The profile which emerges is a much simpler profile than the one which also contains the **[194]** identifying peaks from the female component. The genetic profile of the Y is called the haplotype, which is equivalent to the genetic profile of the Y. Also the genetic profile of the Y has alleles, allele being a synonym for fluorescent peak in this context.

[18] short tandem repeats

The PCR reactions and the other DNA analyses are carried out using three diagnostic kits which are used throughout the world, being as they are sold by multinational corporations. When a biological specimen needs to be analysed it is placed in a test tube in very precise quantities, and the PCR reaction occurs following standard procedures that are used in every forensic genetics laboratory. The kits used have been subjected to rigorous validation, and therefore are kits that have been approved at the international level.

In the event under discussion, Dr. Stefanoni further specified that [the kit] was used to "analyse the total DNA, the DNA from all 15 points plus the sex gene,...always using the same kit produced by the firm Applera, from Applied Biosystem; a kit that is called Identifiler. Whereas to analyze the Y chromosome, another kit, which is called Way Filer, produced by the same firm, Applied Biosystem, is used." She added that "these procedures, not only the kit, but the analytical procedures as well, are those approved at the international level and have been published for many years in numerous international journals in the field" (pages 35 and 36 of the transcripts).

(C)

She explained that three vaginal and rectal swabs were taken from the victim, identified with the letters A, B and C; on one of these swabs she performed a particular "extraction" analysis called "differential" because it tends to separate into two the cellular fractions, obtaining on the one hand spermatozoids and on the other the epithelial cells of the vagina or rectum of the victim, as these two types of cells are morphologically very different and can thus be quite clearly separated using very precise analytical techniques. No seminal fluid was detected by these analyses, but the genetic results obtained from the test on these traces did make it possible to distinguish the genetic profile of the **[195]** victim and the genetic profile of Guede. This latter profile, she emphasised, was found using only the Y chromosome.

In this regard, she recalled that the Y chromosome within mixed DNA is of exclusively masculine origin, and thus the masculine part of mixed DNA can be examined separately. She also observed that the feminine contribution to the sample outweighed the masculine contribution by a large factor. She also stated that in the general genetic analysis, where one can "see" all of the DNA, the masculine part is not revealed, due to a technical limitation of the PCR. She added that the analysis

performed in order to check for the presence of the Y chromosome is conducted, so to speak, blindly, since before obtaining the result, there is no element which can actually indicate the presence or absence of male DNA.

It was assumed at first that male DNA might be found in the vaginal swab, and indeed, in trace B (from one of the vaginal swabs) Rudy Hermann Guede's genetic profile was found in the Y chromosomes present there. No male DNA was found in the other swabs.

She emphasised that in general, the Y chromosome was analysed within biological specimens that could be mixed, and the goal of the analysis was to reveal the possible presence of male DNA. She specified that the analysis of the Y chromosome focuses only on this chromosome while ignoring all the other points, and is thus in some sense much more sensitive: the test ignores female DNA and only detects male DNA. The search for the Y chromosome is made on certain particular samples; for these, the Y chromosome kit is used, because it is more sensitive than the general DNA detection kit. These analyses were performed but gave no results on the other swabs, including the rectal ones.

As for what appeared to be hairlike filaments found on the victim's body, when examined under a microscope they appeared to be strands of wool and gave no results.

Only the DNA of the victim was found in the samples taken from underneath the fingernails. It was noted, however, that the nails were very short and probably could not have given any significant scratches to the attacker.

[196] She stated that the swab from which she determined the biological profile of the victim in order to compare it with the other genetic profiles found on the victim was taken from the largest wound. She recalled that DNA analysis "is a comparison analysis: it is necessary to have a sample of DNA from an individual identified by first and last name in order to be able to state: this is from this person, or this is not from this person" (page 68).

In listing the objects found in the victim's room, she mentioned a glass, a bra, a green towel, a light-coloured towel, a beige towel, a white sheet, three pieces of toilet paper, a ball of cotton wool, and a hairlike filament. The bra was found at the feet of the body of the victim, near the threshold of the room, and of the 6 samples taken (labeled from A to F), only trace B yielded a Y chromosome (only the Y chromosome, not the complete mixture) identified as belonging to Rudy Hermann Guede. The bra,

she said, was found in a peculiar condition: "it had clearly been torn off, the straps were literally torn and part of the back had also been cut; there was one clear cut and therefore it appeared to have been cut " (page 70 of the transcripts). It thus appeared to be one of the most interesting finds, so that the analyses specifically searching for Y chromosomes were performed on the samples taken from it, but all the traces yielded negative results except for trace B which was identified as belonging to Rudy Hermann Guede.

The victim's underwear, also found at the feet of the corpse, was negative for seminal fluid after examination by ultraviolet rays, a method which reveals the presence of seminal fluid by fluorescence, although differently from Luminol.

She emphasised that many samples were taken from the pair of jeans found near the feet of the victim, but all yielded only traces of the victim's blood. She added that the jeans were found inside out, and there were copious traces of blood mainly on the upper part, and also traces of blood that did not seem to be caused by rubbing.

[197] Various samples of haematological blood-like substances were taken from different parts of the victim's room: from the door panels and the door handle, from the left panel of the closet, from the floor around the radiator, and drippings from the base of the desk. All these samples gave the same result: they were the blood of the victim.

The small piece of material with hooks was mentioned as a particularly relevant find from the second inspection, on December 18, 2007. Another sample was taken from the wall in front of the door, which showed a streak of blood apparently made by a hand. An analysis was made on this sample in order to identify the genetic profile of the person who had left that very visible streak between the bed and the night table, perhaps leaving behind some skin cells in doing so. But the sample did not yield any genetic results.

The small piece of material with hooks yielded a genetic result showing a mixture of the DNA of the victim and of Raffaele Sollecito. This result was obtained both by complete analysis of the DNA as a true mixture, and as a genetic result obtained on the Y haplotype.

[Two] additional pieces of evidence were acquired during the second search of the house: an imitation leather handbag, listed as number 166, which had been seen on the mattress in the victim's room during the first search, and was found in the closet of the same room on December 18, and the light-blue sweatshirt listed as number

171. Four samples were taken from the sweatshirt: A, B, C and D. The handbag and the sweatshirt yielded similar results: besides the victim's DNA, the DNA of Rudy Hermann Guede was also found, in a genetic mixture, and this result was confirmed by the analysis of the haplotype of the Y chromosome performed on the same trace. The sweatshirt gave the genetic profile of the victim on all four specimens, but only one of them (trace B, found on the left cuff of the sweatshirt) yielded the genetic profile of the Y chromosome.

[198] In the small bathroom, three traces of the victim's blood were found on the bathmat; on the light switch plate with two switches there were traces "of diluted blood, blood presumably mixed with water, as it was pale pink in colour" (page 76) which also came from the victim; a sample was taken from the front part of the faucet of the sink, which yielded the genetic profile of Amanda Knox; another sample taken from a specimen visible to the naked eye on the edge of the drain of the bidet yielded the genetic profiles of the victim and of Knox, a genetic mixture also found on the box of cotton buds near the sink.

The drippings found inside the sink appeared to be diluted blood, pink in colour, proven by testing to be human blood and yielding the genetic mixture of the victim and Knox.

On the toilet cover there was a bloody substance which yielded the genetic profile of the victim; this was also found on the door-frame. Near the toilet flush was another stain presumed to be blood, but which ended up yielding a negative result.

A sample of feces and two pieces of toilet paper were taken from the toilet in the larger bathroom. The paper yielded the profile of Rudy Hermann Guede, both on total DNA testing and on testing for the Y chromosome alone. The feces gave no result either by DNA analysis or by Y chromosome analysis.

Three samples were taken from two very wet lilac towels found by the Flying Squad [*Squadra Mobile*] of Perugia inside the washing machine, but they gave no results, nor did a grey hairdryer confiscated by the Flying Squad.

Concerning the negative result on the feces, Dr. Stefanoni testified that excremental material is ill-suited to genetic analysis because **[199]** of the presence of large numbers of bacteria which fragment the DNA and thus destroy it.

Samples were taken from the toilet paper because this paper, used in wiping, is much likelier to contain epithelial cells, and they did indeed yield the genetic profile of Rudy Guede.

Amanda Knox's room underwent technical testing only during the second inspection, on December 18; some items were sent to Forensics subsequent to individual collection by the Flying Squad of Perugia. The tests gave no significant results. The shoes were tested, particularly the soles, and gave a negative result.

In Filomena Romanelli's room a few items were tested: a hairlike fibre [*formazione pilifera*] on the lower part of the window frame, and a presumed haematological substance on the wooden part of the window which held the broken pane. Both of these items yielded negative results on analysis. During the second search, on the suggestion of the defence's technical consultant Professor Saverio Potenza, the large rock and two fragments found on the floor of the room were tested, but they yielded negative results.

Six cigarette stubs were found in the ashtray on the table in the living room-kitchen corner. Three yielded the same genetic profile of an unidentified male; one of them contained a mixture of saliva and genetic profiles from Raffaele Sollecito and Amanda Marie Knox; the others yielded the genetic profile of an unidentified woman.

Still in the living room-kitchen corner, five samples of haematological substances were taken from the floor, belonging to the shoeprints which became progressively weaker as they went towards the main door and exited the flat. The result showed them to be human blood belonging to the victim. The last of these samples, taken from a print right next to **[200]** the entrance, gave a negative result, probably, according to Dr. Stefanoni, because the quantity was too small.

On the floor of the corridor of the flat (the corridor going from the small bathroom to the living room-kitchen corner), some samples were taken of bloody spots nearly circular in form, which were identified as the blood of the victim.

She then explained the results obtained from the Luminol tests, stating that "this test was performed during the second search, at the end of all the other activities, on the floor of the following areas: Filomena Romanelli's room, Amanda Knox's room, the corridor, the living room-kitchen corner and the larger bathroom" (p. 83 of the transcripts). She pointed out that on the basis of this test, she could not say with certainty that blood was present, since other substances as well may cause Luminol

to glow. The sample called L1 in the inspection report, taken in Romanelli's room, corresponded to the genetic profile of the victim; the sample called L2, also from Romanelli's room, yielded a mixed genetic profile of the victim and Knox; the sample L3, taken from Knox's room, as well as the other two (L4 and L5) yielded Knox's genetic profile. Of the samples L6, L7, L8 and L9, only L8 (item 183) from the corridor, almost in the middle of the corridor in front of the door to Amanda Knox's room, gave the result: victim plus Knox. The last sample L9 yielded no result.

The living room-kitchen corner gave a negative result on the Luminol test, as did the larger bathroom.

(D)

The November 13 inspection in the apartment used by Raffaele Sollecito did not yield any significant results. Various samples were taken of a pair of rubber gloves and a mixed result was obtained: Sollecito plus Knox; the samples involving a small sponge revealed Sollecito's profile. In the bedroom "Luminol was used on the external **[201]** handle of the door, two samples from the floor" and the evidence revealed the genetic profile of Sollecito plus Knox. Even though this was mixed, the results were only a partial genetic profile, having lacked some of Raffaele's alleles.

In the bathroom, highlighting was done with Luminol and the results were negative, except for one specimen, number 95, a presumed blood-like substance, with the genetic result of Sollecito plus Knox: another sample taken from the floor showed Knox's genetic profile. In the kitchen-entrance [area], the Luminol highlighted five samples including the DNA profile of an unknown individual. Fourteen samples were taken from a pair of Nike shoes, all negative for any blood-like substance. On the elastic boxer shorts, a blood-like substance was revealed on two samples, blood belonging to Knox. On the jack-knife, 4 samples were taken, with negative results where blood-derived substances had been looked for; on the fourth sample, which involved the handle, the genetic profile was found to be of Sollecito plus Knox.

Seven samples were taken from the exhibit [*reperto*] acquired by the Flying Squad of Perugia (i.e, Exhibit [*reperto*] 36) and consisting of a large knife, 31 centimetres long; on the handle, from the trace indicated as "trace A", the genetic profile of Amanda Knox was found and in a point on the blade, the genetic profile of the victim was found. All of the other samples gave negative results.

Several articles of clothing (also acquired by the Flying Squad of Perugia) all gave negative results, with the exception of a rag which, in its internal part, contained the genetic profile of an undetermined man.

In a dishrag, the analysis had given a negative result for any blood-derived substance, but it showed the mixed Sollecito plus Knox genetic profile; in a small yellow sponge a non-blood-derived trace of Amanda Knox was found. In other clothing (bathrobe and towels) mixed Amanda Knox and Raffaele Sollecito traces were found.

The samples taken from the car all gave negative results.

[202] With reference to the inspection carried out on November 20, 2007 in the studio flat where Rudy Hermann Guede was staying, the various findings that were examined (towels, washing machine filter, pants, tickets) yielded the genetic profile of Guede. Also, other findings and samples did not give significant results but they did yield the genetic profile of Guede.

She stressed that, in total, 228 collected samples were taken into consideration from which 460 specimens were taken and analysed.

All the specimens from the vaginal swabs of the victim yielded negative results for seminal fluid; one of these traces, indicated as Trace B, had, as was said, the genetic profile of the victim and the profile Y of Guede. This is Exhibit [*reperto*] 21.

Three samples were taken from the light-blue-coloured bathmat and indicated by the letters A, B, and C. All three samples yielded the genetic profile of the victim; from blood of the victim.

To obtain the data for comparison, two salivary swabs were taken from Raffaele Sollecito and passed on to the Office of Forensics of the Perugia Police Headquarters, from which the DNA profile and the Y haplotype profile was extracted.

This was likewise done for Amanda Knox (obviously only the total DNA, given the absence of Y, in the case of a female subject).

Four samples were taken from the jack-knife and only one yielded a positive genetic result: the sample taken from the belt clip. The trace did not turn out to be blood and it yielded a mixed genetic result: Sollecito plus Knox. To confirm the presence of Sollecito's DNA, a chromosome Y analysis was performed, which gave as a genetic result the Y profile of Sollecito.

In two separate work sessions, seven samples were taken from the 31-centimetre long knife (Exhibit 36) found in Raffaele Sollecito's house.

[203] The only traces that yielded a genetic profile were traces A and B; trace A yielded the genetic profile of Knox and trace B yielded the genetic profile of the victim.

She specified that trace B had been taken from a point on the face of the blade; she added that no biological trace was visible to the naked eye. However [she added that] "under considerable lighting, a series of streaks were visible to the naked eye. These streaks ran parallel to the upper part of the blade, therefore, more or less, they were parallel to this side [of the blade] and towards the point they went downward and, therefore, they followed the shape of the point. These streaks, anomalies in the metal, were visible to the naked eye under intense lighting" (page 95 of the transcript). Still in regard to the visibility of these streaks, she specified that they were "visible under good lighting by changing the angle at which the light hit the blade, since obviously the blade reflects light and thus creates shadows, making imperfections visible".(page 96 of the transcripts).

The samples taken from the handle, in the points indicated with the letters A, D, F were taken in order to verify the possible presence of DNA by the person who grasped that knife. In particular, for sample "A", a particular point had been chosen, "in which there's the hand-guard" (page 95) and therefore, in all likelihood, the point where there was the most friction between the hand that grasped the knife and the handle. This sample yielded the result of Amanda Knox's genetic profile.

The other samples yielded negative results, except the one taken from the blade, from the "scratches and streaks visible under good lighting, by changing the angle of the lighting with regards to the blade" that yielded the genetic profile of the victim (page 96 hearing May 22, 2009).

In order to obtain the genetic profile of Rudy Guede, necessary for the comparison, his toothbrush, found in his bathroom, was used. The genetic profile result was identical, both on the head of the bristles, as well as the place where one **[204]** grips the handle when holding it: his DNA was found, both as a complete genetic profile and as a Y-profile.

With reference to the victim's bra, exhibit [*reperto*] 59, which was found not too far from the corpse's feet, Dr. Stefanoni indicated the point in which a cut had most likely been made, since it was where there was a clear cutting off in the material.

More samples from various points on the bra were taken: two samples from the interior part of the bra cups; four samples of the straps that seemed torn, because there were cotton threads that had come out; another sample, identified by the letter B- from the portion of the elastic band that runs from the lateral side of the woman's body until the back part, adjacent to the missing little piece which was recovered separately. In the posterior part of the bra, indicated with the letter B, the Y profile of Rudy Hermann Guede emerged; the genetic profile of total DNA was that of the victim, from the victim's blood.

Moving on to the findings taken from the small bathroom, it was pointed out that there was a substance most likely of a blood-derived nature on the "edge of the bidet drain"; the sample was taken during the inspection in order to extract the specimen that yielded a genetic result of a mixed profile: victim plus Knox. It was positive for human blood. The same procedure was done on the container of cotton swabs that was on the sink. The collected sample revealed a mixed genetic profile: victim plus Knox and it tested positive for human blood. On the left part of the sink there was a trace, this too, most likely of a blood-derived nature since it was of a pinkish colour, like the others. This particular trace originated from the high part and went towards the drain, towards the lower part. The analysis provided the following results: human blood and the genetic profile of the victim plus that of Amanda Knox.

The samples taken from the toilet lid in the small bathroom provided as a genetic result: victim profile and human blood.

The trace present on the right side of the inside part of the bathroom door frame was positive for human blood and it revealed the genetic profile of the victim.

[205] One of the cigarette butts collected from the blue-coloured glass ashtray, sitting on the table of the living room-kitchenette, revealed the mixed genetic profile of Sollecito plus Knox.

Then, with regard to the little piece of bra, made up of a bit of fabric with the clasp, she mentioned that the sample taken from the fabric had been identified with the letter A and the one from the two hooks, by the letter B.

The exam showed a positive genetic result for human blood on trace A and the profile of the victim. On trace B, from the clasp, a mixed genetic profile was found: the victim plus Sollecito and that result was further confirmed by the Y profile of Raffaele Sollecito, also found on the hooks.

The biological nature of this trace, she specified, was not blood ("the hooks presumably have epithelial cells") and one of the two hooks was particularly bent out of shape (page 100 of the transcript).

The handbag, identified as Exhibit [*reperto*] 166, was found on the mattress of the bed in the victim's room during the first inspection. During the inspection of December 18 - when it was catalogued - it was found in the closet. On this handbag a trace, that appeared to be of a haematic nature, was found and the genetic profile that resulted yielded a result of a mixed profile: the victim and Guede. The genetic profile of the latter was confirmed by the analysis of the Y chromosome, which indeed, had revealed the profile of Guede.

The blue-coloured sweatshirt, exhibit [*reperto*] 171, had been collected as well during the course of the second search, the one carried out on December 18 and the sample collected from one of the cuffs, identified by the letter B, had revealed the genetic profile of the victim and the chromosome Y of Rudy Hermann Guede (page 101 hearing May 22, 2009 statements of Dr. Stefanoni).

With reference to the traces enhanced by Luminol, the test performed on the floor of the various areas of the flat had given the following results: in Ms. Romanelli's room the trace indicated as L1 revealed the victim's DNA. In the same room, in a point closer to the **[206]** entrance, a trace (L2) was found that yielded as a genetic result the mixed profile of both the victim and of Amanda Knox.

The Luminol also revealed another foot print, left along the hallway and the genetic result of the sample was the genetic profile of Amanda Knox.

Another sample, also taken from the hallway, but in front of the wall that separates the victim's room from Knox's room, yielded a mixed genetic profile: the victim plus Knox.

She pointed out that Luminol also detects substances other than blood. However, the presence of DNA also meant, necessarily, that biological material was present (page 102).

Answering Raffaele Sollecito's defence team's questions, she specified that the analyses had taken place at the Rome Forensic Laboratory.

She knew what the certification of quality assurance ISO 9001 was, and she specified that they had been waiting for over a year for said certification for which they had carried out the necessary procedures. She specified that, contrary to the ISO 9001

quality assurance certification which pertains to the procedures to follow in order to guarantee good execution of the analyses, the ISO 17025 certification is pertains to the technical laboratory verifications and also the instruments and the equipment that are used for the analyses.

She added that they were in the process of requesting this certification as well. She explained that in order to be able to obtain said certifications "one needs to put in writing things, that, maybe, are already being done, however, certainly, it's necessary to put it in writing because there is an external certification agency which must be informed"(page 106).

She explained that the procedures adopted and that yielded the results presented, were the ones that were implemented by all genetic forensic laboratories that dealt with this type of analysis.

With specific reference to the trace found on the bra hooks, she stated that the procedures indicated by protocols had been followed. The Applied Biosystem's Quantifiler Kit was used for a quantity of DNA **[207]** suitable for it to be amplified. The trace amount was quantified with the software designed for quantification, which is included with the instrument, the [ABI Prism] 7700 that was used. She confirmed that the DNA which belonged to Raffaele Sollecito, had been found only on the hooks and that the obtained amplification result was an "absolutely good quality result" (page 109).

During the hearing on October 4, 2008, presided by the Preliminary Hearing Judge [*GUP*] (see page 47. and what follows of the related acquired record) she stressed that the analysis could also be repeated and she added that the "DNA that is extracted is kept in the best possible conditions, and therefore, in a refrigerated environment between minus 25 degrees and minus 28 degrees Centigrade… it is however subject to atmospheric, physical and chemical aggressions that could certainly compromise its usage; …DNA, however has a process, that is to say, a molecule already in and of itself which has undergone damage and can continue to be subject to it, even in position, in refrigeration preservation" and she further specified that "DNA…like any other molecule, when it is frozen and unfrozen….can be subject to damage and one must verify if the molecule remained absolutely intact".

She also pointed out that she was able to specify how much total DNA there was: dealing with a mixed trace, and looking under the electropherogram, she was able to

measure the quantitative ratio between the two DNA, that of Raffaele Sollecito and that of Meredith Kercher, a ratio that was assessed at 1 to 6: the DNA of the victim, that is, "is 6 times more than the DNA of Sollecito" (page 110).

She confirmed having entered the Via della Pergola house at 7PM/8PM on November 2, 2007 and prior to that, the Forensic Police of Perugia, who had marked [*allestito*] the crime scene, had entered. That is, they had catalogued the rooms, the potential evidence [*reperti*], and highlighted the areas of greatest interest by placing letters and numbers. With reference to the victim's room, she pointed out that when she arrived "there were a very large number of findings" and the bra immediately revealed itself to be of particular interest since the straps were frayed and in addition, there was "an area that not only was missing a piece, but it had been sharply cut" (page 115). She thought about looking for the small missing piece, without, however **[208]** it becoming a priority, precisely because of the many findings, superimposed one on the other. She also explained that the small piece of bra had already been seen, photographed and captured on video during the first search of the house.

She stated that she was present when the corpse was lifted and moved, and under the back of the corpse, she had not seen that little piece of the bra. She recalled that under the back, there was a pillow and a red floor, "completely covered with blood, with lots of locks of hair." The little piece of fabric with the clasp had been found at night, around 2 AM on November 3, according to what emerged from the video of that inspection. The clasp was immediately brought to her attention and photographed. It wasn't however, catalogued during the course of that first search, because, although important, being a missing piece of the bra, there was the fact that "however we had taken the entire bra" (page 121); furthermore, just like the small piece [of bra], other objects like the handbag and the sweatshirt were left behind and which, catalogued during the second inspection on December 18, yielded results. The small piece of bra in question was repositioned where it had been found and in other words, on the floor, on top of which the pillow was found, on which the lifeless body of Meredith had been placed.

During the second search, the December 18, 2007 one, this small piece of bra with hooks was found in another area of the room, near the desk, under a little rug, and around one metre or one and a half meters from where it had been seen during the first search. She wasn't able to tell the reason or the manner in which it had been moved.

She wasn't able to specify how many people had entered the house at Via della Pergola 7, between the first search and the December 18 one, nor the number of ingresses made.

During the inspection of November 2-3 they had gloves. There were about 10 people but they were not all present in the room at the same time. It was possible to move from one room to the other with the same shoe covers but it wasn't necessary to do so. There was however, and necessarily, "one person passing the bags, another passing the test tubes, another passing the paper used for swabbing, in other words, we weren't able to gather the findings and leave the bags with the findings on that floor **[209]** therefore it's obvious that there were at least some people who went down the hallway and who reached the threshold of the exit" (page 127).

The shoe covers were changed only when leaving the house and not when a person walked in the hallway, and would go into Meredith's room and leave (the room). The gloves were the single-use type. These gloves have two purposes: to maintain the safety of the investigators from possible infections, an aim that is pursued even in the laboratory; to prevent that "by touching various things I could inadvertently mix up a finding's biological trace with another one" and this is done for the purpose of guaranteeing the authenticity of the finding. In fact, the investigator, himself, "having DNA, obviously some cells on his body, could transfer his DNA on to the finding" (page 129). In regard to the possibility of such a transfer of DNA, however, she specified the following: " …DNA ….is associated with cells or at least with the nuclei of cells; the biological trace…in the moment of its development, is a biological trace that I define as fresh…in the sense that it contains a certain amount of water, because all of our biological fluids have a large amount of water: semen, saliva, even let's say, skin, in a certain way---but it's a slightly different subject---they (all) contain a certain amount of water. Now, if I touch a fresh trace, it's really obvious, I stain my hands with that liquid which contains DNA; but if I touch a dry trace, that is dry because it's old, because it's already dried up, it doesn't retain any of its liquid state that can be transferred, that can encourage the transfer of cells from one place to the other; it's very difficult to have a transfer of biological substances…During the inspection, there is an ashtray…with six cigarette butts, obviously these butts…are all in the same ashtray…they've come into contact with each other, these cigarette butts, because if I put out a butt, possibly I bump the adjacent one , and yet these butts have all given a different genetic result: three of them gave a genetic profile of a man, two gave a genetic profile of another woman and one gave a mixed genetic profile. Therefore… it's not so simple to transfer

genetic material from one point to another: it depends on how the findings come in contact with each other, for how long…which forces act among the findings, and most of all, the time period. I mean, **[210]** even if I rub a dry trace, and I put it in a certain place and I have this place touched for an infinite amount of time, there will not be a transfer, but we've seen this with lots of findings, even the sock itself: there's a sock…that during the second search it was found rolled up in this little blue rug, where the little piece of fabric with hooks was later found. This exhibit [*reperto*] was jammed in this small rug; out of three samples, two gave a positive result for the DNA of the victim, therefore, for the blood of the victim, but one sample taken from the elastic hem, where I therefore presumed that I would be able to identify the person who had worn it, because by rubbing the elastic it collects the cells of the person who puts it [the bra] on …this DNA I did not find. Therefore, DNA transfer is not a foregone conclusion. DNA transfer is not so simple because many conditions need to be met….both the amount and also the time period of the development of the trace (pages 130 and what follows).

Regarding the possibility of transferring exfoliated cells that may be found on a hand or a glove, Dr Stefanoni explained that in the abstract, anything could be transferred, but it remained to be seen in practice. So, with specific reference to exfoliated cells, she stressed that it would be necessary to press down with force or scratch over a surface where these would have to be present (for example, the back of a person).

She clarified in this regard, the concept of exfoliated cells, of which she had spoken about and had also explained in the report. She emphasised therefore, that the exfoliated cells which she was referring to are not the skin cells "that come off naturally from the skin because they are dead cells" (page 133) that are shed continuously, without any rubbing. She stressed that it's not even possible to extract DNA from those cells, because the nucleus is practically dead; they are keratinized cells. She further clarified her explanation by adding that the case of cells that, due to the position in which they were found on a finding, may lead one to believe a friction occurred is different; cells that are found in the layers underneath the [skin's] barrier, if you will, made up of dead cells.

[211] The situation in Meredith's room as it appeared in the December 18 search was different from that of the first search: the mattress had been taken to the living room area; a lot of clothes which, during the first search hadn't been catalogued, were on top of the bed slats; the closet doors, removed, were inside the room and leaning on the door; the small rug that was in the corner towards the wall on the right was found in front of the desk, a metre away from where it had been [before], and under

this small rug, during the December 18 search, the small piece of bra with hooks was found, as well as the sock. This small rug hadn't been analysed and one could see a few traces that perhaps were of a blood-derived nature. She added that it was not judged necessary to analyse the small rug because, although appearing soiled by a substance that was presumably blood, it was in an area where there was an "enormous streak of blood" and so it was natural that it was soiled by the blood of the victim, without it taking on any particular meaning.

She specified that both in the first, as well as in the second search, protective suits, gloves and masks were put on. The masks were occasionally removed but always paying attention to not talking or talking in a very cautious manner (p. 142) Between the first and the second search there had been some rummaging, moving of objects, etc. and she didn't exclude the usefulness of the aforementioned precautions on account of the objective (of the protective measures), and she added: "I know for certain I told my colleagues of the Flying Squad [*Squadra Mobile*] and, in general, colleagues are told about this: if you must go inside, use precautions in touching things, in walking, use shoe covers, get these materials".

With reference to the single-use gloves, Dr. Stefanoni specified that they were changed, in the course of the search, every time an object was touched that was particularly soaked with blood, and when it was obvious that the gloves would be soiled; "…otherwise, if it is just an ordinary object…I can move it, but this does not lead to my DNA remaining, let's say, attached. It depends on the object" (p. 149). She added that one cannot see epithelial cells and therefore their possible presence on the glove worn by the investigator is not visible to the naked eye (page 151).

[212] She related how it was possible for her to have touched different findings with the same pair of gloves, and in particular, the bra, first, and then, the underwear. However, she pointed out that, in this specific case, as the video images show (cf. video footage), the part of the bra that was touched was not soiled by any blood.

Regarding the method used to collect [*repertazione*] the blood stains by means of a small piece of paper that was used to collect a small quantity of blood and then this blood was "re-smeared" using that same piece of paper (cf. video of November 3, 2007 at 4:45 PM and beyond), she explained that this method "may not seem suitable for evidence collection [*repertazione*]" but, in reality and in that specific context, it was suitable "due to the nature of the traces that were collected". In this regard she pointed out that "both the traces on the sink as well as the traces in the bidet were clearly rosy traces, so they appeared as certainly diluted traces, and they were

apparently all of the same origin because they were drippings …they were like a sort of rivulet that started from the top and ended in the drain" (page 154). She pointed out again, to stress the necessity of keeping in mind the context of the evidence collection [*repertazione*], that such a work method was not used for different traces, objects, and different areas such as the faucet and the cotton swabs. Rather, it did apply to the evidence which was like a continuous rivulet of pinkish water that was found in the sink or in the bidet.

In response to specific questions regarding these traces, she stated that if they had originated from two different people and in a independent and distinct way, one from the other, what would have formed would have been a mixture of the trace: two DNA that would be separated at the start but that would have joined to form a single trace. She believed it improbable however, to think of such an origin for the trace, which was proven mixed, and this because of the fact that the same area was affected and because of the much diluted blood appearance. She stressed, as well, that both of the two specimens recovered in the bidet "were…more abundant on the rim and on the plug on the drain, compared to the part, which is let's say, slanted, where there is a very narrow line of the substance…However, she stressed, to the naked eye, this link was evident" (page 157).

[213] Returning to the examination of the piece of bra, she confirmed that the investigator who was shedding light on it had also touched the hooks which were on that piece of bra. She stressed that the investigator, immediately before having touched said hooks, changed his protective gloves "both he and I were going in, let's say, in the room, for the sole purpose, at this stage, to look for the clasp. So we had just changed, and he was looking for where it could be, with the flashlight so he was looking, let's say, more attentively". (Pages 162 and 163, where acknowledgement is made of the agreement by all parties and of the consequent certified provision to acquire Dr. Stefanoni's deposition given in the preliminary hearing).

She added that one could not see the gloves being changed in the video footage because the purpose of the video was to document the technical activities and not the instrument handling processes such as the changing of gloves. She confirmed, therefore, that before having touched the clasp with those gloves, the gloves had not touched any other objects, since they had just been put on. With those very same gloves, however, the sock was then taken and catalogued [*repertato*] (page 166). She pointed out, however, that on that sock only Meredith's traces were found. To this regard she pointed out that, since over a month had gone by (it was the search carried out on December 18), the traces were "very dry, dehydrated and, therefore,

the possibility that I could contaminate the findings by touching them is practically equal to zero" (page 167).

With reference to the fact that at a certain point the clasp was placed on the floor to be photographed, without a precautionary examination of the cleanliness of the floor, Dr Stefanoni stated the irrelevance of that circumstance. Firstly, she pointed out that the piece was merely placed [on the floor] and that, due to what previously explained, it wouldn't have been possible that the act of simply placing it there, could result in something being transferred unless there had been some liquid on the floor. Had that been the case, even the mere placement [on the floor] would have allowed the transfer of that liquid either to the fabric or to the bra clasp. In that case, however, there weren't any signs whatsoever of any liquid substance and the bra clasp was simply placed [on the floor] **[214]** without any rubbing or applying any pressure. She specified again, that, on the floor, there could have been some exfoliated cells present, but cells that were keratinized, and therefore not suitable for any transfer of DNA.

On the clasp there were, however, exfoliated cells that were not keratinized; otherwise DNA would not have been found. She added that the cells recovered on the bra clasp could not have been spontaneously released, as it normally happens for anyone's skin, due to a continuous physiological process which causes the older cells, specifically, the dead cells[*lamelle cornee*]-exfoliated cells, to be spontaneously shed. These cells—she added—are not living; they are the horny layer, which covers our skin, these cells are keratinized; they therefore have lost the nucleus and all the cell organelles and they have as their sole function that of protecting the epidermis.

Exfoliated cells are cells that have a nucleus and from which it is therefore possible to extract DNA. They are the cells that have not been lost in a natural or spontaneous manner, but rather, as the effect of a specific action, by a rubbing action between the skin and some object in such a way as to cause the release of living cells. She did not conduct a test to see what could have been on the floor before placing the piece of bra there since the risk of contamination, she reasserted, was believed to be equal to zero, given the absence of liquids. She remembered that one of the two hooks "was partially detached and a bit open".

She ruled out that this small piece of bra could have been stepped on between the first search and the December 18th search because, from a comparison of images it resulted that "when it was found the first time and the second time" the hooks of that piece of bra "had exactly the same shape" (page 176). The possibility that

someone had stepped on the small rug under which the piece of bra was found had to be ruled out, since, otherwise, there would have been a deformation of the very same hooks, which being of aluminium, would have buckled.

She wasn't able to say when and how this piece of bra had moved by about one and a half meters from the position in which it had been seen and photographed **[215]** during the first inspection of November 2-3. She stated, however, that the first and the second time that she saw this finding "the side that was resting upon the floor was always the same" (p. 178) despite the fact that it had changed position: from the initial position under the pillow where the victim's body was to the position in which it was found on December 18, near the desk and under the little rug. She added that one of the hooks was very deformed and even partially detached, unstitched, the other one was intact. She stated that in the night between November 2 and 3, she saw the clasp, but only briefly; she had, however been able to observe it in the photos.

Answering a specific question from Raffaele Sollecito's defence team, she affirmed that the salivary cells from the mucous membrane can be released with a sneeze, or by speaking, or with a spit. This is how these cells can be transferred. Dandruff falls naturally: but these are dead cells.

With regard to the mixed trace, she specified that it was a biological trace that resulted from the DNA analysis.

A genetic profile that has more than two peaks for each gene locus is obtained from the analysis and this allows one to realise that it is precisely a mixed specimen referable to more than one person. From the count of the peaks present in every locus, one can reasonably hypothesise that the DNA belongs to more than one individual; in addition, on the basis of the height of the different peaks, it is possible to indicate the relative ratio between the various subjects present in the mixed specimen.

She specified that the alleles were the red-coloured peaks in the electropherogram which is the complete diagram of a biological trace reading. She pointed out that not every peak was an allele. In the presence of peaks–alleles and on the basis of the combination between them, one could attribute a certain specimen to a specific person, as long as the genetic profile necessary to make the comparison was available.

She added that this result, which is the electropherogram, requires an interpretation on the part of a geneticist. In fact, the machine (the software) that manages the data that come out of the machine itself is not able to determine which peaks must be qualified as alleles, differentiating them **[216]** from the other peaks known as noise. Noise in fact also show as peaks, but they represent false alleles, a "by-product inherent in the process of genetic amplification...absolutely predicted, quantified and described by the firm which produces the kit itself" (p. 184). She added that these false alleles (noise) are impossible to eliminate, because they are inherent in the sequence which gives the DNA, and in which noise will necessarily be found. However, noise is recognisable and the geneticist must know how to identify it since it has an effect on the attribution of a biological specimen.

The height which is considered reliable for a peak to be qualified as an allele is equal to 50RFU, the symbol RFU representing the unit of measure employed for these measurements.

In the case of a genetic mixture, she emphasised that it is not only the height of the peak which counts, but also the position occupied by the peak within the electropherogram, as well as the relative height of the peak with respect to the peak which follows it.

Thus, where there is an allele which has a certain height and such that the peak just before it has a much smaller height, at most 15% of the first one, then the previous peak should be considered noise, just a by-product of the analysis.

In response to a question concerning the electropherogram D5S818 (p. 186), Dr Stefanoni declared that while she recognised that electropherogram, it was not the one which she had given in her own technical report. The present one was in fact the electropherogram which comes directly out of the machine, without the interpretation given by the geneticist. She specified that when that interpretation was made, between the end of December and the beginning of January 2008, she already had Raffaele Sollecito's genetic profile at her disposal from a salivary swab.

She explained that "with particular settings, the machine can actually produce its own interpretation...it produces a result...and proper procedure dictates that without considering to whom it should be attributed...I should read the result as it comes out of the machine without **[217]** filters, without settings, just as a pure signal, as it appears in this diagram... I see everything that the machine shows me, after which...by inserting particular settings, which have been set up objectively with a

knowledge of forensic genetics...I see what comes out, and if the results can be identified with people whose DNA I already have" (p. 188). She declared that she was aware of the prohibition of the "suspect-oriented" method, according to which it is incorrect to have the genetic profile of a suspect in front of one when interpreting the electropherogram. She further declared that she had respected that prohibition, and analysed the trace in an absolutely objective manner.

In response to specific questions, she considered an electropherogram which was submitted to her, and examined three peaks, with particular reference to the third one, the peak of 108 RFU, allele 13. She was asked if she had considered that peak, number 13, as an allele or as noise. Dr Stefanoni declared that she had not considered that peak as an allele or as noise, "because in this case I have a genetic profile in this locus...in the two main peaks, the higher ones, which is fairly homogeneous; so an allele of this type cannot be noise because it would come before...and it can't be an allele because it is too low with respect to the main peaks" (p. 190). She also noted that the height of that peak was 108 RFU, and the parameter indicated was 50RFU; however, she explained, according to what she had already stated, the parameter of 50, the base value, concerns a single profile in which the situation is much clearer, "...there is just one individual, and in every locus there are at most two alleles, so we say the quantity...as this height is in relation to the quantity of DNA, we say that a height of more than 50 is a good height at which to consider that a peak is reliable. But what does that mean? It means that I can reliably consider this peak, in this case, as a real peak, not just a by-product. However, in the case of mixed DNA, the situation is different, because above all in this mixture, which by its very nature has different peaks, different by-products...For me to have a real mixture, I must have **[218]** a balance which is clear. As I said before, for this mixture, if we consider the proportion of X to Y, and also for the other alleles in the other loci, I get a reasonable proportion of about 1 to 6" (pp. 191 and following).

The defence of the accused Sollecito called attention to page 202 of Stefanoni's report, filed with the prosecutor's office on June 12, 2008, in order to show the manner in which Dr Stefanoni interpreted these peaks. They remarked that, by looking at the diagram (the electropherogram), one could expect to find in this part of the report, *in parte qua*, the indication of all of the peaks which appear "physically", so to speak. Whereas under the marker D5S818 (see p. 202, table 165-I of the report), the peaks considered as alleles are only: 11 and 12. If, instead, also the peak which appears in the electropherogram had been considered as an allele, the interpretation would have been different (pp. 192-193). Regarding this, it was asked whether it would be

possible to exclude the fact that within the highest peak, the one of allele 12 which forms a pair together with allele 11, "there could be a second allele 12 which has more or less the same height as 13, and thus both would belong to a subject of genotype 12-13" (p. 193).

In response to this question-observation, Dr Stefanoni explained that in this case, it would not be possible to explain the Y chromosome, and thus reaffirmed the correctness of the interpretation she had given.

Another electropherogram from the same page 202 was then brought to Dr Stefanoni's attention, with the marker D21S11 indicating another locus.

Analysing this marker, the first peak turned out to have a height of 94RFU, and the one following it was 603 RFU; it was observed that thus, the height of the first peak was greater than 15% of the height of the following one [note: Massei writes "less" here but it is an error, 94 is more than 15% of 603 and that is obviously what is meant]. The defence then asked why the peak of height 94RFU was not considered as an allele rather than as noise.

Dr Stefanoni explained that it was 15.5%, "with a tolerance limit of plus or minus 0.5%, so it could be noise" (p. 195).

[219] She admitted all the same that it could have been an allele. It depended upon how it was interpreted.

With reference to the height of the various peaks, Dr Stefanoni stressed the necessity to read every electropherogram “locus by locus”. That is, “different things which happen in different loci”, cannot be mixed (page 197). For this reason a peak with 108 RFU could be considered not to be allele, while a peak with 65 RFU could be considered as such, and this for the fact that they are found in distinct loci and the loci are among themselves of a different chemical nature and because of how the PCR process happens. Therefore Dr Stefanoni affirmed that it is thus necessary to judge case by case and the evaluation must take account of all the parameters inside the electropherogram: of the relative height of the major peaks, of the height of the other peak; several things are consequently taken into account, and the personal experience of the genetics expert is furthermore important (page 198).

As far as the quantity of a sample analysed, she indicated it as above a nanogram, since “the quality of this electropherogram is due to the fact that the peaks, both the principal ones and the secondary ones, are however of a certain height, are of a good

height; this result is obtained with a quantity of DNA of at least a nanogram or more or less, which is that advised by manufacturer" (page 200).

She declared to have not repeated the amplification, not having held it to be useful. The amplification is used to identify gene zones of interest. If the DNA is valid in quantity, as in this case, the result must present itself equal again and thus the repetition of an amplification does not lead to different results.

Referring to the Y chromosome and having recalled that it allows the identification by family type and that it regards only persons of the male sex, Dr Stefanoni stressed that it was an analysis which was used "in order to exclude" and, with the cautions of the case, to affirm as well. She evidenced in this regard that a haplotype, therefore a Y genetic profile, not being unique as a genetic profile, was not identifying, being shared with other persons.

Therefore, "comparing it with a reference data bank is a well-established procedure ... a collection **[220]** of varying different types of genetic profiles of the Y. This is because, differently from nuclear DNA, Dr Stefanoni added, I do not have the allelic frequencies, I do not know how rare that profile is based on the peaks of the alleles; I then have to look at all the genotype which is contained in a data bank in order that, comparing, I find: it is present twice, it is present zero times, it is present a hundred times, and thus I get an idea of the quality of my result, of the dependability with which I can attribute that determined genotype to that determined person".

"It is obvious", the genetics expert Dr Stefanoni further explains, "it is inherent in the nature of the Y chromosome that it is shared by the paternal line, therefore there is no doubt that it is not unique to that person. However, if I insert that genetic profile into an online data bank that therefore can be easily consulted, it is the data bank of Professor Lutz Roewer, this data bank can be used to get an idea of the presence in the population inserted, therefore in the various subjects which have been included in that data bank. I will find out which frequency it has, thus if this same genotype is present once, a hundred times, ten times. Because obviously the Y chromosome contains in itself the information which comes down to us for generations, thus perhaps 100 years ago a part of a certain family immigrated to another part of the world and it planted in that part its Y chromosome which, therefore, will be present in other zones of the world ... in other populations, in other individuals; being able to have an estimate, a judgement of how many individuals in the data bank have that same genetic profile obviously helps to understand how rare that genetic profile is".

"This was done in the case of both the Y genetic profiles, both of Raffaele Sollecito and of Guede", Dr Stefanoni continued. "It was done at two different times, more or less in September and recently in May, and the frequency which I found in this data bank ... is zero ... That is, not one long genetic profile is present, that is extending for 17 loci, that is of the same amplitude of the one that I amplified, because previously, up until a few years ago, there was a kit which analysed only 11 of these loci, therefore **[221]** let us say we were more restricted, then technology ... permitted the analysis of 17 loci instead of 11, as in this case; thus among all the possible haplotypes which are included in this data bank 15 thousand 900 ... and I do not remember the precise number, almost 16 thousand, are extended with 17 loci, thus they are of the same length, of the same type, they have been analysed with just the same kit as that used by us, therefore they are comparable data. This comparison among 15 thousand 900 ... and I do not remember the exact number, yielded zero haplotypes, therefore no genetic profile equal to that of Raffaele Sollecito or to that of Guede is present in this data bank ... the data bank is an official bank of reference for all the forensic genetic experts in the world" (page 202 and following pages).

Dr Stefanoni then specified that the 228 collected samples [*reperti*] from which the 460 specimens were analysed came from the various on-the-spot investigations carried out in the houses in Via della Pergola, in Corso Garibaldi, in Via Canerino and in Raffaele Sollecito's car.

There were 10 trace specimens ascribable to Amanda Knox, five of which were mixed. No trace specimen ascribable to Amanda Knox was found [*repertata*] in the victim's room. Several were found in Romanelli's room, in the corridor, in the bathroom. She confirmed that it is not possible to date a specimen, neither is it possible to establish whether one has been left before another. Thus, with reference to that found in Ms Romanelli's room in which a specimen in which the presence of a mixture of Amanda Knox and the victim was detected, Dr Stefanoni specified that it is not possible to establish which trace was left first or whether these traces were left simultaneously.

The mixed genetic profile therefore is compared with the profiles which are available in the case under examination and, it being a matter of genetic mixture, it is possible to also have (if conditions permit it or if the peaks are of a certain height, if the relationship between the two DNA is sufficiently uniform and thus there is little inequality of quantity between the two) alternative genotypes to those given as present.

[222] In other words: a mixture Knox – victim is indicated as being compatible. Nonetheless, in the presence of a nearly equal mixture (and this occurred in one case) so that in quantity the two DNAs are very similar, in this case then in every gene locus rather than recognising the pair 11 – 12 and 13 – 14, one could find the [pair] 11 -14 and 12 – 13, with the consequent singling out of other persons having this different biological profile.

Indeed, when the two mixtures are very similar in quantity, the peaks are very homogeneous in height, Dr Stefanoni explained; in the said hypothesis it will not be possible to say with certainty: those two people are present and no other is present. Therefore, in this case, when the mixtures are nearly equal amounts, a judgement of compatibility must be given: on the contrary, if they are very uneven there will be more certainty in the attribution of the biological profiles, since other pairs identifying other persons would not be possible.

However, in the case of the mixture of several individuals, the attribution of the genetic profile, even in terms of compatibility of one person with another, or with all the persons, leaves margins of uncertainty, as evidenced above.

With specific reference to the mixed genetic profiles regarding Knox, Dr Stefanoni remarked, she could not exclude a third person because, in at least one case, it was a matter of "very equal profiles" (page 222).

She then took into examination, as an example, the sample taken from [*reperto trovato*] inside the washbasin of the small bathroom, and the mixed genetic profile: victim and Knox. In this case, Dr Stefanoni pointed out, the mixture obtained was not balanced and that in the sense that the two persons identified as victim and Knox have quite different proportions in quantity.

This could be derived from the fact that, looking at the first gene locus, it was possible to note that Knox "has the alleles 11 and 12, which are the first two; the peaks ... are in the order of 2000, beyond 2000 RFU; the other pair ... it is in fact the pair 13 – 16 because it has quite homogenous peaks; one peak is 931, the 13, and the other peak is 752, are a little uneven, but all in all quite homogenous. In this case, but also in other cases ... there is a compatibility [which is], one could say [*come dire*], a little **[223]** stronger ... because it would not be plausible to pair the 11 with the 13 and the 12 with the 16, because their heights are too dissimilar" (pages 223 and 234). Therefore, Dr Stefanoni concluded on this point, specimens can be more easily

attributed when in the presence of quite unequal mixtures in which each one has contributed a different quantity of DNA.

There are also cases in which this unequalness is much less pronounced, as in the trace relative to the box of cotton tips, the witness continued. Thus in the first locus, the D8, the same preceding alleles are present, still 11 – 12 – 13 and 16: in this case, however, the unequalnesses between the pairs of alleles of the two persons are less: the peaks of the pair 11 – 12 which can be attributed to Knox have a height of 637 and 590; the peaks of the other pair 13 – 16 which can be attributed to the victim have a height of 514 and 470. Thus there are four alleles and this is identifiable in the D18 as well, which has quite homogenous heights and it is thus as well in D19.

Then Dr Stefanoni stressed that when the alleles are very homogenous in height, one can think of different pairings in respect of those attributed to the two persons, and these different pairings make it possible to include other persons in respect of those already present. In this case, one can say there is compatibility because there are certainly the alleles of the victim and of Knox present, but precisely, with this possible combination it cannot be excluded that there are also other persons. This assessment regards the box of cotton tips but not the trace of the washbasin in which, precisely because of what has been pointed out and recalled above, "it would be really very, very improbable that there were other persons" (page 227).

She specified that, however, even in the case of the box of cotton tips "certainly there was the DNA which coincided with the alleles, therefore with the genetic characteristics present in the victim and in Amanda Knox ... In that case there could also be a third person present, still of the female sex which however has the same characteristics present in that mixture" (page 229).

With regard to Exhibit 36, the knife, for which in her report Dr Stefanoni had affirmed that "it was possible to extrapolate the genetic profile of [Meredith] Susanna Kercher on the B and on the A the same conclusion: it was possible".

[224] Dr Stefanoni clarified that the expression 2 "it was possible" had the meaning of: identity (page 234) in the sense that "the profile found corresponds to that person" (page 235).

To dispel any doubt in the interpretation of the terminology used, she declared that "the genetic profile of Knox was found on trace A of Exhibit 36, which corresponds to the saliva swab extrapolated [and] taken from the same person [Knox] and that the genetic profile of Meredith Kercher was identified on trace B of the same exhibit

after comparing it to the genetic profile extrapolated from the swab taken from the wound on the victim's neck" (page 236 of the declarations of Dr Stefanoni, hearing 22.5.2009).

Still with regard to Exhibit 36, replying to the specific question with which she was asked to specify which elements needed to be present in order to preclude the possibility of identification of a collected biological specimen, Dr Stefanoni indicated an incorrect storage of the specimen in an environment which was not ideal, such as in warmth, or enclosed in a plastic bag where water might be present and, not being able to evaporate, it facilitates the proliferation of micro-organisms. She stressed that the consequence of a conservation carried out in an incorrect way was the deterioration of the specimen so that, when analysing it, very probably "no genetic result would be able to be obtained". She added that the circumstance for which it had been possible to attribute the specimens gathered meant that the conservation had been correct. She further specified that she received that knife, Exhibit 36, in a cardboard box and that it was delivered to the laboratory where it was photographed and analysed. It did not appear to her that the container of the knife was sterile; she specified however that "not even samples [*reperti*] are sterile ... we take samples from floors, from objects ... sterile is something which does not have micro-organisms; we do not have anything that is sterile, not even the gloves, the gloves are in a package" (page 241).

She added that a possible deterioration of the sample "would have jeopardised the analysis in such a way as to detract something" (page 241).

[225] She stated that the other knives that were analysed were kept separate. She reaffirmed that on the blade of knife Exhibit 36 a striation was visible but "placing the exhibit under a source of illumination … like the conventional sort that has a Reprovit, which is the instrument we use for photography; it was possible to observe it only by placing it under a strong spotlight and by changing the angle at which the light hit the blade, it was only in this way that these striations became visible to the naked eye … photos were attempted but it was too reflective … only white spots of light came out" (page 246).

Regarding the analyses carried out on this knife, she showed, in the following terms, the reason why it was decided to sample at points A and B: point B was found on the striation on the face of the blade; point A coincided with the part of the blade which has the knurl [*codetta*], and this is a sort of rise which stops the hand from sliding when a person grasps the knife and strikes a blow. On the sampling relating to point

A, the genetic profile of Amanda Knox was found, on the sampling relating to point B, the genetic profile of the victim was found. She recalled that the other samplings that were done on the same knife produced no results. At the scratch location, the presence of human blood was searched for, with negative results. "The test is negative," said Dr Stefanoni, "though, given the presence of DNA in very, very low quantity, it cannot be excluded, however, that there could have been blood, but it was not in a sufficient amount to show up even with a very sensitive instrument, such as the one we normally use for this test" (page 256).

In relation to this aspect, she added that "the test for blood had to be carried out on a small portion of this striation, because otherwise … we would remove the probable genetic material which would no longer be available for the genetic test, because after examination of the blood-derived material, it is not possible to preserve the same material and use it for genetic analysis. And so we, to try this kind of analysis, an analysis of the kind of specimen, we sacrifice a small part of the specimen…, after which, I **[226]** however went ahead and sampled the rest of the striation with this swab, because this was the main purpose of the genetic analysis, to establish a genetic profile. Therefore, the origin of the specimen is sacrificed for the benefit of the possible identification that you get with DNA examination, because knowing that it is blood, but not knowing who it belongs to, means very little; conversely, knowing the genetic profile while not knowing its nature is much more informative, because I know that that DNA, whatever its source, belongs to that person … In general…in genetic analysis, you give priority to the extraction of DNA and the analysis of DNA, then, obviously, if it is possible to establish its nature as well, all the better, it is more complete information; but the main goal is getting an identification via the DNA (pages 258 and 259, witness Stefanoni).

Continuing her explanation, Dr Stefanoni stated that a small quantity of DNA is a quantity of DNA that does not always produce a complete genetic profile for all 16 gene points; accordingly, it does not always produce a peak height that is greater than 50 RFU.

In the case of Exhibit 36 (the knife) the height was observable and it was quite low.

In the first locus, D8, "we have the allele pairs 13-41 and 16-28; allele 14 and allele 18 are, respectively 47 [RFU] and 32. Some alleles are also 51 and 75 [RFU], it depends a bit on the gene locus. So, D18 is 75 and 39; D5 is 113 and 36; and therefore they are not well balanced, and, above all, many have a low RFU level" (page 260, Dr Stefanoni).

The geneticist added that extracted DNA, if of a good quantity, allows further analyses to be performed (the PCR process) on the same sample; in saliva swabs it can be repeated many times because the DNA is quite abundant.

In this case, instead, the extraction volume, equal to 50 microlitres, was almost completely used up to conduct this DNA analysis, so that a repeated amplification of such a scarce amount (of DNA) would have certainly prevented a result from being produced both in the first and in the second attempt. And so, with a view to wanting to repeat the analysis, division of **[227]** this quantity of would have been needed, [and] certainly there would have been no result obtained, because, below a certain amount of DNA, PCR is ineffective, it is unable to amplify. The systems in use, in fact, have a quantitative threshold below which one cannot go to obtain a genetic profile. Therefore, since each amplification uses a certain amount of DNA so that it is not possible to re-use it, all that was available was analysed and the above-mentioned result was obtained.

Even if the test is not repeated when an analysis is performed correctly, Dr Stefanoni stated, its result is, however, reliable. Moreover, she continued to explain, "the PCR is done only once in general for all the specimens, even if we had a kilo of DNA…; the analysis is reliable when it is carried out according to the recommended settings provided by the kit's production house and according to the good norms of a genetics laboratory" (page 263).

Nevertheless, she added, if she had had another "small quantity", repeating the analysis would have been desirable (page 264). She re-affirmed what she had already testified to in the preliminary hearing before the GUP, that she was not sure of getting a result with so scarce a quantity. So she used all the extracted DNA, she had proceeded to concentrate it and amplify it, and she had obtained the genetic profiles which she has referred to, not very high in terms of peaks, but complete in almost all their parts.

(E)

The questioning of Dr. Stefanoni continued during the hearing of the following day, May 23, 2009. During this hearing, the subject of the mixed traces of Knox and the victim found in the small bathroom was dealt with: traces on the box of cotton buds, in the sink and in the bidet. It was further recalled that Knox's blood was present on

the faucet of the sink, and Dr. Stefanoni declared that it was coagulated, not fresh blood, and that it was not possible to specify the moment at which this blood had been deposited on the front part of the faucet.

The witness reaffirmed that the mixed trace found in the sink was pink, as was the one in the bidet. In relation to this colouring, she defined it as that of a diluted substance, rinsed blood. She explained **[228]** that the traces were dry, and it was not possible to date them or to determine whether the trace ascribable to Knox had arrived there before the victim's, or vice versa.

She explained that the trace was very light pink, and that the photos and images did not give a visual representation of the reality of the facts as they were observed at the crime scene. She confirmed that it was a streak. With reference specifically to the trace found in the bidet, she explained that the trace was not exactly around the drainage outlet, "we didn't exactly go around the outlet, or underneath it, or go scraping on it directly; we went a little bit over...to a place a little bit to the side, here; not exactly the drain outlet itself" (page 12). She emphasised that the trace appeared as "a *unicum* ("unique specimen") of this drip that started from higher up", so therefore it was not exactly at the drain, or more precisely, the interstice between the ceramic and the metal (page 12, hearing on May 23, 2009).

She subsequently emphasised that both in the bidet and in the sink, the traces were not separate, but presented themselves as physically united, without any break in continuity, and thus each one appeared to constitute a *unicum*, "a trace that I needed to analyse and consider *in toto* during the analyses...as from their visible aspect they were very diluted, really very, very diluted blood, I made sure that everything was taken that was possible to take, from the top towards the bottom", she explained (pages 13-14).

From the videos of the crime scene inspection, made on November 3, 2007 as has been already stated, it was shown that, concerning the trace on the bidet, the evidence collection from the upper part of the edge of the bidet was continued with the same swab down to the lower part.

Dr. Stefanoni maintained that this was correct methodology, since the trace formed one single drip, even though in the images it was not visible as a unit "because it is located practically underneath this hollow, which is not illuminated...however, there was a very thin thread of continuity" (page 15).

At the express request of Amanda Knox's defence, asking her to speak about issues relative to deterioration and contamination of DNA, Dr. Stefanoni declared that deterioration renders analysis more difficult, **[229]** and is caused by an attack on the evidence sample by fungi or bacteria. But such an event has no effect on the reliability of the result; more on the possibility of finding DNA that can produce a result at all. Thus, deterioration impacts in the sense of causing "a loss of information; what remains behind, it might be 10 loci, 5 loci, one locus, is absolutely very partial data but it is data; thus, it is not the same as unreliable data" (page 24).

As for the necessity of reproducing an analysis, particularly in the case of a very small amount of DNA, in order for the result to be considered as reliable, Dr. Stefanoni stated that in the event that the quantity of genetic material available is extremely small, the analysis is performed nevertheless and the result is evaluated. She added that "every analysis that we do is done only once, even if we have a salivary swab containing a very great deal of DNA with respect to the traces..." She added further that, "if an analysis is performed following all the parameters of reliability and proper laboratory procedure, with the due positive and negative controls and the due precautions employed when wearing single-use gloves, everything which is indicated as proper laboratory procedure, then I can confidently obtain a result, even with a very small quantity of DNA. I can therefore use that DNA in a single analysis without needing, even if I had desired it, to repeat that analysis. And that analysis is absolutely valid," concluded Dr. Stefanoni on this point; "There is no reason to cast doubt...as long as the data is absolutely readable and interpretable" (page 25).

With respect to contamination, understood as being a mixing of DNA samples, given that in numerous samples (around 50 samples during a period of extraction and analysis lasting from November 2007 until May 2008), listed on pages 264 and 265 of table A of the report deposited on June 13, 2008, where Kercher's biological profile was found and analysed and the process of analysis was recorded, i.e.: "This biological substance, as amplified here...is injected into an instrument which is an automatic sequencer" (page 28). On the basis of this, Dr. **[230]** Stefanoni was asked if this circumstance, with reference to the operational aspect, could have caused some kind of contamination in other exhibits, in such a way as to cause in each of them the discovery, attributable to contamination, of traces of Meredith Kercher.

Dr. Stefanoni answered that firstly, there were two sequencers in the laboratory, one with four capillaries and one with sixteen capillaries, both used interchangeably; she added that, theoretically, it is not possible to eliminate the risk of contamination. She

did, however, assert that this risk is mitigated via the observance of proper laboratory procedure, and subjecting all the instrumentation and material to regularly programmed technical check-ups.

With specific reference to the knife, Exhibit 36, she stated that this was an Exhibit that was analysed during the course of 50 samples attributed to the victim, some of which came before and some of which came after the analysis of the knife. She further emphasised that each sample was separately analysed, and that it was absolutely impossible to mix one sample with another. She added that the case in question, to the one in respect of the homicide of Meredith Kercher, it constituted one of the many case files [*fascicoli*] that were being dealt with simultaneously by the Scientific Police laboratory during that period, which was also dealing with other analyses concerning other cases. She excluded the possibility that, in the machine used for the analysis of the various samples, any secondary deposits might have formed from which it would have been possible to transfer DNA onto other specimens. With respect to this, she stated that the machine is equipped with a security system which prevents such an occurrence.

With respect to laboratory contamination, she stated that she was not in possession of any data referring to such contamination, and emphasised that if all procedures recommended for good laboratory procedure are applied, this would have cancelled out [*i.e.* prevented] the occurrence of contamination. She also explained that in performing the various analyses on the biological traces in question, there was no anomaly found which could have caused such a **[231]** contamination, and she gave evidence of the presence of a whole series of checks [controls], precautions and procedures, intended so as to eliminate this risk.

With respect to the traces present on the door handle of the victim's room, she stated that they had been identified as being from Kercher. Only blood of the victim was found, and Y chromosome testing was not carried out. In this regard, she explained that Y chromosome analysis is not routine, and there was no particular reason for doing it here.

She stated that the pillow was found half under the pelvis of the body. Analysis was not done on the pillow because it was considered more useful to use it for print analysis, whether of shoeprints or handprints.

On further questions by Amanda Knox's defence, the witness returned to the subject of Exhibit 36 (the confiscated knife), and explained that "any machine which uses

fluorescence as analytical data, whatever kind of fluorescence and for whatever kind of analysis it is used for, the analysis will unavoidably be accompanied by background noise...false peaks which are very, very low with respect to those which belong to the true analytical data". In practice, it is thus "possible to have background noise in an electropherogram, and in any analysis, since this is unavoidable, it is inherent in all genetic analysis of this type" (pages 44-45). Such results are produced by the machine in the laboratory, and subsequently evaluated by the geneticist, Dr. Stefanoni explained.

As for the scratch on the surface of the blade of the knife Exhibit 36, she reaffirmed that if it was not particularly well illuminated, the scratch could not be seen (page 47).

In response to a specific question on this point, Dr. Stefanoni declared that she had been working as a biologist for seven years, had always used the same methodology, and had never heard that any problem of contamination of exhibits had occurred.

With respect to the certification ISO 17025, she stated that it was not mandatory, but was done on a voluntary basis, meaning that any laboratory, any **[232]** institute, even private, can request it from the certification board, so as to be able to state that one's laboratory works to quality standards.

The Scientific Police had asked for this certification. She added that when the analyses under discussion were performed, there was no public agency which possessed this certification. The Scientific Police and the RACIS (now the RIS) of the *Carabinieri* were the first to request it.

She explained that in order to obtain the certification, they were not in the process of modifying, nor needed to modify, anything in their methods of analysis, or in their facilities, machines or anything else. They only had to document certain things. In fact, she explained, "in reality, this type of certification certifies that all the instruments and all the steps and phases of the work have been done with instruments, machines, diagnostic kits and analytical kits which are in their turn certified; thus, in practice, it is a certification that everything in use which could be certified has been, but it does not actually change anything" (page 71).

She specified that the deterioration of material could not yield the DNA of one person instead of another. Deterioration only entails a loss of information.

On the subject of the bathmat from the small bathroom, she stated that three samples were taken, and the results were "blood and DNA of the victim" (page 75).

The knife, Exhibit 36, appeared very clean, with nothing visible to the naked eye. She had decided to collect material from within the striations, because they were the only data for orienting a sampling of a blade that, to the eye, showed no biological trace which, however, where it was present, "would have been inside these scratches" (page 81). The other samples taken from the blade of the knife were collected in a random manner, so to speak, since there was nothing to assist in deciding to take a sample from one spot rather than from another.

With regard to the bra clasp, when asked whether the trace from which the extracted DNA that had turned out to be Sollecito's was actually present on the deformed hook and/or on the non-deformed one, she responded that both the hooks were considered together without distinguishing them from each other, and **[233]** added that on the hooks there was nothing visible at all apart from the deformation (page 82). However, regarding the piece of material, "one of the two sides clearly showed two very tiny drops of blood; so there we were obviously able to give a more targeted aim to our sampling" (page 82).

With respect to the electropherograms and their interpretation, she restated the fundamental information on the subject, taking as an example the results of the swab with the profile of the victim taken for purposes of comparison. In the relevant graphic (electropherogram), she explained that the peaks present at certain points are called loci; the peaks from locus to locus have different heights, and this, she emphasised, is a characteristic of all electropherograms, since every locus is different, as though each one were a subject in itself. Indeed, each locus is the product of the analysis of one chromosome datum amongst the 22 pairs making up the DNA of every individual.

The presence of greatest and least peak heights constitutes a physiological datum: every genetic profile, whether made with more DNA or less DNA, shows this fluctuation, which depends on the history of each locus. There are alleles (peaks) which reach up to 2000 or even over 2000 RFU, and there are other alleles which barely pass 1000 RFU.

In every locus, one can find at most two peaks, since one comes from the father and one from the mother, and in general these are different. However, there can also be profiles which have many equal peaks; and in the case used as an example, she

pointed out that the victim had only one locus with both peaks equal, and that was because in that locus, the peak deriving from the father and the one from the mother overlapped.

She also emphasised that the machine yields a whole series of other, lower peaks, which constitute a kind of background noise; then, the process which leads to obtaining these analyses, the PCR, produces artefacts which are like tiny errors that have nothing to do with the determination of a genetic profile, and are called "*statter*" (*i.e.,* stutter). These "errors" are expected, measured and measurable, and they can be confidently considered as not significant, since they have nothing to do with the determination of the genetic profile. Furthermore, there are loci **[234]** which, by their chemical structure, are more likely to give problems with the polymerase, which is the enzyme used in the PCR process, and there are other loci which give less problems in DNA analysis.

The individualised peaks determine the genetic profile.

When the quantity of DNA is very small, all the peaks are lowered. She explained that the criterion of 50 RFU gives a measure of confidence. In any case, there can be lower alleles in some loci, and that would not be a reason to say that these alleles should not be included in evaluating the diagram, since it is the complete diagram which is yielded by the entire electrophoresis. Therefore, the evaluation of a genetic profile is not obtained by examining just one peak at a time, but evaluating the complete profile as a whole, the full picture. In this way, in fact, it is possible to obtain a comprehensive idea, and thus to consider the various values and positions of the peaks with respect to other peaks that appear and, thus, to decide whether they should or should not be considered as alleles. The activity of interpretation lies solely within the professional competence of the geneticist, a competence acquired whether in the field or through one's educational training, Dr. Stefanoni added.

In order to identify a peak as *statter*, it is necessary, therefore, to consider its height and its position. These interpretative criteria derive from international studies made by organisations in charge of specifying the rules in this field. With the term "*statter*", it was subsequently specified, one refers to smaller peaks which are always found at exactly one position before the main allele, and furthermore this peak must not rise to a height of more than 15% of the height of the main allele, within a tolerance of plus or minus 0.5%.

She explained that in certain cases, the electrophoresis was repeated, as for example the blade of the knife, and each time it yielded the same results. [“]To achieve this, more DNA was used. Obtaining a result a little lower in some loci, a little less lower in others, we had repeated the genetic analysis, by injecting double the quantity of DNA into the machine which performs the capillary electrophoresis,[”] Dr. Stefanoni continued to explain (p. 96), even if, as she added, this procedure could not be considered as a repetition **[235]** of the analysis, since, because of the small quantity in the sample, it was not possible to divide it in two to perform two separate tests. The only thing that could be done was to repeat the electrophoresis run, "because I do not use the entire volume of the PCR, thus the total reaction volume, in one attempt while effecting the electrophoresis; I only use a small part of it, a microliter or a microliter and a half, that is, a twentieth, give or take, and thus in practice I injected simply more DNA into the machine" (page 96). Comparing the two runs, the witness added, "I never got anything different, i.e., anything in addition, which would have made me think that perhaps the profile was not that of the victim but could have been attributed to some other person, unknown perhaps, but, still, another individual" (page 98).

Regarding the Y chromosome found on the bra hooks, Dr. Stefanoni emphasised that it is not possible to take the objections regarding the profile of the Y, the haplotype, into consideration. She explained that the haplotype obtained from the trace present on the hooks was a result produced by the machine, which "assigned those numbers, in sum it had read, so to speak, the genetic profile" (page 101).

Regarding the brown handbag found in the second crime scene inspection, Exhibit 166, which yielded the mixed genetic profile of Guede and Meredith plus the Y haplotype, Dr. Stefanoni was asked if there was any resemblance with what was found on the bra hooks. Dr. Stefanoni explained that this purse, whilst found in the victim’s room, had undergone displacements with respect to its zone of origin, meaning by zone of origin, the place where it had been observed during the first crime scene inspection. Thus, both the purse and the bra clasp had undergone a displacement. As well, both the purse and the bra hooks had yielded a mixed result: victim plus another person (Guede in one case and Sollecito in the other), characterised by the Y haplotype of the respective male subjects.

She explained that the cigarette from which a mixed (Knox-Sollecito) trace was recovered was collected during the first crime scene inspection, the one that started on **[236]** November 2, and it was found in the ashtray. When this cigarette was collected, they had already entered into Meredith's room.

She reaffirmed that the sock which had a haematic trace attributable to the victim was found under the rug and "rolled up in it" (page 122).

In order to ascertain the Y haplotype, with specific reference to for the bra hooks, she reaffirmed that 17 loci were used in evaluating identity, and explained that "it is the maximal possible number that can be considered by the analysis...At this time, we are able to perform our analysis on 17 points, up until three, four years ago it was only possible to do the analysis on 11 of these loci, and before that, a long time ago, on just one genetic locus" (page 126). She added that the kits and the machines are "used everywhere in all laboratories of forensic analysis of a certain level, because they are the latest type of apparatus...and the best that the market can offer" (page 126).

As for the recommendations put forth by the scientific community according to which the so-called "suspect-centric" method (in which the geneticist already has the genetic profile of the suspect; and the recommendation is to avoid this before having the profile, so as not to be influenced by it), Dr. Stefanoni stated that when she did her analysis on the various biological traces, she was already in possession of four swabs, including the profile of Patrick Diya Lumumba and as well as the victim's.

She explained the difference between the technician and the forensic geneticist, who, unlike the technician, must provide the scientific interpretation of the electropherograms, which is subjective in the sense that an electropherogram can give rise to various different readings by different geneticists called on to examine the data.

She explained that in the presence of peaks of height less than 50RFU, there is in general no conflict of interpretation between the nature of *statter* or alleles, and it is not possible that they be taken as alleles. The contrary is not true, since even above 50 RFU, a peak is not necessarily to be interpreted as an allele in terms of treating it; a reference evaluation which is related to the context (*or*: background) and the reference peak. It is possible to "have a *statter* of 100, because the height of the reference **[237]** peak is 1000" (page 133), and, likewise, in the presence of a peak of height 5000 it is even possible to have a *statter* of height 500 or more.

She explained that the bra clasp, when it was collected during the crime scene inspection carried out on December 18, 2007, was among the first things to be found, certainly before 20:30 pm.

With respect to the amount of DNA found on the hooks, she stated that it was not such a small quantity, "to such a point that if we look at the electropherogram of that trace, there are peaks which are easily higher than 1000 RFU, a little less or a little more, but above all obviously the one denoting the sex" (page 139).

With reference to the hooks, Dr. Stefanoni stated, as has already been said, that the extraction of the DNA was done on both the two hooks together and she was unable to say, therefore, whether the DNA was on one or the other or both (page 152). The activity of extracting DNA occurred, as far as she could remember, at the end of December, on December 29, 2007. This Exhibit was labelled with the number 165, and the traces with the letters A and B respectively, one for the material, on which there appeared to be present a haematic trace, and the other for the hooks. They were extracted contemporaneously, during the same work session.

In answer to a specific question about the so-called bench contamination, she explained that this is a contamination which can occur unintentionally at the moment in which one is analysing a sample or a collected biological item, by DNA extraneous to the sample or item inadvertently being placed into contact with the sample or item (page 155). She described this as possible but quite rare. She could exclude that this might have happened for the bra hooks, precisely by the timing and the analysis method used. She added that several exhibits forming part the search on December 18 were being analysed during that same work session. Each exhibit was examined separately, each item being taken in its own envelope, and studied *sotto cappa* (inside a decontamination fume cupboard) by the operator with single-use laboratory paper, filters and tweezers, all these instruments being specially adapted to avoid contamination. She had not repeated the analysis because the results were clear and the procedures had never **[238]** "evidenced any problems during the course of the analysis", and thus the result should be considered as certain (page 156).

In response to a further question on the subject of the stochastic phenomena of preferential amplification and "drop out", she explained that in the presence of a very small sample, it can happen by chance that in the PCR, an allele is not amplified, because it is in too small quantitatively in the starting DNA. That is, the PCR, "moving about in this of sea of reagents, is unable to clamp onto its DNA; by which, the allele is in the original sample, but we are unable to evidence it, and this effect on the electropherogram is in fact called drop out, that is, the lack of an allele; this is much more frequent when the quantity of DNA is low" (pages 157-158). However, as regards the hooks, Dr. Stefanoni had not repeated the analysis because "in this case, the height of the peaks of the minor fraction of the DNA present in the

electropherogram was not giving me any reason to think that there could have been a drop out effect", she explained (page 158).

She added that this effect probably had occurred in the amplification of trace B of Exhibit 36, and in relation to this, she had performed a second electrophoresis, in which precisely "some peaks disappear or become lower and others become a little higher; I see this kind of fluctuation when the quantity of DNA is really very low".

In the case of the hooks, however, the quantity of DNA was not very low, and in fact the lowest peak obtained in the electropherogram is the peak of allele 12, of a height of 65, which is definitely above the aforementioned 50 RFU.

She further noted that "Adler's test" is used to detect the presence of blood; it was not done on the hooks, but it was done on the piece of material, on trace A where there was evident redness.

With reference to Exhibit 36, the traces found on the handle could be attributable to epithelial cells, it being the place where one rubs against, where one grasps a knife for normal usage.

[239] She admitted that it was possible to lose skin cells by exfoliation, as they can just fall off in the course of the skin's natural renewal. She underlined, however, that these cells are absolutely unusable from the point of view of DNA analysis, since they are dead cells, keratinised cells which have lost their nucleus, the organelle inside which the DNA is found, so that exfoliation of said cells could not have given rise to any contamination.

With reference then to the DNA of Raffaele Sollecito and the fact that his profile was already present and available to her when she interpreted the collected samples, including the one relating to the hooks, she stated that the data was present as historical fact, but that she did not have it, have it available before her at the moment in which she was interpreting the technical data, nor was she otherwise consulting this biological profile.

It did not appear that any of the various rules and recommendations for proper procedure had not been followed.

With reference to the toilet paper collected in the larger bathroom, the Y chromosome was also analysed, and it was found to be very different from the Y chromosome on the hooks, which meant, necessarily, that it had to be said that it was a case of traces left by two different male subjects.

With regards to the mixture of DNA attributable to the biological profiles of Meredith and Amanda Knox, she affirmed that, certainly, there was blood content, there being a specific test carried out; further information given relative to the very pale pink colour could have led one to think that there might have been the presence of water. She added that in actuality there is water in blood, but in a different concentration; in blood there is less water than in a trace, which contains more water and is less rich in blood. Though, from the point of view of other substances (sweat, etc.), no tests were done. Therefore, it was definitely a mixture of biological substances, but it was not in any case possible to determine whether it was blood plus blood, or blood and saliva, or blood and exfoliation cells. One could only say that there was definitely blood present, and that the trace was found in the very same places.

[240] Returning to the trace found on the blade of the knife (Exhibit 36), Dr. Stefanoni subsequently specified that with respect to the striations, nothing was visible to the naked eye nor under illumination, and there was nothing in terms of biological material. Consequently, when she had carried out the test before sampling and before carrying out the DNA extraction, she first performed a test to find out whether or not the prospective biological sample might be blood. However, she did not pass the swab belonging to the diagnostic kit along the entire striation, because she was aware that there was a concrete possibility that in doing so "I could have wiped away...the whole of whatever small amount was there, and that could have been used for DNA analysis". Therefore, for the test on the nature of the substance, she "simply sacrificed a small zone", and used all the rest to determine the DNA (page 179).

It was also explained that whereas the deterioration of the sample does not allow it to be interpreted because it is corroded, contamination causes an incorrect interpretation because there are exogenous profiles.

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Dr. Torricelli, civil party consultant for the family of Meredith Kercher, was heard at the hearing on June 5, 2009. Dr. Torricelli stated that she is a director of a genetic diagnostics facility at the Careggi University Hospital and has been working in genetics since 1976.

With reference to "good laboratory practice" (page 80), she emphasised that the normal practices employed were those which Dr. Stefanoni had also recounted, whereby the conclusions were not formed on the basis of personal opinions and assessments, but follow the lines of national and international scientific societies, such that there is a general consensus" (page 81) on working methods. Moreover she stated that in the field of genetic diagnostics, her own specific area of expertise, "we actually work with DNA that is derived from a single cell ... so we do work with minimum quantities" (page 84). Recalling the concept of mixed specimens, she paid particular attention to analysis of the Y chromosome. She then pointed out that haplotype analysis of the Y chromosome is an important analysis **[241]** because it can be used to confirm a generic profile that has been found through analysis and study of the autosomal markers; furthermore, analysis of the Y-chromosome serves to rule out the presence of a male donor thus allowing it to be determined that a given specimen contains only female type DNA. She specified that, when the Y chromosome is examined, a check is made to see if that haplotype is present in the databank to which "we all refer to determine whether a profile can be found, a Y haplotype that matches this DNA" (page 87) which is being analysed. She stated that recently there had been an increase [in the number of loci examined] from 11 to 17, and this made it possible to distinguish one subject from another with greater precision. She specified, with regard to the case in question, that seventeen loci had been measured on the Y haplotype concerning the clasp (page 88).

Responding to a specific question, she stated that biological contamination consists of the transfer of cells which come into contact with the specimen being examined, such that when the DNA is extracted from this specimen, the DNA from contaminant cells is also extracted.

She stressed that the kit used for studying Y haplotypes is much more sensitive than that used for the DNA profile and therefore is able to detect the presence of the Y even with a very tiny specimen, in other words, a specimen constituting a minimal quantity of DNA. For the autosomal markers there is a need for a greater quantity of DNA (page 92). As for the possibility of repeating the test, she pointed out that the quantity of DNA does not always make repetition effectively possible. This should not, however, mean that the results should not be considered reliable. She stated in this regard that, in the diagnostics for hereditary diseases, for prenatal diagnoses, nothing is done in duplicate. So, if the tests being carried out were not valid, "we might just as well put an end to any genetic diagnosis for hereditary diseases, in prenatal diagnosis or in pre-implantation genetic diagnosis [*Diagnosi reimpianto*:

tecnica molto particolare, che si avvale della fertilizzazione in vitro(Fivet) e consente di studiare il Dna delle prime cellule del prodotto del concepimento - a very specific technique which uses in vitro fertilization and allows the DNA of the first cells of the resulting conception to be studied]" (page 93).

As for the profiles found, she emphasised that, in the vaginal swab, in the bra, in the side area, in the sweatshirt, all Meredith's autosomal markers were definitely present; in the vaginal swab, and the quantity of DNA **[242]** which could suggest another biological profile was very low. The Y result was therefore revealed because "the kit for studying the Y is capable, even with a very tiny amount of DNA, of perceiving" the presence of a male subject (page 95). And the analysis of the Y haplotype came out very clearly, with the presence of all 17 alleles (page 95), Dr. Torricelli stressed.

The profile of Rudy Guede obtained from the bag that was found in Meredith's room was then examined. This profile showed the presence of several alleles indicating two different profiles, a major one and certainly a minor one, attributable respectively to Meredith and to Rudy Guede. She specified furthermore that she used the electropherograms provided by Dr. Stefanoni, and in this regard she pointed out that they were "all examined in accordance with … good laboratory practice …; Dr. Stefanoni ... has used all of the practices recommended by the international forensic society and that [she] is now also ... requesting that within the 17025 certification reference should be made to the international recommendations" (page 97).

Examining the vaginal swab findings, she highlighted the presence of "autosomal markers … where those of Meredith are very clear; we don't manage to reveal the other markers, while – on this same sample - the Y profile appears very clearly" (page 97).

Dr. Torricelli then proceeded to examine the findings held to be of greater importance. In this regard and in general terms, the plaintiffs' consultant pointed out that those which she had taken into consideration and for which she gave an explanation were all findings for which DNA concentration was not used … They were all profiles obtained from DNA that had not previously been concentrated. She added that sometimes one is obliged to concentrate DNA by removing water or swabs, anything where the DNA is sticking, and this is done to try to obtain the maximum, i.e., to recover the maximum (page 99).

She then proceeded to examine the findings related to the “diluted blood traces” (page 100) found on the box of cotton-buds, in the bidet and inside the bathroom sink.

[243] With regard to the specimen on the box, she highlighted the presence of 4 alleles in the first locus and stressed that the presence was very clear, without too much "background noise" (page 100). The profile in question, therefore, should correctly be interpreted as being composed of a mixed specimen; and the profiles matched those of Amanda and Meredith.

For the specimen found in the sample recovered in the bidet it was noted that the various alleles, in comparison to those related to the sample on the cotton bud box, were composed by peaks, some of which were much smaller and therefore, she added, “we certainly have a specimen with a major donor compared to another donor ... however ... these are alleles that we can identify clearly, although the quantity is much smaller” and therefore even this sample should be interpreted as indicative of a mixed trace with the DNA profile of Amanda and Meredith (page 101).

Even the specimen taken inside the washbasin shows DNA from one major donor compared to another, however the presence of several alleles was clear in various loci and therefore it should be considered that a mixed sample was present "with the presence certainly of at least two profiles”. She noted that there were also small peaks, difficult to interpret in truth, which could suggest the presence of other donors. However, she emphasised that “the alleles present are all very clear” and match the profiles of Meredith and Amanda” (pages 101 and102).

She then dealt with the profile related to the bra clasp, exhibit 165. She stated in the first place that it was certainly a mixed sample "because we have multiple alleles present" (103) and furthermore, "it is very clearly noticeable that there is a major donor compared to a minor donor" inasmuch as some alleles have very low peaks. She stressed, however, the presence of these alleles with enough DNA to be clearly detected.

Then turning to the Y haplotype, she recalled that the kit used to detect the Y haplotype is much more sensitive and that “therefore, while on the autosomes we had markers present in all the loci, although with a lower quantity yet sufficient to be detected for at least one profile, in the Y haplotype **[244]** all seventeen loci are

present, and are also all clearly evident because these peaks are well defined for each and every one of those seventeen loci" (page 104).

The plaintiffs' consultant then affirmed that on the clasp there was unquestionably the presence of at least two individuals, one of whom is of the male sex; then comparing the profiles, she pointed out that the major DNA is from a donor who has a profile equal to that of Meredith; as for the other loci, all present, the profile was certainly compatible with that of Raffaele Sollecito. In confirmation of this, she pointed to the presence of the haplotype "of the Y, very clear ... in all of its seventeen loci; a haplotype which is equal, when compared, to the haplotype obtained from the salivary swab of Raffaele Sollecito" (page 105).

At this point, Dr. Torricelli highlighted the opportunity to check the frequency of this haplotype in the database, i.e., is in the databank already mentioned by Dr. Stefanoni, in order to check whether it contained an equivalent haplotype. To make this comparison, she explained that the seventeen loci which had been detected were introduced, and with reference to the latest update of this databank consisting of a population of 15,956 individuals, she testified that no one was found who had the same haplotype as Raffaele Sollecito; she also noted that, if 11 loci, rather than 17, had been found and then inserted, 31 subjects with the same haplotype would have been found. She referred to this circumstance in order to highlight how particularly sensitive and selective the current analysis of seventeen loci is.

She concluded on this point by affirming how obvious it is that the mixed profile of the autosomal markers corresponds to the mixture originating from a major component belonging to Meredith and from a minor one compatible with Sollecito, a conclusion "supported by the haplotype of the Y chromosome" (page l07).

She then examined the evidence found on the knife, Exhibit 36, specimens A and B. She recalled that specimen A was found on the handle, at handgrip level, and presented only two alleles for each marker. This concerned, therefore, a sample where there was only one donor and, by comparing the profile derived from it, **[245]** she concluded by saying that "it is certainly compatible with the profile of Amanda" (page108).

Turning next to examination of specimen B, which was found on the knife's blade, she pointed out that the peaks are a bit lower, but that without doubt it is still within the range that is considered useful for testing a specimen (page 108). Although of a much lower quantity of DNA, the profiles were nonetheless very present and, by

making a comparison with Meredith's profile, Dr. Torricelli reported that "we find all the alleles, and we find them to be equal to those obtained from the swab taken, from the sample taken from the wound. Therefore in this case too, without doubt" - she continued- "although we are confronted with a sample that contains very little DNA, it nonetheless contains the DNA of only one person and is therefore comparable to Meredith's; with regard to this knife, I would say I have no doubt in interpreting it: specimen A with Amanda's profile and specimen B with the profile, compatible with that of Meredith" (page 109).

She then dealt with Exhibit 59, consisting of the victim's bra. She highlighted the presence of a profile and noted that, logically, there would be some rubbing against the wearer, thus causing their own cells to be shed. She also pointed out that at a certain point a peak appeared that signified the Y chromosome marker. Regarding this, it could be hypothesised that, within the overall DNA, a minor donor was contained which could not, however, be detected by examining the autosomal markers; analysis of the Y was therefore essential, and the outcome of this analysis gave a result of compatibility with Rudy Guede's haplotype. This specimen therefore showed the phenomena of a mixed specimen where a genetic profile consistent with that of Meredith and with that of Rudy was present and, she added, even the haplotype appeared to be compatible with Rudy's haplotype.

With reference to the noise, Dr. Torricelli reiterated the criteria already indicated by Dr. Stefanoni: peaks found within a certain distance from the locus under consideration, and with a percentage that must not exceed 15 percent of the immediately subsequent allele. Thus, it is **[246]** not only the height that characterises the noise but also the position in which it is found.

Responding to a specific question from Amanda Knox's defence team, she stated that "we cannot exactly work with less than twenty cells, so we are around 120 picomoles and the kits are calibrated on 0.25 micrograms per millilitre" (page 120).

With reference to the aforementioned database, she pointed out that it is a database containing a population from various countries, from different ethnic groups. She added that the databases are updated by people who work in the field of genetics, and in accordance with the existing controls in that regard.

With regard to the possible contamination of a finding, she pointed out, however, that it needed "a forcible action and therefore … to be able to pass cells from one

part, from one support to another, it requires a forcible action which might therefore be rubbing, or might be a pressure, and so on"(page 143).

Finally, with regard to possible errors in interpretation of the sample found on the clasp and attributed to Raffaele Sollecito so as to hypothesise a different biological profile from Raffaele Sollecito's, Dr. Torricelli affirmed that the alleles constituting the Raffaele Sollecito's biological profile were present "in a clear manner in all of the loci that were examined therefore ... it is a rather unlikely that... there is any error of interpretation" (page 144).

(G)

The testimony of Dr. Sarah Gino, consultant for Amanda Knox's defence, researcher at the *Università degli Studi* at Torino, and head of the of the forensic genetics section of the criminal science laboratory directed by Professor Carlo Torre (page 80), was heard in court on July 6, 2009.

In beginning her statement, she considered various Luminol tests from the point of view forensic genetics. She thus demonstrated the existence of numerous substances that are "Luminol positive ... such as, for example, horseradish, turnips, potatoes, fruit juices" and also pointed out that many parts of the internal fittings of motor vehicles can give false positives when they are sprayed with Luminol. Sometimes, she added, even **[247]** terracotta or ceramic tiles, paints, and enamels can produce this interference. She recalled therefore that, in Romanelli's room, samples were taken and only two of these samples yielded an attributable genetic profile; in Knox's room, three samples were taken which produced a positive outcome regarding the genetic investigation; four samples were taken in the hallway but only one yielded a genetic profile suitable for comparison. She emphasised as well that, even though Luminol is a substance used to identify latent traces that could be blood, the certainty that these are indeed blood comes only from specific tests for this type of biological fluid. As the for biological trace samples which were taken, she pointed out that they were taken from a floor and that "biological material that we find on the floor could have come from outside, that is, it could come from a place that I had visited earlier, precisely because it was stuck to the bottom of my shoe, or maybe I put my handbag down and didn't notice that there was a biological specimen there" (page 87).

She stated again that the specimens which were analysed, found in the victim's house and which had produced genetic profiles, were indeed attributed "but, in some cases, in addition to the attribution of the peaks that was carried out by Dr. Stefanoni, there were other peaks present, that is, peaks that were not taken into consideration in the division of the alleles and thus in the definition of the genetic profiles. She observed that these extra peaks could have derived from a later contamination of that specimen from other subjects, or it could indicate that there was an initial deterioration of that biological material that had been collected (page 87). Where biological material was available from the other people living in the house, Dr. Gino further observed, it would have been possible to check whether some of those peaks were attributable to any of these other people. This lack of availability should be seen as a limitation on the investigation carried out.

Another matter examined by Dr. Gino concerned Exhibit 36, the 31-cm long knife seized from Raffaele Sollecito's house on **[248]** Corso Garibaldi, Perugia. As regards the specimen labelled with the letter A and found on the handle of this knife, Dr. Stefanoni – Dr. Gino observed – "had taken a sample, had obtained a genetic profile in accordance with all the rules of laboratory best practice and of sound interpretation of the genetic profile obtained. In fact, the peaks … were all above 100 RFU, [with] 100, 150 RFU being the limit normally fixed for considering a genetic profile to be good" and thus, on the genetic profile that was found on the knife, the defence consultant declared that she had "absolutely nothing to object to" (page 90).

With reference, instead, to sample B taken from the blade of that same knife, she advanced various critical observations. First of all, she pointed out that it was not entirely clear where that sample was taken from, and, since it concerned a specimen not visible to the naked eye, it would have been helpful to use a stereo microscope, which would also have allowed an appreciation of the colour of the specimen, and permitted an evaluation, if only presumptive, of the nature of the specimen itself. She also deplored that was no adequate test to establish the nature of the sample in question had been carried out, Dr. Stefanoni having limited herself to a presumptive test with "benzidine", which gave a negative result. And not having even a description of this material available, Dr. Gino added, we "know absolutely nothing; we don't even know if there was really biological material where the scratches are" (page 91). Lastly, she recalled that Dr. Stefanoni had affirmed that the DNA extracted from this sample taken from the scratches was low, that is it was "low copy number", or in other words a small quantity of DNA. In this regard, she explained what low level DNA usually signifies: DNA present in amounts smaller

than 100 picograms, and, taking into account that usually work is done with one nanogram – which is 1000 picograms – Dr. Gino further added, the quantity of material in "low copy number" is considerably less than a forensic genetics laboratory's standard working conditions, conditions which allow a genetic profile obtained to be considered a good genetic profile, useful for making comparisons.

[249] In dealing with "low copy number", Dr. Stefanoni had therefore concentrated the sample; that is, she reduced the volume available so as to carry out a single amplification, but without being able to check the final result. Regarding this, Dr. Gino recalled that the guidelines recommend "repeating the amplification" because only by repetition can I "check whether there were amplification errors that occur, above all, when I start with low copies of DNA" (page 93).

She reaffirmed that "when we have a small amount of DNA we talk about low copy number DNA, and that when this type of DNA is present, we are indeed able to carry out our amplification and obtain a profile, but we must remember that we may have lost one of the alleles, we may have an allelic imbalance … it becomes very difficult to distinguish from a real allele, so that when working on … small quantities of genetic material, it is necessary to be very cautious in interpreting the results" (page 94).

She recalled furthermore that the threshold value for interpreting peaks is equal to 50 RFU. Most of the peaks examined by Dr. Stefanoni were, anyhow, lower than 50 RFU, and thus according to the guidelines should not have been taken into consideration. Dr. Stefanoni's presentation was also criticised because it only looked at nuclear DNA; in fact, our cells also have a second type of DNA which is very important for the forensic geneticist, above all for those findings where the DNA has deteriorated. This is, she explained, "mitochondrial DNA" (page 96).

Dr. Stefanoni's report was further criticised for not having carried out an analysis to find any Y chromosome in the specimen found on the handle of the door to the victim's room.

Turning again to discussing "low copy number", she specified that this expression refers to DNA present in a limited number of copies. She added that, taking it to the absurd extreme, geneticists can obtain a genetic profile from even one cell. Usually, the minimum number to work with is 10-15 cells; nonetheless one might end up with a single cell, where, however, "the **[250]** result obtained needs to be verified several times" (page 99). With specific reference to the problem of contamination in

relation to sample B of Exhibit 36, the consultant explained that contamination is always possible, during every moment of an investigation and even when all precautionary measures are used. There are contaminations, in fact, that do not arise from operator inattention, but that derive instead from the very act of amplification, which can cause "eventual contamination in subsequent samples" (page 102).

In response to the Prosecution's question, she specified that if some of the Luminol-positive materials (bleach, fruit juice, and so on) had fallen on the floor where there was a biological trace of Meredith or Amanda or of some other person, it would have been possible to find the DNA of Meredith or of Amanda or of some other person in the relevant sample (page 111).

In reference to the guidelines which advise against concentrating the sample, she specified that this was aimed at allowing repetition of the testing "... because if I concentrate it, I have a smaller volume containing my DNA, and so, when I go to amplify it, I use it all in a single amplification and, at this point, I no longer have the possibility of checking what I have obtained" (page 138).

As regards "mitochondrial" examination, Dr. Gino specified that this examination is not useful for identification because "it does not have the same discriminative power of the autosomes or of the markers that are found on the chromosomes within nucleus…".

Nuclear DNA is inherited in part from the father, and in part from the mother, she added, while mitochondrial DNA is inherited only from the mother. It is therefore obvious that those subjects who have a female ancestor in common will have the same mitochondrial DNA; however it is also true that, when I have a hairlike fibre and have obtained a profile, when I go and compare it I can exclude with certainty that it belongs to a given person, but I cannot say, like I can with the autosomal markers, that this genetic profile is present in one subject in every billion. I will not be able to do all this **[251]** with mitochondrial DNA, however this test is certainly very useful for exclusion and, if necessary, for a comparison, but without ever obtaining a result similar to that obtainable with autosomal markers. The reasoning, she added, is similar to what can be done with examination of the Y-chromosome markers, in the sense that Y-chromosomes are inherited through the paternal line and are transferred only to male subjects; those subjects, therefore, who have a common, but not too distant, male ancestor, have the same Y chromosome. The main discriminatory power, she concluded on this point, "derives precisely from studying the markers situated on the autosomal chromosomes" (page 140).

With express reference to possible degradation that may occur in the laboratory, Dr. Gino declared that the specimen could have been handled together with other specimens containing biological material belonging to the victim, and this without changing gloves or perhaps using teasing needles/probes that hadn't been changed. Such an eventuality can occur no matter how much care is taken, she added. The error is human. Unfortunately, it is possible when there are so many samples; geneticists are not machines and errors can happen; or else contamination could have occurred as a result of "amplifications which had already been carried out, or in other words of material that had previously been amplified". It was specified in this regard that this material had thus not contaminated the entire DNA. Just small fragments of that origin could have "contaminated the machinery, the teasing needles/probes, pipettes, the place where I then prepared my sample Exhibit 36B; and could therefore have been transferred, we call this type of process a 'carry over'", Dr. Gino explained (page 154).

With specific reference to the knife, Exhibit 36, and to the collection methodology, she explained furthermore that the carton, could not, in and of itself, "affect the specimen unless that carton was rich in bacteria and mould/mildew, which in turn are transferred to my specimen" (page 155): in this case, however, this contamination does not alter the result in the sense of producing a profile different to the one originally present. The bacteria or mould/mildew possibly "cuts" the DNA, causing **[252]** a diminution and might even reduce it to zero.

At the hearing on July 18, 2009, Professor Tagliabracci, a consultant for the Sollecito defence, explained his own assessments. He recalled that he has been involved in forensic genetics since 1980, and specified that the task he had been given related to two exhibits:

The first was 165/B, collected on December 18, 2007, concerning the bra clasp, with a small piece of cloth attached of a white colour and stained with presumed haematological substance found in the victim's room.

The second was Exhibit 36, the knife found in Raffaele Sollecito's house, and upon which DNA tests were done.

With regard to Exhibit 165, analysis of trace B (165/B) carried out by Forensics allowed the extrapolation of a genetic profile that derived from a mixture of biological substances belonging to not less than two individuals, at least one of whom was male. The comparison carried out between the genotype deriving from

trace B of Exhibit 165 with those belonging to Raffaele Sollecito and Meredith Susanna Cara Kercher, collected in other circumstances, produced a result of compatibility.

Professor Tagliabracci maintained that Forensics had come to this conclusion by following the wrong route. He then explained that, following collection, samples were taken and then an analysis was carried out by means of a series of investigative steps: extraction of the DNA, quantization of the DNA, the amplification, electrophoresis, and then interpretation of the results (page 24). He maintained that, for each of these steps, there were problems.

He recalled that Dr. Stefanoni herself had reported that, 47 days afterwards, she had noted conditions of soiling (*imbrattamento*) and dirtiness in the room which were decidedly greater than what she had observed on November 3rd. Between November 3rd and December 18th, there were, in fact, multiple searches conducted **[253]** an unspecified number of persons. On 3 November this bra fragment with the deformed clasp had been found under a pillow; it was photographed and left where it was found. Subsequently, 47 days later, it was found near the desk underneath the mat that on 2 November was found next to the duvet, more than a metre from the original position where it had, by contrast, been identified in on 3 November. It was also shown that, as it appears in the 18 December video, this bra fragment was passed from the one technician's hands to another's.

Replaced on the floor, and photographed, it was only at this point that it was collected. Therefore, Professor Tagliabracci maintained, the collection methodology could not be considered appropriate, and also because it was not certain that there was a change of gloves during the collection phase, and while the personnel were dealing with other findings. He recalled, in this regard, Inspector Brocci's declarations, who had affirmed that the gloves were changed at the discretion of the operator, and, according to the consultant, that same inspector had an absolutely anomalous collection methodology, in other words, the collection methodology relating to the traces found in the bidet of a bathroom of the house, which were collected using [forensic] blotting paper which was held directly in the hand and not by means of tweezers (page 26), so as to render possible the transfer of material from the glove to the blotting paper, and vice versa.

Inspector Brocci also carried out the collection and sampling of a blood trace on the bidet using the same piece of blotting paper to remove the blood that was found on the rim, and finally, with the same blotting paper, she removed the blood that was

found near the drain of the bidet. By carrying out the collection of evidence with the same piece of blotting paper, Professor Tagliabracci observed critically, the biological material present on the rim of the bidet was, in fact, combined with the biological material from around the drain; this may well have been blood that trickled down from the rim, but it cannot be excluded that it may have been biological material deposited minutes, hours or days previously.

The result was a mixed profile belonging to the victim and to Amanda Knox; but the aforementioned evidence collection was affected by the operative methodology used, in that **[254]** Amanda Knox may have left biological material days or hours earlier, and that material was in any case combined with that found on the bidet rim and which had dribbled down to the drain. "Therefore, we are dealing with is a an operation that we consider erroneous in nature" – explained Professor Tagliabracci – "and if this was done, we are inclined to think that it may also have happened with the other findings, including that … relating to Exhibit 165/B" (page 27).

With reference to the knife, it was recalled that it was described as being clean, and that "there was nothing visible macroscopically, nor were investigations carried out that could have been done to verify if there were exfoliating epithelial cells (=flaking skin cells), which there probably would have been" (page 28), the consultant pointed out that exfoliative epithelial cells are cells that are shed by subjects every day, and that DNA can be left by touching everyday objects like keys, phones, door handles, purse handles. The quantity left on the object is, in the end, independent of the duration of the contact, and is independent as well of the energy/force expended: it is sufficient to touch the object.

He added that there could also be a secondary transfer, from subject to object, and, furthermore, "if another subject touches the same object, epithelial cells left by the first [subject] will remain on their hand, which will obviously complicate many of the subsequent tests that will have to be carried out" (page 29). He pointed out that shedding of epithelial cells can occur even by means of a normal handshake. With reference to Dr. Stefanoni's testimony regarding dead cells, the outer layers (the *stratus corneum*) of the epidermis, and keratinized cells that do not have a nucleus and from which it is not possible to extract DNA, the consultant referred to the outcome of an experiment in which about twenty people had touched a clean glass surface with their thumb, and there was a subsequent check of what was left behind. The outcome of this check supplied the information that epidermal cells and keratinocytes without a nucleus were deposited; however, DNA-containing nuclei were also left behind. This, explained the professor, was in relation to genetic factors

that differentiated the various individuals from each other. Finally, he observed that no sample analysis was done to establish the nature of the **[255]** specimen.

Professor Tagliabracci then focused on the subject of the "low copy number" (page 33, hearing of 5 June 2009) and pointed out that if the quantity of DNA is low, the subsequent amplification may present problems, in the sense that there could be an imbalance in the alleles, or a loss of alleles, and in addition there could be some alleles that are absent and yet are nonetheless highlighted. In the face of such drawbacks, Professor Tagliabracci therefore concluded, it is absolutely necessary to proceed with a subsequent amplification to seek confirmation of the data obtained.

Turning to Exhibit 165 and stressing the possibility of contamination of the specimen, and its consequent unreliability, he turned his attention to the deformation of the clasp and maintained that this circumstance bore witness "to a dynamic [physical] action (*sollecitazione*) brought to bear not on the clasp itself, but on the cloth, where only the victim's profile was found" (page 36). Therefore, he continued, with regard to the DNA, "I ought to have found it on the sides, on the cloth, but instead it was found on the clasp, which I don't think was touched in this dynamic action that we are supposing took place" (page 37). This reasoning led him to think that "the DNA ended up on the clasp after November 3rd" and thus [got there] by way of contamination.

He complained in addition that in reference to the quantization, it was said only that the quantization was performed, but nothing further was specified. In particular, it was not said whether the quantity was adequate and allowed proceedings to go ahead using standard methods, or whether, on the contrary, it was a case of such a low quantity that it would be necessary to proceed using specific methods, as happens for "low copy number", i.e., for small amounts of DNA. In this case, it would have been necessary to repeat the amplification to validate the result. Finally, he explained that, when it is a case of a small quantity, amplification repetition is necessary because there are artefacts [adulterations], that is "alleles that may be lost, entire loci may be lost, or else there may be an imbalance of alleles" (page 43).

The alleles, he explained, representing the individuality of the subject, are in the DNA, **[256]** in the DNA molecule, and there are regions called loci in which there are these microsatellites which are used to identify the subjects. He explained that the term "locus" indicates the base on which the peaks that are called alleles are seen. The peaks are not of equal height, but depend on the quantity of DNA analysed; usually, when the quantity of DNA is normal and optimal, the peaks have heights

reaching 2000, 3000, 4000 RFU. For the peaks present in the indicated loci and relating to Exhibit 165/B, their corresponding heights lead to the conclusion that there was little DNA.

He specified, as well, that noise is an artefact consisting of a peak that is one repetition unit shorter with respect to the principal allele. Usually noise does not exceed 15 per cent of the height of the reference allele; if it is greater than 15 per cent, then it cannot be considered to be noise and must be held to be an allele. He then turned to the Exhibit 165/B electropherograms (pages 47 and following) and emphasised that, as regards the mixed trace, there are rules which have been issued, some just recently, by the International Society for Forensic Genetics which give recommendations on how the interpretation of a mixture must be done. "In particular," the consultant said, "they recommend following a different method to the one that was used by Forensics (Polizia Scientifica)", who had adopted a suspect-centric method.

Professor Tagliabracci censured them therefore for not having considered the possible genotypes of this mixture, or the possible artefacts, or the peak heights present in this mixture, which can give rise to different genotypes, and saying: "I find the subject's alleles in the mixture and, for me, the subject is there, it is compatible" (page 50). On the contrary, while it is necessary to make a comparison with the reference samples of the subject or of the suspect; only once the analysis of the mixture is complete … will I go on to make the comparison with the suspect's DNA, and thus I avoid the urge … to find the suspect's DNA anyway/[i.e., irrespective of the actual results] in the mixture that we have examined" (page 51).

Professor Tagliabracci then maintained that this suspect-centric method was detectible in Dr. Stefanoni's report and presentation because, he affirmed, it was a case of "forcing the profile obtained … eliminating or leaving out alleles **[257]** solely for the purpose of making that profile compatible with Raffaele Sollecito's profile" (page 51). He pointed out, also, that interpreting a peak as an allele or as noise results in the identification of a different profile. He then indicated, in the electropherogram, various peaks which were considered noise whereas they ought to have been considered alleles, and specified that "this is especially so for locus D21S11 (page 55), where there was a peak present whose height exceeded the 15% that constitutes the threshold between noise and allele. This peak's height is 15.8% with respect to the reference allele, he added, and therefore could not be considered as noise (page 56); on the contrary, the Forensics service considered it was noise, and

this in had given rise to a genetic profile that leads to compatibility with that of Raffaele Sollecito which, otherwise, would not have been the case (page 57).

He pointed out that that there is a significant subjective element in reading the electropherograms. He focused in particular on locus D5S818, in which two principal alleles are present; together with a third peak with a height of 108 RFU; as this is higher than 50 RFU, it should have been considered an allele. Forensics [la Polizia Scientifica] did not, however, consider this to be the case; instead, they considered the 65 RFU peak to be an allele and observed that, in this way, a compatibility with Raffaele Sollecito's profile resulted, which otherwise would not have been the case (page 59). With reference to this, Professor Tagliabracci repeated that there was a forced interpretation, which was typical of a suspect-centric attitude (page 60).

Then he looked at locus D21S11 and pointed out that the Forensics service read this trace with 3 alleles, being 30, 32.2 and 33.2, while they did not consider the first one, i.e. 29. This last should however be considered, being a peak more than 15% higher than the reference allele, and therefore ought not to have been classed as noise, but rather as an allele. Professor Tagliabracci indicated the consequences thus: "we have to reconstruct genotypes; we know that Kercher had a 2-allele genotype at this locus, D21S11, being 30 and 33.2; then we have two alleles that evidently belong to the other subject who contributed to the **[258]** formation of this mixture, and the genotype of this subject is 29 and 32.2; the unknown person left DNA with a profile of 29 and 32.2" (page 65), which is different from Sollecito's profile, which has 32.2 and 33.2.

Regarding locus D7S820, he revealed that Forensics had interpreted it, recognizing the presence of two alleles, 8 and 11; they had not taken into consideration a peak, low, but still higher than 50 RFU, corresponding to allele 10. Given this, according to Professor Tagliabracci the following genotypes were possible: 8 and 11, which is Kercher's, and another possible genotype which could be 10 and 11, or 10 and 8, or 10 and 10. But that very possibility in the interpretation highlights the necessity of avoiding a suspect-centric interpretation, and, to avoid this, it would have been necessary that "knowledge of Raffaele Sollecito's profile should occur in the final phase: first we interpret all the possible genotypes, and then we go and see if these possible genotypes are compatible with that of Raffaele Sollecito", the defendant Sollecito's consultant [Tagliabracci] claimed (page 67).

In locus CSF1PO, Forensics found two peaks as alleles: 10 and 12. Professor Tagliabracci held that another peak, which instead was interpreted as noise, should

have been considered, "corresponding to allele 11", so that three alleles would appear, 10, 11 and 12. "The most likely contributors, because we are never certain, I repeat we can never know the maximum number of subjects" continued the consultant, "have genotype 12 and 12, which is Kercher's, and, according to me, 10 and 11. Sollecito has genotype 10 and 12: he should therefore not be considered, and should be excluded from the presence of another subject" (page 68).

In locus D16, Forensics had held that that an allele 10 was present, and an allele 11 and an allele 14, and did not consider another peak which would have indicated allele 13 and which, according to Professor Tagliabracci, should be taken into consideration. "There are most likely two contributors, one of which is the victim who had a 10 and 14 genotype, corresponding therefore to these two peaks, and then there is a subject 11 and 13, by our interpretation … that thus belong to a subject **[259]** with an 11-and-13 genetic profile, different from Sollecito's, which is 11-and-14" (page 70).

Finally, [he turned his attention to] locus D5S818, in which, as has already been observed, the 108 RFU-high peak, allele 13 according to both the RFU and the position, was removed from the group of others that were being interpreted as alleles. He added that, "it is an allele that forms a pair with another allele that could be here, or there might be only a 13 13 subject, but it can pair up with an allele that is found together with the victim's allele 12, and therefore it is nonetheless a subject who is contributing [to the sample] in addition to Kercher, it is a subject with most likely a 12 13 genotype, while Sollecito is 12 12. Now, I cannot say that Sollecito is not also here [in the data], but there is also a third subject with a different genotype" (page 71).

(H)

Regarding the knife found in Raffaele Sollecito's house, he recalled that several samples had been taken from this knife and a genetic profile corresponding to that of Amanda Knox was found in the part corresponding to the area between the blade and the handle; on the blade of this knife a sample had been taken, DNA was extracted and an electrophoresis run was performed. Forensics held that the genetic profile which emerged was the victim's. He recalled, lastly, that the generic diagnostic test for blood had been negative.

Professor Tagliabracci held that, in the analysis of this evidence also, there were the same limitations as those identified with regard to Exhibit 165B. First of all, he stressed, it was surely a "low copy number" finding for which the amplification should have been repeated to confirm the result obtained. Then, with regard to the blood-testing diagnosis, he commented, critically, that there might have been epithelial cells, since the knife might have "been handled by someone who transferred epithelial cells. Amanda lived with the victim, even Raffaele Sollecito had been in that house, so, in short, it is permissible to think that there may have been a transfer of some exfoliated cells" (pages73 and 74).

[260] The consultant, Professor Tagliabracci, added that it had not been quantized; the amplification was not repeated; an electrophoresis run was obtained in which most of the peaks were below 50 RFU. With regard to this, he asserted that this was a case of an unusable result, and added that it would have been so even on the basis of a further observation: "in the second electrophoresis run" according to what had been stated, "a somewhat higher amplification had been set to see whether these electropheric peaks might become higher, whether a better electrophoresis track might be obtained" but this did not occur (page 74).

With reference to a study done by Professor Tagliabracci together with other scholars, and relative to the loss of cells in which DNA was found, it was noted that the quantity of such DNA [is] between 0.04 to 0.2 ng (nanograms) of DNA; and in a significant number of experiments the subject left cells with DNA, in other experiments none was found. It depends also on the state of the subjects' as good or poor losers of DNA" (page 90), the consultant specified. He added that, if a surface is rubbed, especially if vigorously, it is likely that DNA will be left.

With reference to the trace on the [bra] hook he specified that he had spoken of "low copy number" on the basis of two considerations: the cells present on the hook were exfoliated epithelial cells, and therefore it is possible to imagine that there was little DNA since exfoliated epithelial cells do not form a smear as may happens with blood, sperm, saliva or other biological fluids which contain many cells; ultimately, there are few exfoliated epithelial cells. In the professor's opinion, this fact was also confirmed by the electrophoresis chart shown, "in which we have an amplification which may actually be deduced from the results and an electrophoresis of little DNA, in short, the highest electrophoresis tracks reach 500[to] 600 RFU, 500, 600 or 700 ... something like this on average. Then there is a much lower height always around 70 - 80 - 50 - 60 RFU, therefore this suggests that the amount of DNA was very low" (page 94), the consultant further specified.

[261] He specified that in any case he had only assumed the epithelial nature of the cells.

He specified that one nanogram of DNA is the ideal amount to able to carry out an amplification; it allows a good amplification, and therefore to carry out an electrophoresis run with peaks that have a greater height, which will then not suffer from problems of interpretation.

Following questions relating to the amount of DNA (such as "if we have 1.4 nanograms of DNA will the amplification turns out well?" page 99) the defendants' defence called for the elements relating to the laboratory analyses as well as the records of laboratory activities to be made available.

The Public Prosecutor pointed out that all the tests had been carried out under Article 360 of the Criminal Procedure Code and a lawyer or a consultant for the defence was always present at every stage of these tests and no objection and/or request had been put forward in those stages. The quantification was also performed during these activities carried out in the laboratory. The Defence emphasised their demand to have it made available ("we want it, we want it", page 108) and requested that the proceedings should be suspended immediately in order to acquire the necessary [information], otherwise reserving the plea of invalidity because the proceedings whose existence they had been informed of today had not been deposited in the prescribed manner" (page 110). Amanda Knox's defence also insisted that the documentation should be acquired, with a reservation to also review the conclusions of their own consultants (page 111). The Public Prosecutor declared that he did not oppose the defences' requests, but specified that it was not a case of documents, but of data that normally are not recorded in the report.

The Court ordered the suspension and acquisition, setting a reasonable time limit, both for lodging [the document] and for continuing with Professor Tagliabracci's testimony.

(I)

At the hearing on September 14, 2009, Professor Tagliabracci's testimony was resumed following the provision of further documentation in accordance with defences' requests and as ordered by the Court. In that hearing two memos by Professor Tagliabracci were also produced, one dated July 15, 2009 and the other August 27, 2009, regarding the **[262]** documentation made available and the analyses of the Forensics report, respectively.

With reference to the documentation, Professor Tagliabracci complained that not all the logs/entries or index-cards relating to the composition of the amplification mix had been provided, so that it was not possible to know the reaction volumes and the amount of extract. He point out that, although [attention] had been called to the guidelines supplied by the manufacturing firms at the GUP [*Giudice dell'Udienza Preliminare*, Preliminary Hearing Court] hearing, Dr. Stefanoni had affirmed (page 179 of the transcripts) that she had also used different volumes.

From this, Professor Tagliabracci had deduced as a consequence that what had been affirmed did not correspond to the methods actually used in the laboratory and furthermore inferred that there was probably a record of these analytical activities that had not yet been produced.

He complained also that in the SAL ["*Stato Avanzamento Lavori*", work status report] index cards the dates of quantification, amplification and electrophoresis run were never given, and with reference to numerous findings catalogued under [= (finding) Nos.] 3.58, from 148 to 151; from 154 to 163; from 203 to 222, he advanced the hypothesis that not all material relative to these had been made available.

With regard to Exhibit 165B, on the basis of the height of the peaks, from the data supplied and derivable from the extraction quantities and concentration, and taking into account that this concerned a mixed sample, in which the ratio of the victim's DNA to that of the minor contributors was about 10 to 1, it followed, as a consequence, that the quantity from the minor contributors was less than 200 picograms, and it was thus a "low copy number" with its attendant uncertainties and necessity of repetition.

With regard to Exhibit 36, he pointed out that there had been no connection between what was written in the technical report [*RTIGF: Relazione Tecnica Investigativa Genetica Forense*] on the quantization which had tested negative for trace C and positive for trace B, since in the quantization report the result for both specimens was analogous to "too low", i.e., negative. He pointed out another contradiction with what Dr. Stefanoni had testified in the preliminary hearing, when she said that in trace B, the DNA was in the order of a few hundred picograms (page 178 of the transcripts).

[263] With reference to other specimens, their interpretation as cat blood was in contradiction with what was found with trace 3, for which it should be concluded that it was human blood.

He then stated, in conclusion, that the documentation did not allow all the operations that had been carried out to be traced, and that there were various inconsistencies between what had been stated in the preliminary hearing and what subsequently appeared from the documentation. He reconfirmed the datum according to which the quantity of DNA of the minor contributors of specimen 165B should be considered as "low copy number".

Speaking at [the resumption of] the hearing which had been adjourned following requests for provision of documentation, as has already been recalled, Professor Tagliabracci in the first place lamented the lack of information on the volumes, that is on the quantity of material that was used in the test-tube. The volume is normally 25 microliters and of this volume, he specified, 15 microliters are necessarily constituted of the reagents which are used to obtain the analytical result; 10 microliters is the usual quantity that is used; however, whether 10 microliters of extract are used, or 5 or 7 or 8 [microliters] are used, has a bearing on the amount of DNA that can be present in the extract, the consultant pointed out. He clarified that, to have an optimum situation, it would be necessary to use 20 microliters. He stressed the importance of knowing the volumes and the concentrations used, as otherwise it was not possible to express a well-considered judgement on the electropherogram, and nor could one establish whether the peak height was low because of the quantity of DNA used in the amplification, or whether it was the result of other factors (pages 38 and following, hearing on September 14, 2009). He reiterated that, from the documentation supplied, it was not possible to deduce a series of data, namely the volume before the reaction; the amount of DNA used for the PCR [polymerase chain reaction]; whether there had been any changes to the protocol with respect to the manual; whether the extracted DNA had been concentrated; whether the initial 50 microliters had been concentrated before or after the quantization. He complained that none of this was mentioned in the technical report of forensic tests, and added that the concentration should have been carried out taking into account what was said **[264]** by Dr. Stefanoni in the preliminary hearing when, on pages 178 and 179 and with regard to [the trace on] the knife, exhibit 36B, she had affirmed that she had carried out a concentration. He added that the fact that these data were missing from the documentation might be more or less important; it was, however, necessary to check whether the procedures recommended by the manufacturer of these products had in fact been followed. He further observed, with regard to this same aspect, that it was impossible, when examining two or three hundred specimens and without having a documented record, to be able to remember all the operations that may have made and added

that “it is extremely difficult if not impossible to have such a memory as to be able to remember that I concentrated that one, I took it to 22, this one, on the contrary, I didn’t concentrate, and so on”.

He pointed out also that some findings, cited in the technical report of forensic tests, did not have their Work Status (SAL) reports. He quoted in this connection Exhibit 3, Exhibit 14, Exhibit 29, Exhibit 58, the Exhibits ranging from 148 to 151, Exhibits 154 to 163 and the Exhibits ranging from 203 to 222.

Turning to Exhibit 165, he highlighted the presence of the report and noted that four tests had been carried out for the DNA quantization: two related to Exhibit 165 A and two to Exhibit 165 B. These four quantization analyses were carried out using Real Time PCR [polymerase chain reaction] and the results of the quantization were reported. He pointed out that the [Scientific] Police [i.e. Forensics] had correctly done two tests. In the first a quantity of 140 picograms of DNA was found; in the second test 90 picograms. "Therefore”, he added, “if we have 115 picograms per microliter, [then] 50 microliters have been extracted, [and] the total quantity of DNA is 5750 picograms, which would be 5.75 nanograms of DNA: a significant amount that would enable them to carry out various amplifications”.

He pointed out, however, that it was necessary to bear in mind that this was not DNA from a single contributor. There was the principal contributor who was the victim, Kercher, and a second contributor, but there could also hypothetically be more than two contributors, “up to 4: in some loci… **[265]** it seems that there might be 4 contributors, so this total quantity of 115 picograms is provided by at least two subjects: the subject who gives the principal part, the victim, and the ratio with regard to the minor contributor is about 10 to 1. This can be established on the basis of the height and surface area of the peaks: approximately 10 to 1 means that – of these115 picograms per microliter – about 104.6 picograms are from the victim and 10.4 picograms per microliter are from the other contributors”.

Professor Tagliabracci then maintained that the major contributor, the victim, had provided a quantity ten times greater with respect to the minor contributors whose DNA must have been about 100 picograms, a quantity that would be classed in the category of low copy number. In this regard Professor Tagliabracci noted that, when dealing with low copy number, there may be variations in the amplification from one case to another, and phenomena may occur such as loss of alleles or addition of alleles, and there may also be an imbalance of the peaks. In relation to this, it would have been necessary to carry out another amplification. The consultant lamented

that it had not been shown that such a repetition had been made and disputed the assertions made by Dr. Stefanoni who had held that the data obtained on this basis was sound, and had not performed a repetition. Professor Tagliabracci maintained instead that data that was a result of a single amplification, in any case of such DNA quantities, is susceptible to error.

Turning then to Exhibit 36, that is the 31 cm long knife found in the house of Raffaele Sollecito, given that in Dr. Stefanoni's technical report it was written that traces A and B, having turned out to be positive for quantization, were subjected to amplification, and that trace C had turned out to be negative for quantization; in this regard, the consultant observed that it appeared that trace B and trace C had given the same result of "too low" (page 57, hearing on September 14, 2009). As a consequence, it was not at all clear why trace B had been positive for quantization, [since] it had had the same result – trace C's "too low" – which had turned out to be negative. He also emphasised that the expression "too low" was used for amounts of less than 10 picograms and also for 0 picograms. **[266]** Consultant Professor Tagliabracci also pointed out that, in the preliminary hearing, Dr. Stefanoni had affirmed that in trace 36 B the DNA was in the order of some hundred or so picograms and that the quantization had been done through Real Time PCR [polymerase chain reaction]; but this did not appear from the cards [reports] that had been provided.

Responding to a specific question posed by the defence regarding the relevance of the documentation which was only subsequently made available: ("Professor, in light of your analysis of this documentation, I'd like to ask you two things: if I had been able to provide you with these documents earlier, would you be able to make a more complete analysis? And what does what you are missing have a bearing on, precisely?"), the consultant declared that "what is missing has a bearing on the interpretation and evaluation of the result; these are results which must be corroborated by an analytical process which does not appear to have been documented here ..." (page 63).

[Replying] to a question by the Public Prosecutor regarding the quantities used by Dr. Stefanoni and, in particular, if these were in conformity with those prescribed by the kit in question, the consultant declared that he had information which led him to say that they had not been respected with regard to exhibit 36, for which it was said that the volume of amplification had been reduced to less than the 25 microliters prescribed by the manufacturer [of the kit]; the volume in this case was reduced to 20 microliters, as he recalled (page 64). On that point, he specified that 25 microlitres

is the total quantity, including reagents: 15 microliters of reagent and 10 microliters of substance. He deduced this from what Dr. Stefanoni had declared at the preliminary hearing of October 4, 2008. ("What I know, I've taken from pages 178, 179 of the preliminary hearing transcript, wherein Dr. Stefanoni would have taken ... after a first concentration, [she would have] taken the sample to 20, 22, and 23 microliters, then, after she had done the quantization, she carried out a further concentration", page 68). He noted that, in that hearing, Dr. Stefanoni had specified since the amount of DNA was so low she had decided to use all of it and had taken it to 10.

To the Public Prosecutor's question, asking Professor Tagliabracci where he had read that she used less than 10, the consultant replied: "the final volume, as everyone **[267]** knows, refers to the last volume which is in the test-tube after everything has been put in it – reagents, extract – and the final volume written down here is 20 microliters because the identifiler kit can amplify in 20" (page 69). He reaffirmed that the kit used by Dr. Stefanoni indicates the optimal minimum quantity to be 25 microliters inclusive of reagent, and 10 microliters with regard to the substance.

Turning to Exhibit 36 B and 36 C, he highlighted that in the report "too low" was written, and explained that this was to signify that there had been was no result for the quantization, which was therefore below 10 picograms and might be anywhere from 9 picograms down to zero picograms; therefore in the 10 microliters there might have been only water.

Professor Tagliabracci emphasised that when the result is too low, one should stop doing the analyses and that sample should not be considered useful for subsequent analyses. The resulting graphs showing peaks could have arisen from "laboratory contamination" (page 76) and confirmed that "the peak is produced by DNA" (page 76).

As for the missing S.A.L. reports [work status reports] he could not specify which items they related to.

With regard to the [bra] hook and the ratio between the male contributor and female contributor to the mixed DNA present on the hook, the consultant declared that it was a mean ratio that he had deduced on the basis of the peaks of the various loci. He stressed that it was nonetheless difficult to determine exactly, because there were loci that had different proportions. "However", he added, "at a rough guess, it seemed to me that it could be a one to ten ratio" (page 83). The differing ratio of one

to six found by Dr. Stefanoni he considered to be rather low; a ratio of 1 to 8 might seem more reasonable. He affirmed, nevertheless, that even with a ratio of 1 to 6 they would have found themselves below that threshold of 200 picograms which qualifies low copy numbers. In this mixed trace and with reference to all the loci, it could only be at the least that there was a male subject; it was not possible to establish the number of male contributors.

However, since only one Y haplotype was found in that "mixture», it should be considered likely that only one **[268]** male subject had contributed that DNA (page 85). The possibility could not, however, be excluded that other contributors had been present “with such a low quantity of DNA that was not detected”.

Professor Tagliabracci further specified that the kit used for detecting the Y haplotype is very, very sensitive, and more sensitive than the kit for DNA. He clarified that the expression “more sensitive” means "we can get a result more easily" (page 86). With reference to the criticism advanced on the collection/finding of the hook and the consequent contamination that might have occurred, the consultant reiterated that the term “contamination” refers to the transfer of DNA; he affirmed that this DNA “is probably derived from the fact that the collection was carried out in an anomalous way because the hook remained there for many days; it was moved ... there are subjects’ epithelial cells that may be shed, that are found in the surroundings, [and] that may have adhered to the hook” (page 96).

Responding to questions from the defence team of the civil party (Kercher family), the consultant declared that there is no minimum number of loci to assert compatibility between two subjects. He specified that previously, when the current systems were not available, "there was enough ... we made hypotheses even with 6 loci" (page 103).

With reference to the Y haplotype, Professor Tagliabracci declared that, because of its particular nature, the Y haplotype cannot be used to confirm but only to exclude because it is not possible to know which of the subjects, present in a given area, have this specific haplotype that is transmitted unchanged through generations. He thus affirmed that, in the area of Perugia, there could be dozens of subjects with the same haplotype as Raffaele Sollecito. In fact, he added, "all the Sollecitos who have spread throughout Italy probably all share the same haplotype” (page 106).

Regarding the reference made by Dr. Stefanoni to the database, to which the organisation where Professor Tagliabracci himself worked had also contributed, he

pointed out that the number of samples that came in was limited; as a consequence the claim that **[268]** no subject with Raffaele Sollecito's haplotype was present in the database meant nothing. He added in this regard that carrying out an analysis "on 8 loci of these 17 … we see that Raffaele Sollecito's haplotype for only 8 loci ... has a frequency of 2, 3 [or] 4 subjects in every thousand, [i.e.] has a frequency of 3.36 in a thousand subjects" (page 107).

In the face of a result of "too low", such as the one found on the traces of Exhibit 36, the consultant declared that it would also have been possible to continue with the analysis. He added, however, that "it is a result that should not allow you to continue". He specified that continuing the analysis meant going ahead with the amplification (page116); but, he added, "any result would still be disputable".

Attention was also called to Exhibits 42, 45, 47, 48, 49, 52, 55, 56 and 57, which had yielded results of "too low" (sponges, the bucket, the cloth, the gloves...); it was also noted that all of these samples had then been amplified; according to Stefanoni's report dated June 12, 2008, it could be seen that none of them had yielded any useful genetic profile at all. In in this regard, the consultant pointed out that this was the normal outcome in the presence of a "too low" quantity.

He declared that the valid interpretation criteria for distinguishing alleles and noise were both the quantitative criterion of the ratio equal to 15 percent and that [criterion] concerning the position: the noise in respect to the allele must occupy the place that the previous allele normally occupies. He reaffirmed that labs normally use a threshold of 50 RFU: the peak must be 50 RFU high, and he specified that "over 50 it should be considered an allele, below that it might be an artefact ... something that disturbs the reaction, [or] the electrophoresis run, unless it is a case of mixed samples because if we're talking of mixed samples we can have some contributors that provide such a minimal quantity of DNA that the peaks that are then produced are even lower than 50 RFU" (page 119).

Turning to reply to the question regarding Exhibit 165 (the clasp), he specified that his criticism with regard to Dr. Stefanoni's report and presentation/testimony concerned the attribution of the trace to Raffaele Sollecito, but not **[269]** the finding about the mixed nature of the trace, and he therefore confirmed that it concerned a specimen that came from the victim and from one other subject or from several other subjects. He could not establish whether this other subject or those other subjects were male. He could, however, affirm, "the major contributor is male" and added that it was "difficult to say whether this Y peak of the Y chromosome Y, at the level

of the amelogenin [test] which identifies the sex, was formed by one single contributor or whether there were also minor smaller contributors" (page 120). He added, however, specifically taking the Y haplotype obtained on 17 loci into account, the following: "in short, to me it would seem to be only one subject". He reaffirmed, still with reference to the Y haplotype, that it served [i.e., could be used] to exclude but not to attribute with certainty. He also affirmed that the Y haplotype found on the hook could not belong to Rudy Guede who, he specified, "has a different profile from this one". Still with reference to this point, he added the haplotype was compatible with the Y haplotype of Raffaele Sollecito, afterwards specifying that, "the problem is, I repeat, the frequency of this haplotype, so that it can only be used for exclusion" (page 121).

He further declared that he concurred with the analyses carried out by Dr. Stefanoni, which had led to the attribution of some biological specimens to the victim, because in those cases there was DNA "in large quantities left by the victim in traces of blood and in other findings; so there is no problem in the analysis of those specimens belonging to the victim, the problem is in the other specimens" (page 122).

With regard to the frequency of the Y haplotype attributed to Raffaele Sollecito, he declared that he knew this frequency in relation to 11 loci, and he indicated it as being 3.36 per thousand subjects. He did not know the frequency with reference to 17 loci.

The Public Prosecutor then produced a copy of the ISO 9001 2008 certificate issued to the Scientific Police Service, valid as of July 21, 2009.

(J)

Dr. Patumi, a consultant for the defence of Amanda Knox, testified at the hearing on September 25, 2009. Having clarified that he is not actually a specialist in genetics, he essentially confirmed the statements of Professor Tagliabracci concerning the genetic investigations. He also recalled that the **[271]** international scientific community advises not taking values smaller than 50 RFU into account, in order to avoid using results which lack reliability because they may have been influenced by other factors.

Referring to Exhibit 36, he recalled that Dr. Stefanoni performed a specific test for blood which yielded a negative result, and asserted that "we must believe today that it was not blood" (page 99, hearing of September 25, 2009).

Dr. Patumi further observed that, having failed to obtain a qualification of type, Dr. Stefanoni then proceeded in her analysis to seek a quantification, which as Dr. Stefanoni herself explained, is obtained by using a machine called a fluorometer, which is able to determine the quantity of genetic material in a given item. The machine yielded the result "too low". He recalled that the same point was raised by Professor Tagliabracci: when the technician or the scientist is confronted by a result of this type, she may not and cannot continue, because whatever results she may obtain will be questionable and can never be considered certain (page 100).

He also recalled that it is recommended to use private laboratories rather than Scientific Police laboratories "to avoid the suspect-centric expectations which could arise from the fact of working in surroundings in which other elements of the case are also known" (page 101).

Returning to the "too low" results, he observed critically that Dr. Stefanoni decided to continue, and used Real Time PCR, which is another type of reaction, obtaining peaks which were quite low, and that she did this even though "they were already not parameterised according to the normal conditions of genetic investigation recommended by the manufacturer in order to guarantee the accuracy of the result, but in fact well below the well-known 50 RFU required by the international community to obtain a reliable examination of low copy number DNA" (page 102).

[272] He then explained that the peaks obtained were at heights of around 20, 30, occasionally 40, and observed that therefore if the machine had been used with the regular 50 RFU parameter, no results would have been obtained at all.

Those results that were obtained should thus be considered as the consequence of contamination, for several reasons: the manner of collection (the knife was found by the Scientific Police of Perugia, then transferred to Rome inside a regular envelope (of the type used) for letters, and a cardboard box; the samples, indeed, were taken at random and not at specific points [*reperti*]); the quantity examined was the absolute minimum and thus very difficult to study, and, he added, in this vein, that "the ratio was minimal…compared to the, on the contrary, huge...amount of genetic material of the victim … being studied during that time in the laboratory in Rome" (page 104). On this specific point, he recalled that Dr. Stefanoni had stated that she

had examined the sample from the victim around 50 times, "showing that the hypothesis of contamination is not such a very unlikely one".

He also recalled that a second amplification was not done, because there was insufficient material. Asked specifically, he said that laboratory contamination does not always and necessarily produce very small biological traces.

Dr. Sarah Gino was heard at the hearing of September 26, 2009 on the subject of the documentation deposited following the relevant orders made by this Court, which have already been mentioned; with respect to this document, Amanda Knox's defence produced a memorandum statement dated September 25, 2009 from Dr. Sarah Gino.

Considering the Work Status Report [*SAL*] cards, she noted various inaccuracies, such as the lack of indication of the concentrations of the extracts before or after the quantifications. She observed, however, that this procedure must have in fact been followed, since it was mentioned in the technical report by the Scientific Police. She criticised the lack of dates for the amplifications, and noted that this lack constituted a shortcoming of some importance, since it becomes impossible **[273]** to know which samples were "processed" together, which could be relevant for evaluating the possibility of contamination.

Indications making it possible to verify whether the standards and protocols were followed were also missing. Work status report [*SAL*] cards were not even found for certain samples.

It did, however, emerge from the documentation that some of the samples taken from Exhibit 36 were quantified with the Qubit fluorometer, and that the results for some of them were "too low". Thus the quantity was inferior to the base value (or threshold setting) of the kit; it could even have been equal to zero. This result, she asserted, should have led to cessation of the analysis.

She also observed that if the concentration of DNA was below the threshold value of the instrument: "we have surely before us a low copy number situation".

She also noted the contradiction between what was said before the GUP with respect to Exhibit 36B, when it was stated, on the part of Dr. Stefanoni, that the quantity was of the order of a few hundred picograms and what had resulted from the quantification performed using the fluorometer, which had given a "too low" [result].

The negative result for blood yielded by the Luminol-positive traces raised the question of whether these were actually made in blood or not. Furthermore, Dr. Gino observed, the quantity of DNA in these samples was compatible with the "low copy number".

During the hearing, Dr. Sarah Gino also explained that from reading the SAL schedules, information emerged which indicated the personnel who performed the analyses, the file number, the bio code, and the identification numbers of the items being analysed. She added, however, that "there is missing information or rather, information which is not easy to interpret".

She also noted that the quantity of the extract was noted as being 50 without, however, the unit of measurement. She added, however, that "anyone in the business knows or can assume that the 50 meant 50 microlitres" (page 64 hearing Sept. 26, 2009).

She added how there is a phase in which the result of diagnosis of the nature of the sampled trace becomes known: during the extraction phase, **[274]** the dates of the first, second and third extractions are indicated, and also the quantifications, so three dates are supposed to be recorded; but "in these cards, the dates for the quantifications are missing"; she also complained about the fact that the dates for the first, second and third amplifications and the type of commercial kit that was used to amplify the trace were missing.

This information was not contained in the SAL cards; however, the type of commercial kit could be determined by reading through the technical report deposited by Dr. Stefanoni.

Further indications were missing, concerning the dates at which the samples were amplified, and this, she observed, was extremely important in relation to the problems of contamination which had been raised.

Not knowing the dates of the amplifications made it impossible to know whether contamination had occurred. She also noted the lack of information with respect to the volume of the reagents and also to the quantity of DNA used in the various samples.

With respect to the Luminol-positive traces found in Romanelli's room, in Knox's room and in the corridor, she stated that by analysing the SAL cards "we learn, in contradiction to what was presented in the technical report deposited by the

Scientific Police, and also to what was said in Court, that not only was the Luminol test performed on these traces, but also the generic diagnosis for the presence of blood, using tetramethylbenzidine...and this test...gave a negative result on all the items of evidence from which it was possible to obtain a genetic profile" (pages 73 and 74). She thus asked whether it was still possible to interpret these traces as being haematic in nature. Analysing the quantification data, she added, "we see that the quantity of DNA obtained from the major part of these traces is compatible with low copy number DNA; therefore DNA is present in very small quantities; so it is also necessary here to ask oneself whether or not the amplification could be repeated, in order to be able to consider the results obtained as scientifically valid" (page 74).

[275] With respect to the extracted quantity indicated as 50, and which she presumed was intended to mean 50 microlitres, she stated that that value did not refer to the quantity of DNA present in the sample, "but it is the quantity...it is the volume from which I eluted, that is, I extracted, I drew out of the sample, of the substrate on which this trace had my DNA...the DNA is contained inside this liquid; the quantity of DNA could be zero inside this liquid...this does not give any indication of the quantity of DNA that is present because the DNA could even amount to zero" (page 75).

Returning to a discussion of Exhibit 36, trace B, with reference to the indication: animal species, she declared the following: "animal species, I believe that...where there are tests that are specific for humans and thus can indicate that this trace originates from a human being, when this is not possible, one says that the trace comes from an animal, but then there are tests that one can eventually do to verify which type of animal might have left the trace, such as dog, cat..." (page 76).

In answer to specific questions about the Luminol-positive traces, she stated that from the technical report one exclusively learn that at the crime scene, these traces returned a positive reaction, like that which has come to be defined as the generic analysis made with Luminol, whereas in fact it could be seen from examining the SAL cards that testing specifically for blood had been carried out and had "resulted as negative " (page 77).

To a question from the Public Prosecutor, she confirmed that a genetic profile of Knox had been extracted from Exhibits 178, 179, 180, and this biological material, which could not be confirmed with certainty as being human blood, could have been, she affirmed, "saliva or skin cells" (page 78); the negative result of the TMB test (tetramethylbenzidine) made it impossible to determine exactly what material had

been analysed. She did, in any case, confirm that the profile of Knox had been found ("Certainly, Knox's genetic profile was found", page 79).

She added that, in her own experience, analyses performed with TMB on traces revealed by Luminol give about even results: 50% negative, 50% positive, **[276]** and added that the acronym TMP indicated a colourimetric reaction which occurs in the presence of tetramethylbenzidine, which had been substituted for the carcinogenic benzidine; the presence of blood can be detected by means of this reaction.

She tied the relevance of the amplification dates to the need to verify the samples which were amplified across various dates, stating it was also relevant in relation "to the contamination possibilities which exist in a laboratory" (page 81).

Returning to Exhibit 36, she specified that she had focused on trace B and not on trace A and the profile which emerged from it.

She stated that in the hearing before the GUP, Dr. Stefanoni had spoken of a quantity equal to a few hundred picograms; from later documentation it appeared that in fact, it was a quantity labelled "too low", and, she observed, such a quantity cannot amount to a few hundred picograms (page 88). However, it appeared to her that, Dr. Stefanoni (again, before GUP) specified that she had performed the PCR at 28 cycles; in fact, she recalled that she had been asked why "if it was a case of a low copy number sample, she had not amplified it with more than 28 cycles, as usually suggested in the guidelines" (page 88).

She reaffirmed that [the risk of] contamination exists, and emphasised that in minimal quantities of DNA there is not necessarily a greater risk of contamination but it was easier to notice the effects of the contamination and be misled ("...It's not that the risk of contamination is greater; but it is easier to see the contamination..." page 92). She specified that of the samples tagged as "too low"; only two had yielded a genetic profile, namely traces 33A and 33B.

With respect to trace 177, one of the Luminol-positive ones, she declared that "besides the profiles...that is in addition to the peaks relating to the victim and the ones attributed to Amanda Knox, there were other peaks which were not taken into consideration even though they were present, and some of these had heights greater than 50 RFU" (page 93).

GENETIC INVESTIGATIONS: CONSIDERATIONS

[277] The declarations made during the course of the present case by Dr. Stefanoni, a biologist at the Police Forensic Service in Rome [*Servizio Polizia Scientifica di Roma*], as well as those already referred to in the October 4, 2008 hearing before the Preliminary Hearing Magistrate [GUP] and published in the Report dated June 12, 2008, were the subject of various objections by the Consultants for the defence of Raffaele Sollecito and Amanda Knox.

In the first place, it was stated that a geneticist who knows the biological profile of the suspect and has access to said profile may misinterpret ["force-bend"] the reading of the graph supplied by the machine so as to recognize or identify the biological profile of the suspect. The recommendation that forbids such a procedural method was mentioned and, for the trace for which Dr. Stefanoni already had the biological profile of the current defendants, it was repeatedly maintained that the reading of the various graphs and the interpretation of the peaks in themselves presenting as *statters* and/or alleles was flawed due to the so-called suspect-oriented method.

This court does not accept this objection. The same objection, in addition to making no logical sense, appears to be contradicted by the acquired findings.

In the first place, it must be stressed that it is not possible to discern any reason for which Dr. Stefanoni would have had any bias in favour of or against those under investigation and, on the basis of such bias, would have offered false interpretations and readings.

Dr. Stefanoni and the personnel of the Polizia Scientifica arrived in the immediate aftermath of the event and took various specimens, beginning their evaluations several days later. They then returned to the house where Meredith's body was found a month and a half later, on December 18, 2007, and then undertook with their analyses. While this activity was being carried out and followed through on, the suspects changed and the investigations were underway, open to later acquisitions against and/or in favour of this or that suspect.

At the same time the Forensic laboratories were handling many other cases, as Dr. Stefanoni recalled, devoting to each of them their customary skill and professionalism. Now, unless we want to acknowledge some kind of **[278]** persecutory intention against a specific individual (this eventuality, though without the slightest foundation of any semblance of plausibility, was in fact expressly

denied by the same defenders during the course of the [legal] debate), we cannot see how or why, based on logic alone and for the sake of argument, Dr. Stefanoni would have had to cook the data supplied by the machine in order to identify incriminating evidence against any of these defendants, attributing this or that biological specimen to one or the other suspect, or else – as happened with many specimens collected – not attributing them to anybody at all. Furthermore, all of this would have been on the basis of choices and changing permutations that would have been absolutely indecipherable in their concrete determination. It is sufficient in this regard to consider that from 228 exhibits a total of 460 traces were sampled, only a few of which provided positive results that were useful to the investigations; the Consultant for Sollecito's Defence has declared having been given the responsibility of examining Exhibit 165 (the clasps with the piece of bra) and traces A and B of Exhibit 36 (the 31.5cm long knife; thus one of the two knives seized). Therefore, just three specimens out of over 450 examined, plus a few more that were taken into review by the Amanda Knox defence consultants. Accordingly, it stands to reason that the suspect-oriented method would have invalidated Forensic activity for only for a small minority of specimens, in addition to not knowing what the selection criteria were.

It must also be stressed that Dr. Stefanoni, testifying under oath, declared that she did indeed have the biological profile of the various defendants, but as merely historical data and not as data held front-and-centre in the moments during which she was interpreting the various electrophoresis diagrams.

It must therefore be excluded that Dr. Stefanoni, during the moments she was interpreting the various electrophoresis diagrams, was swayed by the suspicion-centred method. Instead, it is held that in interpreting the various electrophoresis diagrams Dr. Stefanoni availed herself of her own capabilities and her own professional experience and, once identified, where it was possible to do so, a biological profile was compared with each of the available biological profiles **[279]** as, in itself, the biological profile that forensic genetics is able to process is useless in identifying the first and last name of the subject to whom said profile refers.

(L)

In another point, the unreliability of the results offered and illustrated by Forensics was asserted. It was held that the specimen examined could have been contaminated

and therefore could not be held to be pure, and that the results obtained from analysis of these same specimens would be unusable. This contamination, furthermore, were alleged to have a dual source and nature: laboratory and collection.

The alleged laboratory contamination would have occurred or could have occurred due to contact with other samples, or with residues of other samples, on which the presence of biological traces belonging to one or another subject would have compromised the purity of the other trace to be placed under examination. It was also hypothesised that the multiplicity of analysed samples, many of them originating from the victim, may have left behind residual DNA of the victim herself that, especially in traces later examined and containing minimal quantities of DNA, would have been capable of altering (contaminating, in fact) the trace that subsequently came to be placed under examination. This hypothesis, it must also be remembered, was in particular proposed for trace 36B (the one found on the blade of the knife and attributed to the victim) which, owing to the minimal DNA found in it (too low) some residual trace, originating from one of the many specimens examined belonging to Meredith, could have contaminated this trace. On this point, Dr. Sarah Gino also complained about the missing indications of the dates on which the various examinations were carried out, an element that – she observed – would have been useful to better evaluate the contamination hypothesis precisely from this perspective.

The Court does not hold this assumption to be tenable.

In the first place, and according to what was evidenced by the prosecution during the course of legal debate without incurring any objection, the analytic activity carried out on the various samples was completed in accordance with the provisions to which Article 360 of the Criminal Procedure Code applies, and no **[280]** objection was raised or proposed with specific reference to the non-observance of any of the provisions contained in the above-mentioned law, intended to safeguard the rights of the various defendants and allow participation in the relative activities, precisely in order to confirm the correctness, integrity and reliability of the activities carried out. No objection, therefore, was raised by the parties, who were in a position to participate in the analytic activity, in line with the methodology used to carry out same. What Dr. Stefanoni declared during the preliminary hearing of October 4, 2008 (the transcript of which was tendered during the course of legal debate) about Professor Potenza's presence throughout all phases of the sampling of Exhibit 36

(page 29 of the relevant transcript) bears remembering with regard to this specific point. And no objections were raised concerning the methods or procedures used.

It must also be emphasised that, as Dr. Stefanoni said, every technician in the Forensic laboratories adheres to all precautionary measures to ensure that there is no contamination from one sample to another. This was stated in reference both to the handling method used for the various samples and their analysis. She also testified and affirmed that the various tools and instruments were changed and underwent customary maintenance, checks and replacements. In addition, responding to apposite questions about the quality certifications, she said that the procedure for obtaining them were in place, and specified that it was only a matter of signing off on what had already been done in order to obtain the said certification, without the need to introduce any variation or modification in the methods currently in practice or in the existing instruments.

Dr. Sarah Gino also maintained that laboratory contamination is possible, and Dr. Patumi referred to a contamination case that occurred in a particular genetic analysis laboratory: possibility of contamination, therefore, and objective confirmation that contamination can occur.

[281] In the present case, none of any of this emerged, however, and Dr. Stefanoni's testimony rules out that any laboratory contamination could have occurred.

In fact, none of the parties in a position to participate in the analytic activities (which took place pursuant to Article 360 of the Criminal Procedure Code, as has been said) ended up putting forward any specific objections to the equipment, methods, or fitness of the machinery. Differently to what happened at the analysis Institute expressly mentioned by Dr. Patumi, for the structure in use by the Polizia Scientifica in Rome – where the analyses were performed – nothing of this kind has emerged, no anomaly – either during or following the completion of the analyses – was signalled; Dr. Stefanoni testified about the ongoing precautions adopted to avoid any possible contamination and, in relation to the related methods and instrumentation – as has already been said – a process for obtaining the Quality Certification was already underway, with no introduction of any modifications required. She further specified that, during the course of the various analyses, no anomaly had occurred. These declarations, it must be observed, have not been contradicted by other matters emerging; thus, they have been confirmed by the Quality Certificate obtained in 2009 and produced by the prosecution.

On the matter of contamination, there was also discussion with reference to the method used to acquire the specimens and the handling of the samples by technicians. First, accordingly, that they had been carried into the laboratory for their respective analysis, and, about this, specific reference was made to the 31.2cm long knife seized from Raffaele Sollecito's apartment in Corso Garibaldi in Perugia (Exhibit 36) and to the fragment of the bra, made up of the clasps and a little piece of cloth, found in the victim's room at number 7 via della Pergola (Exhibit 165). Secondly, there was also discussion of the specimens collected from the bathroom (in the bidet and in the washbasin, in particular), albeit under the heading of the concrete methodology of sample collection.

The issue in question must therefore be examined with reference to the Exhibits for which said objections have been raised.

EXHIBIT 36 (THE DOUBLE-DNA KNIFE)

[282] On November 6, 2007, during the search carried out in the apartment in Perugia where Raffaele Sollecito lived, the 31cm-long knife was found. Taking part in the search were Dr. Chiacchiera, Vice Director of the Perugia Flying Squad, [and] Inspectors Finzi and Passeri; [and] Superintendent Ranauro and assistants Camarda, Rossi and Sisani. All, according to statements made by witnesses, wore gloves and shoe covers. The knife was taken by Inspector Finzi, who testified that he had clean, new gloves and that, having opened the drawer where the tableware was kept, the first thing he saw was a large knife that was extremely clean. There were other knives in the drawer, but he took [only] this one, which became Exhibit 36. This knife was the first object he touched and it was located on top of all the tableware. He put it in a new paper envelope he had with him and then in a folder. The bag with the knife inside was handed over to Superintendent Gubbiotti when he returned to the Police Headquarters.

In turn, Superintendent Gubbiotti, who had participated in the search of the house on via della Pergola on that same date of November 6, stated that he was given the knife by Finzi when he returned to Police Headquarters and that it was inside a new and well-sealed envelope. Gubbiotti furthermore declared that when he collected [Note from the translator: the Italian word used here can also mean catalogued or indexed] the knife in question, he was wearing new gloves that had never been used before, which he had taken from the office. It was with these gloves that he took the knife from the bag and put it inside a box that he sealed with scotch tape and sent with the other evidence to the Forensic Police in Rome, where it underwent analysis as stated by Dr. Stefanoni.

It should also be recalled that Stefano Gubbiotti, before receiving the knife, had participated in the search in the house on Via della Pergola 7, [and] together with Zugarini processed Amanda's room. The various individuals who testified [in Court] on the procedures [used] for this search all declared unanimously that whoever dealt with one room did not enter any of the other [rooms]; no one went from one room to another.

[283] At this point, it must be asked what concrete possibility of transferral of DNA could have happened in order to contaminate the knife, Exhibit 36, [thus] falsifying/altering the subsequent analyses which, as testified by Dr. Stefanoni, resulted in the discovery of traces A) and B) with biological profiles attributable/referable to Amanda and to Meredith, respectively.

Inspector Finzi declared that this knife was the first object which he took from the drawer and specified that it was on top of the rest of the cutlery and conspicuous; he therefore took it without having to do any rummaging. He grasped it with the new gloves, which had not first touched [any] other objects, and then put it in the new bag. In this phase, therefore, there can be seen no way in which the DNA of Amanda and of Meredith, which Stefanoni says she found on the knife, might have finished up on that exhibit, contaminating it.

Finzi did not touch the knife again, and delivered the folder and the envelope containing the knife to Superintendent Gubbiotti at Police Headquarters. Superintendent Gubbiotti returned from the search [which he had] carried out with gloves and shoe-covers in the house on via della Pergola, [during which he] had processed Amanda's room. It could therefore be hypothesised that Gubbiotti was the carrier of the contaminating DNA, DNA which he could have picked up in Amanda's room where, that morning, he had carried out the search and which, therefore, he could have transferred to the knife, Exhibit 36, as he pulled it out of the bag in which it was contained in order to put it in a box which had previously contained a new diary - a gift from a bank - and which, [once] sealed, he then sent to the Forensic Police in Rome. Such a hypothesis must, however, be rejected since for the search in Amanda's room, Gubbiotti had worn gloves which were not the same as those he wore when, subsequently, he took [hold of] the knife. He declared, in fact, that when he found that knife he was wearing new gloves which he had not used on any other occasion, [and] on which, therefore, there could not have been the DNA which was later discovered on the knife. It cannot be thought that contaminating DNA from Amanda or from Meredith could have been found in the box in which the knife was placed, since it was a box which had contained a new diary, a box which, once sealed, was sent to Forensics in Rome.

[284] Nor is there more merit in the hypothesis advanced by Professor Tagliabracci, although (insofar as a reading of the transcripts of the hearing in which he testified allows [us] to verify) it only appears in the memorandum dated July 15, 2009 and acquired on September 14, 2009. According to this hypothesis, the biological trace found on Exhibit 36B (blade of the knife) could have come from flaking/scaling cells belonging to Meredith, which cells, as Amanda touched objects on which these could have ended up, could then have been transferred to the blade of the knife (page 25 of the memorandum).

This Court is not able to can share such a hypothesis because of the means of DNA transfer which the same hypothesis presupposes, and because of the variety of

circumstances that such a reconstruction requires. In fact, since the knife, Exhibit 36, was not found to have ever been seen in the house on Via della Pergola, it is necessary to imagine that Amanda (or Raffaele Sollecito, being the only person who, together with Amanda, was shown to have visited both houses) picked up these cells in a place quite far from Raffaele's house, where the knife was kept, and went directly to the house on Corso Garibaldi without touching anything else in between, precisely to where the knife was and, once again, without touching any other object (since otherwise there could be no reason for which, without any particular exfoliating action, sometimes the DNA "attached" itself and "re-attached" itself and other times it didn't) immediately took the same [knife] and with her hand on the blade (and the reason for such a way of grasping it, imprudent at the least, escapes [the Court's understanding]) could have transferred cells from Meredith onto the blade in question.

Thus, the DNA from Meredith which was found on that knife cannot be traced back to any contamination occurring in the house in which it was found, or to the method of acquisition of the knife on the part of Finzi, or even to the collection and dispatch methods used by Gubbiotti. In addition, as has been said, that such contamination could have been carried out by the laboratory is also ruled out.

EXHIBIT 165 (THE BRA-CLASP)

[285] There have been many criticisms, especially on the part of Raffaele Sollecito's defence, of the manner of discovery and subsequent collection for analysis of the small piece of material with hooks attached, from the bra, found torn off and stained with blood in Meredith's room.

This small piece was seen on November 2, 2007, but was not collected on that occasion. Testimony about this small piece of bra was given in particular by Gioia Brocci, vice-captain serving at the Questura of Perugia. Gioia Brocci, present at the moment in which the lifeless body of Meredith Kercher was removed, in the night between the 2nd and 3rd of November, has declared that she observed everything which was underneath the body; bloodstains and a pillow, and that lifting this pillow, underneath it she noticed that there was a fragment of bra which had not been found attached to the rest of the bra, found at the feet of the victim. She further stated that that piece was photographed, but that no specific letter was placed on it, of those letters which were used to describe the crime scene, as it was counted along

with the letter indicating the bra. This piece of bra was found again and taken for the purpose of analysis during the search on December 18th, 46 days later than when it was seen during the search on November 2nd-3rd. In these circumstances, the small piece of bra, while still in the victim's room, was not seen to be in the identical position it had been in before, but had been moved by about one metre and a half, and was almost hidden by a small rug under which was also hidden a sock. On this occasion it was collected, photographed, repositioned on the floor, taken up again, observed and placed in the envelope which was then sealed and sent to the laboratory for analysis.

In relation to these events, and taking into account also the various searches and entries which occurred in the house on via della Pergola between November 3 and December 18, 2007, the possibility was raised that this small piece of bra might have undergone some contamination, so that the results of the analysis could not be considered reliable.

Also in this case, the Court does not consider that statement is acceptable.

[286] In the first place, it must be emphasised that no specific circumstance or situation has been given which could justify the asserted contamination, even as a possibility.

The hypothetical transfer of contaminating DNA appears to rely on the whole set of events concerning the recovery and collection of the piece of bra, without any precise specification of one or more actual moments or happenings of which one might say: that might have been where the contamination happened. Rather, the assertion of contamination was put forth almost like a bet -- one might say blindly -- that there must have been an error, and that this corrupted all of the following phases.

But, even posed in this general way, the problem of contamination must be confronted.

Dr. Stefanoni, as we have already seen, thus explained that on the bra clasp, there was also present the DNA of Raffaele Sollecito. Starting from this assertion, the problem in question can also be formulated as: was the DNA of Raffaele Sollecito, which, according to Dr. Stefanoni, was found on the bra clasp, a consequence of an act of Raffaele Sollecito carried out directly on the bra which Meredith was wearing on the night that she was killed, or on the contrary, could it have had a different origin, so that this DNA could have ended up on the bra clasp without Raffaele Sollecito having ever touched the bra directly, and its clasp in particular?

A first fact in the solution of this problem is the following: the door of Meredith's room was closed on the morning of November 2nd, closed and locked: this was how Amanda stated to have found it when, around 10:30 am on November 2nd, she went to the house; this was how Amanda and Raffaele found it when, around 12:30 pm of that same November 2nd, they returned to the house together, and that is how the two agents of the Postal Police saw it, and the four young people (Filomena Romanelli, Paola Grande, Luca Altieri, Marco Zaroli) who, having arrived at around 13:00 pm, decided to break down the door of the room of the British student, which was locked as has been said, and whose key could not be found.

[287] It must also be recalled that when the door was broken down and opened, Raffaele Sollecito remained at a distance, far enough -- as has been said -- that he could not even have been able to look into the room; furthermore, it does not appear that he entered the room at any later time; in fact, as has been seen, the contrary has been shown: once the door was broken down, everyone was ordered to leave the house and Raffaele Sollecito did not enter into the cottage again, much less into Meredith's room.

There is no hypothesis for the "placing" of Raffaele Sollecito's DNA in Meredith's room which could have actually occurred under these circumstances.

On October 26, 2007, the day immediately following the day on which he met Amanda, Raffaele Sollecito was in the house in the via della Pergola, and he returned there two or three more times, according to the statements of Filomena Romanelli and Laura Mezzetti. It is thus possible that he could have left some of his DNA somewhere in the house. But it is not possible to consider that this hypothesis could explain that his DNA ended up on Meredith's bra clasp. Raffaele Sollecito went to the house in via della Pergola to be with Amanda, and was always right next to her, as reported by Laura Mezzetti. Thus he did not need to go into Meredith's room. Moreover, no one has stated that this happened, and the very tight and quite recent bond with Amanda tends to exclude the possibility that such a thing could have occurred.

It is thus necessary to hypothesise that Raffaele Sollecito left his DNA in various places around Meredith's room; and also one must hypothesise that his DNA, left on a surface anywhere in the house, could have been transferred to the clasp of the bra that Meredith was wearing when she was killed.

Regarding the possibility of such an event, or combination of events, occurring, one must observe the following: in the house on via della Pergola, apart from the clasp, only one other place was found which bore a trace containing the DNA of Raffaele Sollecito, mixed with that of Amanda Knox: on the cigarette stub which was in an ashtray sitting on the table in the living room. In and of itself, this fact should one to rule out that Raffaele Sollecito easily and copiously disseminated his own DNA in the house on via della Pergola.

[288]

Page 288 of the original Italian is corrupted. Please see the Note at the front of this document – we invite readers to submit an intact copy of this page so that we may update the translation. What follows in the marked section between [288] and [289] is a summary put together from what is observable on the page. However, for obvious reasons, this should not be relied upon until the whole page can be translated.

Certainly, it can be observed that every single place in the house was not tested, and one might think that Raffaele Sollecito's DNA might have been located in some other places. One can consider the possibility that his DNA from some other place that was not found was transferred onto the bra clasp, but this would have to have been done by someone manipulating the object. But simple contact between objects does not transfer DNA. Amanda's and Raffaele's DNA were both found on the cigarette stub, not just one of them, transferred by the other. It is also important that the bra was the one that Meredith was actually wearing, and the clasp was found under the pillow which was under Meredith. It doesn't seem possible that Raffaele Sollecito could have managed to touch it there so as to leave his DNA on it. At this point it should also be mentioned that the piece of bra was found under a small rug in Meredith's room [which protected it] and that no objects were taken out or

[289] carried into the said room, which would imply that Raffaele Sollecito must have had something to do with objects that were in the room of the victim and must have left his own DNA on one such object. A hypothesis which, it is observed, has the same value as the preceding one, with the identical consequence of not being retained as plausible by the Court.

It is also observed that the small rug did not show itself to be a good transmitter of DNA. Underneath it there was a sock, and analysis proved that on this sock there were only DNA traces of Meredith. Also the circumstance by which DNA was found on the hooks - so on a more limited and rather less absorbent surface than the material attached to them - tends to exclude that Raffaele Sollecito's DNA could have landed on the hooks, precisely on the hooks, by contamination or by transfer from some other unspecified object.

Another remark concerning the last hypothesis formulated above is the following: any transfer of DNA from the surface of the rug under which the small piece of bra was found would imply that between the two objects there was more than simple contact, touching of each other, but an actual pressure exercised on the rug under which the piece of bra lay. This hypothesis was set aside after Dr. Stefanoni reported that the small piece of bra with the hooks was found placed in the same position on the floor as when it was seen during the inspection of November 2nd-3rd, and also the deformation of one of the hooks was the same. Vice versa, if some pressure had been exerted on top of it, if in one of the police activities someone had stepped on it -- then that deformation would not have remained identical; but the small piece of material and the hooks and eyes had the same form, the exact same type of deformation and also the same placement on the floor (see also the statements of Dr. Stefanoni that were reported earlier; she additionally stated that, having seen the small piece of bra in the early hours of November 3rd rather quickly, the images of it taken on that occasion allowed her a more prolonged and attentive observation, enabling her to declare that the deformation had **[290]** remained unmodified and unchanged, as did the side on which it was set on the floor).

For the elements and the considerations indicated above, it is ruled out that the hooks could contain DNA transferred by contact with other objects.

The Defence heavily emphasised the manner in which the Police search was performed, entries into the house that occurred, the fact that in the inspection of December 18th the clasp was found to have moved by a metre and a half and was underneath a rug, rather than in the situation and position in which it was originally found; they also emphasised the fact that this piece of bra was taken, held, repositioned and then picked up again by hands before being placed in the envelope for transmission to the laboratory for analysis.

It thus appears necessary to go over the moments, the phases, the entries and the operating methods which could be relevant for the examination of the problem at hand.

On November 2nd, after the door had been broken down and after everybody had been made to leave the house, at around 13:30 pm, the personnel from the Questura of Perugia arrived: Dr. Chiacchiera, the inspector Monica Napoleoni and others. Dr. Chiacchiera reported that he stood in front of Meredith's room without entering; Napoleoni drew near to Meredith's room together with the assistant Buratti. They remained at the door, and Napoleoni took a step inside the room when the doctor from 118, who had arrived, uncovered the body. Deputy Commissioner Napoleoni stated that everyone who entered wore gloves and shoe-covers except for the personnel from 118, who, even without the precaution of shoe-covers and gloves could not have contaminated the clasp, it is observed, since it was well-hidden and, one might say, protected by Meredith's body and by the pillow under which it was found.

Meredith's body, stretched out supine on the floor, was lifted, and it was possible to look underneath. This happened late at night, shortly after 13:00 pm on November 3, 2007, based on the video footage and the time stamp on the video camera which, however, according to Dr. Stefanoni, advanced by one hour. However, it was late at night when the clasp was seen for the first **[291]** time and it was placed under the pillow on which, at the level of the hips, the body of Meredith was partially placed.

In the room of the victim, the Scientific Police from Rome were working, and Dr. Stefanoni declared that they were proceeding with all the care and precaution needed to ensure the maximum conservation of the crime scene, avoiding all careless manipulation of things which could provoke any contamination. She added that the operators were using special protections such as suits, gloves, shoe-covers and face-masks in order to avoid any exchanges between the operators themselves and the surroundings.

She also declared that in order to avoid objects contaminating each other, every single object or trace was sealed in a security envelope.

It must also be emphasised that precisely in order to preserve the crime scene as genuinely as possible and to avoid contamination, the choice was made to postpone the examination of the body for about 11 hours, according to the declarations of Dr. Lalli, who arrived at around 14:40 pm on November 2, 2007, and began his own

activity by the observation of the body alone at 00:30 am on November 3, 2007. This choice was certainly not without a significant cost in terms of the acquisition of elements that were certainly important. If this choice was made in order to preserve the crime scene, then it stands to reason that the precautions indicated by Dr. Stefanoni must have been adhered to with the greatest care. No elements have emerged from which one could assert that this did not happen. Furthermore, viewing the film of the inspection of November 2nd-3rd gives the impression of movements and actions that are particularly attentive and measured. It should also be recalled that Dr. Stefanoni declared that in that search, the technical operations were pursued from the interior of the house towards the exterior.

Let us return to the problem in question, of examining in what manner the small piece of bra could have been contaminated, and contaminated with the DNA of Raffaele Sollecito. Given the circumstances and the operating method described above, one must find a hypothesis that could explain such a contamination.

[292] One could, perhaps, think that one of the technicians, entering into the room of the victim, might have inadvertently moved some DNA that Raffaele Sollecito had left elsewhere in the house, dropped it in Meredith's room, and after the lifting of the body and the discovery of the clasp, there was another moving of the DNA which thus ended up on the hooks, which are very tiny: but this hypothesis appears absolutely improbable in terms of the dynamics which must be assumed, the sequence of combinations that would be required, and even its contradictory nature. Indeed, one would have to believe that at times it is very easy for DNA to move from one object to another and stay there, and at other times it is not.

As for entry into the house on November 4th, it does not seem that such an event could have any material relevance: the personnel from the Scientific Police from Rome were still present in the house, since as declared by Dr. Stefanoni, they were proceeding from the furthest part of the house towards the exterior, without going back and forth between the different places. The entry on November 4th was limited to the first places in the house, and the Vice Commissioner Napoleoni spoke of it in the following terms: to this meeting were called Meredith's roommates, Romanelli, Mezzetti and Amanda; thus Raffaele Sollecito was not present, and the goal was to show to Romanelli, Mezzetti and Knox the knives from the kitchen; everyone wore gloves and shoe-covers and everyone remained in the kitchen area; only Romanelli was asked if she recognised the clothes that were in the washing machine. It is impossible to see how this access to the house can have led to any contamination of the piece of bra found in Meredith's room and left there. Indeed, it was found in the

said room on December 18th, and as was declared, no object that was taken out of any room was then brought back, and no object found in one room was taken to a different room or place in the house.

The activity of the Scientific Police of Rome was completed on November 5th, and the police search took place on the following two days (November 6th and 7th), performed by Profazio, the director of the **[293]** Flying Squad, Deputy Commissioner Monica Napoleoni, and the inspectors and superintendents Bigini, Gubbiotti, Zugarini and Barbadori.

According to the statements made on this point, the search was conducted with gloves and shoe-covers, and above all with a precise division of the different places. Meredith's room was searched by Dr. Profazio, Napoleoni, and Bigini; Amanda's room was searched by Zugarini and Gubbiotti. Barbadori was responsible for Romanelli's room.

On November 7, 2007 the clothing that was in the washing machine, located in the area between the large bathroom and the kitchen-living room, was collected. Profazio and Giobbi were in charge of removing Meredith's computer.

During the course of the search, objects were necessarily moved and clothes were looked through. The search respected the subdivision into different rooms for different operators. In Meredith's room, on the day of November 7th, the computer was not taken. It was also shown that, according to declarations, those who searched Meredith's room did not enter into other rooms and vice versa; there was no movement of objects from one room to another. The gloves were not changed every time a different object was touched.

Monica Napoleoni, referring to the search of November 6th, has reported that she saw the light blue rug, but did not notice the small piece of bra, and she added that she does not specifically know whether the light blue rug was moved. Inspector Bigini recalled that in Meredith's room, there were bloodstains, and because of this, everyone moved very carefully trying to minimise their motions. According to the testimony of Dr. Profazio, the only other surface stepped on by all the different operators in the various rooms was the corridor.

While the Scientific Police were in the house, it was under surveillance, and after that the seals were placed. After November 7th, the last day of the search by the personnel of the Questura of Perugia, the next access to the house on via della Pergola was the entry on December 18, 2007, which has already been discussed,

[294] and no seals were broken between November 7 and December 18, 2007. So there was no illicit access to the house during this period.

The Court thus holds that the circumstances and operative methods described above lead to the conclusion that no contamination of the small piece of bra with the hooks occurred. Such contamination, as will be shown immediately, cannot be connected with any illicit access since, before the piece of bra and other findings were removed (on December 18th as already stated), the protective system in place and the seals placed on the house show no signs of having undergone any forcing which would make it possible to state that persons not under [police] control, moving around without due care and attention, could have contaminated any findings.

The search methods set up by Dr. Profazio, and complied with according to all statements made, prevented those working in Meredith's room from ever entering any other room, or those working in other rooms from entering Meredith's. Objects were moved, necessarily moved, but every object that was in a room, if it was not actually taken away, remained in the same room, without ever moving to another room, or being taken out of the room and then back in. The only parts of the house through which operators from the various places all passed were thus the living room and corridor. One might thus assume that some DNA of Raffaele Sollecito that had been left somewhere in the living room or corridor was moved, and ended up on the hooks. Such a movement of DNA and its subsequent repositioning on the hooks would have had to occur either because one of the technicians walking on the floor on which the DNA was lying hit it with his foot or stepped on it, causing it to end up on the hooks, or because by stepping on them, he impressed onto them the DNA caught underneath the shoe-cover he had on in that moment. But these possibilities cannot be considered as concretely plausible: to believe that, moving around the house, the DNA could have been kicked or stepped on by one of the technicians, who in that case would have been **[295]** moving about, and to believe that this DNA, instead of just sticking to the place it had been kicked or stepped on by (probably the shoe, or rather, the shoe-cover), having already been moved once from its original position, would then move again and end up on the hooks, seems like a totally improbable and risky hypothesis.

One could think that in the moving around of all the various objects, one thing could have been touched that carried some of Raffaele Sollecito's DNA on it, and by this contact found itself on the hands (gloves) of some technician who, then using the same gloves to touch another object, could have transferred onto that object the DNA that was on the gloves he was using. This hypothesis could hold in relation to

the fact that objects were certainly picked up and thus subjected to a certain pressure; furthermore, from what has emerged, during the search, gloves were not changed every time a different object was handled, but several objects were touched with the same gloves. However, such a hypothesis cannot be held acceptable with respect to the bra hooks. Firstly, one must consider the search method, which involved subdividing the areas: in Meredith's room no other object apart from the hooks was shown to carry Raffaele Sollecito's DNA; Raffaele Sollecito, as already observed and stated above, did not leave his DNA on any object that was in Meredith's room; and more importantly, none of the operators, after having touched some object which might have had Raffaele Sollecito's DNA on it, then touched the hooks of the small piece of bra so as to make even hypothetically possible a transfer of DNA (from the object containing Sollecito's DNA to the gloves, from the gloves to the hooks). In fact, none of the operators during the search of November 6th and 7th even took note of that little piece of bra, and thus in particular no one picked it up. That the small piece of bra was later found in the inspection of December 18th in a different position than where it was originally noted (in the early hours of November 3, 2007) is not in contradiction with what has been said: during the search, various objects present in Meredith's room (as in the other rooms) were checked, **[296]** furniture was moved around and drawers looked into. Movement of objects, in particular of clothing, may have induced the movement of other objects, and this is what the Court considers to have occurred with respect to the piece of bra which was seen on the floor of Meredith's room on November 2nd-3rd and left there. Deputy Commissioner Napoleoni, referring to the search of November 6th, has declared that she recalled the presence of a bluish rug; one can thus conclude that this rug was looked at during the search and entered into contact with the operators making the search, and like other objects, was moved from its original position, but always remaining on the floor of the room; during this movement it must have covered up the piece of bra (which was on the floor of the same room and yet was not noted during the search), thus determining by its own motion the accompanying motion of the small piece of bra, making it end up where it was then found during the inspection of December 18th: under the rug, together with a sock, in the same room, Meredith's room, where it had already been seen. So it underwent a change of position that is, thus, irrelevant to the assertion of contamination.

It is also impossible to consider that contamination occurred from the manner of the finding and collection that took place on December 18, 2007: on that occasion, the personnel from the Scientific Police were equipped with gloves, shoe-covers, suits and masks. The inspection took place in Meredith's room, and the piece of bra was

the first object to be found and catalogued. It should also be observed that in order to assert the occurrence of contamination, one would have to hypothesise that some object in Meredith's room contained a deposit of Raffaele Sollecito's DNA, and that this object was touched in a way that determined the transfer of the DNA from it to the gloves of the operator, who then touched the piece of bra on the hooks upon which the DNA was transferred. This hypothesis is unsustainable according to what has already been observed of the methods used and the conditions for contamination that such a hypothesis would necessarily require. Furthermore, it does not appear that before picking up the piece of **[297]** bra, any other objects were not touched. Also, the use of suits, masks, gloves and shoe-covers, even if it occurred after certain other activities, in particular the search, still demonstrate that particular caution and care were used: thus it appears unlikely that the hypothesis of contamination could hold in this situation.

Much has also been said on the finding of the piece of bra at a distance of one and a half meters from where it was first seen. But this is a consequence of circumstances which are not held to be significant for the hypothesis of contamination, and correspond to the circumstances and considerations explained above, adding that after those events the samples were dry and therefore transfer of DNA would have been all the more difficult, according to Dr. Stefanoni. If anything, the passage of such a long period of time would rather have had the effect of deteriorating the DNA and losing information. However, these are aspects concerning the results of the analyses and not the contamination of the finding.

It can thus be asserted that no contamination occurred on the hooks on the piece of bra seen on November 3rd and collected on December 18th. These conclusions are based on the arguments given above and are consonant with the manner of finding of the hooks: they form a tiny surface which would be difficult to contaminate; the piece of bra shows, from the attachment of some threads from the strap of the bra and by the partial deformation of one of the hooks, that a rather firm and violent pressure was applied to that piece and in particular to the hooks, a pressure which adequately and convincingly explains the presence of DNA of the person exerting this firm and violent pressure. The opposing reconstruction of events given by Professor Tagliabracci is not held to be acceptable: he claims, judging from the deformation of the hooks, that this would have been caused by a strong pull exercised on the material and not on the hooks (p. 36 cited above), and he expressed the hypothesis of contamination in relation to this point of view.

[298] However, it must be observed that the pressure exercised on the bra could not have had any other purpose than to unfasten and remove the bra that Meredith was wearing, a thing which was actually done; to obtain this result it seems logical and natural that the hooks and eyes of the bra were privileged. For the rest, a bra that is worn is very firmly on the person wearing it, in particular in that the hooks are placed in the eyes. Thus, when intending to remove the bra, the person acting to remove the hooks from the eyes they were hooked into, this being the principal act necessary in removing a bra. This action, thus, must have been exercised on the hooks, but then, not obtaining the desired result, in the context of the violence to which Meredith was subjected, pushed [the attacker] to force the hooks, with the consequence that precisely the hooks underwent some deformation. That the bra was then torn and also cut signifies the resistance of the hooks, and their deformation appears as a natural consequence of this resistance, and the placing on them of the DNA of the person applying force to the hooks appears as a totally coherent and logical fact.

Nor, as has already been said, is it possible to hypothesise a contamination in the laboratory since, as was declared by Dr. Stefanoni, during the course of all the analyses, no anomaly occurred, and the fact that all due controls, precautions and procedures of good laboratory practice were complied with necessarily leads us to rule out the possibility of such contamination in the laboratory.

TRACES IN THE SMALL BATHROOM

The traces of blood detected in the small bathroom, which was usually used by Meredith and by Amanda, located next to the door of Meredith's room, facing Amanda's room, have already been discussed.

Dr. Stefanoni gave precise details about these traces and about the outcome of the analyses which concerned the following items:

On the right side of the inside doorframe there was a tiny droplet of the victim's blood.

[299] Also on top of the toilet-seat cover of the toilet there was blood from the victim.

In the bidet there was a substance which appeared to be diluted blood, and which was shown to be a mixed trace specimen having the biological profiles of Amanda and Meredith.

Also in the sink, there was a substance which appeared to be diluted blood, and which was shown to be a mixed trace specimen with the same result.

On the front part of the tap of the sink, there was coagulated blood which was shown to belong to Amanda.

On the box of cotton buds/Q-tips sitting on the sink/washbasin there were stains and these showed the presence of blood and a mixed trace from Amanda and Meredith.

On the light switch in the same bathroom there was a mark which proved to be the victim's blood.

The sky-blue mat found in that bathroom was stained with blood which was shown to be from the victim.

On the outcome of such tests, not only these but also others of a biological nature, carried out in observance of the provisions contained in Article 360 of the Criminal Procedure Code, no significant and specific criticisms were made. Instead, the defendants' teams maintained that these traces and the outcome of the analyses with reference to the mixed sample traces were irrelevant. In this regard, starting from the scientific data which emerged, according to which DNA analysis does not permit the age of the sample/trace to be determined, nor, in the case of a sample/trace indicating the presence of several biological profiles, can it be established whether their apposition-formation was contemporaneous or not, it was affirmed that, since it concerned a bathroom which was used both by Meredith and by Amanda, the presence of mixed traces seemed to be a completely normal circumstance, and had no significance. All the more so since the samples had been taken using the same blotting paper which had been used for various parts of the bidet and the sink.

The Court, however, believes that the presence of the biological trace specimens that were found is of great importance.

First, it should be recalled that Amanda Knox, in the course of her own examination (questioning), declared that when she left the house on Via della Pergola on the afternoon of November 1st, the bathroom was clean. It should then be highlighted that in that same bathroom various **[300]** trace specimens were found, of a mixed nature and testing positively for blood. It is true that, according to what was asserted

and explained, it is not possible with a mixed trace specimen that tested positive for human blood to determine which of the trace's contributors the blood belongs to. In this case, however, non-mixed traces were also found, which were shown to be of a haematological nature [i.e. blood] and turn out to have the biological profile of the victim. Such traces, in particular the dribble of blood left on the right inside edge of the door and the stains left on the light switch (see photographic illustrations 141, 142; 158, 159) lead to the deduction that whoever entered that bathroom had his or her hands covered in Meredith's blood. Furthermore, the sky-blue bathmat with the print of a bare foot in blood, blood which also was shown to be from the victim, indicates that whoever went into this bathroom was barefoot, and must therefore also have been barefoot in Meredith's room where she had been repeatedly struck, a room which had great blotches of blood, and in one of these whoever transferred the blood to the bathroom and the sky-blue bathmat must have placed his or her foot, and thus must have been moving about that room with bare feet. The above observation leads to the deduction that whoever went into the bathroom at that point (after the stabbing of Meredith) must have had to do so to clean him/herself of Meredith's blood with which he/she was staining the various things he/she touched or leaned against: the door, the light switch, the mat. And it is probable - not necessary, but probable - that during the following act of scrubbing the hands to remove the blood, he/she left the mixed trace consisting of Meredith's blood and of cells which had been removed by rubbing during the act of washing. An entirely probable outcome given the likelihood of the act of scrubbing, yet not a necessary one, since the running water which was used in the shower stall or in the bidet or in the sink, or in several of these sanitary fittings, might well have rinsed away the washed-up blood and the cells which had been lost during this washing.

At this point, one may turn for the resulting evaluations to the trace specimens found in the sink, in the bidet, on the cotton-bud box, traces which tested positive for human blood and which were attributed to Meredith and to Amanda.

[301] While it is not possible to use the genetic scientific data (Dr. Stefanoni explained the impossibility of determining the date, the succession or the simultaneity in the depositing of the components of the mixed trace specimen and the impossibility of attributing the haematological component to one or the other of the contributors), the information previously put forward provides answers which are entirely consistent with the circumstantial evidence that has emerged and which the Court considers convincing.

Amanda was not wounded; in the days following no one spoke of wounds that she might have had; the examination which was carried out on her when measures restricting her personal freedom were taken ruled out the presence of wounds. Meredith's situation was the complete opposite. In relation to this and to the circumstance by which haematological stains attributable to Meredith were found on the inside of the door, on the toilet-seat cover, on the light switch, it should be deduced that the haematological components found in the sink, in the bidet, on the box of cotton buds were also from Meredith. Nor can it otherwise be argued for the presence of a drop of Amanda's blood on the tap of the sink. This consisted of a spot of coagulated blood, with respect to which Amanda explained that it came from her own ear having been pierced; this spot, furthermore, was located towards the inside of the sink: distinct, separate and morphologically different, therefore, from the trace found in the sink itself.

This Court also considers that the components of the mixed trace specimens were deposited simultaneously, and were deposited by Amanda.

Against this conclusion, the observations with respect to the shared use of the bathroom by the two young women, the resulting likelihood of their biological traces being present, and the way in which these specimens were gathered [by the police], are not valid, in the sense that they are not considered either convincing or plausible, neither in relation to the overall situation present in the bathroom, which has been described, nor with [regard to] the statements made by Gioia Brocci and by Dr. Stefanoni, who both stated that the trace specimens present in the bathroom and in the bidet were of the same colour, as of diluted blood, and appeared to constitute one single trace, one [part] in the bidet and one in the sink. The drop at the top **[302]** and the drop at the bottom had continuity and formed a continuous pattern. The specimens were collected accordingly, just like any other specimen which necessarily occupies a certain space, and which the technician does not collect one little spot after another.

It should also be noted that the statements according to which the traces in the sink and in the bidet each constituted a single specimen correspond to the act of cleaning the victim's blood, an action previously mentioned and during which it would have been easy to leave a mixed sample, constituted precisely of biological material from the victim (blood) and biological material from whoever was cleaning (cells lost during scrubbing/rubbing). It should further be noted that such mixed trace specimens, with the morphology shown, were found both in the sink and in the bidet. It should be considered that those in the sink occurred when Amanda, as has

been said, washed her hands which were stained with Meredith's blood; in the bidet it should be considered that they [the traces] originated from a similar activity, but in relation to the feet, which must also have been covered with blood as can be inferred from the print of a bare foot left on the sky-blue mat, stained with Meredith's blood. This print will be dealt with subsequently. Reference to it is made now in order to make the point that the presence of such a print of a bare foot brings one to consider that Amanda (also) could have had bare feet, stained with Meredith's blood.

The mixed trace specimens found in the sink and in the bidet and on the box of cotton buds therefore signify that Amanda, soiled with Meredith's blood, entered the bathroom which was right next door to the room in which Meredith had been stabbed; putting her hand against the door she left a mark on it and the dribble of blood which remained is a sign [proof] of this, and left a mark also - still with Meredith's blood - on the light switch; she touched the cotton-bud box which was on the sink and left a mixed trace specimen of herself and of Meredith; to clean her hands she used the sink in which, through the act of scrubbing, she left her own biological trace mixed with that of Meredith, and used the bidet, most likely to wash her feet, which must have become [blood] stained in Meredith's room, where there were widespread and abundant traces of blood even on the floor, and where the blood was spattered over various parts of the room, and also in the bidet **[303]** she left a trace specimen of what appeared to be diluted blood, which contained both her own DNA and that of Meredith.

LATENT TRACES REVEALED BY LUMINOL

Referring to the traces revealed by Luminol, Dr. Stefanoni testified that these traces were absolutely invisible to the naked eye and [were] meagre/scanty/slight (page 60 of the minutes of the preliminary hearing). Such a test, it was shown, is performed in order to check for the presence of traces of blood, since this substance - Luminol - reveals blood by fluorescence. It also, however, reveals other substances, as Dr. Sarah Gino, in particular, had emphasised, according to what has already been stated (rust, fruit juice, bleach, various vegetables [vegetable matter] and some enamels used for tiles). Moreover, the circumstance under which DNA is found necessarily indicates the presence of biological material in the trace revealed by Luminol.

The traces revealed by Luminol are those labelled 176 to 184 (traces already indicated by the letter L, numbered 1 to 9).

Accordingly, Dr. Stefanoni stated that traces 176 and 177 (L1 and L2) found in the room of Filomena Romanelli had yielded, respectively, the following results: a specimen from Meredith and a mixed specimen from Meredith and Amanda; the traces 178, 179, 180 (L3, L4, L5) all found in Amanda's room had shown Amanda's biological profile; trace 184 (L9), found in the corridor, almost in front of the wall separating Amanda's and Meredith's rooms, had shown a mixed genetic profile attributable to both Meredith and Amanda.

The outcome of these investigations had not been the subject of any particular or specific criticism. Dr. Sarah Gino observed that the quantity of DNA was compatible with what is known as low copy number, and it did not appear that the analysis had been repeated to validate the results. She underlined that the SAL [*stato di avanzamento lavoro* – work status report] reports which had been made available had shown that a generic diagnosis for blood had been performed and had given a negative result, and therefore it could not be said with certainty that blood was present in the material revealed by Luminol. There were peaks which were not considered, which could indicate the presence of other contributors.

[304]

Page 304 of the original Italian is corrupted. Please see the Note at the front of this document – we invite readers to submit an intact copy of this page so that we may update the translation. What follows in the marked section between [304] and [305] is a summary put together from what is observable on the page. However, for obvious reasons, this should not be relied upon until the whole page can be translated.

In considering these specimens, one must also consider the possibility that they arose from other sources and are irrelevant to the investigation. But it must be noted that the negative result for blood does not necessarily indicate that no blood was present. The result may have been negative because there was not sufficient material to indicate the presence of blood. Dr. Gino stated that in her experience there is a probabilistic relation to the number of cases in which the blood test comes out positive or negative. The negative result was also partly a consequence of Dr. Stefanoni's choice to use most of the DNA to determine the individual profiles and only the remainder to attempt to determine the nature of the trace. Furthermore,

since the traces revealed by Luminol ?? it becomes certain that the traces contained human DNA. The fluorescence ?? implies that the biological material (in which appears ?? human) was Luminol-positive.

As was recalled, Luminol-positive substances are ?? Dr. Gino also recalled that ceramic and tiles can be Luminol-positive. However, nothing specific of this type was pointed out in the house in via della Pergola ?? if the tiles of the house had had such a peculiarity, then the traces revealed by Luminol would have been more numerous and probably the technicians would have realised that the traces were arising from the tiles themselves and not from other substances. In relation to these considerations, it is not possible to accept the

[305] ... assumed, albeit very generically and suggested in an entirely hypothetical manner, of the Luminol-positivity of the floor of the house at Via della Pergola 7.

The other possibilities expressed, concerning specific substances, appear unlikely. It would be necessary, in fact, to hypothesise that one of these substances (some vegetable matter, fruit juice, rust, bleach ...) had been on the floor on which the Luminol test was carried out, and present on the date of December 18, 2007 (when, on the occasion of the second search, the Scientific Police [Forensics] of Rome performed these tests), [and] had been affected by any of the biological traces located on one of these Luminol-positive substances, these biological traces having come from Amanda and in two cases also from Meredith.

It would also be necessary to believe that one or more of these substances had been present in the various rooms in which the Luminol gave a positive result; in Romanelli's room, in Knox's room, in the corridor. It appears - it was held - clearly possible that fruit juice might have been spilled in one or more places in the house; it seems [more] difficult to believe that it could have been spilled in Amanda's room, in Romanelli's room and in the corridor in front of the wall separating Amanda's room from Meredith's. These considerations also hold for the other Luminol-positive substances such as rust, various vegetables, etc. The argument concerning bleach is different: in cleaning the house, such a product might indeed have been spread about in the various rooms. But in actual fact, it was not known when and by whom such widespread and extensive cleaning, and which had involved these various rooms, had been carried out. Furthermore, no one entering the house had declared that they had noticed any smell of bleach, unlike what, on the contrary, had occurred

with reference to Raffaele Sollecito's house on the occasion of the entry there on November 6th. Furthermore, if the presence of bleach had been spread throughout the house via some cleaning activity (carried out, it is not known by whom, in the various rooms) which had affected these various rooms, then many more traces ought to have been highlighted as Luminol-positive than were actually found.

The presence of the traces revealed by Luminol, whose presence in several points in various rooms of the house **[306]** cannot be explained by reference to fruit juice, bleach, various vegetables, rust, etc., appear, on the contrary, to be explained if one holds that the Luminol gave off fluorescence because of the presence of blood. In this regard, one cannot simply disregard the fact of the bloodstains that were undeniably abundantly present in Meredith's room, from which easily, or indeed inevitably, they must have been exported to other parts of the house by anyone who, coming out of Meredith's room, went into these other parts. This was seen for the footwear belonging to Rudy Guede which marked their owner's footsteps along the corridor towards the exit from the house; it was seen for the traces found in the bathroom; it should be considered that also happened for the traces found in Romanelli's room, in Knox's room, in the corridor, and it should be pointed out that two of these traces give a mixed biological profile of Amanda and Meredith, and the others the biological profile of Amanda alone. She, it must therefore be held, with her bare feet washed of Meredith's blood, but on the soles of which some residue of blood must have remained, went into her own room, into Romanelli's room and passed through the corridor, and in several points in the room[s] where she had passed, she left the traces which were discovered.

As for the remark advanced by Amanda Knox's defence, according to which the DNA in these traces was low copy number, with the [consequent] necessity of repeating the analyses, the following should be observed: the reliability and the dependability of the results of the analyses derives from the quality of the instruments, the upkeep of these [instruments] in accordance with the prescribed maintenance rules, the correctness of the methodology; in relation to precisely this, much emphasis was given to this aspect and to the possession of a quality certificate on the part of the organisation/body (Scientific Police of Rome) which performed the analyses. Dr. Stefanoni declared that the organisation/body within which the analyses were done benefited/profited from instruments and methodologies which were absolutely reliable and which constituted good laboratory practice; this declaration was compared with the quality certificate obtained in 2009 on the basis of the machinery, instruments and methodologies already present and in use - as

declared by Dr. Stefanoni - without any modifications of any sort having to be made in order to obtain this quality certificate**[307]**. The quality certificate was thus an acknowledgement of what already existed, and had already been done.

On the other hand, it must be observed that the traces revealed by Luminol did not yield isolated results: in two cases they showed mixed traces with biological profiles attributable to Meredith and to Amanda; in four cases they showed a biological trace attributable only to Amanda.

Finally, it should be noted that with respect to the interpretation of these traces, no specific criticisms were put forward.

Both Professor Tagliabracci and Dr. Gino had complained about the lack of certain documents, and had hypothesised the existence of others, and had argued [that there was] a certain contradictoriness/inconsistency between what Dr. Stefanoni had asserted and what had emerged from the documents, and in particular with regard to Exhibit 36B.

These criticisms have been partially addressed. For example, the missing indication of certain data, an element which would have been relevant in assessing the problem of contamination in the laboratory, is an aspect which was addressed precisely when laboratory contamination was being discussed.

The lack of SAL cards/reports relating to findings which yielded no results appears to be irrelevant.

Other data, indicated by Dr. Sarah Gino as being difficult to interpret or not expressly provided can be reconstructed on the basis of the declarations of Dr. Stefanoni, who reported that she had adhered to the manufacturer's instructions.

With reference to the analyses of the traces which had tested positive for cat blood and certain contradictions which were apparently noted in these [analyses], Professor Tagliabracci also advanced a hypothetical solution to these contradictions ("that in the traces there was a mixture of human biological material which was not blood"), while deploring that this had not been verification. On this point, it must nevertheless be noted that this further verification was not done because of the perceived irrelevance of the relative analyses, and therefore it cannot be inferred, from a hypothetical contradiction, that the modus operandi of the Forensics laboratory was not reliable/trustworthy. Besides, it must be emphasised that the criticisms **[308]** all concerned specific findings and a very small part of the specimens

actually analysed; on the other hand, for many specimens, the results obtained by Dr. Stefanoni were fully accepted (one has only to consider all the specimens attributed to Rudy Guede and all of those attributed to Meredith Kercher, with the exception of specimen 36B).

EXHIBIT 36, TRACES A AND B

Mention has already been made about the findings identified on the 31cm long knife, seized on November 6 at Raffaele Sollecito's home. Of the seven findings [tested], only two provided a biological profile, those indicated as specimens 36A and 36B:

The first [test] (36A) was carried out at the point where the handle of the knife ends and the blade starts. This resulted in a biological profile attributable to Amanda.

The second (36B) was conducted on the side of the blade, on the part where -in good lighting and by varying the angle [point of view] with respect to the light- striations [scratches] could be seen. Analysis gave a biological profile attributable to Meredith.

No criticism was advanced concerning the results of the analysis regarding trace 36A, and Dr. Sarah Gino, consultant for Amanda Knox's defence [team], declared that she agreed with the interpretation in that regard provided by Dr. Stefanoni, and noted that the genetic profile obtained "abides by all the rules of good laboratory practice and good interpretation".

The analysis of trace 36B and its results have, on the contrary, been the subject of several strong criticisms by the defence [teams] of both defendants.

It was thus maintained that the blade did not show any visible sign of the claimed scratches, and not even Professor Cingolani (the expert witness nominated by the GIP [preliminary hearing judge] for the *incidente probatorio* [taking of evidence at pre-trial stage], during which, in the course of the discussion, the knife, Exhibit 36, having been made available at the request of the defence teams, was shown) has declared that he noticed such scratches.

Furthermore, it was not possible to know the nature of the biological trace that had apparently been found on the blade, and in fact the test for blood had given a negative result.

[309] From the documentation which, following the Court's ruling on that subject, was made available by the Scientific Police [Forensics], it was seen that the quantity of DNA was too low ("troppo basso") to be able to perform the tests and to consider those results reliable. In the presence of too low DNA, it was also noted, the risk of a contamination capable of altering the results is very high because the contaminating DNA could end up on the specimen to be tested, which also contains very little DNA, and is therefore susceptible to a contamination likely to distort the result and this, it was further noted, [was] particularly [the case] with regard to the very

numerous findings, about 50, which had given the biological profile of the victim and which were subjected to tests in the same organisation/body of the Scientific Police [Forensics] in Rome.

It was also noted, critically, that the same "too low" result had concerned other traces, such as C, which was found to be negative and, recalling that the expression "too low" was used for quantities of less than ten picograms and also for zero picograms, a complaint was made that it was not clear from the [state of advancement of work] reports where the specimen B had tested positive for quantization (see the presentation by Professor Tagliabracci, page 76, previously mentioned). The analysis, moreover, had not been repeated and therefore there was no confirmation of its result.

Regarding the remarks against the reliability of the results provided by the analyses of Exhibit 36 trace B, this Court holds that the following should be observed:

The negative result of the test performed to determine the haematological nature of the material of specimen B does not *per se* exclude the haematological nature of the specimen. Dr. Stefanoni, [when] questioned on this specific aspect, noted that since any DNA that might be present on the trace in question was certainly of a very small quantity, a minimal quantity was used to determine whether the trace was of a haematological nature or not: consequently the outcome of test, [which was] negative for blood, did not necessarily signify the non-haematological nature of the trace, as it might have been derived from too small a quantity of material to have allowed a positive result, even if that substance had been **[310]** blood. She [Dr. Stefanoni] explained that such a choice, whereby the greatest quantity of DNA had been used to determine the biological profile rather than the nature of the specimen, provided a basis for the subsequent assessments: it is preferable to know to whom a given biological specimen is attributable, rather than ascertaining the nature of that same specimen, without any possibility of attributing it to anyone.

With respect to the affirmation according to which the negative test for blood does not necessarily signify absence of blood in the sample being analysed, no significant counter-arguments were put forward. Moreover, Dr. Stefanoni's explanation of this point seems convincing: if the quantity is minimal, the negative outcome of the test may also be a result of the insufficient quantity used for the test itself.

However, the main criticisms advanced concerned precisely this very small DNA quantity, and it raised the question of the reliability of the result obtained.

Now, with reference to contamination in general, and to laboratory contamination that could occur the more easily the smaller the quantity of DNA present in the specimen being tested, one must recall the observations that were made about the absence of elements and circumstances which permit it to be held that any contamination had occurred and which, in fact, serve to demonstrate otherwise.

Regarding the too low quantity of DNA, Dr. Stefanoni declared, as has been seen, that even in the case of a particularly scanty amount of material, the analysis and evaluation should be performed, and she added that, if the data that emerges is absolutely readable and interpretable and the correct laboratory practice was followed, the result is reliable and there is no reason to repeat the test.

However in the case of a too low DNA quantity, that is of an excessively low quantity (i.e. too low), it is convenient to be able to confirm the analysis and Dr. Stefanoni, precisely with reference to this specimen 36B, while emphasizing that compliance with good laboratory practice makes repetition of the analysis unnecessary, **[311]** did not fail to point out and affirm that if she had had a greater quantity of DNA she would have repeated the analysis.

It does not follow, however, that the data is unusable and unreliable as a consequence of a lack of repetition due to a lack of further quantities of DNA. It is necessary, instead, to take account of the data that emerges from such a specimen and to check for the – possible – presence of other elements, both circumstantial and inherent to the data itself that, despite the lack of repetition of the analysis, could allow an evaluation of the reliability of the analysis and of its outcome.

As for the need to take account of data which have emerged from the analysis of a trace with too low a quantity of DNA ("too low"), it should first be pointed out that the category "too low" includes very different situations, indeed significantly different since it [the category] is used - as has been pointed out by Professor Tagliabracci - for [indicating] quantities of DNA ranging between an amount of DNA equal to zero and the maximum too-low threshold (which is quantities of less than 10 picograms, and therefore includes [quantities] equal to 9.999... picograms). Thus, according to what has been observed by Dr. Stefanoni and Dr. Torricelli, in the case in question a rather good specimen was obtained, indicative therefore of a quantity of DNA equivalent to the maximum threshold of too low, and Dr. Torricelli, after pointing out that the field of diagnostic genetics actually involves working on DNA from one single cell and thus with a minimal quantity, observed, with specific reference to specimen 36B, that while the amount of DNA concerned was very low,

the profiles were nonetheless very present and, comparing these with Meredith's profile, the alleles obtained from the swab taken for comparison from Meredith's wound were all to be found [in the trace profile]. She further emphasised that, although the peaks were a little lower, they were nonetheless still within the range that is considered useful for examination.

It should also be added that the electrophoresis run was repeated and though this does not constitute repetition of the analysis, it may, however, represent some confirmation of the previously obtained result, and such confirmation was obtained.

In relation to this, it was noted, however, that following the repetition of the electrophoresis run, the peaks were of different heights with respect to the **[312]** previous electrophoresis run and therefore, it was argued, confirmation of the first result had not occurred.

That argumentation does not seem acceptable since even the second electrophoresis run confirmed the original result; that this happened despite the variation in peak heights serves to strengthen - it was held - the correctness and reliability of the first result which had remained unchanged except in the changing heights of various peaks.

The biological profile that emerged – it should also be noted – did not appear to be consistent with the biological profile of a person who was unidentified or who should definitely be considered extraneous to the event; that trace, found on the blade of the knife, instead gave a biological profile attributable to the person who was mortally wounded with that very knife: a result, therefore, that was entirely reasonable and consistent with the event; [it was] certainly not explainable as a mere coincidence, and it must be ruled out –according to what has already been observed in this regard - that it could have originated from contamination or from the use of a suspect-centric method.

Even the point in which Dr. Stefanoni declared that she had found the substance which, when tested, furnished Meredith's biological profile, presents its own consistency and logic with the result obtained. This was taken from the side of the knife blade where there were scratches, such that, in the tiny little grooves that these scratches must have formed, biological material might have remained, resistant – u unlike that which would have been present on the rest of the blade – to cleaning which, although it appeared to have left the knife extremely clean (as has been

affirmed), might not have been able to remove the biological material that ended up in these very tiny grooves, where it remained.

With respect to the existence of these scratches the defence and their consultants had voiced doubts and perplexity; moreover, Professor Cingolani, the expert witness appointed by the GIP [judge of the preliminary hearing] for the *incidente probatorio* [pre-trial taking of evidence], who was shown the knife, Exhibit 36, during this hearing, it having been made **[313]** available at the express request of the defence, declared that he had not seen such scratches.

In this regard, however, Dr. Stefanoni's statements should be recalled on the manner of observing the knife (under good lighting and moving the blade so that it was thoroughly illuminated) and it should be noted that it does not appear that the others have examined the blade of the knife in the same way and with the same or similar lighting. It must therefore be stated that Dr. Stefanoni, in reporting that she had seen these scratches and had taken sample B from these very scratches, has not stated a falsehood.

Undoubtedly, the presence of the biological trace on the knife found in Raffaele Sollecito's house, a biological trace [which is] attributable to Meredith being mortally wounded with a knife, constitutes an element of significant importance also in relation to the circumstance, which has come to light, that Meredith had never been to Sollecito's house and no one had reported seeing such a knife in Meredith's house in Via della Pergola.

At this point it is also useful to remember that, when dealing with the acquisition and evaluation of [information of a] medical-legal nature [i.e. the coroner's report], an examination was also made of the problem of the compatibility between this knife and the most severe of the wounds inflicted on Meredith, a problem [which was] resolved in terms of compatibility: indeed, it should be further noted, an observation made and illustrated by Professor Cingolani, in the hearing before the GIP [judge of the preliminary hearing] presiding in the *incidente probatorio* [pre-trial taking of evidence], gives an additional element of strong compatibility and almost allows the identification of an imprint left by this knife in Meredith's neck. Examining the wound just below the most severe one, Professor Cingolani had in fact noted and declared the following: "in the second lesion, the one that is 2 centimetres deep and 1.5 centimetres wide from corner to corner, the only thing that we are tempted to do, [albeit] in an absolutely amateurish/unprofessional way, because we only have photographs available, is to measure, assuming that only the tip entered, how wide

the blade is [at a point] 2 centimetres from its tip: it is precisely 1.5 centimetres wide!" (pages 33 and 34, minutes of the *incidente probatorio* before the GIP on April 19, 2008).

[314] At this point Amanda's behaviour on November 4 should also be recalled, when she was accompanied, together with Filomena Romanelli and Laura Mezzetti, to the house on Via della Pergola and was asked, like the other two girls, to look at the knives that were in the kitchen. The personnel from the Questura, [who were] present on that occasion, reported Amanda's severe and intense emotional crisis, unlike [the reaction of] the other two girls. This circumstance appears significant both in its own right and also when one considers that Amanda had never previously shown signs of any particular distress and emotional involvement (in the Police headquarters, on the afternoon of November 2, Meredith's English girlfriends, Robyn Carmel and Amy Frost in particular, according to their declarations, had been surprised by the behaviour of Amanda, who did not show emotions).

Still with reference to this knife, it is considered appropriate to recall that in the room tapping [*intercettazione ambientale*] of November 17, 2007 Amanda, talking with her parents, after a brief mention of what had been reported on TV about the knife, turned to talk about this object using the following expressions: "I am very, I am very worried about this thing about the knife ... because there is a knife of Raffaele's" (pages 4 and 6 of the transcript, translated into Italian and ordered by the GUP [judge of the preliminary hearing] and acquired for the case file, folder 4). It is true that in the transcript version made available to the current trial/hearing, this sentence and the reference to knife do not appear, and there is a mention of the night and of a worry because they came at night (" ... I'm worried about this thing about the night. Why did they come at night? ..." RIT 397, of 17.11.2007, page 133). Assuming that among the different versions, the one offered by the experts appointed in this current trial and the one offered by the experts appointed by the judge of the preliminary trial [GUP] the first one does not necessarily prevail over the other, since both are useable and subjected to an evaluation of the suitability and logical consistency of the different versions, this Court holds that the version offered by the expert appointed by the judge of the preliminary hearing [GUP] should be considered correct. The two following reasons led to this conclusion: the version given in the current trial seems to have no logical sense, its meaning is indecipherable, unconnected to any other passage **[315]** and moment of conversation present in the room tapping itself; the version given by the experts appointed in this trial is also missing the reference to Raffaele's name, which, on the contrary, appears

in the English language transcript (see page 6 of the transcript filed with the judge of the preliminary hearing [GUP] on October 4, 2008, where we read the name: Raffaele), which is reported and inserted [i.e., in the sense of embedded] in a sentence that has meaning, logical sense and consequentiality in the version given by the expert appointed by the preliminary hearing judge [GUP].

On the basis of the foregoing, it should therefore be affirmed that the analysis of trace 36B, which detected the presence DNA attributable to Meredith, appears to be completely reliable.

EXHIBIT 165B

The criticisms have already been recalled which were made with regard to Exhibit 165 (piece of cloth with hooks from Meredith's bra) with specific reference to the way it was collected, to the contamination that may have ensued, to the suspect-centric method that may have flawed the interpretation of the trace which it was applied to.

In particular, the consultant for Raffaele Sollecito's defence, in examining some of the gene loci, offered different interpretations from those put forward by Dr. Stefanoni during the course of the various hearings, and recorded on page 202 of the report. He had therefore maintained that the interpretation offered by Dr. Stefanoni and considered to be wrong was derived from the suspect-centric method applied. He also maintained that, since mixed traces were involved, the ratio between the major contributor (Meredith Kercher) and the other contributor or contributors was of 1 to 10, so that it fell within the category of "low copy number" with the necessity, in order for the result to be considered reliable, of repeating the test - which repetition was not done.

Speaking of the Y haplotype, which was also found in specimen 165B, Professor Tagliabracci made no criticism of the reading/interpretation, but emphasised that such analysis could exclude, but not establish, the presence of a given male subject.

[316] With reference to the suspect-centric method, there had already been occasion to point out that it represents a criticism which on the one hand is illogical and on the other hand is exclusive both of the results of any genetic analysis carried out, and of the declarations explicitly made in this regard. The issue of interpretation nevertheless remains, and, particularly with respect to cases that may present some uncertainty in the application of the hermeneutical criteria [i.e. interpretation criteria] which have been elaborated, other solutions may also appear without calling into question the correctness and the professionalism of one or the other geneticist. Besides, Dr. Stefanoni wished to emphasise that the result obtained from the machine must be interpreted to determine the genotype, and on this point she recalled the importance of experience, of the knowledge and training of the individual geneticist, and recalled the difference between the technician and the forensic geneticist who must provide the scientific interpretation of the electropherograms, interpretations which can moreover give rise to different readings by the geneticists called to carry out the same interpretation. At this point it should also be noted that, in respect of the different interpretations offered by one

party and the other, this Court could, as indeed had been requested by the defence, have ordered the appointment of experts and entrusted [charged] them with the relevant assessment. On closer examination, however, they might have found themselves confronted with further interpretations which might have fully or partially confirmed one or the other of the interpretations already offered, and the problem of the most suitable interpretation would still have remained, and therefore no call was seen for the provision of an expert assessment on this matter in accordance with [*ex*] article 507 of the Criminal Procedure Code. But that there was no need for further evaluations and assessments in accordance with the provision quoted above can be seen from what was highlighted and from what emerged during the trial proceedings.

It has already been said that Dr. Stefanoni had reported that on the [bra] hook (Exhibit 165B) the mixed genetic profile attributable to the victim and to Raffaele Sollecito was found; looking at the electropherogram, the ratio had been estimated in the proportion of 1 to 6 (the victim's DNA being six times that of Sollecito); the quantity of DNA found could not be considered terribly small because there were several peaks that easily exceeded 1000 RFU, and no **[317]** repetition of the analysis had been carried out because the peak height of the smaller fraction of DNA was good, such that there was no reason to doubt the reliability of the result.

Even Dr. Torricelli, with specific regard to Exhibit 165B, found that the alleles of the minor donor indicated the presence of sufficient DNA for these alleles to be clearly recognized, and emphasised that all loci of the genotype were present and gave a clear biological profile, attributable to that of Raffaele Sollecito.

Professor Tagliabracci contested those assertions, maintaining (also) that the DNA was attributable to the "low copy number" category, and that there had been several errors in the interpretation of the electropherograms.

Regarding the first point, as has already been seen, Professor Tagliabracci hypothesised a ratio of 10 to 1 between the main contributor and the other contributor(s). During the above-mentioned hearing, he had nonetheless realised that he had over-estimated this ratio and had reduced it, but in an approximate way, to [a ratio of] 8 to 1, which was different from the ratio of 6 to 1 indicated by Dr. Stefanoni and which, looking at the height of the various peaks and making the consequent comparison, seems more in accordance with the truth. In relation to this and also - at least in part - in relation to what was admitted by Professor Tagliabracci on the ratio of 8 to 1 rather than 10 to 1 as originally indicated, the calculations

presented by Sollecito's defence consultant and the results of these calculations which must be spoken of as being "low copy number", cannot be accepted.

Moreover, the peak heights appear suitable to provide a result that is completely reliable according to the interpretation criteria demonstrated in that regard, and mentioned above. It is sufficient to recall in this regard that the lowest peak was 65 RFU. The heights of these peaks are therefore indicative of a sufficient quantity of DNA, as was also noted by Dr. Torricelli, such that there was no need to repeat the analysis. Moreover, Dr. Tagliabracci himself, in the previously mentioned memorandum dated August 27, 2009, affirms that "if the amount of extract was 50 microliters (mcl), by multiplying this by 0.114 ng/mcl the total DNA would be equal to 5.7 nanograms. This is a considerable quantity which would be sufficient to repeat the amplification without problems" and he hypothesises that one is dealing with low copy number on the basis **[318]** of mere assumptions and deductions ("since it was not stated in the technical report [*RTIGF*] that any of the extracted DNA had been concentrated ... we deduce that the amount of extracted DNA which was placed in the mix of PCR [polymerase chain reaction] is 10 mcl at the most, which means that the total DNA used in the reaction was 1.14 ng at most") and [on the basis of] a ratio of the victim's and of the contributors' DNA in the amounts of 10 to 1 which was considered by Tagliabracci himself, as we have seen, as excessive.

Turning next to the interpretation according to which specimen 165B should be attributed to Raffaele Sollecito's genotype, an interpretation [which was] put forward by Dr. Stefanoni and shared by Dr. Torricelli, Professor Tagliabracci examined various gene loci to challenge this interpretation and demonstrate its erroneousness. It should, however, be immediately emphasised that of the 15 gene loci plus the one for gender, constituting the complete profile, Professor Tagliabracci disputed the interpretation of only some of these loci: D21S11 (pages 55 and 65 of the transcript of the minutes of the hearing): D5S818 (p. 59); D7S820 (p. 67); CSF1P0 (page 68); D16 (page 70). With reference to D5S818, he noted, however: "now I cannot say that Sollecito might not also be here, but there is also a third subject who has a different genotype" (page 71, hearing minutes). In the memo dated July 15, 2009 lodged at the hearing on September 14, 2009, the interpretation put forward by Dr. Stefanoni was challenged with reference also to the other loci. On the basis of the considerations set out in the said report, Professor Tagliabracci maintained that the possible genotypic combinations led to the affirmation that "Raffaele Sollecito's profile is not compatible with those that have contributed to forming trace 165B for the following loci": D8S1179; D21S11; D7S820; CSF1PO; D16S539; D5S818; FGA

[note: possibly fast genetic algorithm?]. From these conclusions it would seem that for the other loci, which are therefore greater in number, Raffaele Sollecito's profile would be compatible and it would also be [compatible] for locus D5S818 according to what the consultant himself said during the hearing (see, once again, page 71). Consequently, there are apparently a considerable number of loci that are not the subject of dispute, a number which seems to be greater than the number of disputed loci and greater than the number of six loci with reference to which Professor Tagliabracci had previously declared, before the current systems were available "it was enough ... we made hypotheses even with six loci" (page **[319]** 103). The circumstance now exposed allows, it was held, the following consideration: if, despite the subjective contribution of the geneticist, the interpretative disagreement regarding the non-compatibility of Raffaele Sollecito's profile with the loci that had contributed to forming trace 165B involved those loci indicated by Professor Tagliabracci during the course of the hearing and at pages 20 and 21 of the previously mentioned memorandum conclusions, it must be held that, for the greatest number of loci at least, the peaks were so clear and the interpretation so sound that they could not be contested. Consequently, the overall result should be considered fully reliable, even disregarding the repetition of the analysis. It should however be noted that Dr. Stefanoni, during the hearing at which she testified, had offered suitable explanations and answers which this Court considers acceptable. Moreover, they [note: Stefanoni's explanations and answers] were also considered acceptable by the defendants' defence teams themselves for the greater part of the results which the Forensics biologist had obtained. This refers in particular to all the traces, but not just those, of Rudy Guede, the results of which were fully accepted and in relation to which the defence teams had insisted on the theory of Rudy Guede's responsibility and, it must be added, Dr. Stefanoni (in examining specimen 165B) did not change either the methodology or the interpretive criteria.

Moreover, the attributability of the biological trace to Raffaele Sollecito does not derive only from the correspondence/match with the gene loci: all 15, plus that of the gender, according to Dr. Stefanoni and Dr. Torricelli; or equal at any rate to a considerable number, according to what was demonstrated by Professor Tagliabracci in court, and explained on pages 20 and 21 of the memorandum conclusions, as has been said.

The attributability of trace 165B to Raffaele Sollecito derives also from examination of the Y-haplotype in respect of which, as was emphasised, it is not possible to consider any objections whatsoever because the haplotype obtained from the trace

present in the hooks emerged from the machine which attributed those numbers and in that sequence. And, it must also be emphasised, for the test and the individuation of this haplotype the identity of 17 loci was used, that is the maximum extension of analysis possible, therefore much more precise and individualizing than the one in use until a few years ago, when it was **[320]** possible to carry out an analysis on only 11 of these loci. Furthermore, with regard to the Y-haplotype, more sensitive kits were used than those used for the DNA profile, capable of detecting the presence of the Y even with a minimal quantity of DNA. Moreover, with reference to the haplotype found on the [bra] hooks, no criticisms were advanced (except those, already discussed, concerning collection and contamination) and even Professor Tagliabracci declared that it was a different haplotype from that of Rudy Guede, and compatible with Raffaele Sollecito's genetic heritage. The problem brought to [the court's] attention pertains instead to the frequency of this haplotype, which Professor Tagliabracci declared that he knew only with reference to 11 loci, which is seemingly equivalent to 3.36 per thousand subjects.

On this point, it should however be noted that in the memorandum cited above, the frequency of almost 4 subjects in 1000 refers to 8 loci (see page 23). This frequency, therefore, is destined to decrease considerably if compared to 11 loci and even more considerably with reference to all 17 of the loci found, and in fact Dr. Torricelli, at the hearing of June 5, 2009, declared that, with reference to the latest update of the database with a population of 15,956 individuals, if only 11 loci were found and inserted 31 people would be found with the same haplotype as Raffaele Sollecito; whereas, using the 17 loci found, there was nobody found in this database with the same haplotype as Raffaele Sollecito. On the basis of the foregoing, this Court considered it absolutely improbable that another subject, other than Raffaele Sollecito but with the same haplotype as his, individualized and matching to the fullest extension of 17 loci, could have left - on the bra Meredith was wearing when she was killed and which was torn from her - the biological trace which was found on the hooks (Exhibit 165B). It would be necessary to believe that in the house where Meredith lived, and where Raffaele Sollecito in those very days had just begun to frequent, there had been a different subject than Raffaele Sollecito but from the same male line of descent, and therefore having the same Y-chromosome. That subject, furthermore, would have had, in addition, gene loci which were not the object of dispute, as we have seen above, which matched with those that constitute the specific, individual genetic heritage of Sollecito Raffaele.

[321] Consequently, the match between Raffaele Sollecito's Y-haplotype and the Y-haplotype found on trace 165B leads us to conclude that the biological trace found on the hooks of the bra that Meredith was wearing when she was killed, was left by Raffaele Sollecito. This conclusion becomes even more evident, strengthened and further confirmed by the recognized match between the genetic profile of Sollecito and that yielded from the trace, a match which, for a considerable number of loci and as we have seen, turns out to be uncontested.

RAFFAELE SOLLECITO'S "MACBOOK PRO"-MODEL APPLE LAPTOP

[321]
The Perugia Flying Squad seized the laptops of the accused, the victim, Patrick Lumumba, and later, Rudy Hermann Guede, as well as Sollecito's Kingston and Seitec USB drives, each 128MB [in size].

The computers of Knox, Sollecito, Lumumba and Meredith Kercher were examined first by the Scientific Police for fingerprints, and then, starting on 13 November 2007, five sets of technical tests were carried out by the Postal Police (cf. record of the Flying Squad, 3rd section produced at the 14 March 2009 hearing).

As far as the accused Raffaele Sollecito goes, the Postal Police technical examination was carried out only on his MacBook PRO Apple laptop. Insofar as his other PC, an ASUS L300D, as well as Amanda Knox's Toshiba serial number 7541811OK and Meredith Kercher's G4 iBook sustained damage, it was impossible to retrieve data from their respective hard drives.

Regarding the technical examination carried out on Raffaele Sollecito's MacBook PRO, during legal arguments presented in court Marco Trotta, Claudio Trifici and Gregori Mirco, *Polizia di Stato* Assistants with the Umbria Division of the *Polizia Postale delle Communicazioni*, gave testimony (Witnesses were examined at the hearing of 14 March 2009).

The computer, as per the Flying Squad's statement, was handed over to the Postal Police on 13 November 2007.

[322] The Public Prosecutor had in the meantime ordered a specific investigation to verify whether, based on an analysis of the hard drives, there had been human

interaction [on the computer] in the time period from 18:00 of 1 November 2007 to 08:00 of 2 November 2007.

The wide scope of the timeframe reflected the uncertainty regarding the time of death of Meredith Kercher.

The verification of the MacBook PRO's functioning (the only one, as before said, analysed, and the only one this report will discuss) within the aforementioned timeframe consisted of the performance of two fundamental operations.

First, there was the "acquisition" of the entire contents of the laptop's hard disk(s) (a kind of cloning/copying of the hard drive). Second, there was an "analysis" of the image obtained.

The two tasks involved the use of two forensic software packages furnished to each Postal Police Division by the Police Communications Service in Rome: Encase 6.7 was used for the so-called cloning/copying of data; the recently released Encase 6.8 was employed for the analysis.

The Postal Police operation, it was explained, involved the use of equipment capable of ensuring the repeatability of the work carried out.

The five exhibits (that is, the Apple MacBook PRO and ASUS laptops seized from Sollecito, Knox's Toshiba laptop, the G4 iBook belonging to the victim, and Patrick Lumumba's computer, an HP serial number 375075-001), placed inside a cardboard box, were received [from the Scientific Police] by the Postal Police on 13 November 2007.

The exhibits were not under seal and had already been examined by the Scientific Police. They were intact (witness vice-captain Trotta; they were dismantled in the presence of the Sollecito Defence consultant; no evidence presented itself of erroneous assembly or tampering; the hard disks were perfectly integral, pages 103-104, Assistant Trifici), and nothing of their external aspect gave any indication that three of them were non-functional.

[323] (The Encase software had not revealed the presence of working hard drives, as explained by the Postal Police testimony. To clone the hard drive, a write-prevention tool, Write Protect from Logic Cube, was applied; then another computer was used to read the linked hard drive: at this point, the Encase software and the operating system of the reader-computer "*reported that no functioning hard drive was visible*"; page 99, Assistant Traffic's deposition).

The first operation, which consisted of acquiring/copying the data, was carried out in the presence of the Sollecito Defence technical consultant Mr. Fabio Formenti. The initial activity had in fact been preceded by the appropriate written notification to the defence teams, and the Sollecito Defence team had appointed a consultant.

The cloning operations, concluded successfully, as mentioned, only for the MacBook PRO and Lumumba's HP laptops, were carried out without any change of equipment in the same room where, being of interest, a few copies of Sollecito's computer hard drive were produced. One of these, produced by the same means as the one used for the "analysis" activity of the Postal Police, was handed over to the Sollecito Defence consultant.

Before doing anything, the Postal Police verified the system date/time. The system clocks were found to match real time: meaning that the laptop's BIOS clock and the real-world clock at the time of cloning "*were perfectly synchronized*" (page 16 of witness Vice-Captain Trotta's testimony). Therefore, the laptop files were not carrying incorrect timestamps.

During the system-clock check and hard-drive cloning operations (including deleted files that were at least partly retrievable), no remarks were made by consultant Formenti, as is evidenced by the supplied relevant record of the conclusion of operations.

And so, with the relevant prevention of the possibility of any write-to-disk action (the above-mentioned Write Protect from Logic Cube), a copy of the hard disk's contents was obtained and the correctness of the **[324]** "clone" was certified by the same Encase 6.7 software by means of the hash codes' correspondence in the relevant string.

With the Encase 6.8 software, the Postal Police were able to analyse the copy, for the purpose of acquiring useful confirmations to establish the possible human interaction on Sollecito's computer during the time period indicated in the [Prosecution's] request.

Given that each file has a creation date, modified date, last accessed date, delete date and write date, the results showed:

• 0 (zero) modified files, in the sense that there were no variations in the dimensions/sizes of existing files

• 0 deleted files

• 9 created files (they were "created", but in the absence of human interaction, where two were both "created" at 03:15:07 on 2 November 2007 automatically by the system, and the rest were automatically generated files, at 60-120 minutes intervals by the "Firefox Mozilla" browser inside its cache (cf. 1 in the 19 November 2007 Postal Police report)

• 124 files with *last accessed*

• 17 written files (meaning a modification that increased the file size); of these, 3 files related to program "crashes" for listening to/playing audio-video files. (We will return to these crashes, once we consider the time at which they took place, - *ndr* ("editor's note")).

The analysis undertaken using the Encase 6.8 software therefore gives the following results:

Of the 124 files (or "reports") with "last accessed" in the referenced time period (from 18:00 on 1 November 2007 to 08:00 on 2 November 2007), only two were *"human interaction"*; the remaining 122 reports were actions carried out automatically by the Mac OS X operating system installed on the Apple MacBook PRO.

In particular, the evidenced human interactions occurred at:

√ 21:10:32 on the 1 November 2007.

[325] √ at 05:32:09 on the 2 November 2007, this last evidenced at heading 2 of the Postal Police report, relating to "Files written".

Furthermore at 18:27:15 on the 1st November 2007, there was human interaction via the "VLC" application, software used to play a multimedia file for a film, "Il Favoloso Mondo Di Amelie.avi", already downloaded onto Sollecito's laptop via P2P (peer-to-peer) some days earlier.

Encase 6.8 therefore evidences two times:

■ at 18:27:15, VLC was launched to play the multimedia file "Amelie.avi"(referred to thus for brevity; cf. the 4 headings under 8 in the list)

■ at 21:10:32 the system recorded the last access to the file on the same [film] (cf. the 4 headings under 95).

The Postal Police witnesses explained "*last access*", including quoted material from the explanation printed in the Encase software manual, as referring to an indefinite quantity of actions performed for the last time on a specific file, such as: moving [a file] to a different part of the Desktop or to different folders; right-clicking [on a file] with the mouse when the pointer is on top of it, or the file is used by another program; the conclusion of viewing – the end of playing – a video file; the termination of playing a file, the moment during which the VLC application interacts with the file without, however, requiring the presence of a user.

Encase 6.8 was used, as previously mentioned, to examine the MacBook PRO hard-disk clone. The examination was undertaken on what the Postal Police call a "dead system", giving a specific type of information.

At the same time, though, it was possible to conduct an examination on a "live system", which allows for different possibilities, including verification of the "properties" of the "Amelie.avi" video file.

Live system analysis means installing the copy/clone onto a notebook with identical hardware specifications to the Apple MacBook PRO **[326]** used by Sollecito. This makes it possible to reboot a computer identical to the accused's for the purpose of inspecting the properties of the multimedia file in question to establish the period of time during which the computer user would have interacted with the file and to temporally link the start and end of the aforesaid activity.

This was done and the machine was started by inserting the *password* "*palmiottosollecito*", obtained by combining the family names "Palmiotto" and "Sollecito" of the mother and father of the accused. (The laptop password was identified through intuition, being otherwise unknown to the Postal Police.)

Operating in the described manner, it was possible to confirm that at 18:27:15, there was activity by the "VLC" application, the software used, as indicated, by the MAC OS X operating system to play multimedia files, in this case that of the film "Amelie.avi".

The result obtained by running on the live system therefore offers confirmation as to what the Encase 6.8 software already indicated (as per the appendix, at 4 headings under 8).

Booting up the Raffaele Sollecito virtual laptop, via hardware identical to the MacBook PRO notebook with a clone of the original hard disk, the Postal Police had

in front of them a *desktop* identical to the accused's computer, including, amongst many others, the icon for the video file "Amelie.avi". Clicking on the icon, they were able at this point to obtain information about the file in question. And so it resulted that the movie had been "*created*" on Sunday 28 October at 22:36, meaning that at this time the *download* began from the Internet onto the laptop, via the P2P network.

The Postal Police then began to play the "Amelie" video file; such activity took place on 27 November 2007, starting at 10:21.

After 5 minutes, at 10:26, the playing of the film was interrupted and they proceeded to check, in the live system (with Mac OS X operating system), the properties of the said file.

[327] The result obtained was that, at 10:21 on 27 November 2007, the VLC application started playing the video file (being the *last opening* of the file). Turning back to Encase 6.8, it showed that 10:26 on 27 November 2007 corresponded to the "*last accessed*" of the video file in question.

Turning to the prior playing of the film "Amelie" that took place on 1 November 2007, the result is the following:

The *live system* attested to the fact that the play command for the film (making the film "Amelie.avi" play via the VLC application that the Mac OS X operating system of the laptop used for multimedia audio and video files) took place at 18:27:15.

The dead system confirmed that the last access ("*the system closed the program*", is how Vice-Captain Trotta expressed it, on page 31, meaning that the "closure" could be correlated as much to the human activity needed to *stop* the playing of the film, as to the natural conclusion with the scrolling of the end credits, a place at which the end of the "film" itself would have undertaken a last interaction with the system, irrespective of the physical presence of a user), took place at 21:10:32 on the 1 November.

Finally, the subsequent human interaction on Sollecito's laptop was recorded at 5:32 on the 2nd November.

On this occasion, the VLC software was launched to play a music file (MP3 file). The attempt failed, however, due to a problem with the file extension, such that the computer registered an "*application crash*", a kind of record that the OS writes to leave a trace behind for problem debugging.

(The three VLC crashes are evidenced under heading 2 of the report, specifically, number 2 at 5:32:12, number 3 at 5:32:13, number 16 at 5:32:09; all of them requiring the action of a person, as said earlier, to start the VLC application.)

Further analysis showed that, immediately after the application crash, the playing of the music files was done via another application, iTunes, which the MacBook PRO operating system associates with MP3 files.

[328] The data obtained, highly important in view of reconstructing the movements of the accused during the night of 1-2 November, is therefore the following:

After 21:10:32 on 1-November, and up until 5:32:09 on 2 November 2007 when the VLC program was launched to play music files, there was no user-activity verified on the Apple MacBook PRO.

In addition, the analysis carried out on the USB drives seized from Sollecito did not reveal any file for which there was any interaction in the requested 18:00/08:00 time period.

The Postal Police investigation, in extreme summary, has evidenced that, whereas the Mac OS X system (in live system mode) showed inherent information for the last opening of a file (in our case, the playing of the film "Amelie.avi" began at 18:27:15 on 1 November), the Encase 6.8 forensic software analysis tool was able to show the last system access time of the same file (at 21:10:32 on 1 November 2007, in this specific case).

THE NON-EXISTENT WEB-BROWSING ACTIVITY ACCORDING TO THE POSTAL POLICE

The technical investigation of the Postal Police produced the result shown above.

Whereas the accused's Apple computer was connected to the Internet during the 21:10:32 on 01-November to 5:32:08 on 02-November period, keeping the Mozilla Firefox web-browser (which is a program for navigating on the Internet) open, the Encase forensic analysis software determined, for such time period, that the only files created (*last created*) or written (*last written*) were generated, automatically, either by the computer's operating system or the Firefox web-browser within its own cache: being files generated at regular intervals.

As for what the cache might be, Assistant Gregori said first of all that Mozilla Firefox is a program for displaying a web page. Before making the contents of a web page visible, the data is first downloaded from the Internet and then transferred to the computer before being **[329]** written, where such activity (writing) is carried out within the cache. This being done, the program acquires the written data from the cache and displays it on the screen for the benefit of the user.

The Postal Police were able to determine that there was no navigation inside Mozilla Firefox's cache (Firefox uses anti-phishing filters, used for anti-fraud purposes, that work by activating every 30 minutes; with the web browser open, the program looks for updates at the anti-fraud service with the preset periodical activations; Assistant Gregori, page 117), also on the basis of the analysis of the *log files* supplied by Fastweb.

Whereas the Encase software had obtained the "navigation *history*", which excluded any trace of web browsing in the 21:10:32 01-November-2007 to 05:32:08 02-November-2007 period, the Postal Police could have reached a similar result by examination of the *log files* from Fastweb, the Internet provider with which Raffaele Sollecito had a contract. (Cf. the printouts produced at the 14 March 2009 hearing.)

Fastweb's logfiles, with reference to destination port "80" (a standard port for all web-service servers), show that very few bytes went through port 80, the port of web pages (as per the table; we are dealing with what the server sends back to the computer making the request).

From this it was possible to infer that there was no web page retrieval in progress, while the P2P service (the so-called *file sharing* service) remained active (but the

matter does not require the context of human interaction) for the exchange of files between a household computer and another one (page 121, Gregori).

In this case, the human interaction was limited to the initial moment in which the user started downloading the searched files (films, songs...). This done, the user only had to wait: the system linked automatically with all the servers managing the synchronisations that make P2P work, creating a spider web of links (in such a way that a file could be supplied, in small parts, by several users).

[330] Fastweb's log files, in brief, would have shown web page requests directed towards internet sites: this was not the case, and the negative result would have been applicable to whatever computer that happened to be found in Sollecito's house (page 121). This fact is therefore applicable not only to the Apple PC analysed by the Postal Police, but also to the Asus PC whose hard disk had been impossible to clone.

As Assistant Gregori made clear in conclusion, whatever computer would have made a webpage request, it would have been confirmed by means of Fastweb's logfiles.

For the ASUS, having therefore excluded Internet navigation, which is absent in the documented table, P2P services could however have been active for exchanging music, video etc files, which is different from navigation on the Internet.

Turning to the playing of music files, an activity initiated with the MacBook PRO computer starting from 05:32:08 on the 2nd November 2007, around 05:56:37 (heading 40 of appendix 4 "files last accessed["]), a "playlist" was created. Human interaction was continuous (cf. no.54, last access 06:18) for about half an hour from that VLC application crash, of which we have spoken, when [attempting] to play a music file.

THE TECHNICAL REPORT FROM THE SOLLECITO DEFENCE TEAM CONSULTANTS

The Sollecito Defence Team consultants, Dr Michele Gigli and Dr Antonio D'Ambrosio (this latter was cross-examined in the 26-Sep-2009 hearing) are of the contrary view, with respect to the analysis carried out by the Postal Police, in reference to the possibility that there was human interaction with the Web in the time period with which we are concerned.

The consultants had available to them a copy of the magnetic hardware [i.e., the hard drive] from the Apple MACKBOOKPRO computer obtained by the Postal Police using the Encase software; they used another copy for carrying out their investigations, and they analysed the log files furnished by the company Fastweb.

The Defence [team] had entrusted them with the task of verifying whether there had been interactions on specific days and in specific time periods, [and] having relevance, with **[331]** reference to the time period between 22:00 and 05:00 on 1-2 November 2007.

The result of their analysis led them to the following conclusions.

Starting with the data according to which the Fastweb log files under heading "L" of the report (traffic extraction concerning port 80-http-) show 4 seconds of connection to Apple's international site (from 00:58:50 to 00:58:53) the following reconstruction was provided:

It is claimed that at around 00:58, while the user was probably launching a multimedia file with the Quick Time application (or alternatively with the iTunes application to listen to some music), this software, on opening, contacted Apple's server.

At this point, the opening of an ad-type window occurred (a list of multimedia files sold by Apple) after which this "window", coming directly from Apple, was closed (due to a lack of interest by the user, one might say).

All of this left traces in the log files (cf. the related "L" cited, where the evidencing [of this] is reported) and not in the computer hardware, with respect to which Sollecito's consultants agree fully with the investigation carried out by the Postal Police using the Encase system, which provides, as has been noted, the time of last

access to the “Amelie” video file launched in the late afternoon of the 1st November 2007.

The human interaction with the Apple server would be limited to the four seconds reported in the log files, without explaining [*che sia dato sapere*] what the user did immediately afterwards, and whether or not a video or music file was watched or listened to.

The uncertainty surrounding the “afterwards” depends on a loss of data connected with the P2P sharing that Raffaele Sollecito had with the Internet.

For example, it was explained, it has been positively confirmed that in the afternoon of 1-Nov-2007, the download completed for the multimedia file “Stardust” that the user had requested from the Internet using the P2P system.

[332] The files requested were six in number (those in the Stardust series), where the user had played the first three downloads, evidently of good quality, so as to cancel the download of the further copies.

But the Stardust files remained on Raffaele Sollecito’s computer in a folder shared with the Internet, such that, for these, a “last access” occurred right on the night of 6-Nov-2007, at 02:47, during the time period in which Raffaele and Amanda were being held in the Questura [Police Headquarters].

The fact that the Encase system registers a "last modified" entry during the night of 6-Nov-2007 for the Stardust files constitutes the confirmation that there has been a loss of data.

It can be said, indeed, when there was a last access, but the information of when the file was previously launched has been lost.

Bringing the Giglio-d'Ambrosio report into the framework of the present case, it is possible to draw the following conclusions.

In the abstract, it can be hypothesised that a viewing of the Stardust file (and others as well) downloaded from the Internet and shared with the Internet, could have been launched even after 22:00 of the 1-Nov-2007. In fact, no one will ever know if this actually occurred, as the Encase system supplies the information limited to *the last access*, where the access in question is not even referable to the computer user but [can be referred] to anyone at all around the world [*quisque de populo*] with a P2P

program requesting the sharing of the files from the dedicated folder on Sollecito's computer.

Whether the file was actually played or not must remain in the world of hypothesis, where in any case the so-called file launch (of which Encase supplies the last access to) could have taken place, still in the abstract, in the succeeding days, up until the late afternoon of 5 November when Raffaele and Amanda went to the Questura, not necessarily having had to occur right in the final hours of 1-November-2007.

The only certain data that comes out of the Giglio-D'Ambrosio report is of that four second interaction with the Apple server, caused by the opening of the http://www.apple.com website home page (a **[333]** secondary hypothesis made by the technical consultants): equivalent to an intention to browse the Internet followed by an immediate renunciation or else by the closing of an ad-type window generated directly by Apple, which the Quick Time application (or else iTunes) had, according to reconstruction by the consultants, opened.

Nonetheless, it is possible to infer from the technical report that the opening of the so-called window is something absolutely tied with launching the Quick Time application, which allows the playing of a film, independently of any confirmation of whether the playing then took place, and at what time.

And so, the certainty that is reached is limited to the fact that, at most, starting from 00:58 on 2 November a certain use of the computer was made, where however its usage in the preceding hours can only be ascertained by a crystal ball.

In conclusion, [the Court] takes note that around 1am on the night of 2-Nov-2007, Raffaele Sollecito could have found himself in front of the computer; in the opinion of the Court, the time thus mentioned is however after the hour of Meredith Kercher's death and nothing prevents the holding that Amanda and Raffaele could have, at that hour, returned home again, after the murder [*a cose fatte*], to the apartment at Corso Garibaldi 30.

[GSM] NETWORK COVERAGE: VIA DELLA PERGOLA AND VIA SPERANDIO 5 BIS

From Rome's SCO[19], chief inspector Letterio Latella's deposition introduced the topic of radio base stations covering the abodes of Via della Pergola, Corso Garibaldi 30, and the specific point where the discovery of Meredith's mobile phones occurred, as noted, in the yard of the Lana-Biscarini family on 2 November 2007. The accused, the victim, and even Filomena Romanelli, for the purpose of reconstructing the protagonists' movements during the day of 2 November 2007 and, even earlier, during the evening and night of 1 November 2007, possessed mobile phones, where Meredith used a phone with a Vodafone SIM card [*utenza*] loaned to her by Romanelli and another phone with an English SIM card which she used to keep in contact with her own family.

[334] Meredith's English number [*utenza*[20]], based on the English provider's contract with the [mobile phone] provider Wind for when their own clients are in Italy, used WIND's network for *roaming*: hence the importance of identifying the Wind cells securing coverage of Via della Pergola 7, since those radio base stations would be the ones Meredith's English phone [=*cellulare*] usually linked to when making or receiving phone calls.

The *Polizia di Stato* (Chief Inspector Latella and others) handled the analysis of the call records of the mobile phones [*apparati*] used by the accused, the victim, and other persons, as well as the relationships of the mobile phone network cells to the territory.

Taking into consideration the basic information, furnished during the trial, of the concepts of "*best server cell*", "BTS" (the phone tower or iron pole mounted with panels that ensure radioelectric coverage over an area; the phone records provide the addresses of the towers in question), "endover" (which come in three types: "*intracell*", where the user using the mobile phone goes around the same tower, therefore only a *sector change* occurs while being connected to the same tower; "*intercell*": the user exits that cell and enters another one of the same cell group or BSC [best server cell], remaining definitively within the same area; "*external*", in this case the new cell connected to belongs to a different cell group), the Police Investigators [*Polizia Giudiziaria*] proceeded to acquire the "*cell traffic*" from Wind, after which, placing themselves directly on the places of interest [*posto*] (the three

[19] *Servizio Centrale Operativo della polizia di stato*, "the State Police's Central Operations Service"
[20] service plan, subscription

places being, as said, Via della Pergola 7, Corso Garibaldi 30, and Via Sperandio 5 bis) by means of appropriate instrumentation supplied by the Scientific Police, it was verified which signals [from those locations] reach the places of interest (with the aim of checking whether the *cell traffic* furnished by Wind contained any errors).

As regards to Via della Pergola 7, where Chief Inspector Latella personally measured the Wind signal strength (it was immediately clarified by the inspector that the radio towers [*ponti*] of the various [GSM] Providers do not interfere with each other even though they are very close to one another, each being independent from the other [*vita propria*]), it was ascertained that, in the courtyard of the cottage, three Wind cells were within reach (which is to say, that the cottage is at the intersection of the three cells indicated below).

[335] The cells are:

• 30424

• 30423

•30064 (this last one sends the strongest signal)

They are located in the same place (radio tower) and the address is Strada Vicinale Ponte Rio Monte La Guardia.

Regarding the selection of one cell instead of another, Chief Inspector Latella explained that a mobile phone, with the help of the Network, scans for the strongest signal (usually across 3-4 channels) in a certain spot at that moment: the Network in fact knows which cell is free, and connects to the one able to ensure the best communication. (In this regard, it was explained that the GSM mobile phones [*apparati*] – which corresponds to the type the phones in evidence – have a minimum and maximum sensitivity limit. At -50 decibels, for example, the signal is very strong and we are close to the transmission source; -110dB constitutes the extreme limit, where, though, by -102dB, the signal is no longer usable for telecommunication purposes.)

At the side of the cottage, Chief Inspector Latella found that a fourth cell joins the three listed above.

This is Wind cell 3302025621, situated at Piazza Lupattelli, which one can connect to by shifting position by only half a metre while still inside the cottage garden.

The Wind cells reachable from Meredith's room are those mentioned herein above. To them can be added Wind cell 3302025620, which the Scientific Police instrumentation detected near the window of the victim's bedroom. (The *Polizia Giudiziaria* carried out the [signal] detection sensing exclusively on the outside of the cottage, re-positioning the instrument's antennae with extensions.)

Cells 33020**25620**, 33020**25621**, and lastly 33020**25622** are located on the pylon placed in Piazza Lupattelli.

Of particular interest in the present reconstruction is that cell **25622** is different from the other two on the same tower by the fact of not **[336]** covering the Via della Pergola 7 cottage. And in fact, this cell, because of its positioning and the orientation of the irradiation of the broadcasted radio signal, is facing in the opposite direction of the cottage.

As a whole, the conclusion of the *in loco*[21] checks is the following: just as cell 25622 does not cover Via della Pergola 7, cell 30064 does not cover the garden of the house at Via Sperandio 5 bis.

In Via Sperandio – close to the *Parco di Sant'Angelo [parco]* – the Police investigators verified, using technical equipment, that none of the cell signals covering Via delle Pergola is present; in particular, there was no signal in the garden of the house from cell 30064 (located in Strada Vicinale Ponte Rio Monte La Guardia) that one can get at the cottage and surrounding area.

Conversely, the signal from cell 25622 does not reach Via della Pergola 7.

Therefore, between cell 25622 (signal present in Via Sperandio, absent in Via della Pergola) and cell 25621 (signal present in Via della Pergola, absent in Via Sperandio), a lack of overlap amongst the respective coverage zones was verified.

Meredith's English phone that connected to cell 25622 could not have been in the cottage and surrounding area at the moment of making or receiving a call.

At the same time, the connection to cell 30064 by the same phone would have meant that it was not located in the garden of the Lana-Biscarini house, where certainly, as of a precise moment in time, the mobile phone ended up being placed.

[21] "on the ground", "on site"

It should be noted at the outset that the records from Meredith's English phone (which was using the SIM 00447841131571) show incoming/outgoing calls on the 1st November 2007 at these following times:

14:31:43
15:01:58
15:48:56
15:55:03
15:55:57
22:13:19
reference to the radio base station connected to for each call allows the localisation of the phone in the following way:

√ at 14:31:43, the mobile phone connected to cell 3302025620 in Piazza Lupattelli, whose signal was reachable near the victim's bedroom window

[337]

√ at 15:01:58, the phone connected to cell 3302025621, whose signal was equally reachable in Meredith's bedroom

√ at 15:48:56 –>> cell 25621

√ at 15:55:03 –>> cell 25621

√ at 15:55:57 –>> cell 25621

√ at 22:13:19, the phone connected to the 30064 Strada Vicinale Ponte Rio Monte La Guardia cell, the base radio station which Chief Inspector Latella referred to as the same one that <u>was detected by their measurements near Meredith's bedroom</u> (in addition to having reception in the courtyard of the cottage).

The immediate deduction which the *Polizia Giudiziaria* arrived at is therefore that Meredith's English phone was at Via della Pergola 7 on the date 1 November 2007, in the time period from 14:31:43 to 15:55:57, and lastly at 22:13:19, when the phone made a GPRS connection (to which we will return) rather than a voice connection.

In addition, for the first call Meredith's English phone had on the 2 November 2007, exactly at 00:10:31, the base radio station connected to was 25622 at Piazza Lupattelli, as said, positioned and pointing in the opposite direction from Via della Pergola 7.

At the above-mentioned time, Meredith's English phone was located in the place it would be later discovered in by members of the Lana-Biscarini family: the phone from 00:10:31 onwards was thus situated in the garden of that family.

The dichotomy between cells 25622 (incompatible with Via della Pergola 7) and 30064 (incompatible with the garden of Via Sperandio) allows the establishment of a fixed point [of reference].

Up until **22:13:19 at least, the phone was in the student's [=Meredith's] house; from 00:31:21 onwards, one can establish the presence of the phone in the garden [parco]** of the other abode.

From 12:07 onwards on the 2 November 2007, Meredith's English phone would then receive numerous incoming calls (which are seen better in the following section): the first [few] involve the Wind 25622 radio base station; subsequently, for the 12:43 call (still under cell 25622), the phone will have coverage **[338]** from cell 25603, since the mobile phone had been taken to the offices of the Postal Police located in Via M Angeloni in Perugia.

Regarding the mobile phone with a Vodafone contract (SIM 348-467311) loaned by Romanelli to Meredith, the *Polizia Giudiziaria* has ascertained the non-existence of phone-call traffic from the afternoon of 1 November 2007 up until 2 November 2007.

The data produced for 31 October 2007 show an SMS sent at 18:27:50 to number 3388921724, with connection to the cell Piazza Lupattelli sector [=*sett.*] 7, and the receipt, under the same cell, of a response SMS at 18:29:05.

As regards 2 November 2007, Meredith Kercher's Vodafone number received a call from Amanda Knox's number (348-4673590) at 12:11:02 (the Strada Vicinale S Maria della Collina cell, sector 1).

Two calls followed, both originating from the same English number 447853133067, handled by the service centre because Meredith's phone was off or unreachable.

The first was received at 13:17:10 (the Strada Vicinale S Maria della Collina cell, section 7); the second at 15:43:13, with the printout in this case omitting the radio base station.

TELEPHONE TRAFFIC OF RAFFAELE SOLLECITO'S MOBILE PHONE

The Police investigators proceeded to analyse the printouts of the phone traffic of the mobile phones in use by the defendants, by the victim, by Romanelli Filomena who, as has been noted, late in the morning of 2.11.07 contacted the mobile phones both of Meredith Kercher and of Amanda Knox, and finally to the father of Raffaele, Dr Francesco Sollecito.

The analyses provided information of various types. Besides indicating the times at which the calls were made, the printouts give a list of the radio base stations used by the calling and receiving users, and for this reason the Court of Assizes was able to reconstruct the routes followed by the persons concerned during the time in which the phone calls in question were taking place.

A preliminary piece of information must be provided. The fact has been admitted, as is borne out both by the Police investigators' notes and by the defence consultants according to whom **[339]** calls which are not answered do not generate phone traffic when they involve mobile subscribers of Italian [GSM] service providers; an exception is made for the Service Provider H3G which, having become operational after the entry into force of law No. 155/2005, was able to immediately organise itself, in conformity with the aims of the anti-terrorism legislation, to record all types of traffic.

An unanswered call, therefore, does not leave any trace which could be verified in the printouts.

There is however an important exception to the rule, and this exception concerns the subscribers of foreign service providers that are used in Italy, as happened with Meredith's English mobile phone: in this case the contractual relationship between the English operator and Wind [the Italian GSM service provider] in connection with the roaming service stipulate a give-and-take relationship which is maintained even for unanswered calls. In fact, phone traffic is also generated since the missed call is redirected to the mobile phone's answering service, producing its own record; the unanswered calls are ultimately perfectly recognizable, since the printouts indicate the involvement of the answering service.

Turning to the data which deals with Raffaele Sollecito's mobile subscription (SIM No. 340-3574303), the first point to highlight is the following: the defendant's mobile phone was inactive after 20:42:56 of 1.11.07 and until 06:02:59 of 2.11.07.

This signifies that the subscriber did not receive and did not make calls during the approximately nine-hour period of time described here above.

As for the location of the apparatus [the phone], the call made at 20:42:56 on 1.11.07 used the Via Beradi sector 7 cell, which serves the houses located along Corso Garibaldi.

At 06:02:59 on 2.11.07 (first contact of the day), the mobile phone received an SMS sent from the mobile phone of the father, Dr Francesco Sollecito, using the reception, in this case also, of the same base transceiver station on Via Beradi sector 7.

From this information, the investigators deduced that Raffaele Sollecito's mobile phone had been left always in the same place, or else it had been switched off and switched on again in the **[340]** same place (being, essentially, inside the house at Corso Garibaldi 30).

Sollecito's house, it was established, receives various signals [in the places] where the measurements were taken, as is the case for Meredith's cottage when standing outside, and placing the measuring instruments in front of the entrance.

The front of the house is reached by another 3 cells with powerful enough signals (as will be explained in more detail), as Chief Inspector Latella reported, for which reason the coverage offered by the Network would have allowed, except in cases of mobile phones that are broken or switched off, SMSs to be received in real time.

Thus the SMS sent to him by his father was received on Raffaele Sollecito's mobile phone at 06:02:59 of 2.11.07, whereas Dr Francesco Sollecito's mobile phone had generated the text message at 23:14 on 1.11.07.

An SMS which does not immediately reach the recipient is stored on the server of the operator, in the Vodafone server in this case it was explained, in order to be re-sent when the Network realises that the mobile phone is once again accessible.

The importance of the delayed reception of the SMS generated at 23:14 thus poses a specific problem [enigma]: in the period of time between 23:14 and 06:02:59, was Raffaele Sollecito's mobile phone switched off, or was it inaccessible? (That it was broken is a circumstance which can be positively excluded, given its subsequent functioning.)

According to the investigators, the mobile phone had simply been switched off, as there were no technical reasons that prevented the SMS from being delivered within seconds of being sent.

The above evaluation is based on a series of observations:

1. The area around the defendant's home was reached by a very strong signal radiated from the Via Berardi sector 7 cell, indicated as being the "best server cell" with regard to Sollecito's house; furthermore the signals of other cells are also powerful, respectively that with a pylon in Piazza Lupattelli sector 8 and that with a pylon in Via dell'Acquilla-Torre dell'Acquedotto sectors 3 and 9.

[341]

2. On the basis of analyses of the printouts - dealing with the month preceding the murder - Raffaele Sollecito's phone had received until late in the evening, where the calls were handled by the Via Berrardi sector 7 cell, clearly constituting the "best server cell".

3. The global traffic of the said cell was obtained by the investigators to check if there had been any problems; the results of the analyses led to the finding that many mobile phones had been engaged in conversation, connecting during the night of 1-2 November 07 to the Via Berrardi sector 7 cell (it was determined that the Network was functioning normally).

4. The signal of that base transceiver station reached [Sollecito's house] normally in the preceding days (it was ascertained from the printouts that Raffaele Sollecito normally used the mobile phone at night, thus it can be inferred that the phone was rarely turned off), so there were no technical reasons that could explain a blackout on that very night and only on that night.

Turning to Raffaele Sollecito's mobile traffic, the subject was dealt with in the notes of Chief Inspector Latella and with Assistant Stefano Sisani of the *Polizia di Stato* of Perugia, where the latter dealt with studying the telephone record printouts with reference to the landline subscribers in addition to the mobile subscribers.

With respect to Sollecito's mobile phone 340-3574303, attention was paid to the entire day of 1.11.07 with the following results:

– 00:00:39 an outgoing call, just after midnight

– 00:57 an incoming SMS

− 14:25 an incoming call which lasted 58 seconds

− 16:50 an incoming call, coming from the mobile phone of the father, lasting 214 sec.

− 16:56 another call from the father (64 sec.)

− 20:42:56 call from the father (221 seconds: this is the conversation which Dr F. Sollecito referred to, made at the end of the film he had just seen in the cinema, which the father recommended to the son, at which point Raffaele informed his father of the problem with the water leak in the kitchen).

With regard to the day of 2.11.07 **[342]**

− 06:02:59 Sollecito Raffaele received the SMS from his father wishing him a good night; from the evidence of the mobile phone record printouts of Dr Francesco Sollecito, it was shown that the sending of the message occurred at, as has been said, 23:41:11 of 1.11.07. This was the last SMS sent from that mobile phone during the whole day of 1.11.07

− 09:24 Raffaele Sollecito received a phone call from his father lasting 248 seconds

− 09:29 another call was received lasting 38 seconds

− 09:30 the father called Raffaele; the call connected to the Vial Belardi sector 7 cell (the best server cell for Corso Garibaldi 30)

− 12:35: Raffaele's mobile phone contacted a service centre for a phone [credit] recharge (the cell used was that of Piazza Lupattelli sector 7, which gives coverage to the little house on Via della Pergola 7. The signal in question does not reach Corso Garibaldi 30, which instead is served by the signal from Piazza Lupattelli sector 8)

− 12:38: Vodafone sent a message of confirmation of phone [credit] recharge (Piazza Lupattelli sector 7 cell, good for Via della Pergola 7)

− 12:40: incoming call from the father's mobile phone (lasting 67 seconds; connection through Piazza Lupattelli sector 7 cell, compatible with the Sollecito's presence near the little house)

− 12:50:34 outgoing call directed at mobile phone 347-1323774 belonging to Vanessa Sollecito, sister of the defendant; duration 39 seconds. Connection to Piazza Lupattelli sector 7 cell

− 12:51:40 Raffaele Sollecito called "112" to inform the Carabinieri of the presumed theft in Romanelli's room (duration 169 seconds; connection to Via dell'Aquila 5-Torre dell'Acquedotto sector 1 cell, which covers Via della Pergola 7)

− 12:54: a second call by Raffaele to "112" (57 sec.; connection to Piazza Lupattelli sector 7 cell)

− 13:40:12: incoming call from the father (94 sec.; Via dell'Aquila 5-Torre dell'Acquedotto sector 1 cell)

− 13:50: the father called for 178 seconds (Piazza Lupattelli sector 7 cell) **[343]**

− 14:33: the father called for 21 seconds (as above)

− 17:01: the father called for 164 seconds; cell used is that of Via Cappucinelli 5/A sector 2, corresponding to the location of the Perugia Police Station

− 17:42: the father called for 97 seconds (as above).

With regard to Raffaele Sollecito's landline home phone (No. 075-9660789)

− on 31.10.07 Raffaele received [a call] from the father's fixed line (No. 080-3958602) at 22:14 for 44 seconds

− on 1.11.07 [he] called the father's house at 00:02:41 for 262 seconds

− on 3.11.07 at 14:16 note was made of two attempted incoming calls from the father's fixed line.

For the entire day of 1 November and then of 2 November, Raffaele Sollecito's fixed line was not affected by any calls, either incoming or outgoing.

With reference to the subject of Raffaele's very delayed reception (at 06:02:59 of 2.11.07) of his father's message with respect to when it was sent (at 23:14 on 1.11.07), the technical consultant for Sollecito's defence [team], Engineer Bruno Pellero (testimony at the hearing of 17.7.09) offered an alternative interpretation with respect to that maintained by the Scientific Police.

Given the point, in accordance with Chief Inspector Latella's proposition with regard to the fact that the phone record printouts do not give information as to whether a mobile phone is switched on or turned off, the Consultant recounted the survey, carried out using his own technical equipment inside Sollecito's apartment at Corso Garibaldi 30, for the purpose of recording the level of reception of the radio-

electric signals transmitted by Vodafone's base transceiver stations operating in the area.

The investigation's arrival point as calculated on the spot by the Consultant is that there is bad reception *tout court* [altogether] inside the dwelling, which is located on the ground floor and is bounded by thick external walls, whereas optimal reception of the signals is shown at the level of the entrance, as was demonstrated at the time by Chief Inspector Latella, who had also dealt with **[344]** checking the signals, without at any point going into the inside of any of the homes concerned.

Having mentioned Engineer Pellero's remarks (the delayed reception of the SMS to be attributed not so much to the switching off of the mobile phone as to lack of a [reception] field, with the supposition that the mobile phone was resting in a position deep inside the house and far from the door and the main window where, on the contrary, signal reception was steady), the Court limits itself to taking note, not without highlighting its perplexity as to how to endorse such an interpretation taking into account: what Chief Inspector Latella had said with regard to the optimum functioning of the network's traffic, with respect to the operator Vodafone and to the area in discussion during the night in question; the analyses of Sollecito's telephone traffic, which had revealed the intensity of mobile phone calls exchanged, even in the middle of the night - which tends to confirm the theory that the student also used the mobile phone while lying in bed, and therefore far away from the entry door or from the window of the kitchen where reception of the signal would not have given any problems; the absence of points of comparison from declaratory sources, because neither in Knox's divulgations nor in those of Sollecito, despite having taken the stand on numerous occasions to make spontaneous declarations, was there any indication of difficult [reduced] reception in parts of the apartment which were far from the outside perimeter.

In conclusion, the remarkable work of Engineer Pellero, does not seem to weaken the analyses carried out by the Scientific Police, bringing the court to the conclusion that the delayed reception of the SMS was due to the actual switching off of Sollecito's mobile phone during a period of many hours, between that attendant to the sending and that near to the actual reception of the short text message.

THE PHONE TRAFFIC ON AMANDA KNOX'S MOBILE PHONE

Amanda Knox's mobile phone was provided with a Vodafone SIM [card] 348-4673590.

The phone traffic with regard to the day of 1.11.07 was reconstructed in the following terms (cfr. statement of Assistant Stefano Sisani at the hearing of 20.3.09).

[345]

− 00:41:49 hours: outgoing phone call of 20 seconds, to a number whose holder was not identified

− 00:57:20: Amanda's mobile phone sent an SMS, using the cell on Via dell'Aquila 5-Torre dell'Acquedotto sector 3 (which does not provide coverage to Sollecito's house, since it pertains to Via Ulisse Rocchi, Piazza Cavallotti, etc. and therefore at the heart of Perugia's historic center). This consisted of the SMS which the young woman exchanged with Raffaele at the end of the Halloween evening to arrange meeting up with her boyfriend and be accompanied home

− 1:04:58: Amanda's mobile phone received [a call] for 53 seconds from the number 075/9660789, located in Piazza Danti 26

− 20:18:12: Amanda receives the SMS sent to her by Patrick Lumumba, which let her off from having to go to work at the "Le Chic" pub on the evening of 1 November. At the time of reception the phone connected to the cell on Via dell'Aquila 5-Torre dell'Acquedotto sector 3, whose signal does not reach Raffaele Sollecito's house. The young woman was therefore far [i.e. absent] from Corso Garibaldi 30 when the SMS reached her, as she was walking in an area which was shown to be served by the Via dell'Aquila 5-Torre dell'Acquedotto sector 3 cell. This point of her route could correspond to Via U. Rocchi, to Piazza Cavallotti, to Piazza IV Novembre, bearing in mind that Lumumba's pub is located in Via Alessi, and that Amanda Knox would have had to travel along the above-mentioned roads and the piazza in order to reach the pub

− 20.35.48 Amanda sent an SMS in reply to Patrick, at No. 338-7195723; the message was sent when the young woman's mobile phone was in Corso Garibaldi 30 or in the immediate neighbourhood. The cell used, in fact, was that of Via Berardi sector 7

− no other [use] was shown for the day of 1.11.07, noting that Amanda declared during hearings that she had switched her mobile phone off once she had returned

to Raffaele's house, since she was more than happy she did not have to go to work and could spend the evening with her boyfriend.

The day of 2.11.07

− 12:07:12 (duration of 16 seconds) Amanda calls the English phone number 00447841131571 belonging to Meredith Kercher. The mobile phone connects to the cell at **[346]** Via dell'Aquila 5-Torre dell'Acquedotto sector 9 (the signal from this cell is picked up at Sollecito's house)

− 12.08.44 (lasted 68 seconds) Amanda calls Romanelli Filomena on number 347-1073006; the mobile phone connects to the Via dell'Aquila 5-Torre dell'Acquedotto sector 3 cell (which covers Sollecito's house)

− 12:11:02 (3 seconds) the Vodafone number 348-4673711 belonging to Meredith (this is the one [i.e. SIM card] registered to Romanelli Filomena) is called and its answering service is activated (cell used: Via dell'Aquila 5-Torre dell'Acquedotto sector3)

− 12:11:54 (4 seconds): another call is made towards Meredith's English mobile phone number (the cell used is the one in Via dell'Aquila 5-Torre dell'Acquedotto sector 3, thus compatible with Sollecito's house)

− 12:12:35 (lasting 36 seconds) Romanelli Filomena calls Amanda Knox (No. 348-4673590); Amanda receives the call connecting to the cell on Via dell'Aquila 5-Torre dell'Acquedotto sector 3 (still at Raffaele's house)

− 12:20:44 (lasting 65 seconds) Romanelli F. calls Amanda, who receives the call connecting to the cell in Via dell'Aquila 5-Torre dell'Acquedotto sector 9 (good for Corso Garibaldi 30)

− 12:34:56 (48 seconds): Filomena calls Amanda who receives it from the cottage on Via della Pergola 7 (the cell used is that on Piazza Lupattelli sector 7. As mentioned, Raffaele also used the same cell when he called the service centre at 12:35 hours to recharge [the credit of] his mobile phone)

− 12:47:23 (duration of 88 seconds): Amanda calls the American (USA) number 00120069326457, using the cell on Piazza Lupatetlli sector 7; the phone call takes place prior to the one which, at 12.51.40, Raffaele Sollecito will make to "112", connecting to the cell on Via dell'Aquila 5-Torre dell'Acquedotto sector 1, which gives coverage to Via della Pergola 7)

− 13:24:18 (duration of 162 seconds): Amanda calls the same American number which corresponds to the home of her mother, Mrs Edda Mellas, using the same cell. It is obvious that the young woman is inside the cottage, where by this point, several minutes earlier, the Postal Police had shown up, **[347]** represented by Inspector Battistelli and Assistant Marzi, who were engaged in the task of tracking down Filomena Romanelli, who was the owner of the Vodafone phonecard contained in the mobile phone found earlier in the garden of the villa on Via Sperandio

− 13:27:32 (duration of 26 seconds): Amanda calls the American number 0012069319350, still using the cell at Piazza Lupattelli sector 7.

− 13:29:00 (duration of 296 seconds) Amanda receives [a call] from No. 075/54247561 (Piazza Lupattelli sector 7 cell)

− 13:58:33 (1 second): this is an attempted call to her mother's number

− 13:50:06 (350 seconds): Amanda calls the American number 0012069319350 by using the Piazza Lupattelli sector 7 cell

− 14:46:14 (102 seconds) Amanda receives a call from the German number 494154794034, most likely belonging to her aunt Doroty Craft

− 15:31:51 (1 second): Amanda receives an SMS sent from the number 389/1531078; at this point the cell being used is the one on Via Cappuccinelli 5/A sector 2, where the Questura [police headquarters] is located

In the hours that followed the [mobile phone record] printouts show that the answering service of Amanda's number 348-4673590 was activated due to a lack of signal coverage.

Finally, the analyses of the [phone record] printouts highlight that the first phone call made by Amanda on the day of 2 November was to Meredith Kercher's English number.

The American student called her English flatmate even before contacting Romanelli Filomena to whom she intended to express, as she testified in court, her fears about the strange things she had seen in the cottage, which she had returned to at about 11 o'clock in order to shower in preparation for the excursion to Gubbio which she and Raffaele had planned.

It is strange that Amanda did not say a word to Filomena about the phone call to their flatmate, when the call, not having been answered, would normally have

caused anxiety and posed some questions as to why Meredith did not answer the phone at such an advanced hour of the day.

In the opinion of the Court of Assizes, the call to Meredith's phone was the first indispensible step before putting the **[348]** planned staging into action. The lack of a reply, since the poor girl was obviously already dead, gave a reason for reassurance about the fact that the young woman's phone had not somehow been retrieved, [and] was therefore safe in the spot where it had been thrown, which, according to the expectations [in the minds] of the murderers was a precipice or some other inaccessible spot, rather than in the garden of a villa located barely outside the city, where the vegetation concealed it from view.

THE PHONE TRAFFIC OF MEREDITH KERCHER'S MOBILE PHONES AND THE MEMORY OF MEREDITH KERCHER'S ENGLISH MOBILE PHONE

For the day of 31.10.07 it was shown that Meredith's mobile phone with service provider Vodafone 348-4673711 sent an SMS at 18:27:50 hours using the cell at Piazza Lupattelli sector 7. (this signal is received in Via della Pergola 7.)

The same number received an SMS at 18:29:05 hours (this exchange of messages took place with the number 388-8921724) connecting to the same cell as mentioned above.

For the day of 2.11.07, when Meredith was already dead, the traffic registered for the Vodafone number was shown to be the following:

− 12:11:02 (duration of 3 seconds): Amanda's phone call reached the phone and was diverted to the answering service. The Vodafone cell used by Meredith's service provider was situated in Strada Vicinale S. Maria della Collina sector 1.

− 13:17:10 (lasting 1 second): the cell used was located in the same place, sector 7

− 15:13:43 (5 seconds) cell not indicated.

From Inspector Latella's examination it emerged that he had not had free access to Meredith Kercher's mobile phones, for which reason the investigation which had been assigned to him had been limited, in parte qua [for this part only], to the analyses of the [phone record] printouts of Service Providers Wind [an Italian mobile phone company] and Vodafone relative to the two numbers in use by the English student; the inspector had therefore not examined the memories of the two mobile phones. The same thing happened for witness Assistant Chief Sisani Stefano.

[349] With regard to the information that a [phone record] printout can provide, Chief Inspector Latella gave a general explanation that the [phone record] printout records everything that generates traffic; it also records calls which do not give rise to charges (e.g. free calls on the basis of promotional [marketing] campaigns). Whenever there is traffic, it is therefore registered.

The printouts, with the exception of Service Provider H3G which, as previously recalled, immediately complied with [the requirements of] the antiterrorism law - Law 155/05 - do not register non-connected [i.e. unsuccessful] calls, with the exception of those which are due to the roaming agreement where, for calls to foreign numbers, [phone] traffic records are also produced.

Finally, the [phone record] printouts do not contain any indications whatsoever that would allow one to determine whether a mobile phone was switched on or off; this is, in fact, a detail which is of no interest [for the records], since it does not serve to generate traffic.

Since the information which can be drawn from the [phone record] printouts cannot, in itself, provide the entire range of what it is necessary to know with regard to the use of any given mobile phone, the contents of the memory of Meredith Kercher's English [mobile] phone were copied to court documents.

In fact, it is established that the Postal Police acquired from this mobile phone the complete contents of the phonebook [i.e. the list of names and numbers saved in the phone's memory] (this was also done for the phone using the Vodafone SIM card) and the data relative to its use during the late evening of 1.11.07 was extracted.

For the moment, the Wind [phone record] printout for SIM number 00447841131571 belonging to Meredith Kercher (used in the Sony Ericsson model K700i mobile phone) showed the incoming/outgoing phone calls for the said phone in the early afternoon of 1.11.07 (please see the chapter on "base transceiver stations", editor's note), all concentrated within the space of time from 14:31:43 hours until 15:55:57 hours, and all involving the cells which provide coverage to the cottage on Via della Pergola 7.

These were the previously mentioned base transceiver stations with numbering ..25620 and ..25621 with the pylon in Piazza Lupattelli.

[350] As previously explained, the following and last [item] highlighted by the Wind [phone record] printout concerns the traffic registered at 22.13.29 hours on 1 November 07, where the cell providing the coverage was ..30064 on Strada Vicinale Ponte Rio Monte la Guardia, whose signal, as the on-the-spot measurements carried out by Chief Inspector Latella prove, can be received both at the level of Meredith's bedroom window and in the courtyard of the cottage on Via della Pergola 7.

This is, as has been noted, the last record of telephone traffic of the day of 1.11.07 whereas, for 2.11, the first record is that of [0]0:10: 31, when it has been established as an incontrovertible fact that Meredith's English mobile phone was no longer in Via della Pergola, the mobile phone having received the contact under the coverage from Wind signal [cell] ..25622, which is incompatible with the cottage.

At this point in the discussion, other information should be highlighted [which was] provided by the witnesses and consultants concerning the record reported in the Wind [phone record] printout for 22:13:29 hours, [and] at the same time the subject of the contents of the memory of Meredith's English mobile phone should also be introduced.

The documentary findings are briefly as follows.

The memory of the Sony Ericsson mobile phone showed

1. at 20.56 hours on 1.11.07, an attempted call was made towards the family number ("home") at 441737553564 referable to Meredith Kercher's mother

2. at 21.58 hours there was an attempted call to the mobile phone's answering service "voicemail 901"

3. at 22.00 hours the number "08459724724" which, according to the phonebook of both mobile phones, corresponds to the user "ABBEY" is dialled.

The Wind [phone record] printouts register that (but the data is absent in the mobile phone's memory)

4. at 22.13.29 hours a GPRS connection (to the Internet) lasting 9 seconds to the IP address 10.205.46.41 (cf. printout). This connection took place, as has been said, under the coverage from Wind cell ..30064 which is compatible with the cottage at Via della Pergola 7, while the Scientific Police's instrumentation **[351]** did not register this signal in the site where the mobile phones were found (garden of the Lana-Biscarini house in Via Sperandio 5 bis).

Now, while even the Scientific Police paid attention to the GPRS connection, having explained what this represented, it is only in the technical investigations of the Defence (Engineer Pellero, technical consultant for Raffaele Sollecito) that attention is also paid to the three contacts made between 20.56 hours and 22.00 hours which were seen in the mobile phone's memory.

It is in fact important to point out that the timing of the three contacts corresponds to the late evening of 1 November, a time span which is situated extremely close to (if not actually after the event, as the defences suggest) the moment in which the English student was killed.

The GPRS connection is the last information reported by the telephone [record] printout for the last day on which Meredith had been seen alive, and for this

connection and for the two calls preceding it, Engineer Pellero provided a possible key to their understanding.

First of all, the Internet connection occurred towards the APN [access point name] "wap O2 co uk", while Meredith's English service provider - which is called O2 - indicates this APN as the one to be used for sending and receiving MMSs.

Three hypotheses were elaborated with regard to this connection, which should explain its significance.

1st hypothesis. Meredith's English mobile phone may have received a multimedia message (MMS) - which would be confirmed by the number of bytes received, No. 4708, and transmitted, No. 2721 - where such reception would not have called for any manual intervention by the user. (The MMS therefore arrived automatically, but the decision of whether to connect to the Internet to see this message was up to the user, who could alternatively erase the MMS to avoid the cost of reading it).

2nd hypothesis. There was a connection to the Internet via WAP of a very brief duration. And in truth, the limited quantity of data exchanged would not have allowed the actual use of any service, given that even such a short access **[352]** required in any case a human interaction. (This second hypothesis therefore cannot disregard human interaction.)

3rd hypothesis. There was *an involuntary activation of the Internet WAP access followed by a not rapid disconnection* (in total 9 seconds) which Engineer Pellero attributed to a hand unfamiliar with the instrument, to sum up, the hand of the killer who was struggling to end the connection.

Considering the criticism which Engineer Pellero addressed to the Police for not having acquired the telephone traffic of the Sony Ericson mobile phone directly from the English service provider O2 and for not having further investigated the data contained in the mobile phone's memory, Sollecito's Defence were, in short, in favour of the hypothesis according to which the few minutes when, in rapid succession, contacts 2 and 3 and connection 4 were made, would correspond to the crucial moment of Meredith's end [death]. The two attempted calls would have taken place during the moments in which the physical assault was being carried out against the student, who evidently was tightly holding her mobile; the GPRS connection would have happened while the murderer was in the road, by now far from the cottage, at which time, having with him[/her] both stolen mobile phones, the ringtone of the 22.13 MMS would have prompted the sudden decision to rid

him[/her]self of the two instruments [mobile phones], throwing them in the direction of an apparent cliff (the landing spot, however, was inside the garden of a beautiful villa) just in front of the spot where the criminal was at that moment. (A spot which is situated inside Park S. Angelo, facing the said villa, a place which benefits from excellent coverage from Wind cell 30064, as was shown by the appropriate instruments used by Engineer Pellero.)

Engineer Pellero also focussed attention on the two attempted calls under 2 and 3 for the following reasons.

The call at 21.58 hours to the answering service "voicemail 901" did not produce any telephone traffic - to the point that it had not left any trace on the Wind [phone record] printout - in view of the fact that the caller had hung up before the welcome message of the answer service ended, at which point the charge for the relevant costs would have become due.

[353] The call at 22.00 hours to the "Abbey" number, which corresponded to an English banking institute, could not be routed because the international country code for Britain "0044", or else the symbol "+" followed by "44", had not been dialled. The number "08459724724" was therefore dialled (the memory attests to this) but [the call] could not have been successful.

Now, Engineer Pellero emphasised the three situations to point out that they would confirm an anomalous situation, if necessary supposing that the two attempted calls at 21.56 and 22.00 hours had happened at the same time as the assault on Meredith, with the activation of the buttons of the answering service and of the user "Abbey" - which is memorized in the phonebook - not having been voluntary, and the GPRS connection of 22.13.29 hours being explained in the form given under hypotheses 1 and 3 of the presentation.

But the reconstruction [of events] proposed did not persuade the Court.

Nothing compels [us], among the circumstantial evidence available, to consider that the assault took place in the minutes between 21.58 and 22.00 of 1.11, and not rather merely moments of relaxation during which Meredith Kercher, still alone in the house and probably just lying on her own bed, was absent-mindedly playing with the mobile phone in her hand.

First of all, the arrival of the MMS is a highly possible thing, as it is incontrovertible that the message was not saved in the memory of the phone. From this it can be

inferred that Meredith simply deleted it without opening it, not intending to incur the charge for the Internet connection necessary to be able to view it.

As for the call to "Abbey" destined to failure because of the absence of the British telephone country code, it must be recalled that in the mobile phone's phonebook the entry "Abbey" was the first in the list; from this, as shown by experience it is easy to argue that the number could have been dialled by chance.

The call to the answering service for listening to recorded messages was, in the end, interrupted before incurring any costs: all this was in line with the frugal habits of Meredith, who used the mobile phone during the **[354]** less expensive times and days, as was highlighted by the reconstruction of her habits concerning the use of the telephone.

With this, the matter of the computers and mobile phones is closed, without failing to mention that the murderer, had he/she been interested in the mobile phones, would have behaved in the expected way.

[The murderer] could have removed the SIM cards, which constitute an inconvenient encumbrance, as soon as possible, keeping only the mobile phones (alas with the related risks, which derive from the combination of the IMEI[22] code of the individual devices with every phone card that is used subsequently); he[/she] would not have needed to deprive him[/her]self of the Sony Ericsson only because of the reception of the MMS ([he/she] might as well have, in that moment, removed the SIM or else switched the mobile phone off); there would have been, in such a case, no need whatsoever to get rid of the Motorola mobile phone with the Vodafone SIM card, which was not a problem.

In the Court's mind, the reason for the fear of the phones was quite different. It is due to the need to eliminate the two devices [mobile phones] from the scene of the crime to prevent the possibility of their being called, essentially by relatives, within too small a time-span with respect to the [time of] death. The ringing of a mobile phone which had been left in the room would have created the risk, in fact, of drawing attention before time, and of greatly advancing the [time of] discovery of Meredith's body.

[22] International Mobile Equipment Identity

THE SHOEPRINTS: DR RINALDI'S AND CHIEF INSPECTOR BOEMIA'S 09-APRIL-2008 REPORT

Now we come to the topic of the technical investigations entrusted to Dr Lorenzo Rinaldi (Engineer, Principal Technical Director of the State Police, director of the three sections which compose the Identity Division of the ERT), and to Chief Inspector Pietro Boemia of the ERT in Rome, the aim of which was to compare the shoe prints found and photographed during the course of the crime scene examination by Forensics [Polizia Scientifica] at the cottage at Via della Pergola 7 between 2 and 5 November 2007, with several pairs of shoes present in the bedrooms, respectively, of Amanda Knox and Meredith Kercher, as well as footwear seized at the residences of Raffaele Sollecito and Rudy Guede.

[355]Responsibility for the examinations [*consulenza*] was entrusted to Dr Rinaldi and Chief Inspector Boemia by the Prosecutor as of 9 January 2008.

At that time, the Prosecutor's Office was already working with a consultant (Ippolito-Mainieri, dated 7 November 2007) who had concluded that a particular shoe print was attributable to the accused Sollecito. It was left by the deposit of haematic substance and discovered in the English student's [=Meredith's] room near the body, pointing towards the door leading out of the room.

This relates to evidence item [*rilievo*] **5A**, which will be referred to in what follows.

The purpose of the technical investigation, the first of two entrusted to Dr Rinaldi and Chief Inspector Boemia, therefore was to ascertain, with the express request to not proceed by scraping the soles of Raffaele Sollecito's shoes and to follow an absolutely repeatable operative procedure, *whether or not there was a match between the print, item 5/A, and the sole of Sollecito's shoe*.

As Dr Rinaldi and Chief Inspector Boemia noted in their report dated 9 April 2008, entered in evidence at the conclusion of testimony on 09 May 2009, the police technicians worked with four pieces of evidence, made up of four pairs of shoes attributable to the three accused [=Guede, Knox and Sollecito], and the photographic album portraits of *prints* isolated based on Forensic findings.

The shoes were made up of:

1. Nike "Air Force 1" model, size 9 (corresponding to 42.5 [cm]) seized at Raffaele Sollecito's (the left shoe was of interest)

2. Skechers size 7 (corresponding to 37 [cm]) belonging to Amanda Knox

3. Adidas "Universal" model, size 10 (44[cm]) taken from Rudy Guede's house on the 16 November 2007

4. Timberland, "RLLTP Camo Wheat" model, size 11, seized at Guede's house on 21 November 2007

The technicians also had at their disposal the photo of the "Puma" shoes discovered next to Meredith's body, and thirty shoe prints in total detected in the course of crime scene examinations.

At Guede's house, during a search on 21 November 2007, an empty shoe box was also found for "NIKE OUTBREAK 2" size 11 (45[cm]); with this model in mind, the **[356]** Investigation Taskforce purchasing identical shoes, brand new and without defects, given that those used by Guede have never been found and stored as evidence.

As for the detected prints, of interest to the technical investigation were those that Forensics labelled, in the 2-to-5 November 2007 inspections, with the letters F, G, J, Y, I, H and with the numbers 2, 3, 5/A, 5/B, 5/C.

Attention was also focused on the prints present on the pillow-case of the pillow found underneath Meredith's body, corresponding to the following items: photo 104 and photo 105 of the ERT Latent Prints Evidentiary Section's report.

Finally, Exhibit 68 was examined, constituting two prints (photo 16 letter Q) discovered on a postcard found in Filomena Romanelli's room, and the size 9 prints found in Meredith's room on a paper-like material (photos 17-21).

Lastly, at Rudy Hermann Guede's house at 26 Via del Canerino, on 20 November 2007, prints 1/A and 2/A corresponding to photos 12 and 13 were found in the bathroom.

Specifically, and given the interest in the above prints, known information regarding their location is provided below:

• prints F (corresponding to Exhibit 161 of the Perugia Public Prosecutor's Office), G (Exhibit 162), J (Exhibit 166), I (Exhibit 163), H (Exhibit 165) were found in the living-room of the cottage at Via della Pergola 7 (H and F were found in front of the sofa in the living room).

• prints 2 (Exhibit 71) and 3 (Exhibit 73) were found in the hallway, where print 3 was positioned just in front of the doorway of Meredith Kercher's room

• prints 5/A (Exhibit 86), 5/B (Exhibit 87, being 3 prints), 5/C (Exhibit 88, three prints) were found in Meredith's room near the body.

For prints 5/A, 5/B, 5/C, 3, 2 and F, it was possible to determine their orientation; the orientation of the remaining prints G, I, J and Y was, instead, not identifiable owing to their small size.

Prints F, G, J, Y, I, H, 2, 3, 5/A, 5/B, 5/C, a total of all 11 prints, were produced by means of compression of the sole onto the floor.

[357] For these, and for the prints of Exhibits 104 and 105 (pillow-slip in Meredith's room), it was determined that they were made by the probable deposit of haematic substances. (The photographic images attached to the report show the corresponding colour – *editor's note*.)

For the 11 shoeprints, the direction of blood flow was toward the outside of the various parts of the sole, revealing the contours of these parts.

Given the results of the investigations, the Rinaldi-Boemia report overturned the conclusion of the prior expert witness Ippolito. Where in the course of investigations the shoe sole of Exhibit 5A had been attributed to the footwear of Sollecito (namely the left shoe of the size 9 Nike "Air Force 1" model used by the accused), the new examination concluded that there was a correspondence of the 5A print with the size 11 "NIKE OUTBREAK 2" model that was certainly worn by Rudy Guede, given that in the Ivory Coast national's [=Guede's] apartment a box corresponding to said shoe model was found.

(In fact, during the course of legal debate in Court, it emerged that, from the first findings [*rilevazioni*], it appeared to Rinaldi and Boemia that Sollecito's shoe print was smaller than the print left on the floor, given that the circular diameter was equal to 33mm in place of the 36mm of Exhibit 5/A. It was thereby hypothesised that the trace could not have been left by the Pugliese student's [=Sollecito's] Nike shoes. The investigations consequently turned towards using the results of examinations carried out in the meantime at Guede's house, where the examination conducted in Via del Canerino revealed both an empty box for size 11 "NIKE OUTBREAK 2" shoes, and, on the bathroom floor, two shoe prints on the ground, made from dirt, grease and dust. Comparing the two prints found in the bathroom with the shoe

model in question led Rinaldi and Boemia to the confirmation that the size 11 NIKE OUTBREAK 2 shoes were, in fact, worn in that house [=Guede's house]. At this point, the investigation turned to comparing the 5/A print and a pair **[358]** of size 11 "NIKE OUTBREAK 2" shoes purchased from an authorised Nike retailer, leading lastly to a determination of probably identical. It was not possible to formulate a determination of *certain identity* with regard to the prints in the bathroom of the house [=Guede's house], [because] this would have required gaining access to Guede's actual shoes, which were never located and seized as evidence. The determination of certain identity cannot in fact be based on the mere knowledge of the general characteristics of a shoe, it was explained; it requires knowledge of specific characteristics arising from wear and tear of the material, abrasions, imperfections arising from use, etc.)

The examination of Exhibits H, 2 and 3 from the corridor, as well as 5/A, 5/B and 5/C near to Meredith Kercher's body, showed as well that the print had been from a left shoe, if the three fragments of Exhibit 5/C evidenced the *heel* of a left shoe (specifically, it was a case of *three heel contacts* [with the floor] of the same left shoe).

These prints, not presenting any particular markings, were evaluated as being useful only for *negative comparisons*.

At the operational level, making use of the footwear samples for testing, *Nike "Air Force 1" model size 9* (Sollecito) and *Nike "OUTBEAK 2" size 11* (a shoe purchased specifically for testing purposes [*all'uopo*], corresponding as has been said to Guede's footwear), technicians Boemia and Rinaldi then proceeded to ink up the soles of Sollecito's shoes which they then pressed onto sheets of A4 paper; on the *Nike OUTBREAK 2 size 11* brand obtained from an official retailer, an adhesive base support was applied.

The comparison led therefore to establishing that print 5/A (photo 9 of the attached set) was not produced by Sollecito's size 9 Nike "Air Force 1" model shoe, given that the print did not correspond to the shoe of the current accused [=Sollecito] in its general shape and size features.

The outcome of the first Rinaldi-Boemia report, taking into account that the comparison with Guede's size 11 Nike "OUTBREAK 2" shoes was **[359]** extended to all of the aforementioned evidence (prints left by the probable deposit of haematic substance), leads to the following results:

• for the print Exhibit 1/A (bathroom in Guede's house, relating to the heel of the left shoe, photo 12), the conclusion was reached of probable identity with the footwear owned by the accused separately tried [=Guede]

• a similar response for the print Exhibit 2/A (Guede's bathroom, photo 13: heel of left shoe)

• Exhibits F and H (cottage living room), 2 and 3 (hallway): the technicians arrived at a conclusion of probable identity between said Exhibits and the left shoe of Guede's Nike "OUTBREAK 2" size 11.

• Exhibits 5/A, 5/B, 5/C (near Meredith's body; the three prints under 5/C are very close to the outer edge of Meredith's jeans which are visible under the duvet covering the body): analogous conclusion of probable identity with the left shoe of the above-mentioned [=Guede]

• photo 104 of the report from the Latent Prints Evidence Section (Meredith's pillow): conclusion of probable identity with the bottom of the right size 11 Nike "OUTBREAK 2" shoe (there is full compatibility of the heels' [*tacchetti*] traces left behind with those of the new shoe bought from the official Nike retailer, cf. Rinaldi testimony)

• photo 105 from the Latent Prints Evidence Section (Meredith's pillow): this print *was not produced by any of the shoes tested*. It is, in the absence of any distinguishing features, *useful solely for negative comparisons* rather than for a determination of identity; with regard to this print, the technicians reported that it was made by the deposit of haematic substance; the outer edge of the shoe is distinctly visible; nine lightly arced elements are discernable, with a width of 2.6[mm] 3.5mm apart. The print measures approximately 39mm [wide] at the heel, and 46mm at the upper sole, corresponding to the ball of the foot. The technicians hypothesised that the print had been made by the heel and the central part of the sole of a left shoe. Based on the small size of the heel and the reduced dimensions [overall], it was held to be <u>a woman's shoe print</u>, of a size between 36 and 38. In any case, it is a shoe much smaller than that attributed to Rudy Hermann Guede

[360]

• Exhibit Q (Romanelli's room): two prints left by the superimposition of dust on a postcard were found. Print number 1, left by a right shoe and the sole useful for negative comparisons, was not produced by any of the shoes tested

• photo 17/21 (Meredith Kercher's room) prints on paper-like material: these were not produced by the shoes tested.

THE PRINT ON THE MAT IN THE SMALL BATHROOM, THE PRINT (IN) PHOTO 105, THE PRINTS HIGHLIGHTED BY LUMINOL: DR RINALDI AND CHIEF INSPECTOR BOEMIA'S 31 MAY 2008 REPORT:

On 12 May 2008, the Public Prosecutor charged Dr Rinaldi and Chief Inspector Boemia with a second consultancy task.

The technicians were asked to: (1) compare the shoeprints found during the crime scene inspection – in particular, trace 105 on Meredith's pillow-slip, attributed to the presumed print of a woman's left shoe – with the seized shoes; (2) compare the footprints taken from those being investigated with the foot print found on the bathmat in the so-called small bathroom of the Via della Pergola cottage; (3) compare the footprints taken from those being investigated with the prints revealed by means of Luminol; (4) ascertain the *compatibility or non-compatibility of the prints found in the cottage* with *those taken during physical examination* of the persons under investigation.

For their consultancy activities, as the Public Prosecutor's technicians explained, Rinaldi and Boemia had in their possession-numerous pairs of shoes which had been found and seized, on the date of 23.04.08, respectively at Via della Pergola 7 and at Raffaele Sollecito's house.

They thus had 12 pairs of shoes belonging to Meredith Kercher, 4 brands [of shoes] from Amanda Knox (the pair of "free climbing" Boreal-brand were found, the left one in a room, the right one in the suitcase in the hall), and 6 pairs seized from Sollecito's, making for a total of 22 pairs of shoes.

Furthermore, they possessed three footprints taken from the accused on the date 12.05.08, during the course of a physical examination, and of the prints, already examined **[361]** during the course of the preceding technical investigation, made up of: photo 14, corresponding to Exhibit 105 on Meredith's pillow-case; photo 16 (postcard from Romanelli's room); photos 17-21 (nine prints on paper-like material in Meredith's room).

New traces, being taken into consideration for the first time, were:

– the footprint found on the bathmat in the little bathroom during the course of the 2-5 November 2007 crime scene inspection

– 4 photos of prints revealed by means of Luminol (found by Forensics on 18/12/07).

Of these, traces 1, 2 and 7 corresponded to three footprints, while trace 6 [corresponded] to a shoe print.

Specifically,

- trace 1 was a footprint, revealed by Luminol inside Amanda's bedroom
- trace 2 was made up of two footprints present in the hallway facing the exit
- trace 6 (hallway) a shoe print pointing towards the exit, it did not result in being useful for comparisons
- trace 7 (hallway) a footprint orientated towards the entrance into Meredith's room

These prints were compared with those prints taken from the three accused during the course of a physical examination on 12.05.08.

All the Luminol-positive prints, as well as the bathmat print, were of the right foot. And so, only the right foot print of each of the accused was taken.

The foot prints were taken using inking technology, with printer's ink, which is absolutely widespread in the literature and practical, as Dr Rinaldi noted during the legal debate, and a successive acquisition on a paper base placed on a flat surface.

THE MAT: FINDING 9F, LETTER A

[362] The technicians first checked the compatibility of size and morphology between the print on the mat and the top part of Raffaele Sollecito's sole-print.

Various prints on the mat were made by deposits of haematic substance, there where on the exhibit [i.e. the mat] various traces of blood can be seen (cf. table 7 of the attachment relative to the "mat").

Among these, the trace *sub lett.* A (table 8) can be seen clearly: this is a print of a bare right foot.

In this [print] the big toe, the metatarsus and a part of the plantar arch are clearly visible, whereas the heel is missing completely (this is the print located on the bottom right of the mat, when viewed by someone entering the bathroom).

The measurements quoted in the report highlight:

• for the big toe: 33mm width and 39 length (sheet 11)

• for the metatarsus: 99mm width and 50 length (sheet 11 of the photographic attachment, on page 5649)

giving the print on the mat a clear definition of the general characteristics of shape and size (with regard to the morphological aspects).

Due to the lack of minutiae found on the friction ridges ["epidermal ridges"], these latter being highly differentiating elements, the technicians decided that the print on the mat was useful for negative comparisons but not for positive ones; in this case, in the same manner as for print 5/A and for numerous others, Dr Rinaldi and Chief Inspector Boemia arrived at an opinion of probable identity, as will be explained.

Using Raffaele Sollecito's sole-print where the big toe measures 3cm in width and 37mm in length - table 5651 - (the width of the outline of blood measures, as has been said, 3cm and 30mm) one element immediately came to the technicians' attention.

One characteristic of the defendant's sole print was indeed to be found in the print on the mat: this was the relevant size in width of Sollecito's big toe with respect to the measurements belonging to the co-defendants Guede (whose big toe measures 23mm in width, with a significant difference of 7mm, **[363]** and 43mm in height; cf. table 5653) and Knox (big toe: width 22mm and height 41.8mm; table 5655).

Furthermore, Sollecito's metatarsus is 99 mm wide (table 5651), where [the one] on the mat has a matching width of 98-99mm (table 18, or 99mm on table 19).

The analyses of the size of the big toe, Sollecito's being absolutely the widest, led in itself to the conclusion of compatibility between the print on the mat and the right foot of the defendant, while the comparison between the sole-print of Guede and that of Sollecito also demonstrated the different size of the plantar arch, with Guede's narrower one attesting to the fact that the Ivory-Coast national has an altogether narrower foot in comparison to Raffaele Sollecito's foot.

The sole-prints of the two defendants in question therefore present considerable differences in terms of: 1) the big toe; 2) the width of the metatarsus; 3) the width of the plantar arch; 4) finally, the width of the heel (attention to the heel will become relevant in relation to the examination of the print highlighted by Luminol, whereas the heel cannot be used in the examination of the print on the mat since, as has been said, the heel is not present).

Given that the analyses of the size of Sollecito's big toe had already led the technicians to conclude that there was compatibility between print "A" on the mat and the defendant's right foot, Dr Rinaldi and Chief Inspector Boemia now carried out an in-depth metrical analysis of the sizes, and as a result their level of certainty increased with regard to this kind of identification.

The method used was that of overlaying each print with a grid measured off in centimetres, the so-called "Grid of L.M. Robbins" (tables 16-17 all. cit. [previously cited]), positioning the grid so that the vertical axis lined up with the right-hand outline of the foot, while the horizontal axis was aligned with the tip of the big toe (table 16. The procedure, in this case was carried out in relation to the sole-print of Sollecito's right foot; the grid marked off in centimetres was then also used to measure the sole-prints of Amanda Knox and of Rudy Guede and, finally, to measure the print on the mat which was used as the point of comparison).

[364] The procedure in question, it was explained, allows a homogeneous alignment of the points of comparison, which is then used as a basis for analyses of the outline containing highlights of the analogies (points in green), of the differences (in red) and lastly of the "*bumps*" [*gobbe*] in the outline, the latter *protuberances* make a print highly individual when considered to be relevant from a morphological point of view.

On the basis of the points of reference taken, the technicians of the ERT[23] therefore made the measurements (cf. table 18 for the *similarity* between Sollecito's sole print and the print on the mat; table 19 for the differences, highlighting the analogies between the two points of comparison.

The results led to the finding according to which that while Sollecito's plantar arch is 40mm wide, the plantar arch of the print on the mat is 39mm [wide], measurement which is also found in Guede's plantar arch (table 24), however the latter's foot (table

[23] Esperti Ricerca Tracce, the trace-finding experts

25: the differences) presents differences which are irreconcilable with respect to the print on the mat, as shown analytically in table 25.

(e.g., the distance between points 1-2 on Guede's big toe, table 23, is 20mm against the 28mm on the equivalent point of the print on the mat; the metrical differences are highlighted with respect to points 3-4, # Guede's "bumps" are aligned differently with respect to those of the print on the mat, where table 28 shows a distance of 8mm which identically portrays the "bumps" on Sollecito's foot and those of the print on the mat; in Guede's foot, on the contrary, the equivalent distance is 12mm compared to the 8mm of footprint "A" on the mat, cf. table 28 and for points 5-6-7 which correspond to the left-side outline of the foot; the left-hand outline of Sollecito's right sole-print is characterised by profound similarities with the print on the mat, as is shown in table 18. In this case the measurements were seen to be fully overlayable, showing identical values of 99mm, 92mm and 75mm which corresponded to the width of the metatarsus measured at different points; otherwise there is [also] the value of 93mm of Sollecito's foot, which is very close to the value of 92mm at the corresponding part of the print on the mat, these measurements concerning the distance between the top of the big toe and a certain *green point* at the beginning **[365]** of the plantar arch, [this] point being used as a fixed end-point and resulting in a vertical measurement of 93mm and a horizontal one of 75mm, as shown in table 18. Finally, the differences in Guede's sole-print with respect to the print on the mat can also be seen with reference to points 8-9-10 which define the plantar arch, which are shown for Guede, in table 25, as measurements of 37mm and 36mm in comparison to the equivalent *40mm and 43mm on the mat*, and against the *equivalent 40mm and 42mm belonging to Sollecito's sole-print*, in table 18).

With regard to the non-correspondence in absolute terms of measurements in the two categories of footprint (the sole-print on the one hand, and that on the mat, on the other), Dr Rinaldi highlighted (page 42 transcript) that, in general terms, one would never find oneself in the presence of two identical footprints, the one acquired with typographical ink and the other left through the deposit of an haematic substance on the mat, and this was because the second was *left where blood was present*. (The quantity of blood therefore influences the extension of the print.)

With regard to the point of departure of the investigation, the fundamental parameter which, according to technicians Rinaldi and Boemia, distinguishes Sollecito's right foot from Guede's, is determined *by the width of the big toe and the shape of the metatarsus*, to which are added further differences found in the plantar arch, in the f the heel, in the left-side outline of the foot (in table 29, for example, it is

shown that, once the left-hand outline of the print on the mat has been traced, when this outline is overlaid on those of the sole-prints of Guede and of Sollecito respectively, an outcome is obtained in which, for Guede's foot, *the left-hand outline* drawn *overlaps one part of the phalanges of the big toe*; in the case of Raffaele Sollecito, on the contrary, this does not occur, and in fact the outlines of the two prints match perfectly) and finally, with regard to the measurement of the bumps (12mm Guede; 8mm Sollecito), as demonstrated by tables 27 and 28 of the report.

The above-mentioned differences led the technicians to conclude that *there was compatibility of imprint "A" on the mat with regard to the general characteristics of shape and size with Raffaele Sollecito's right foot*, and this outcome allowed them to express of an opinion of probable identity; at the same time they arrived at a finding of non-**[366]** compatibility of print "A" with Rudy Hermann Guede's right foot (page 44 transcripts).

THE PRINT (IN) PHOTO 105 (MEREDITH'S PILLOW-CASE)

According to the technical evaluation by Dr. Rinaldi and Chief Inspector Boemia, none of the seized shoes under examination and used for comparative purposes were able to recreate the print on the pillow case.

Like the previous ones, this print, without special markings, is considered useful only for negative comparisons. The [technical evaluation] indicates that the print was imprinted by a deposit of haematic substance and the outer contour of the shoe is well defined along with nine slightly arched elements with a thickness of 2.6 mm, at a distance of some 3.5 mm from each other. Lastly, the evaluation provides the measurement of the print which is about 39 mm on the heel side and 46 mm at the top, surely corresponding to the plantar arch.

As had been anticipated, technicians of the Polizia Scientifica hypothesise that the print **was made by the heel and the middle part of the sole of a left shoe.** Because of the reduced width of the heel and its small size it is considered to be a mark from a women's shoe, between size 36 and 38.

Given the above, we recognize that, in the hearing of 9.May.2009, Chief Inspector Pietro Boemia, whose testimony was focused on the evaluation of the shoeprint in question, said that an investigation was conducted among merchants and shoe manufacturers in order to verify whether a woman's shoe, with sole measurements

like those taken from the print in photo 105, were on the market (not sports shoes but walking shoes, given that in sports shoes the heel is normally much wider in order to comfortably accommodate one's posture).

The photograph, according to the proffered explanation, presented a portion of the heel on the left, where one could see the circle at the centre; the total length was measured as 77mm by 46mm wide, comprising 9 distinguishable arcs.

[367] Chief Inspector Boemia's investigation of merchants and shoe manufacturers led him to identify a woman's shoe brand, ASICS, on which he then focussed his attention in consideration of the specific form of the sole, whose width was equal to 40mm, which contained a circle just next to the hind part of the heel.

Inspector Boemia reiterated during the course of his deposition that the photo 105 print could not have corresponded to that left behind by a man's shoe, taking into account the different range in width one would expect from a man's shoe, measuring around 60mm in width.

The purpose of the investigation of merchants and shoe manufacturers was not to propose the ASICS as the shoe that produced the print in question; the objective, more modestly, was simply to indicate how the dimensions of the print (held to be sufficiently complete and not merely partial) were in themselves comparable to women's shoes available on the market, with the consequence of providing support for the hypothesis of two types of footwear at the murder scene, above all Rudy Guede's indisputably identified shoe, and, on the other hand, a woman's shoe, whose dimensions, being indicated as between size 36 and size 38, are compatible with Amanda Knox's shoe size, which is size 37.

With respect to Boemia's professional opinion, Professor Vinci, who is Raffaele Sollecito's technical consultant and who performed an in-depth study of the print in photo 105 as well as other studies on different matters, holds a contrary opinion.

Vinci's report arrived at a completely different conclusion from that of Forensics. Comparing the sole of the right shoe of Guede's Nike Outbreak model 2s with the enlargement of the 105 print found on Meredith's pillow (cf. tables of the technical report), the expert witness reconciles imprint 105 with the pattern on the sole of Guede's right shoe.

The print would therefore have been left by the co-accused's [=Rudy's] second shod foot, namely the right one [shoe] (the arc-like elements being indicated as

corresponding to the homologous elements of the pattern on the anterior part of the right shoe, **[368]** in effect abandoning the methodical approach of Forensics, who want to attribute the print [as being] the part [of the foot] positioned near the heel rather than to that [part from] the forefoot) , with the result of excluding from the murder scene the presence of a co-participant who necessarily would have worn a small-size shoe, in considering the dimensions of print 105 as fully complete.

The Court, on this point, takes notice of the opposing conclusions without expressing a specific opinion. It cannot in fact be excluded that Guede alone tread on the cushion lying on the floor, to the exclusion of Knox (the smaller dimensions of the right foot can be explained by the characteristics of the underlying surface, the pillow, having a non-rigid structure and where the material of the pillow-slip may have been not perfectly straightened out, but, on the contrary, soft and as such determining the curvature), to whom [=Knox], actually, one [must] attribute moving herself about the murder scene essentially in bare feet, as shown in the part of the report that examines the genetic investigations that were done on certain biological traces and the positive Luminol prints.

THE PRINTS HIGHLIGHTED BY LUMINOL

During the second inspection carried out in the cottage on Via della Pergola 7 by the Forensic police of the ERT on 18.12.07, at the end of the evidence-gathering which was documented in real time through video recordings and through photographs carried out by the experts in that branch (cf. statements of Deputy Commissioner Maurizio Arnone and Chief Inspector Claudio Ippolito), the final operation carried out that day was to spray Luminol on certain areas of the floor.

This activity concerned some of rooms of the cottage: the corridor and the kitchen-living room, the bedrooms of Amanda Knox and Filomena Romanelli, and the large bathroom.

The job of highlighting the prints had, on the other hand, been carried out in the course of the first inspection, particularly during the days of 3 and 4 November 07, when the, as it is known [*c.d.*], biological evidence collection phase, (conducted by Dr. Stefanoni), had, in her turn, **[369]** preceded every other technical investigation, having begun the very evening of 2.11.07 after the ERT specialists arrived from Rome.

When the Luminol was sprayed on 18.12.07, Chief Inspector Ippolito was in charge of the photographic documentation of what might be revealed: it was his task, therefore, to photograph any fluorescence that might appear.

To take the photos, it was necessary beforehand to ensure complete darkness in the rooms, so all the lights of the apartment were switched off. This having been done, what the Luminol exposed was consistent with bare feet (but also a shoe print), foot[prints] which Chief Inspector Ippolito recalled as having been present both in the corridor/living room as well as in Amanda Knox's room, excluding the rooms that were subsequently sprayed with Luminol.

Chief Inspector Ippolito thus took photos of the areas where the Luminol had given results, [although] the choice of where to photograph did not depend on him.

The photos were then taken using a tripod, in order to ensure a stable support for the camera.

During the shots, fluorescent measuring tapes were used (normal measuring tapes were used when the photos taken in natural light were shot, it was explained), so that the metric reference could be used for the subsequent measuring of the photographed prints.

So, although Chief Inspector Ippolito is responsible for the photographic documentation showing the prints on the floor highlighted by Luminol, the subsequent technical investigation of measuring these prints and comparing them with the sole-prints of the three defendants was carried out by Dr Rinaldi and by Chief Inspector Boemia, having been the subject of the consultancy task which the Public Prosecutor assigned, together with other in-depth examinations - concerning the prints on the mat and the presumed woman's shoeprint, print 105 - on 12.05.08.

Coming, therefore, to the Rinandi-Boemia report, Dr Rinaldi highlighted, during the course of his statement, that the Luminol-positive prints, unlike the print on the mat which, having had the measuring strip placed next to it (cf. photo 1 on page 5646), was photographed in visible **[370]** light, the second category of prints was characterised, as already mentioned, by the absence of the measuring reference, since the shots had been taken in complete darkness.

Accordingly, it was necessary to make use of some of the technical findings of the forensics team in order to obtain a definite metric reference.

As a consequence, use was made of photographic finding 5, which page 3 of the report on "perspective correction" used for comparison with photographic finding 2 (the photographic findings under discussion are all from 18.12.07, and portray the same point on the floor under different lighting conditions, being light in photographic finding 5 and dark in photographic finding 2 which shows the fluorescence highlighted by the Luminol; photographic finding 5, therefore, uses the aforementioned measuring tape placed on the floor).

Photographic finding 5 contained the definitive metric reference; for this reason it allowed calibration of the print highlighted with Luminol.

Photographic finding 5 thus allowed the floor-tile to be measured: the first measurement obtained was 169.3 mm (height) x 336 mm (base) which a further study carried out in view of the hearing on 09.05.09 (summarized in the report on "*perspective correction*") resulted in a re-evaluation of the height of the floor-tile, which was reduced to 162mm.

With regard to the perspective correction which was worked out by the technicians, on the technicians' own initiative [*motu proprio*], before the hearing on 09.05.09 Dr Rinaldi explained that a way of thinking had prevailed according to which the photos of the Luminol-positive findings had certainly undergone some reduction with respect to the real dimension, in that the images were not taken in from a position perpendicular to the floor. The shots had therefore not been taken with the operator in a 90° position with respect to the floor.

The images consequently displayed characteristics due to perspective, whereas the correction of the perspective allowed the incorrect trapezoidal shape of the tile to be rectified to its own rectangular shape, ultimately using the metric references supplied by the forensics team, which measured the floor-tiles as 162mm in height and 336mm along the base. The result of the perspective correction was to straighten the lines, obtaining **[371]** thereby a lengthening of some measurements. (Example: the print in Luminol-positive finding 2 was ultimately attributed a length of 244mm, contrary to the 227mm attributed by the previous measurement in which the perspective correction had been applied only to the height of the tile, without changing the base of 336mm).

The Luminol-positive findings which were the subject of technical study were, as previously mentioned:

• **finding 1** present in the bedroom of Amanda Knox; this is *the print of right foot*, most likely imprinted in a deposit of haematic substance, in which are clearly visible (cf. attached [to the report], following perspective correction): the big toe or 1st toe (which measures 22mm in width); the 3rd toe or middle toe (17mm in length); the metatarsus (80mm wide); a portion of the plantar arch. This finding was considered *useful for negative comparisons* and the comparison led the technicians to express an opinion of compatibility with Amanda Knox's right foot

• **finding 2**, present in the corridor in the direction of [facing] the exit. Finding 2 corresponds to *the print of a right foot*, most likely imprinted in a deposit of haematic substance, useful for negative comparison. The print next to it, made by a left foot, also facing the exit, was not considered useful for any comparison since it does not clearly present general characteristics. The dimensions of this print of a right foot (cf. page 16 of the attached [to the report] which corrects the perspective), after having positioned the Robbins grid [ruled grid in centimetres], are: big toe 28mm wide; metatarsus 95mm wide and 55 long; heel 58mm wide, with a total length of the luminal-positive print of 245mm, where the length of Raffaele Sollecito's right sole-print is equal to 244mm (with the big toe being 30mm wide, the width of the metatarsus, taken from the base to the green dots positioned at the end of the right and left outlines, being 96mm, with height 57mm – cf. table 16 cited - and width of the heel of 57mm)

• **finding 6**, *print of shoe present in corridor*, pointing towards the exit. In the absence of the measurement reference necessary for the correct sizing this print was not considered to be useful for any comparison [purposes]

[372]

• **finding 7**: this is the print of a foot most likely imprinted in a deposit of haematic substance, since the Luminol was positive; it was found in the *corridor in front of the door to Meredith Kercher's room, and was pointed towards the entrance*. It is considered useful for negative comparisons. The dimensions of the Luminol-positive print (photo 51, main album) show 22.4mm width for the big toe; 78mm width for the metatarsus; 43mm width of the heel, compared to the corresponding measurements from Amanda Knox's sole-print (cf. photo 44 on page 5669, main album) at: 22mm with regard to the width of the big toe; 76.7mm the width of the metatarsus; 43mm the width of the heel.

Moving to the conclusions on the matter, the Rinaldi-Boemia consultancy (the Luminol-positive prints considered usable had the outlines of the foot absolutely defined, explained Dr. Rinaldi) expressed itself as being:

• in favour of the compatibility of the prints in findings 1 (inside Amanda's room) and 7 (corridor just outside Meredith Kercher's room) **with the right foot of Amanda Knox**

• in favour of the compatibility of the print in finding 2 (the only useable one of the two parallel prints, the one on the right) with **the right foot of Raffaele Sollecito**.

Dr Rinaldi pointed out the differentiating characteristics of Luminol-positive finding 2 with respect to the right foot of Rudy Guede, since, in the sole-print of the latter, (cf. page 19 of the report on the correction of perspective) one can notice:

− a different length of the foot (which measures 247mm, compared to the 245mm of finding 2, Sollecito's foot being 244mm long)

− the lesser width of the heel (51mm for Guede's foot, against the 58mm of the finding and the 57mm of Sollecito's foot)

− the lesser width of the big toe (which in Guede measures 23mm, against the 28mm of finding 2 and the 30mm of the big toe of the co-defendant)

− the difference in the metatarsus, which for Guede has a width of 93mm against the 95mm of finding 2 and the 96mm of Sollecito (table 16).

The differentiating factor in the sole prints of the two defendants lies, as was pointed out with regard to the print on the mat, in the specific width **[373]** of Sollecito's big toe and metatarsus, distinctive characteristics which were identified in the Luminol-positive prints of finding 2 and which are lacking, in an obvious manner, in Rudy Guede's sole-print, [which is] more tapered, narrower and longer than the other's [sole-print].

In Dr Rinaldi's explanation, it was evident that only the general characteristics of shape and size (concerning the morphology of the foot) of the prints in consideration - Luminol-positive and [on the] mat - are known, lacking the minutiae [minute details] present on the friction ridges [also known as epidermal ridges], which would have furnished more highly differentiating information.

The general characteristics referred to above may undoubtedly refer to any number of people, requiring in each case the identification, among the various *quisque de*

populo[24], those persons who present *the same combination of values* [measurements] and who have, therefore, at the same time, with respect to finding 2, a 99mm-wide metatarsus, a big toe with a width of 30mm and a heel of 57-58mm.

Such metric values [measurements], as has been said, are present in Raffaele Sollecito's right sole-print, but are on the contrary lacking in the right feet of both Rudy Hermann Guede and of Amanda Knox.

Lastly, the evidence available (width of the big toe, shape of the bumps, the outer profile much more defined with respect to the heel) constitute measurement and morphological pointers which are widely used in scientific literature, which declares that they [these pointers] have, in themselves, a very great value in differentiating.

In this particular case, they lead to an opinion of probable identity with one subject (Sollecito with respect to trace 2, Amanda Knox with respect to traces 1 and 7) and to the demonstrated exclusion of the other two[25].

THE CONSULTANCY OF PROFESSOR FRANCESCO VINCI, TECHNICAL CONSULTANT FOR SOLLECITO'S DEFENCE

Professor Dr F. Vinci, Associate Professor of Forensic Medicine at the University of Bari, and director of the University Centre for Ballistic Forensics of the same university, is the author of various reports relevant to this trial.

[374] On December 18, 2007, Professor Vinci participated, in his capacity as technical consultant for Sollecito, in the inspection of the cottage at Via della Pergola 7, and on January 15, 2008 he wrote the first of several technical reports, whose object was a discussion of the shoe-sole print "5 A" marked in haematic substance near the body of Meredith Kercher.

An account of this print was given in regard to the consultancy entrusted to Dr Rinaldi and to chief inspector Boemia of the ERT of Rome, it being noted that from April 2008, it was definitively accepted that the shoe-print "5A" should be attributed to the Nike Outbreak 2 footwear used by Rudy Hermann Guede, rather than to the sole of the Air Force 1 Low shoes worn by Raffaele Sollecito.

[24] general masses/man-on-the-street
[25] in terms of each print matching only one person's feet, and not the feet of the other two

Before arriving at this point, the process of identification of the shoeprint followed, in any case, a route marked by conflicting technical views and opinions.

As Professor Vinci recalled in the opening words [*incipit*] of his report, the first to make a statement on the shoeprint were the Forensics agents from the State Police Commissariat in Foligno, officiated by the Forensics Provincial Office of the Perugia Police Headquarters, on November 6, 2007.

The very first indications thus came from the police of Foligno, who asserted as a premise the necessity of bearing in mind that in the absence of characteristics and details usable for the purpose of comparison, the shoeprint in question could not yield a "judgement of identity" but only of "*probable or possible identity*". According to these indications, taking into account the examination of the shape and the dimensions, it was held to be possible that "*the sequestered shoes of Sollecito* (could have) *produced the shoeprint A*".

The next technical report, from the Scientific Police in Rome (consultancy of Ippolito-Mainieri of November 11, 2007), further worsened the position of Raffaele Sollecito, since at the beginning of April 2008, when the Court of Cassation came to a decision in the matter of *de libertate* [26] (judgment of April 1, 2008, on appeal against the rejection order of the Re-examining Tribunal of Perugia), the mass of serious indications of guilt [also] included the technical judgement that attributed the shoeprint "5A" to the shoe of the student from Puglia.

[375] It was in fact held that, on the basis of "*comparisons made by superimposition/combination, the traces under examination marked by the letter 'A'* would correspond *to the design (model and size) of the sole of the 'Nike' brand shoe which was the object of these comparisons*".

But already at that time, as Professor Vinci recounts in his report of January 15, 2008, Professor Giovanni Arcudi, Sollecito's technical consultant at that time, held the opposite view, maintaining that there were insufficient - the shoeprint did not possess "*constitutive elements with characteristics of sufficient definition and clarity, nor elements which could be considered particularly clear*" - objective elements suitable to support the claim that the bloody shoeprint had come from Sollecito's shoe.

In short, Professor Vinci had the intuition that the size 9 Nike Air Force 1 Low model shoe that Sollecito wore could not be called into question (the edge of these shoes leaving a "tank-track" style print with a characteristic design absent from the print

[26] in this case, the decision about the remand in custody of the defendants

under examination. This gave the technical consultant the next indication, according to which the trace 5A could very well correspond to the design of the sole of the other Nike model that had been suggested, the Outbreak 2 model, whose sole design was analysed on p. 24 of the report.

Thus, Professor Vinci can be said to have been the first to pay attention to the Nike Outbreak 2 model which was finally shown to have been worn by Sollecito's co-accused, Rudy Hermann Guede (as for the question of whether the technical consultants Rinaldi and Boemia knew about the report of January 15, 2008, it was not established that this report had been drawn to their attention; they were engaged in their own investigation as of January 9, 2009, and Professor Vinci's report had been deposited as an attachment to a request from Sollecito's defence to obtain an expert opinion on the print during the pre-trial phase). Arriving at these further technical investigations by this consultant, at this point there came into play the reports on the bathmat print and the Luminol-positive print 2, on both of which, as has been noted, the Scientific Police reached an "*opinion of probable identity*" with respect to Sollecito's right foot, having by a comparison of the footprint on the bathmat and the footprints taken from Knox and Guede at least excluded the footprint's belonging to either of the two co-accused.

[376] Professor Vinci's report on the bathmat – we highlight this from the beginning - completely contradicts the conclusions of the Rinaldi-Boemia consultancy.

Not only is the possibility of attributing (in the form of a "judgement of probable identity") the bathmat footprint to Raffaele Sollecito or to Amanda Knox completely denied, but it is somehow hypothesised that the print could have been made by the right foot of Rudy Guede.

It must first be noted that Professor Vinci disagrees with the some of the terminological choices of the consultants of the prosecution. In the opinion of this technical consultant, one should not speak of "print" but of a "track"[*orma*], as the term "print" should be reserved uniquely for prints containing "ridges", not for foot outlines.

The topics of disagreement also concern the technique used to take footprints. As he testified in Court, Professor Vinci dissents from the methods used by the technical operators of the ERT, and also from the R.I.S. of the Carabinieri, of placing the foot on an inkpad and then on sheets of paper (a method suitable for studying fingerprints). He recommends a more modern method, approved by the scientific

community, which would have those submitting to the procedure of footprint acquisition walk for a length of at least six metres along a paper-covered gangway.

The professor furthermore supports the theory that the technical investigations in question belong to the domain of forensic medicine, as they require mandatory orthopaedic and anatomical knowledge. He then criticised the fact that the investigations were conducted uniquely on the basis of image analysis (Dr Rinaldi did state that he had not seen the crime scene, as he did not participate in the inspections, and that he worked only with the photographic materials that had been made available to him, which in particular required correcting the perspective of the tiles because the snapshots are not perfectly perpendicular), without any direct examination of the bathmat on which the footprint was actually found.

The professor personally examined the bathmat (on a visit to the laboratory of the Scientific Police in Rome, where he spoke to **[377]** Dr Rinaldi and Dr Stefanoni), and took accurate photographs with his own sophisticated equipment, and using absolutely accurate measuring tapes, approved by the scientific community of the United States. He then examined the left and right footprints which he had himself taken from the three accused, checking that what was obtained was in appearance a non-static footprint, even though the manner of impression onto A3 paper was actually static, since the accused were not asked to walk for a certain distance, but instead to press down the heel and the ball of the foot (etc.) at different moments.

Having made these remarks, Professor Vinci stated that he then proceeded to take a new measurement of Sollecito's footprints (those obtained during the bodily inspection), yielding results that are extremely close to those obtained by the ERT., (differing only by decimals) and finally, that he used in his own investigation the results of a baropedometric[27] examination of the feet of Raffaele Sollecito, which had been performed on September 9, 2006 by a specialist from Acquaviva delle Fonti (BA) because of a knee problem.

Bearing in mind the claimed importance of orthopaedic and medical forensic competence in performing this type of investigation, Professor Vinci stressed the value of some particularly individualising details of the right foot of Raffaele Sollecito, revealed by the said examination, consisting of: the fact that his second toe does not touch the ground (the so-called "hammer" position of the distal phalange) connected to a slight case of valgus on the right big toe, and the fact that the distal phalange of the big toe also does not touch the ground, (meaning that there is a

[27] measurement of weight distribution on the feet

distinct separation between the print of the ball of the foot and the print of the big toe in the footprint of the accused).

Given these two features which make Sollecito's foot morphologically distinctive, Professor Vinci's study basically arrives at the assertion that, while the second toe of Raffaele Sollecito's right foot is entirely absent from the footprints known to be made by him, on the contrary the footprint on the bathmat does contain the imprint of the second toe.

[378] Professor Vinci reached these conclusions based on a close examination of the weave of the bathmat, and also by varying the colours of the footprint, as shown in the photograph album of the Scientific Police, so that via the use of different filtres it could be viewed in black and white or in a more intense red colour which emphasised the traces of blood.

A morphological examination of the footprint alone led the professor to consider it as irreconcilable, due to its general shape and size, with the footprint taken directly from Sollecito's right foot.

Indeed, the consultant hypothesised that the measurement calculated by the Scientific Police of the width of the big toe of the bathmat footprint was to be reconsidered: he rejected the measurement of about 30mm in favour of a much smaller measurement of 24.8mm, which he obtained by detaching a mark of haematic substance which he did not consider to be a mark from the surface of the big toe, but from a separate body, namely the imprint of the second toe, which is totally absent from the print taken from Sollecito's right foot.

This opinion is supported by slides shown in Court that refer to the tables in the technical report, which establish that the point on the right, corresponding to the ERT's calculated width measurement of 30mm, is set in a clean area without any traces of blood, whereas the mark under discussion (to be separated from the big toe) actually would appear separated from it by a visible interruption of continuity.

When Professor Vinci's consultancy then proceeded to carry out the measurements aimed at comparing the two items (bathmat print, Sollecito's print), they also made use of the "Robbins grid", but yielding results of non-reconcilability of the two terms of the comparison.

The grid was not positioned according to the methodology followed by Dr Rinaldi (with the right edge of the millimetric graph paper placed vertically with the points

on the right and the horizontal edge touching the apex of the big toe), but instead was placed just under the metatarsal line (table p. 54 of the report). The “reference line” is placed in this point (the zero point of the grid horizontally, **[379]** with the whole of the ball of the foot in the upper part) from which the millimetric graph paper yields the result that all the important points (for example the apex of the big toe and the so-called bump, or the right external contour of the bathmat footprint) are out of alignment with Sollecito's foot.

However, the Court cannot agree with one point of departure, which is the operation that consists of detaching the small mark from the big toe print, since this results in a clearly visible resizing of the big toe.

This operation rests on the assumption that there is an interruption of continuity in the print (tables on pp. 45-46 of the report), but this starting point is not at all convincing, given that the photograph provided as documentary evidence of this appears to show exactly the contrary. The base of the material in the disputed point (in this portion of the mat, the terrycloth [also] has a decorative protuberance) shows that the trace of blood is a single unit on all of the curl (flourish), and is uniformly linked, forming a single unit with all the other parts of the material on which the big toe was placed. For these reasons, the proof that this mark is actually the mark of the second toe (missing in the morphology of Sollecito's foot) appears totally weak and unsatisfactory.

Finally, although it is possible to agree that in the calculation of the width of the big toe (of approximately 30mm.) the point of measuring may fall in an unstained place, nevertheless a comprehensive view of the bathmat clearly shows why this was done. Considering (see attached photo 17 of the ERT showing a complete view of the bathmat print) that the small region under discussion is part of the tip of the big toe, the point on the right of the toe giving the 30mm measurement lies along the line descending perpendicularly from that tip, without any widening.

In brief, the suggestion that the extension of the big toe trace be sacrificed, interpreting it instead as the print of the second toe, appears far from realistic. Furthermore, the association of the bathmat footprint with Guede's foot (see the CD-ROM provided by Professor Vinci showing the "superimposition sequence" for Guede's foot and for Knox's) appears, frankly, as strained, given that Guede's footprint, apart from having a morphology **[380]** which is generally longer and more tapered, also has a second toe print which unequivocally falls quite far from the big

toe print, so that the small mark whose detachment from the big toe is in question here could hardly be attributed to the second toe of the co-accused.

Finally, there is a piece of data which the Court has uncontrovertibly adopted: the same images of the bathmat, shown in deepened colours by the lighting equipment of the Crimescope, do actually increase the impression of solidity of the size of the big toe (and also of the metatarsus), and augment the perception of the unity with the rest of the small mark whose detachment was suggested.

The consequence is that the Court does not hold as practicable the alternative version aimed at confuting or undermining the judgement of probable identity formulated by the Scientific Police, which instead finds itself strengthened.

Finally, with regard to the Luminol-positive print/trace 2, the results emerging from the consultancy are as follows.

The consultant performed a morphological examination, comparing the footprint in question and Sollecito's footprint; he first made the two footprints to the same size (table p. 70 report) and then placed them side by side, showing what he pointed out as irreconcilable differences (for example the print of the second toe revealed in the Luminol-positive print, and the print from the first phalange of the big toe which does not show in Sollecito's prints).

But in the opinion of the Court, the table on p. 70 seems to communicate an absolute morphological similarity of the two prints brought to the same size, in which the line of the heel, the isthmus and the width of the metatarsus and the big toe are practically superimposable.

As for the line of the toes of Sollecito's right foot (table p. 72), which is of the type that goes down from the big toe to the little toe, this detail also appears to correspond to the Luminol-positive print, which shows up clearly the mark of the ball of the foot, with much lighter marks for the third and fourth toes.

[381] The fluorescence photographed in the upper part, a somewhat fuzzy area in the zone of the big toe, might, rather than being attributed to the second toe, reflect a dynamic positioning of the foot as described in the report, with respect to the explanation of "drag marks" which would indicate this dynamism.

Finally, one more aspect of the report is not shared by the Court.

This concerns the moment in which Professor Vinci, although he noted that the consultancy of Dr Rinaldi performed the correct perspective adjustments on the tiles, illustrated during the hearing of May 9, 2009 and yielding a larger length for the Luminol-positive print (calculated as 245 mm with Sollecito's footprint measuring 246mm), concluded as though the uncorrected data from the previous report remained valid and unmodified.

This led the technical consultant to consider the print only 215mm long (which it is not), and consequently to judge that it came from a foot of that length, a good 3cm less than the foot of the accused, with a shoe size between 36 and 37.

While the morphological appearance alone supports the comparison between the Luminol-positive footprint and Sollecito's right footprint, the Court cannot share the conclusion that the print revealed by Luminol was made by a foot much smaller than Raffaele Sollecito's.

CLOSING CONSIDERATIONS

From the facts set out above it is possible to reconstruct the events during which, on the night[28] of 2 November 2007, Meredith Kercher was murdered in her own home on Via della Pergola 7.

These facts also provide proof of the presence of Amanda Knox and of Raffaele Sollecito in the house on Via della Pergola when Meredith was killed and clarify the role that they played, outlining a framework of evidence that leads to a declaratory judgement of guilt with regard to the crimes imputed to them.

As [the Court] has already pointed out, it does not recognize the necessity, as requested and defined by articles 523 and 507 of the Criminal Procedure Code, for **[382]** new evidence to be introduced.

In this regard, what has been previously observed on the subject is called to mind; with specific reference to the stains found on the pillowcase, particular mention of which was made by Sollecito's defence [team] during the trial and in the related illustrative memorandum, the following should be noted: even if a genetic investigation established the spermatic nature of these stains, such an investigation, as a rule, would not allow these stains to be dated and, in particular, it would not be possible to establish that they had been deposited on the night on which Meredith was killed. It having furthermore been established that Meredith had an active sexual life and at times had intercourse in her own room (cf. on this point the statements of her boyfriend Giacomo Silenzi) such an investigation, besides not being of a strictly necessary nature due to the impossibility of dating [i.e. establishing the date] (cf. what was elucidated on this aspect by the genetic experts), might also yield an entirely irrelevant outcome even for establishing the spermatic nature of those very stains and seems to be, therefore, a purely explorative activity, [which] is not permitted at this stage of the proceedings because it is lacking in the requirement for absolute necessity which was, on the contrary, requested.

Amanda Knox, it has been seen, has declared that from the afternoon of 1.11.2007 until the late morning of the following day (10.30-11.00 am) she did not leave the house on Corso Garibaldi where she was staying with Raffaele Sollecito. He, in his turn, as was recalled by Robyn Carmel Butterworth, stated that he had spent the night together with Amanda Knox.

[28] *i.e.*, the night of 1-2 November 2007

With such declarations, one as much as the other [i.e. they both equally] have therefore interposed, between the place where they affirmed they had been (the house on Corso Garibaldi) and the scene of the murder (the house on Via della Pergola), such distance and space that it ought to have protected them from every suspicion and involvement in the murder.

Not one element, however, confirmed that Amanda and Raffaele were not to be found, late in the evening of that 1st of November, in the house at Via della Pergola. No phone calls, no meetings, no interactions on the computer, nor anything else allows it to be believed that in actual fact Amanda and Raffaele, after having dined at the apartment on **[383]** Corso Garibaldi and after the last interaction with the computer, as was shown, at 21.10.32 pm remained in there without going out until the following morning. On the contrary, their presence in that apartment, uninterrupted from the evening of 1 November to the morning of the 2nd according to Amanda (the only one of whom a [witness] examination was requested), besides not being in any way confirmed, was refuted and contradicted on various points.

Antonio Curatolo, whose declarations have already been established to be reliable, declared that he had noted both the one and the other [i.e. both of them] (whom he already knew, albeit only by sight) at about 21.30 to 22.00 pm on the 1st November in the little square [*piazzetta*] in front of the University for Foreigners.

The uninterrupted sleep which seemingly continued until 10.30 am on 2.11.2009 (in contrast to the normal habits of Amanda, whom her flat-mates declared as being an early riser, and also not compatible with the planned trip to Gubbio, since Raffaele Sollecito's father called his son at 09.24 am to know if they had set out) is contradicted by Quintavalle, who declared that he had seen Amanda in his own store at 07.45 am and is contradicted by the interaction on Raffaele Sollecito's computer which occurred at 05.32 am and continued for about half an hour as has been shown; also the SMS which Raffaele Sollecito's father sent to his son at 23:14 pm on the 1st November and which the son received at 06.02 am on the following day, leads to the conclusion, so far as has been seen in the chapter dedicated to the telephone traffic of the mobile phone belonging to Raffaele Sollecito, that the latter switched on his mobile phone shortly before 6 am on 2 November and thus was able to receive the SMS sent to him by his father late in the evening of the previous day.

Amanda Knox and Sollecito Raffaele therefore did not spend the evening and the night of 1 November in the house on Corso Garibaldi uninterruptedly and without going out until 10.30 am the next morning. The declarations made on this point by

Amanda Knox and which would have constituted, if they had been true, an alibi for both, were shown to be false, and were aimed therefore at avoiding an investigation into the truth and are therefore considered to be evidence against [them] (e.g. Cass. 15.12.2005 No. 5060).

With regard to Raffaele Sollecito, he did not give any statements other than spontaneous declarations, and none of the parties requested him to be questioned. It should nonetheless be recalled **[384]** that Robyn Carmel Butterworth (one of Meredith's English girl friends) declared that, while they were at Police Headquarters on the afternoon of 2 November, Raffaele said that Amanda was with him on the night between 1 and 2 November.

For the evening of 1 November 2007 both Amanda and Raffaele had planned to go out: the one to go to work in Patrick Lumumba's pub located in Via Alessi and the other to do a favour for a young woman, Jovana Popovic.

Almost at the same time, around 8 in the evening, both these appointments were cancelled and both Amanda and Raffaele found themselves without commitments. Once dinner had been finished at about 20.40 pm (on this subject the phone call which Francesco Sollecito made to his son, and what he declared in this regard during the hearing of 19 June 2009, should be recalled) and the last operation of the day had been made on the computer at 21.10.32 pm (as was demonstrated in the chapter dedicated to the examination of Raffaele Sollecito's computer), Amanda and Raffaele were therefore able to leave the house, completely free of commitments, and find themselves a few minutes later in the little square [*piazzetta*] in front of the University for Foreigners, where the basketball court is; a few metres from the news kiosk and from the bench which, at about 21.30 or 22.00 pm, would be occupied by Antonio Curatolo who, already knowing both the current defendants since he had come across them on previous occasions, noticed their presence at various times, when he broke off from reading his magazine. He saw them, therefore, several times in the square where there were other young people, and this took place in the time-span between 21.30/22.00 pm and about 23.00 pm. It should also be recalled that Curatolo had declared that he had seen Raffaele Sollecito go towards the railing which is to be found in that square and look down below.

The square where the defendants were from between 21.30 and 22.00 pm up until about 23.00 pm as has been said, is only a few metres distant from the house at Via della Pergola 7 and the little road situated at the bottom of this square would have allowed the house on Via della Pergola to be reached in a minute or slightly more,

without passing in front of the bench occupied by Curatolo who testified that, when he left **[385]** his bench at about 23.00 pm, the two young people were no longer in the square where he had previously glimpsed them several times.

The said square is just a few metres distant from the house on Via della Pergola which Rudy Guede entered that evening, and the itinerary which he took in that house has already been demonstrated and the biological traces which he left in Meredith's room and on Meredith's person [body] have also been recalled.

On the entry door, furthermore, no signs of breaking and entering or of forcing were found. The window in Filomena Romanelli's room had a broken pane but - and as it was seen - Rudy Guede did not enter the house on Via della Pergola through that window: the breaking of the window and the disorder which had been created in Filomena Romanelli's room formed part of the staging carried out by whoever allowed Rudy Guede to enter the house, and were done in order to divert any suspicion from themselves.

Whoever allowed Rudy Guede to enter the house and then carried out the staging of the broken window and the disarray could only be the person to whom the key was available, who had free access to the house because they lived in it and who, finding themselves in the area, could calmly enter the house and bring, precisely, Rudy Guede into it.

The key to the apartment, it has already been seen, was available to the four young women who lived there.

It has already been pointed out that it does not seem likely that Meredith would have opened the door to Rudy Guede; for that matter, if it had been Meredith who opened the door of the apartment, there would be no explanation - as has already been observed - for the staging carried out in Romanelli's room.

With regard to the other three flatmates, it should be recalled that Laura Mezzetti was at Montefiascone at her family home and Filomena Romanelli, while she was in Perugia, was staying with her own boyfriend Marco Zaroli, with whom she was celebrating the birthday of Luca Altieri, the boyfriend of Paola Grande, with whom she would share a car the following day in order to go to the *Fiera dei Morti.*[29]

[386] The fourth flatmate, Amanda Knox, was with Raffaele Sollecito, suddenly free from any commitments, as was her boyfriend, and with the latter, as has been seen,

[29] The Fair of the Dead, held on All Saints' Day.

[was] a few steps from the house on Via della Pergola, in the square in front of the University for Foreigners where she was spotted together with Raffaele Sollecito until about 23.00 pm, and then no more.

All of the circumstances just noted (Amanda has access to the key; the entry door is not forced; the broken window is staged in order to mislead the investigations; the other flatmates, Mezzetti and Romanelli, have commitments which have taken them elsewhere; Amanda and Raffaele, until about 23.00 pm were just a few steps away from the house on via della Pergola, and have no commitments) constitute a framework of evidence on the strength of which it must be concluded that it was Amanda, who was with Raffaele Sollecito, who allowed Rudy Guede to enter the house on Via della Pergola 7, and that this happened at around 23.00 pm, give or take a few minutes.

Amanda, moreover, knew Rudy Guede and he knew Amanda; indeed, he was attracted to her (it was considered that the interest that Rudy showed for the young woman demonstrates, in fact, an undeniable appeal that Amanda must have wielded towards the young man); Rudy, furthermore, knew the house on Via della Pergola since he had already been there, whether by invitation or without invitation.

It cannot be known whether Rudy entered the house at the same time as Amanda and Raffaele or several minutes afterwards, when Amanda and Raffaele were already there, even if only for a few minutes. It is not possible to answer such a question since no one offered any indications on this point and no one saw the three young people enter the house.

This Court considers the first hypothesis most likely in consideration of the fact that Amanda and Raffaele were in the square in front of the University, a place which Rudy often frequented. Therefore, it is probable that, Rudy may have been in the area of the square on the same evening and, seeing Amanda, stopped to speak with her before all three went together to the house on Via della Pergola. The other hypothesis (Rudy arriving at the house on his own) seems less likely because; while it is true that Rudy had previously **[387]** gone to the said house without having been invited by anyone, this had happened with regard to the apartment occupied by the young men with whom Rudy was more familiar and who were not there that evening, having returned to spend the festive period in their respective home towns, all in the Marches Region.

Raffaele Sollecito's Defence [team] stressed a great deal that Raffaele did not know Rudy, and did so in order to rule out the configurability [i.e. falling into the category] of complicity of one [person] with another in carrying out crimes of homicide and assault.

To uphold the thesis of non-acquaintance they pointed to the unreliability of witnesses Gioffredi and Kokomani, and this Court considers reasonable what they highlighted on this point: the activity on Raffaele Sollecito's computer makes an encounter with him in the time-span indicated by Gioffredi scarcely plausible; also the red coat which Amanda apparently wore at that time, a coat of which there was no other evidence, does not allow [us] to consider as believable the circumstances related by Gioffredi, and according to which he allegedly also saw Rudy accompanied by Raffaele, as well as by Amanda and by Meredith.

The inconsistencies in Kokomani's statements are even more obvious. It is enough to think of the black bag which then revealed itself to be two people and of the throwing of olives and of a mobile phone which had allegedly been used to make a video which was subsequently shown to others and, furthermore, the time he had seemingly seen Amanda, a time predating her arrival in Italy and the mention of an uncle of Amanda's of whose existence no one was able to supply confirmation.

But, even if it is accepted that Rudy and Raffaele did not know each other, such a circumstance cannot lead [us] to arrive at the outcome desired and affirmed by Sollecito Raffaele's Defence [team], for whom the lack of acquaintance would rule out complicity in the hypothesised crimes. In fact, it must be highlighted that the circumstance that Rudy knew Amanda allowed the former to approach and greet the young woman who, being [i.e. since she was] with Raffaele, could quite easily have acted as an intermediary between the two and enabled an immediate and easy acquaintanceship of each other. After all, it was in this way that Amanda had met Rudy: he was introduced to her by the young men **[388]** from the downstairs apartment, who knew both the one and the other (Amanda Knox statements, hearing of 12 June 2009 page 28).

With regard to the complicity of persons in the crime, it must be recalled that the desire to participate together does not necessarily presuppose a prior agreement and can manifest itself without distinction either as prior arrangement or as instant understanding or as simple compliance in the deeds of another who might even remain unaware (cf. Cassation 15.5.2009 No. 25894 and, therein recalled: Cassation Section 11 22.11.2000, Sormani). Therefore, even if Rudy and Raffaele did not know each other until November 1, the existence of complicity in the crime [*configurabilità del concorso*] cannot be excluded since the acquaintance could have been formed the very evening of 1 November through Amanda who knew both well, and given that, as noted above, complicity in a crime may also be manifested through an instant understanding in the determination of an event [in a crime].

Therefore Amanda and Raffaele, most likely accompanied by Rudy who had asked or had been invited to go with them to the house on Via della Pergola, arrived in that apartment around 23.00 pm; Meredith was already in the apartment, having gone back home around 21.00 pm, after having spent the afternoon and the evening with her own English friends.

It is not possible to know why Rudy also came to be in the house on Via della Pergola; perhaps to spend the night as had happened on another occasion although in the downstairs apartment; or perhaps to hang out with Amanda and Raffaele for a while and to use the bathroom, and that did indeed happen, as has already been recalled; maybe even to say hello to the young men in the downstairs apartment, with whom he had a friendly relationship, young men who, since they were all from the Marches, were absent during those days having each returned to their home towns. It must nonetheless be considered [possible], given the relationship [and] regular visiting that existed between Rudy and these young men, that having arrived at the house on Via della Pergola, Rudy went to check for the presence of any of the young men from downstairs, and finding that none of them were home, most likely shared that [information] with Amanda and Raffaele.

It was not possible, however, to ask Rudy any questions or receive any reply from him.

[389] Rudy, who had been asked to testify, refused to reply and the defence [teams] of the defendants did not consent to giving testimony.

The recording fragment of a conversation produced by Raffaele Sollecito's Defence and which apparently took place with a certain Debenedetti gives evidence of the

acquaintance between Rudy and Meredith and the presence of the former in the house when Meredith was killed; in that conversation mention is made of the blood and of the glass in Romanelli's room which Rudy claims not having seen that night. These references however are vague and, lacking in confirmation and details, seem to be of little use. There remains, however, the fact that Rudy, around 23.00 pm on 1 November 2007 was in the house on Via della Pergola 7 and was there because Amanda and Raffaele, closely united and together, had allowed him to enter.

Rudy goes to the bathroom, as he had on previous occasions, although in the downstairs bathroom and, just like in the previous occasions he does not flush the toilet, leaving behind traces of his use of the bathroom (faeces and toilet paper).

The presence of Meredith in the house must have been immediately noticed.

Meredith, moreover, kept the door of her room open (as has already been seen) and did not close it unless she was going to be absent for a certain amount of time and that happened only once, when she returned to England for a few days; at that hour Meredith must still have been awake and in her own room, most likely reading the book which her friend had given her that very day, or busy with the homework which her own university studies called for.

In accordance with the information noted above, it is considered likely that she was still dressed: the blood stains on her trousers; the t-shirt which was found pushed up to reveal her breasts was stained with blood; the sweatshirt on which biological traces of Rudy were found in one of the cuffs, all indicate that Meredith was dressed in her own room, and therefore still awake.

Furthermore, the wounds she suffered give evidence that the victim was not harmed in [her] bed since, otherwise, there would have been many more blood stains found on the sheet and on the mattress given the great **[390]** quantity of blood which came from the wounds struck and no explanation would have been found for the haemorrhagic swelling on the occipital region of her scalp (see page 13 of the forensic report of the forensic experts appointed by the Preliminary Hearing Judge [the GIP] in the pre-trial hearing).

Additional evidence supporting this claim (that the victim was not already in her own bed when she was harmed), is that Meredith was still dressed and awake, [and was] in an entirely normal condition having consumed neither alcohol nor drugs as shown by Dr Lalli and confirmed by the experts appointed by the Preliminary Hearing Judge. It must also be recalled that the house was rather cold,

as Amanda testified during her own examination and as can be deducted from the measurement of the ambient temperature which Dr Lalli took at 00.50 am on 3 November 2007. With regard to the aforementioned observations, it must be considered that Meredith was in her own room, awake, still dressed and, at least when Rudy and then the others entered and began the assault, was not stretched out on her own bed.

Amanda and Raffaele, having arrived at the house slightly after 23.00 pm, it should be considered that they went into Amanda's room with the intention of being together, in intimacy. Amanda moreover had reported that that evening they had "made love", although in Raffaele's house, after having consumed drugs (hashish) prepared by Raffaele Sollecito. Besides, as Laura Mezzetti had testified, Raffaele Sollecito and Amanda Knox, when they were together, were very affectionate towards each other; Raffaele was always "stuck" to her, and even in the Police Headquarters, during the afternoon of 2 November, the behaviour of the two young people was evident: they were very close to each other, caressed each other, kissed each other. Conduct which is scarcely appropriate in that environment and that situation; and yet it carried on, indicative, therefore, of the strong attraction which existed between the two which manifested itself through continuous displays of affection, even in inappropriate contexts such as, precisely, the Police Headquarters must have been shortly after the discovery of Meredith's body, and where Amanda and Raffaele were waiting, along with others, to be questioned about [the murder]. All the more, therefore, must such affectionate and effusive behaviour have been manifested on that particular occasion: Amanda and **[391]** Raffaele who were together in Amanda's house; together in Amanda's room and alone, since Meredith was in her own room and Rudy, as previously mentioned, was in the bathroom.

It is therefore probable that Rudy, coming out of the bathroom, let himself be carried away by a situation that he perceived as being charged with sexual stimuli and, giving in to his sexual urges, sought to satisfy them by going into Meredith's room, where she was alone with the door at least partly open (she never closed it unless she was going away for several days).

Speaking of Meredith, there has already been occasion to make mention of her personality (serious, not superficial, with a strong character), of her romantic situation [*i.e. her love life*] (she had not long beforehand begun a relationship with Giacomo Silenzi), of the plans she had for that evening (studying, preparing for the following day believing that there would be classes at the University, finishing a piece of homework, as her mother recalled during the hearing of 6 June 2009, and

resting). None of the people she frequented and in whom she confided (her relatives and her English girlfriends) testified that Meredith had made any mention to them at all of Rudy, for whom, therefore, she must not have felt any interest. With regard to the totality of these circumstances, it must be considered that Meredith could only have made an outright refusal to Rudy's advances and in doing so could also count on her slim [fit] physique, which the photos allow [one] to understand, [and] on her good athletic training (other than dance she had also done sports characterised by a certain physicality such as football, and had even taken a course in karate), sustained by her strong character.

That Rudy then yielded to his lust, and tried to find sexual satisfaction with Meredith, is revealed by how Meredith's body was found: wearing only a little t-shirt, pushed up to expose her breasts and for the rest completely nude, and by the results of the vaginal swab which showed biological traces of Rudy. There can be no doubt that the part of the girl's body which Rudy had "lingered over" to the extent that he left his biological traces on her and even **[392]** caused the bruises which have already been mentioned, and [the fact of] having stripped the young woman, [all] point to the objective of sexual satisfaction carried out against Meredith's wishes.

It is not possible, however, to know if Rudy went to Meredith's room on his own initiative, almost subjugated by the situation which he interpreted in erotic terms (the two young lovers in their room and Meredith who was on her own in the room right next to it) or, instead, he went to Meredith's room at the urging of Amanda and/or Raffaele.

This Court is inclined towards the first hypothesis.

It cannot see, in fact, the motive for such an invitation on the part of Amanda Knox and/or of Raffaele Sollecito. Besides, Rudy does not seem to have needed to be encouraged to make advances toward Meredith. Abukar Barrow [who was] interrogated on 11 December 2007 (and whose testimony was acquired with the consensus of the parties) testified that Rudy, above all when he was drunk or under the effects of drugs, "bothered people, especially young women. He blocked them off physically and tried to kiss them".

Nevertheless, it should also be considered, and this seems to be the most probable hypothesis, that Rudy decided on his own to enter Meredith's room, the young woman's reaction and refusal must have been heard by Amanda and Raffaele (Amanda's room was very close to Meredith's) who, in fact, must have been

disturbed by them [i.e. by the reaction and the refusal] and intervened, as the progression of events and their epilogue show, backing up Rudy, whom they had brought into the house, and becoming themselves, together with Rudy, Meredith's aggressors, her murderers.

Why, then, two young people, strongly interested in each other, with intellectual and cultural curiosity, he on the eve of his graduation and she full of interests, resolved to participate in an action aimed at forcing the will of Meredith, with whom they had, especially Amanda, a relationship of regular meetings and cordiality, to the point of causing her death, falls within the continual exercise of choice among [the range of] possibilities, and this Court can only register the choice of extreme evil which was put into practice. It can be hypothesised that this choice of evil began with the **[393]** consumption of drugs which had happened also that evening, as Amanda testified.

On the effects of drugs of the type used by Amanda and by Raffaele, such as hashish and marijuana, [we] heard the testimony of Professor Taglialatela who, while underlining the great subjective variability (page 211, hearing of 17 July 2009) specified that the use of such substances has a negative influence on the cognitive capacity and causes alterations of perception (pages 201 and 207) and of the capacity to comprehend a situation (page 218). In his turn, Professor Cingolani, who together with Professor Umani Ronchi and Professor Aprile, had also dealt with the toxicological aspect (see witness report lodged on 15 April 2008, pages 26 and following), responding to the question he had been asked as to whether the use of drugs lowers inhibitions replied: "That is beyond doubt" (page 163 hearing of 19 September 2009), while correlating that effect to the habits of the person [on] taking the drugs. Raffaele Sollecito's friends had furthermore stated that such substances had an effect of relaxation and stupor.

Therefore it may be deduced that, accustomed to the consumption of drugs and the effects of the latter, Amanda Knox and Raffaele Sollecito participated actively in Rudy's criminal acts aimed at overcoming Meredith's resistance, subjugating her will and thus allowing Rudy to act out his lustful impulses; and this is considered to have happened because, for those [i.e. for people] who did not disdain the use of drugs (Amanda has stated that on that evening, before "making love", they had consumed drugs), watching films and reading comic books in which sexuality is accompanied by violence and by situations of fear, disregarding the concept of sexuality as an encounter of [two] persons moved by reciprocal and free emotion (see the comic books seized from Raffaele Sollecito and the statements on the

viewing of films which had drawn the attention of the tutors of the ONAOSI College attended by Raffaele Sollecito), the prospect of helping Rudy in [his] goal of subduing Meredith in order to sexually abuse her may have seemed to be an exciting stimulant which, although unexpected, had to be tried.

[394] A motive, therefore, of an erotic, sexually violent nature which, arising from the choice of evil made by Rudy, found active collaboration from Amanda Knox and Raffaele Sollecito.

That such participation, active and violent, also involved the current defendants in combination with Rudy can be derived from what has been observed in earlier discussion of the wounds suffered by Meredith, of the outcome of the genetic investigations, [and] of the bare footprints found in various parts of the house.

THE INJURIES

The consultants and forensic scientists have asserted that from the point of view of forensic science, it cannot be ruled out that the author of the injuries could have been a single attacker, because the bruises and the wounds from a pointed and cutting weapon are not in themselves incompatible with the action of a single person. With regard to this, it is nevertheless observed that the contribution of each discipline is specifically in the domain of the specific competence of that discipline, and in fact the consultants and forensic experts concentrated their attention on the aspects specifically belonging to forensic science: time of death, cause of death, elements indicating sexual violence, the injuries present on the body of the victim, and the causes and descriptions of these. The answer given above concerning the possibility of their being inflicted by the action of a single person or by more than one was given in relation to these specific duties and questions, which belong precisely to the domain of forensic science, and the meaning of this answer was thus that there are no scientific elements arising directly from forensic science which could rule out the injuries having been caused by the action of a single person. But, to actually answer this question, of whether the criminal action which determined Meredith's death was the action of one person alone or several people acting together, it is necessary to take into account, not only the contributions of forensic science, but also other elements which have emerged and which are relevant to this point, and to evaluate the situation in a way which takes the comprehensive picture into account.

One first such additional element is what has been said of Meredith's personality and her physical condition; one must take into account that, according to what has already been noted, Meredith, when the attack began, **[395]** was awake and dressed and not lying on the bed; additional elements are given by the place in which the violent action appears to have taken place, of which the file of photographic documents make it possible to determine, as they represent Meredith's room, with the various pieces of clothing and objects present there.

In fact, putting together the elements mentioned above - including, of course, the forensic observations - it is considered that the injuries and the violence were the result of an action of several people.

A first indication to be taken into account is Meredith's physical build: the photographs of her body and the data of her approximate height and weight reveal a physique with "normotrophic muscular mass and normally distributed subcutaneous fat" (cf. declarations Lalli p. 3), a slim physique which would have permitted Meredith to move with agility. To this must be added the declarations of the parents and the sister of Meredith. Her mother, Arline Carol Mary Kercher, recalled that Meredith had practised football and karate (p. 7 hearing 6 June 2009), and her sister, Stephanie Arline Lara, stated that Meredith also did boxing, if only the once, and that "physically she was very strong" (p. 20, hearing 6 June 2009). Also her father, John Leslie Kercher, declared that his daughter was quite strong and had taken a course in karate (p. 23 hearing 6 June 2009).

It has also been noted that Meredith was not in bed and undressed when the "advances" and the attempts to subject her will commenced. Being still dressed and awake, and since it must be excluded because of what has been said above that the violent action could have taken place with Meredith lying on the bed, it is considered that she, who was sober and fully conscious since no traces indicating either the use of drugs or the abuse of alcohol were found, would have opposed a firm resistance, as she could claim a strong physique, experienced in self-defence by the lessons in karate that she had taken. The signs of this resistance, however, consist in a scream, the scream heard by Nara Capezzali at around 23:30 and by Maria Ilaria Dramis when, having gone to bed at 22:00 pm, she awoke at a later time which she was not able to quantify; they consist also in some tiny defensive wounds: one on the palm of her **[396]** right hand of a length of .6cm showing a tiny amount of blood; another on the ulnar surface of the first phalange of the second finger of the left hand, also of length .6cm; another on the fingertip of the first finger with a

superficial wound of .3cm, and another tiny wound corresponding to the fourth radius.

Compared with these almost nonexistent defensive wounds (cf. report of Dr Lalli, pp. 33, 34, 35 with the relevant photos), there is an injured area which is impressive by the number, distribution and diversity, specifically of the injuries (bruises and wounds) on the face and neck of Meredith.

This disproportion is all the more serious and inexplicable if one considers Meredith's physical and personality characteristics recalled above. It seems inevitable that it must be considered that the criminal action was carried out by several people acting together against Meredith, who, strongly limited in her movements, could not defend herself in any way nor shield herself with her hands in order to avoid a vital part of her body (the neck) being repeatedly struck.

Furthermore, it is impossible to imagine in what way a single person could have removed the clothes that Meredith was wearing (shoes, pants and underwear), and using the violence revealed by the vaginal swab, could have caused the resulting bruises and wounds recalled above, as well as removing her sweatshirt, pulling up her shirt, forcing the bra hooks before tearing and cutting the bra. In order to maintain such a hypothesis (action performed by a single attacker), Professor Introna suggested that Meredith was undressing, and thus when her attacker arrived, she had already removed her own shoes, pants and underwear; the attacker would have come up from behind, thus taking her by surprise. But this reconstruction appears unrealistic, as we have seen. It must also be noted that the representation of Meredith's room with the distribution of the various furnishings and the direction of opening of the door towards the interior of the room (see in particular photos 80, 89, 94) makes it rather improbable that someone entering into that room could have surprised Meredith from behind, especially as in addition, and there seems no reason for this as already noted, **[397]** she would have had to be (but one cannot see where in the room her attacker would have been able to surprise her from behind) naked from the hips down.

The breaking of the bra alone, from which a small piece of material with hooks (photos 140, 119, 118 and 117) was cut off and thrown to the floor, by an act which was necessarily conducted from behind Meredith (one cannot see in what other way the bra could have been thus forced), requires the following observation: such an action would occupy both hands of the attacker, and thus Meredith would have had her hands free, and in that situation she could have attempted some action in self-

defence (for example trying to run out of the room and attempt to flee, in other words reacting towards her attacker by getting away from him), whereas in fact there is no trace of such a thing, and it seems inexplicable unless it is admitted that several attackers were present, with a distribution of tasks and roles: either holding Meredith and preventing her from any significant defensive reaction, or actually performing the violent actions (and here one must recall that a biological trace of Rudy was found on one of the cuffs of Meredith's sweatshirt, which appears to be the sign of having gripped Meredith in order to prevent any reaction, any defence). Also the diverse morphology of the injuries and their number and distribution lead one to consider that those participating in this criminal action were more than one. Many injuries appear to have been caused by an activity of restraining; others were inflicted by a pointed and cutting weapon, and are greatly diverse in dimension and harmfulness; furthermore, even when directed at the same part of the body they sometimes attained the victim from the right and sometimes from the left. In fact, in order to maintain the hypothesis of a single attacker it would be necessary to hypothesise that the same person continually modified his own harmful conduct, first exercising a strong manual pressure on the victim, producing bruises, then deciding to seize the knife, thus changing the very nature of the attack (now armed rather than with the hands) and then striking first on the right (4cm wound) and then on the left **[398]** (8cm deep wound). In the first case, a single blow was apparently halted by the jawbone (4cm deep wound), and instead in the second case, the knife was held inside the victim's neck, after the same knife having been used to run over the surface of the same part of the neck, just a few centimetres below the zone on which the more serious and deeper wound was inflicted. Furthermore, in spite of all these changes in the action of the attacker, Meredith would have remained in the same position, continuing to offer the same part of her body (the neck) to the attacker who would in the meantime have picked up a knife. Yet after the first wound, the normal and instantaneous reaction would have been to protect the wounded part (the neck, precisely, which would have moved away from the possibility of another blow) even running the risk of receiving the blow on another part of the body. Conversely, considering the neck wounds sustained, it must be believed that Meredith remained in the same position, in a standing position, while continuously exposing her neck to the action of the person striking her now on the right and now on the left. Such a situation seems inexplicable if one does not accept the presence of more than one attacker who, holding the girl, strongly restrained her movements and struck her on the right and on the left because of the position of each of the attackers with respect to her, by which it was easier to strike her from that

side. One of these attackers was Rudy and the others were those who allowed Rudy to enter the house and who were with him in the house and who, in order to lead the investigations astray, then organised the staging of the broken window and the mess in Romanelli's room: Amanda Knox and Raffaele Sollecito, according to all that has already been shown.

RESULT OF THE GENETIC INVESTIGATIONS

[The Court] has focused at length on the genetic investigations, on their outcome, on the objections moved, and on the evaluations that this Court held to expound, and this with particular regard to Exhibits 165B and 36B.

The first relates to the fragment of bra with the clasps upon which was found the biological trace attributable, by what has been observed above, to Raffaele Sollecito. The focus brought by the Defence upon this Exhibit is justified **[399]** by its relevance and significance: it is a part of the intimate clothing Meredith was wearing when she was murdered; it was found torn, cut, and in part covered in blood, in the victim's room, under the pillow upon which Meredith's body was partially placed; her bra, missing this little piece, came to be found, instead, at Meredith's feet.

The biological trace attributable to Raffaele Sollecito and found on the clasps of this small fragment of bra, near to the biological trace attributable to Rudy Guede and found on one of the straps of the same bra, places Raffaele Sollecito at the crime scene, active – negatively active – when Meredith was stripped with violence: the top she was wearing had been rolled almost up to her neck to uncover her bra, which it was thus possible to unfasten, and remove even this piece of clothing from Meredith. An action in which the goal of sexual satisfaction is evident due to the erogenous zone on which the attention was focused, and tightly tied to the violent behaviour, symptomatic signs of which are the raised top and the eagerness with which the bra was ripped off and cut.

The biological traces found on this bra (for the probative relevance of the outcome of the genetic investigations on the DNA, cf. Cassation 30 June 2004, no 48349) and attributable (other than to Meredith) to Rudy Guede as regards one bra strap and to Raffaele Sollecito as regards the clasps, placing the one and the other together and actively present at the scene of the crime; the pair of them united in the intent to strip Meredith, who was suffering the sexual assault which is documented by the vaginal swab. Both of them, therefore, pursuing the same objective (cf. on the concourse that

can be realised with an immediate intent, without a previous accord, e.g., Cassation 15 May 2009 no 25894), denoted by violence and sexuality.

The cutting of the piece of bra on which the clasps were to be found, one of them resulting in being bent, a clean cut that appears to have been done with a cutting implement, requires a further consideration: whoever was eagerly forcing the clasps, being unable to unclasp the bra and only to bend and deform one of the **[400]** clasps, decided to cut the bra so that, in fact, it resulted in being cut right next to the clasps. At this point the inquiry findings are to be recalled, from which it emerged that Raffaele Sollecito was in the habit of carrying upon his person a small knife, such a deep-seated habit to render vain his father's recommendation to not carry the knife ("Oh, in these days, don't you go around with the little knife in your pocket", telephone interception of 5 November 2007, at 15:00 pm, number 13), and indeed Raffaele Sollecito carried one, in those days, for, on the 6 November 2007, a pocket knife came to be found and seized.

A habit known to Raffaele Sollecito's friends and referred to also by his father, who stated that his son's ability to use the pocket knife was such that he was able to model himself objects from wood (page 23, hearing of 19 June 2009).

His friends, in speaking of this habit, added significant details.

Mariano De Martino recalled that Raffaele always had the pocket knife with him and the blade must have been around 4cm long (page 21, hearing of 4 July 2009).

Saverio Binetti declared that, to Raffaele, the pocket knife was like an ornamental object which, though, when it was necessary, he made use of, and so it happened for a fruit, and for a takeaway pizza. It must have been a rather thin and pointed pocket knife, inasmuch, Saverio Binetti declared, "he didn't let anyone use it because he was afraid that they would hurt themselves" (page 26, hearing of 4 July 2009). Even Saverio Binetti had indicated the blade of this pocket knife as about 4cm [in length].

Of Raffaele Sollecito's habit of carrying a pocket knife, Corrado De Candia also made reference, recalling that the blade of Raffaele Sollecito's pocket knife had a length around 6-7cm and a width of 1cm or less.

In relation to the preceding (Raffaele Sollecito actively present at the scene of the murder, finding himself behind Meredith, pulling on the bra with violence, finally deciding to cut it), it must be affirmed that Raffaele Sollecito not only found himself at the scene of the murder and pursuing, with violence, the same objective as Rudy

Guede, but he is there with a well-sharpened knife (dangerous and thus capable of cutting a resistant material, such as that of a bra, **[401]** especially in the part that was cut, which may be seen in photos 117 and 119 in the second volume of photographic evidence) and having a blade probably around 4cm long, as De Martino and Binetti have referred to (the length of this, 4cm, appears more consonant with the type of pocket knife described, and Raffaele Sollecito's habit of always carrying a pocket knife attached with a clip to his trousers, and therefore to be considered rather short and manageable, with respect to a blade of 6 or 7 cm, as indicated by Candia).

Elements which lead one to consider that the 4cm in depth wound was inflicted by Raffaele Sollecito with the pocket knife that he was always carrying around with him, and was inflicted immediately after having cut the bra, while Rudy penetrated the unfortunate victim – who had been almost completely stripped naked – probably with his fingers because the biological trace on the vaginal swab did not present anything of a spermatic nature.

That the knife used by Raffaele Sollecito on that occasion, according to what has been said, has not been found, is an irrelevant circumstance when it is a case of blade weapons [*arma bianca*] of easy availability and easy enough to conceal (cf. on this specific point, Cassation 30 June 2004, no 48349).

This progression of violence, from advances to gripping, from which derive the numerous bruises, to ultimately injuring the girl with a knife, finds a possible explanation in the fact that Meredith, it must be held, continued to put up the resistance that she could (there are in fact no signs of yielding, of any acquiescence occurring and, as a matter of fact, the scream that Nara Capezzali and Maria Ilaria Dramis have declared to having heard confirm this behaviour of the young lady), and, to the end of completely subduing her, even to her will as well, probably, as an angry and almost punitive reaction against a girl continuing in this behaviour, there was the blow inflicted upon the neck producing the 4cm deep wound (corresponding to about the length of the blade described by Binetti and De Martino), a blow that, as observed above, is to be held to have been inflicted with the same pocket knife used to cut off the bra and therefore by the **[402]** same person who had sliced the bra itself and who had the use of this pocket knife, and this is Raffaele Sollecito.

The very loud scream (as described by Maria Ilaria Dramis) of pain and, at this point, also of terror, made by Meredith and of which it was said, not causing any repentance among the attackers, but the final definitive progression of violence, and

while her already-cut bra was being removed (the bra that, coming into contact with the part of the body that had begun to be covered in blood from the wound in the neck, itself became partially stained with blood), the hand of one of the attackers sealed Meredith's mouth, so that she could not scream again, and another of her attackers struck her again on the neck, but on the left side because, probably, they were on the other side with respect to the person who had inflicted the 4cm deep wound, causing [in their turn] a lesion 8cm deep. Meredith tried to withdraw the part of her body that was once again and more deeply attainted but, held by the hand of whoever was holding her mouth shut and countered by the presence of the one who had caused the 4cm-deep wound, she ended up being driven back towards the knife that still remained in the wound itself, and occasioned a second incision on the epiglottis, as has been seen, almost as if it were [a case of] a second blow being inflicted upon her.

This dynamic requires the presence of a second attacker, of a second knife. This Court holds that the second attacker is Amanda Knox and the second knife is Exhibit 36. The outcome of the genetic investigation with a quantity of DNA indicated as "too low" was placed under censure and doubts about reliability. Equally, the incompatibility of this knife with the wounds suffered by Meredith was affirmed. On these matters, the considerations already made must be recalled, which led this Court to evaluate the outcome of the genetic investigation as reliable, and this knife as absolutely compatible with the most serious wound.

The inquiry elements allow, still, further observations.

This knife, which attracted the attention of Inspector Finzi during the search in Raffaele Sollecito's house such that it was taken, unlike the other knives that were in the same drawer, must have presented itself as different from the others, with **[403]** its own individuality with respect to the other knives present in the Corso Garibaldi house. The owner of this house, were this knife not to be found in the Corso Garibaldi house, would have been able to remember its presence and note the absence of this utensil, and this circumstance would have been able to constitute a trace, an investigative hypothesis upon which Raffaele Sollecito may have been called in to supply an explanation for. In relation to this, it is to be held that Amanda and Raffaele would have evaluated as opportune to carry the knife back to the house from which it had been removed, considering also that its cleaning (it was in fact found extremely clean, as has been noted) would have ensured the non-traceability of the wounds suffered by Meredith to it itself.

Now, concerning how this knife could have found itself in the house at Via della Pergola when Meredith was killed, and in the custody of Amanda, the following must be observed: Amanda had with her a very large handbag, as Romanelli declared (page 51, hearing of 7 February 2009); in this handbag there could have been found a place for the knife in question. Amanda, in her various movements [about town], as for example to take herself to the le Chic pub situated in Via Alessi, could have found herself walking alone, even late into the night, on roads that could have seemed not very safe for a girl to be on at night time. It is thus possible and in fact probable, considering the relationship that Raffaele Sollecito had with knives (he never separated himself from his knife, as has been seen), that Amanda, advised and convinced by her boyfriend, that is Raffaele Sollecito, to take this knife with her, if not only to make her feel more secure, and that, if necessary, it could have served as a deterrent against possible ill-intentioned persons that, at night and on her own, she may have encountered. Furthermore, since it was a kitchen knife, Amanda, were she to be checked, would have been able to easily explain why she was carrying it.

The presence of this knife in the house at Via della Pergola when Meredith was killed, and its discovery in Raffaele Sollecito's house, thus find plausible explanations. It is moreover quite plausible that Amanda, holding this knife in her own spacious handbag, when together with Raffaele they found themselves in the house at Via della Pergola in the late evening of the 1st **[404]** November, may have been able to take this knife at some point during Rudy's advances, Meredith's refusal and Rudy's reaction, perhaps with the intention, initially, of mere threat.

It must be also emphasised that the presence of biological traces discovered on the handle of this knife, – and on which, regarding its attribution to Amanda, there was advanced no particular censure nor perplexity, – appears more likely to have been derived from her having held the knife to strike, rather than from having used it to cut some food.

Remembering that this trace was found at the point in which the knife handle has a kind of upturn or rise [*rialzo*], after which the blade begins, with the knife positioned thus in a horizontal position with respect to the plane on which one is cutting [*piano di appoggio*], it appears somewhat unlikely to hypothesise that such a biological trace would have come to rest at the point indicated. Conversely, should the cutting implement be used for striking, and therefore moving it not horizontally, but with a certain inclination, it is quite probable for the hand holding the knife to undergo a sliding motion due to the violence required for the blow and, finishing up with a certain violence against said upturn, thereby leaving behind the biological trace.

Even this consideration, therefore, leads one to hold that the biological trace attributable to Amanda and found on the knife handle, could have derived from the use of the knife for the purpose of striking, rather than to cut food; it could have derived, therefore, from the harmful action carried out against Meredith and as a consequence, a biological trace attributable to Meredith remained in the tiny striations present on the face of the blade, in spite of the subsequent cleaning, and which does not appear otherwise explainable as to how, in this regard, it was to be found there (Meredith had never been in Raffaele Sollecito's house and could never have used this knife).

Moreover, the knife Raffaele Sollecito carried with him had a definitely shorter blade – as has been seen – than the length that would have been necessary for causing the deeper resulting wound, with a depth of 8cm, and therefore, there must necessarily have been **[405]** two knives at the scene of the crime, first one, and then the other, being used against Meredith.

Amanda also, therefore, is to be found at the scene of the crime, and she also participated in the violence against Meredith, united with Raffaele and Rudy, with one objective pursued together, and participated in together: to subdue Meredith, allowing Rudy to sexually assault her, creating a situation of violence and eroticism, as observed earlier.

In this context, the death of Meredith, while not constituting the primary end, became an eventuality that easily could be realised due to the particularly vital body region that came to be struck (the neck); due to the certain suitability of the weapons used (knives capable of producing deep wounds), and due to the violence carried out against the victim: hands used to seal the mouth and impede the breathing, the repeated and violent blows that caused 4cm- and 8cm-deep wounds.

This eventuality of death, highly probable, came to be accepted [by the attackers] and the harmful actions [were] carried out and followed through both by Amanda and by Raffaele, who acted pursuing the same objective that made them similar to Rudy: there is therefore the awareness and the will to cause death in the context of sexual assault.

BIOLOGICAL TRACES FOUND IN THE SMALL BATHROOM USED BY MEREDITH AND AMANDA

The inquiry activity revealed further elements against the accused.

We refer to the traces found in the bathroom next to Meredith's and Amanda's room, and generally used by both girls.

It was maintained that this common usage ought to render the traces found in this room completely irrelevant. It is an argument which cannot be upheld when we consider the overall situation found in this bathroom and which appears almost to document, in sequence, the actions carried out.

After Meredith had been killed, those who had struck her with the knives must have been stained with blood and had, therefore, the necessity of cleaning themselves.

[406] The bathroom nearest to Meredith's room was the environment best suited for this need, and it is likely it was there that they took themselves, and the traces found in the bathroom give confirmation of this, and so, on the bathroom door, evidently touched to gain entry or on which something was pressed (for example, a piece of clothing) there was a droplet of blood, Meredith's blood (see photos 141 and 142 of the photographic evidence, volume 3). On the light switch (evidently pressed on because, being night time, it was necessary to turn on the light), one can see the presence of a slight blood stain that turned out to be Meredith's. On the box of cotton buds on the washbasin, bloodstains were found and a biological trace, attributable to Meredith and to Amanda.

Mixed biological traces, attributable to Meredith and to Amanda, were also found in the washbasin and in the bidet, and appear to evidence the signs of an activity of cleaning of the hands and feet, effected in the washbasin and in the bidet, an activity that, through the action of rubbing, involved the cleaning of the victim's blood, and could involve the loss of the cells through exfoliation of whoever was cleaning themselves: the two biological traces thus united together in that single trace described by Dr Brocci and that, because of the presence of blood, took on a faded red colouration, like diluted blood. This trace was attributable to Amanda and to Meredith, both as regards the bidet as well as the basin.

The sky-blue mat positioned inside the bathroom contained imprinted blood stains which were found to be Meredith's, and in particular one of these stains outlined a footprint (see photo 157 of the photographic folder last cited).

The Defence also focused attention on this stain, and in particular Professor Vinci, consultant for the Raffaele Sollecito defence, tried to demonstrate that this shape was imprinted from a bare foot compatible with that of Rudy's. In the relevant chapter [of this sentencing report], the various considered elements were examined, and the reasons by which Professor Vinci's assumption does not appear to be sustainable were described. In addition to recalling these considerations, it is to be **[407]** observed that there are further arguments which lead to excluding that the print on the mat could be attributable to the foot of Rudy Hermann Guede.

It must in fact be emphasised that the shoe prints found in the hallway, after an initial attribution to Raffaele Sollecito, were traced to footwear matching those that were to be found in the shoe box found in Rudy's house. In relation to this, it must be affirmed that Rudy had been in Meredith's room with his shoes on, and, moving around in this room where there were large patches of blood, it is quite possible that he had placed his feet in these pools as well; Rudy, in this way, came to have blood on the soles of his shoes, and, leaving the room, left his blood-marked prints, which, therefore, showed the course and direction that he took: towards the exit of the house, as has already been shown. These factual elements lead, therefore, to ruling out that Rudy had been barefoot in Meredith's room and that he had stained his feet. As a consequence, the shape of the bare footprint on the sky-blue mat in the little bathroom cannot be attributed to Rudy, who, on leaving Meredith's room (according to what the shoe prints show), directed himself towards the exit without deviating or stopping in other rooms.

Also from this viewpoint it must be excluded that the print left on the sky-blue mat in the little bathroom could be attributable to Rudy. A footprint that, for what has been observed in the relevant chapter [of this report] and for the reasons just outlined, must be attributed to Raffaele Sollecito, who, therefore, took himself, along with Amanda, into that same bathroom, and for the same reason as Amanda. That there then were no biological traces found in this bathroom also attributable to Raffaele Sollecito as there were biological traces attributable to Meredith and to Amanda, does not diminish the validity of what has been said. Raffaele Sollecito could have washed himself in the shower stall, in a different way and with an abundance of water, so that, either for one reason (no rubbing action, or not effected in the same way), or for another reason (use of water in large quantities), he did not leave his own biological traces while he **[408]** was washing himself, or rather, he could have washed himself before Amanda, so that the water used by her immediately afterwards could have carried away the preceding possible traces.

The traces found in the bathroom constitute, in their overall evaluation as mentioned above, a further element of proof against Amanda Knox, showing how she herself had been in the room where Meredith was killed and, stained with blood, she went to the bathroom to wash herself, leaving, as a result of this action, mixed biological traces constituted of her own material and of Meredith's (likely the blood which coloured the trace a faded red).

TRACES HIGHLIGHTED BY LUMINOL

It was also said of the traces highlighted by Luminol and of how these very traces, because of the certain presence of blood in abundance in the house and because of the lack of indication, beyond the mere hypotheses made, of substances which could actually have been present and present in various areas, indicate that Amanda (with her feet stained with Meredith's blood for having been present in her room when she was killed) had gone into Romanelli's room and into her own [room] leaving traces [which were] highlighted by Luminol, some of which (one in the corridor, the L8, and one, the L2, in Romanelli's room) were mixed, that is, constituted of a biological trace attributable to [both] Meredith and Amanda, and others with traces attributable only to Amanda (the three found in her own room and indicated as L3, L4 and L5) and only to the victim (one found in Romanelli's room, the L1).

These traces, besides constituting further evidence of the presence of Amanda in Meredith's room when she was killed, lead [us] to believe that Amanda and Raffaele, before deciding to break the glass in the window of Romanelli's room and leave the house, wished to make sure that there was no-one in the street; a worry that may have had its basis both in the scream let out by Meredith and which could have been heard by someone who, being in the street, had stopped in curiosity, and in the presence, only slightly earlier, of a broken-down car, in the very near **[409]** vicinity of the house on Via della Pergola, a car which both Amanda and Raffaele must have noticed when they entered the house; in fact, it should be considered that Raffaele must have already noticed the presence of such a vehicle when he was in the square in front of the University when, as Curatolo testified, he went close to the grating located there in order to look below, where that same broken-down car, causing an obstruction to the traffic, may have caused horns to be blown. Such noises may have drawn the attention of Raffaele Sollecito who, finding himself in the

piazzetta above and therefore only a few metres distant, became curious and thus might have gone to look over [the railing] to see what had happened (on the presence of that car and on the timing, cf. the statements of Giampaolo Lombardo who testified that he had arrived at about 23,00 pm with the tow truck after a phone call received at about 22.30 pm, and had loaded the broken-down car and left again at about 23.15 pm: hearing of 27 March 2009).

The biological traces attributable to Amanda (one to Amanda alone and one to Amanda and Meredith) highlighted by Luminol and present in the rooms of Amanda and Romanelli can therefore be adequately explained by the need to check what the situation outside the house was, and to do this Amanda had to look from the window of her own room and from the window of Romanelli's room, leaving in these areas the prints which were then highlighted by Luminol.

The situation outside the house must have seemed quiet (the tow truck had arrived and left by about 23.15 pm and there was no-one in the street looking at the house, moreover Capezzali and Dramis, who testified that they had heard the scream, did not go outside their own homes) and it was then decided to break the glass in order to create the staging of an unknown criminal entering from the window, and they decided they could go outside. It is to be believed that Raffaele Sollecito, who in the meantime, after having been in the small bathroom, must have put his shoes on again, went around [the outside of] the house to look for the big stone (subsequently found) to use in order to break the glass, and Amanda could, in her turn, go to the bathroom to wash her hands and feet; when Raffaele came back in with the big **[410]** stone the disorder in Romanelli's room was created, the glass was broken, and the shutters pushed towards the exterior.

Before leaving the house it is to be held that both went back into Meredith's room, taking care not to put their feet in any of the splashes of blood that were present there, to take the mobile phones and they decided to cover Meredith's body, which was almost completely nude, with a duvet and then they left, locking this room's door with the key. It is likely, furthermore, that in returning to Meredith's room at that point, one of the little pieces of glass from the broken window ended up, inadvertently, in that room, where it was later found, as has been recounted.

While Amanda and Raffaele were carrying out these actions, Rudy immediately left by S. Antonio street until he reached the steel stairs of the car park, and climbing these stairs made the noise heard by Capezzali. The latter, in fact, declared that first she heard the noise on the steel stairs and then she heard the shuffling noise, as of

someone walking on leaves and gravel, a shuffling which was, therefore, produced by someone who had just exited from the house on Via della Pergola and was on the gravel path, where, because of the autumnal season and the presence of trees (see photo 5 of file 1 of photographic evidence) there must also have been leaves.

These statements by Capezzali which have already been dealt with and which constitute a confirmation of the presence of several people in the house where Meredith was killed, make it possible to consider that the exit[s] from the little house happened at different times: the first to come out was Rudy, who was already wearing his shoes (as has been seen) and who headed immediately towards S. Antonio street until he reached the steel stairs of the car park situated below the window of Capezzali's home; then Amanda and Raffaele exited, having stayed behind in the house longer than Rudy had in order to attend to the actions which have been mentioned, and their scrunching on the driveway outside (despite, therefore, having only covered a couple of meters, or slightly more) was subsequently heard.

Even the traces highlighted by Luminol therefore show the existence of evidence against Amanda, making [the Court] consider that she, having been barefoot in the room where Meredith was killed and having thus stained her feet, had left the traces highlighted by Luminol (which could have resisted the subsequent action of cleaning, on which more will follow) and found in the various parts of the house which she went to for the reasons shown above (her own room, the corridor, Romanelli's room).

[411] This reconstruction, according to which Meredith's death occurred a few minutes after 23.30 pm is also confirmed by the thanato-chronological data [i.e. data concerning the chronology of death] as there has already been occasion to note, as well as by the following circumstances [which were] highlighted in the relevant chapters:

Meredith's English mobile phone established a GPRS connection at 22.13.19 pm lasting 9 seconds, under the coverage of the Wind cell with the final numbers 30064, which is compatible with Meredith's room in the house on Via della Pergola 7; the next telephone contact of the same mobile phone occurred at 0.10.13 am on the day of 2 November 2007 and the cell connected to was that with the final numbers 25622, which provides coverage to the villa on Via Sperandio and is incompatible with the house on Via della Pergola.

Consequently, at 22.13.19 pm the situation must still have been quiet and Meredith may have been toying with her own mobile phone, as was noted in the chapter dedicated to the examination of the memory of Meredith's English phone; at 01.10.31 the mobile phone was no longer in the house on Via della Pergola: at that hour, therefore, Meredith must already have been killed and her phones taken and thrown away. And in fact, Amanda and Raffaele, exiting the house on Via della Pergola around midnight, could easily have reached Via Sperandio in a few minutes, and from there have thrown, towards the zone of trees and bushes which at that time of night may have looked like a precipice or uncultivated woods (an area where the telephones would, with difficulty, have been found by someone), Meredith's mobile phones. In this regard, it should be underlined that from the file of planimetric surveys [i.e. maps] can be seen the contiguity and closeness of the various streets, situated almost in continuation from one to the other, and therefore known to the current defendants: Via della Pergola, from which one may easily reach Corso Garibaldi, where Raffaele Sollecito's house was, **[412]** and Via Sperandio, located almost behind the houses which mark the edge of the old town of Perugia but easily and quite quickly reachable from Corso Garibaldi across various communicating passages which lead to S. Angelo Park, along which runs, precisely, Via Sperandio.

In the chapter dedicated to the examination of the memory of Meredith Kercher's English mobile phone, there was occasion to point out that the authors of the murder - had they actually been interested in the mobile phones themselves - would not have taken them to then throw them into the midst of trees and shrubs. It is clear, therefore, that the aim pursued was different.

A first hypothesis can be seen as an intent to further the simulated burglary so that discovery of the two mobile phones could strengthen the lead of the unknown thief who had entered the house on Via della Pergola by breaking the window-pane and who had taken Meredith's two telephones. This is a hypothesis which, while it has a certain logical validity, seems scarcely credible since to that end it would have been easier to (also) take one of the valuable items in Romanelli's room, which had already been turned upside down [i.e. rifled].

The other hypothesis, which this Court prefers also in relation to what will be further observed at a later point, holds that it could have been to prevent the two mobile phones from ringing as a result of calls which Meredith might have received, which thus because of the insistent ringing and lack of an answer might have brought forward the discovery of Meredith's body to a much earlier time. In particular, Amanda and Raffaele may have thought that Mezzetti or Romanelli or

one of the young men from downstairs, particularly Giacomo Silenzi, who had a relationship with Meredith, might have returned to the house in the morning and if they had heard the telephone ring without being answered by Meredith, might have gone to check in the room and would have discovered what that room concealed. It was therefore necessary to take the mobile phones away and to throw them far away; it was also necessary to lock the door of Meredith's room with the key in order to prevent someone, returning to the house, from calling Meredith and, not receiving **[413]** a response, going into the room and realising, too soon, what had happened.

The taking of the mobile phones which were immediately thrown away and the locking of Meredith's room both had, therefore, the same objective: to isolate Meredith and her room to prevent anyone who might have gone into the house on the morning of 2 November from discovering what had happened too early.

Such a requirement may be explained by the need to check that no compromising traces had been left behind and by the consequent need to eliminate any possible remaining traces.

What has just been said is confirmed by the circumstance by which, on the morning of 2 November at 07.45 am, Amanda was in Quintavalle's shop and just after leaving was seen travelling downhill along Corso Garibaldi, most likely therefore in the direction of the house on Via della Pergola where, moreover, she might already have been prior to 7.45 am.

Further confirmation is constituted by the fact that, after Meredith's murder, it is clear that some traces were definitely eliminated, a cleaning activity was certainly carried out. In fact, the bare foot which, stained with blood, left its footprint on the sky-blue mat in the bathroom, could only have reached that mat by taking steps which should have left other footprints on the floor, also marked out in blood just like (in fact, most likely, with even more [blood], since they were created before the footprint printed on the mat) the one found on the mat itself. Of such other very visible footprints of a bloody bare foot, on the contrary, there is no trace.

Even the drip of blood left on the internal edge of the bathroom door (see photos 141 and 142 already mentioned) seems to be the remainder of a much larger trace.

Moreover, this cleaning activity seems to fit in with the planning carried out by taking the telephones, which were then immediately thrown away, and by locking

the door of Meredith's room; otherwise one cannot see what other significance these behaviours could have had.

[414] With regard to Meredith's mobile phones, the hypothesis was also put forward that these same [mobile phones] were stolen at about 22.00 pm and thrown in Via Sperandio because the thief, hearing the connection reach one of the two telephones, became frightened of keeping them and, being already in Via Sperandio, threw both of them away.

This is an argument which is based on premises that have been shown to be inconsistent according to what was looked at in greater depth in the appropriate chapters (entrance into Meredith's room and assault by a single aggressor who could have used the broken window as the point of entry or could have managed to make Meredith open [the door to him]; time of death to be established as being shortly before 22.00 pm; incompatibility between cell 30064 on Strada Vicinale Ponte Rio Monte La Guardia used for the connection of 22.13.9 pm and Meredith's room located in Via della Pergola); such an argument seems, moreover, completely illogical. Whoever takes mobile phones knows well that, at some point or another, if they are switched on, they may ring or have some connection; to avoid this, it would be easy to turn the mobile phones off or to remove the SIM cards. And then: why throw both mobile phones away if the connection had concerned only one of them? [We] cannot see any reason why the author of the crime would have been in Via Sperandio, which is located beyond the city walls of the town, in front of S. Angelo Park which, at that hour, must have been dark and deserted. Furthermore, it must also be observed, if one travels along the Via Sperandio road in the direction [of someone] coming from Via della Pergola, one advances into the countryside (see, once again, the file of planimetric surveys/maps) and [we] cannot see what destination a person advancing along that street could have had with any objective other than that held by this Court: to throw the telephones in a place where they would be very difficult to find. To this must be added that even if the telephones had been stolen for their economic value, and that throwing them away was a spontaneous action dictated by fear, we cannot see the reason for having locked the door of Meredith's bedroom.

It should therefore be considered that the taking of the telephones and the locking of the door of Meredith's room were aimed at preventing someone **[415]** from prematurely entering the English student's room and discovering what had happened in there, and this, probably, because of the need to check for possible

compromising traces left behind, and the necessity, in that case, of eliminating these traces.

A plan which, as has been said, is confirmed by the testimony of Quintavalle: entering the shop which also sold cleaning products at opening time, shows an unquestionable urgency which is easily explained by the objective indicated, [and] all the more so because that going into [the shop] and at such an early hour, was denied by the defendant Amanda Knox.

This action of checking and cleaning was carried out, therefore, in the very early hours of the morning of 2 November. And also this circumstance constitutes a clue to the charge of both defendants: of both because it must have been a common [joint] decision, taken at the time the mobile phones were taken and Meredith's room was locked; carrying out [the task of going to the store] was entrusted to Amanda alone since, if they had been together, and someone had seen them at that time of the morning, they would have been far more noticeable and if they had met anyone who knew them, they would have most likely have had to give an explanation.

That this action of cleaning could have been carried out the same night, immediately after the murder, seems difficult to hypothesis e. To linger on in the house where Meredith's body lay could have been risky. On the contrary, returning in the morning would have allowed [them] to do the cleaning under better conditions and with more time available; it is also possible that more cleaning products were needed, as the visit to Quintavalle's shop leads us to believe. Furthermore, once the mobile phones had been taken, and the door had been locked, there would have been no compelling reason not to put off the cleaning until early the next morning. If anyone had arrived at the house (Silenzi, for example) the closed door would have convinced him or her that Meredith was not in her room, and the impossibility of hearing Meredith's phones ring would not have given rise to any suspicion.

Nor is it held that what was presented with reference to the cleaning activity and the prints elimination is contradicted by the prints that were actually found and this with particular reference to the prints of shoes left in the corridor. In this regard, **[416]** it can in fact by hypothesised that the cleaning action was not particularly careful or else - and this second hypothesis is held to be more probable since the shoe prints, as has been recalled, were fairly evident - that such an omission was intentional, in the knowledge that, having been in Meredith's room, when the latter was killed, with bare feet as has already been noted, the shoe prints in blood would have constituted an exonerating element in their defence.

We believe that the small blood stains in the bathroom were not considered to be significant as to require specific cleaning and the same goes for the stains on the mat which could be explained either by referring to wounds which the criminal would have sustained when entering the house by breaking the glass, or by referring to a loss of blood attributable to menstruation (furthermore, the house was occupied by four young women).

With regard, then, to the traces highlighted by Luminol, it is possible that these had resisted being cleaned, and in fact they were not visible and could only be seen when the chemical reagent was sprayed.

Once the cleaning [action] which had been planned with Raffaele Sollecito had been carried out, Amanda returned to the house on Corso Garibaldi; this was around 12.00 noon.

She makes sure that Meredith's phones had not ended up in the hands of someone who might have reported their recovery thus leading to a search being started, and to this end she called Meredith's English mobile phone number.

Nor can an argument be made against such an interpretation by recalling the circumstance that Amanda called Meredith on only one of the phones. It should in fact be observed that, having thrown both phones together and in the same place (they were, in fact, found very close to each other), the fact that one [phone] had not been found would lead to the conclusion that the other had not been found either. It should, rather, be added that if Amanda's concern had really been to find out where Meredith was, the lack of a reply on the English mobile phone number which, as Romanelli testified, Meredith never parted with because it allowed her to stay in touch with her family, and in particular with her mother whom she knew was ill, **[417]** should have given her [Amanda] even greater cause for alarm and made her call the other telephone too.

Reassured, therefore, also on the aspect which was most important to Amanda and Raffaele, Amanda called Romanelli, to whom she started to detail what she had noticed in the house (without, however, telling her a single word about the unanswered call made to Meredith, despite the question expressly put to her by Romanelli) and Raffaele called the Carabinieri to whom he describes the situation and specifies that there had been no theft, and we have already pointed out the inconsistency of such statement the inconsistencies in Amanda's and Raffaele's subsequent behaviour on the arrival of the agents from the Postal Police (to whom

they did not mention the problem of the locked door of Meredith's room) and on the arrival of Filomena Romanelli, Paola Grande, Luca Altieri, Marco Zaroli, when, as soon as it was decided to break down the door, they remained in the background, at a distance, without manifesting any particular interest in seeing what could be found in Meredith's room.

{CONCLUSION}

All of the elements put together, and considered singularly, create a comprehensive and complete framework without gaps or incongruities and lead to the inevitable and directly consequential attribution of the crimes to both the accused, for which therefore they have penal responsibility, with the exception of the items listed under Heading D) other than the cell phones, with regard to which no evidence emerged against [*elementi a carico*] the accused, who are therefore absolved for the relative and residual charge because it was not proven that the crime was committed [*il fatto non sussiste*].

The stealing of the mobile phones complements the crime of theft due to the benefit, which has been mentioned, obtained by stealing the mobile phones. A benefit that, in order to constitute the crime of theft [*ai fini della configurabilità del furto*], does not necessarily have to be of a financial or a property-related nature (cf. for example, Cass. 12.2.1985 No. 4471 and Cass. 22.11.1983 No. 9983).

Amanda Knox is also declared guilty of the crime of *calunnia* which was attributed to her.

[418] The accusation directed at Patrick Lumumba, of having committed the murder and assault against Meredith, clearly emerged as having been made by Amanda Knox between 5 and 6 November 2007. Amanda came back to this accusation during the first conversations she had with her mother, and the regret shown in this regard (cf. audio surveillance of 10 November) constitutes confirmation of the accusation and awareness of its injustice. An awareness which, moreover, is derived from what has been presented regarding Amanda's responsibility in the murder and assault against Meredith. Nor can it be claimed, in order to rule out the determination of the crime of *calunnia*, that Amanda Knox was persuaded by the investigators to accuse Diya Lumumba aka Patrick, by means of various pressing requests which she could not resist. Such a theory, also suggested in the declarations made by Amanda during the course of the present trial and which have been documented here-above, does

not seem acceptable. On the one hand it can be seen that there has been no confirmation and no corroboration of the pressing requests which Amanda was seemingly subjected to in order to accuse Diya Lumumba of the crime committed to the detriment of Meredith. It must also be pointed out that Diya Lumumba was not known in any way, and no element, whether of habitually visiting the house on Via della Pergola, or of acquaintance with Meredith, could have drawn the attention of the investigators to this person in such a way as to lead themselves to "force" Amanda's declarations.

[Amanda] herself, furthermore, in the statement of 6 November 2007 (admitted into evidence *ex*. articles 234 and 237 of the Criminal Procedure Code and which was mentioned above) wrote, among other things, the following: "I stand by my – accusatory - statements that I made last night about events that could have taken place in my home with Patrick... in these flashbacks that I'm having, I see Patrick as the murderer...". This statement which, as specified in the entry of 6 November 2007, 20:00 pm, by the Police Chief Inspector, Rita Ficarra, was drawn up, following the notification of the detention measure, by Amanda Knox, who "requested blank papers in order to produce a written statement to hand over" to the same Ficarra.

It must therefore be asserted that Amanda Knox freely accused Diya Lumumba of having killed Meredith, and so accused him with full knowledge of the innocence of the **[419]** same Lumumba. The incriminating evidence against Amanda Knox and her boyfriend Raffaele Sollecito which has been presented also highlights the goal that was thus pursued: to lead the investigators down the wrong track, far away from that which might have led to an investigation of her own and her boyfriend's responsibility. A behaviour and a choice, therefore, [that were] purely defensive: Amanda had good relations with Lumumba, by whom she had always been treated well, as she herself stated, and thus there could have been no reason for rancour, animosity, revenge which could have justified such a serious accusation; the sole reason for unjustly accusing Lumumba was that of distancing herself and her boyfriend from every possibility of suspicion and the necessity of further investigations. To obtain this it was necessary to indicate a different perpetrator and so Amanda pointed to Diya Lumumba. A behaviour, therefore, which follows the same defence strategy as that already put into effect with the staging implemented by breaking the window of Romanelli's room, and constitutes a further confirmation of Amanda Knox's capacity for fictitious representations and contrived manipulation of the events.

With regard to the aggravating circumstances which have been attributed, it was decided to exclude that of the impaired defence in consideration of the fact that the assault against Meredith was carried out in the room in which she lived. Meredith, furthermore, was awake and still dressed; neither having consumed drugs nor abused alcohol, she was in a state of full consciousness and complete capacity to react.

The aggravating circumstance of trivial motives is also excluded, since it was attributed without further specification other than a mere mention of Article 577 of the Criminal Code.

Within the crime of murder, carried out in the course of the sexual assault which Meredith Kercher was subjected to according to what has been presented, the crime of sexual assault is assimilated as a special aggravating circumstance of the former [i.e. of the murder]. In this regard it should be noted that the aggravating circumstance provided for by Article 576 paragraph 1 number 5 of the Criminal Code. (having committed the crime in the act of committing any of the crimes provided for by Articles 519, 520 and 521 of the Criminal Code which provide for, respectively, rape, sexual intercourse **[420]** carried out with abuse of [one's] position as a public official, and violent indecent acts)must always be applied when in the presence of crimes of sexual assault regulated by Articles 609 bis *et seq*. [of the] same code, as introduced in Law 15.2.1996 No. 66, noting that nothing in this law has provided for the repeal of the above-mentioned Articles 519, 520 and 521 of the Criminal Code since the reference to the latter articles made in Article 576 of the Criminal falls within the category of formal reference [*rinvio*] and not into the category of applicable law [*rinvio recettizio*], then the repeal did not include an "*abolitio criminis*" but only an ordinary phenomenon of succession of incriminating criminal laws (see Court of Cassation 28.1.2005 No. 6775).

This Court considers that both the defendants should be granted generic mitigating circumstances equivalent to the above-mentioned special aggravating circumstance.

There are various elements allowing generic [extenuating circumstances] to be granted in the case in question.

First, it should be recalled that the seriousness of the crime is not in itself alone an obstacle to the recognition of generic extenuating circumstances (a principle established since 1979 by the S.C.[30] with judgement No. 7392, and confirmed with

[30] Suprema Corte di Cassazione

sentence 33690/09); for their recognition [of generic extenuating circumstances], reference should also be made to certain elements and states of affairs, other than those indicated legislatively by Article 62 of the Criminal Code due to, for the said clause, the express provision contained in Article 62 bis of the Criminal Code: "independently of the circumstances set out in Article 62". Therefore, in exercising the power of discretion required of a judge, without singling out specific Article 62 bis of the Criminal Code situations in the presence of which such standards must apply, account must be taken of circumstances not explicitly envisaged by the legislator but which have a significant value for the purpose of determining the sentence without disregard "for the criteria indicated by the legislator in Article 133 of the Criminal Code, dealing with all-comprehensive regulation on the possible situations which might have an effect on how sanctions are dealt with" (Cassation 33690/09).

That said, it should be noted above all that both defendants have no criminal record, no pending suit (with regard to the non-applicability of the limit to the granting of generic [extenuating circumstances] in Article 1 letter F bis **[421]** Law 24.7.2008 No. 125 to crimes committed in an earlier period, cf. Cassation 10646/2009). Other than their personal use of drugs, no unbecoming behaviour of the same [defendants] was demonstrated to have been carried out to the detriment of others. No witness testified to violent actions, or to aggressions-intimidations carried out by the current defendants to the detriment of anyone at all. To the contrary, there were even shown to be circumstances in which as much one as the other, besides diligently and profitably undertaking their studies in the manner that they were expected to do as students (Raffaele Sollecito was on the point of graduating and Amanda Knox was working profitably and regularly in the classes she was attending at the University) proved themselves to be available with others (Raffaele Sollecito, on the evening of 1 November, was meant to have accompanied Jovana Popovic to the station) and made the effort of taking on work (Amanda Knox worked in the evenings in the pub of Diya Lumumba) which was added to the effort required by their studies and attending lessons. These circumstances seem significant *ex* Article 133 paragraph 2 number 2 of the Criminal Code.

Both defendants are very young, and were younger still at the time the events [took place]. The inexperience and immaturity characteristic of youth were accentuated by the situation in which both found themselves because it [the situation] was different from that in which they had grown up and did not have the usual points of reference (family, friends, acquaintances made through the years, one's own country and town

of origin) which might have served as a continual support, [point of] comparison and check in the decisions of daily life. Thus Amanda Knox, who had been in Perugia for less two months, driven only (as far as the proceedings have allowed [us] to judge) by curiosity and by the desire to have several experiences, found herself living without that protection and shelter constituted, in particular, by her family (in this regard what Amanda declared with regard to her "big" family, [and] to the intense and continual [lasting] relationships existing within it, appears even more significant); analogously [the same applies to] Raffaele Sollecito whose father phoned him regularly, signifying the need his son still had for a presence [someone to be there] to continually listen to, support and guide him; phone calls which were, however, incapable of taking the place of the [physical] closeness and control which were evidently still necessary (significant circumstances ex [according to] Article 133 paragraph 2 number 4 of the Criminal Code).

[422] It should further be noted that the criminal acts were carried out on the force of purely chance contingencies which, put together one with the other, created a situation that, in the combination of various factors, made possible the crimes to the detriment of Meredith: Amanda and Raffaele who suddenly found themselves without any commitments; they meet Rudy Guede by chance (there is no trace of any appointment having been made), and find themselves together with him at the house on the Via della Pergola where, precisely that evening, Meredith is alone. A crime that is carried out, therefore, without any planning, without any animosity or feelings of rancour against the victim which could be seen in any way as preparation-predisposition to [commit a] crime. Considerations which, together with what has been observed on malice with regard to the crime of murder, appear significant in terms of Article 133 paragraph 1 number 3 of the Criminal Code.

Even the[their] behaviour towards Meredith once the assault and the murder had been committed, which consisted in covering her lifeless body, shows a feeling of pity for the victim, a refusal, and thus a sort of repentance for what has been done: refusal and repentance expressed through such an act of pity. And also the fact of having remained far from Meredith's room when, through the breaking down of the door, it was opened, seems to be along the same lines as the act of covering the body: the pity towards the victim and the refusal of the evil committed which appear to be expressed in the act of covering the body and in the decision to remain far away so as not to see Meredith's body, her blood spilt. Behaviours which are shown to be significant according to Article 133 paragraph 2 number 3 of the Criminal Code.

Such generic extenuating [circumstances] are considered to be equivalent and not also prevailing [do not predominate] with respect to the aggravating [circumstance] of sexual assault. The latter [sexual assault], in fact, is highly important and significant such that it constitutes, when considered in its own right, a very serious independent [separate] crime and, placed in the context of the events in consideration, carries a sentence of life imprisonment. In relation to the occurrence of such aggravating [circumstances] the generic mitigating [circumstances] must be evaluated, and justified on the basis of the considerations outlined above, in terms of equivalence and not [rather than in terms] of prevalence.

[423] The element of continuance in a crime must be applied to all the crimes due to the concomitance of the time and place in which they were committed, the objectives which were pursued and the situation in which they arose.

The most serious crime on which the increases [of penalty] due to the continuance must be applied is the murder considered the punishment prescribed by law provided for this [i.e. murder] and the extreme damage caused. It is precisely the seriousness of this damage as constituted by the killing of a young woman, violated intimately and subjected to wounds which, with great suffering, caused her death, which forms the deciding factor in determining the punishment ex [in accordance with] Article 133 of the Criminal Code and on which are applied the maximum increases for the reiteration provided for by Article 575 of the Criminal Code and to the extent of 24 years of imprisonment.

The element of continuance together with the crimes of simulation [staging] and of unjustifiable carrying of the knife and of the theft of the cell phones determines, with regard to Raffaele Sollecito, an increase of the punishment of a further 1 year and thus Raffaele Sollecito is condemned to 25 years of imprisonment. In relation to the fact that in addition to the said crimes Amanda Knox is also answerable for the crime of *calunnia*, she must be condemned to a total punishment of 26 years of imprisonment (base penalty 24 years; increased to 24 years and 6 months for the simulation [staging]; to 24 years and 9 months for carrying the knife; to 25 years for theft and increased, finally, by a further year for *calunnia*).

Both [defendants] are likewise ordered to pay the costs of the trial and of custody in prison.

In accordance with Articles 29 and 32, Amanda Knox and Raffaele Sollecito are also declared in perpetuity to be forbidden from Public Office and to be in a state of legal interdiction for the entire duration of the punishment.

Both defendants are condemned to the compensation, jointly and severally, of the damages caused to the plaintiffs constituted by John Leslie Kercher, Arline Carol Lara Kercher, Lyle Kercher, John Ashley Kercher and Stephanie Arline Lara Kercher, damages to be settled in another trial [in separate sede].

In relation to the requests and conclusions formulated in that regard, a provisional [compensation] is granted in which it is considered reasonable to indicate €1.000.000,00 for each of the parents and €800.000 for each of the brothers and the sister.

[424] The same defendants are also sentenced to reimburse the legal costs of the plaintiffs named and constituted here above, which are assessed as being € 100.000 with regard to the defence of the plaintiff Stephanie Arline Lara Kercher and € 160.000 with regard to the defence of the other plaintiffs, that is of John Leslie Kercher, of Arline Carol Lara Kercher, of Lyle Kercher, of John Ashley Kercher, in addition to a lump-sum refund, VAT and CPA as provided by law.

The relevance and complexity of the case, the particular laboriousness [difficulty] of the investigations, the number of hearings, the efforts lavished, all justify such sums. The difference between them [the sums] is justified by the number of plaintiffs represented by one defence with respect to the other and by the anticipated increase in this regard provided for in cases, such as this case, of "parties having the same position" (Article 3 paragraph 1 criminal charge attached to D.M. 8/4/2004 No. 127).

Knox Amanda Marie is furthermore sentenced to pay compensation for the damages caused by the crime of *calunnia* to the plaintiff constituted by Patrick Diya Lumumba, damages to be settled in another trial [in separate sede] as it is not possible, on the basis of the information [available] in these proceedings, to precisely determine them in this court.

In consideration of the damages nonetheless caused and demonstrated by the defence [lawyer] of the plaintiff Patrick Diya Lumumba, it is considered, however, that the above-mentioned defendant should be sentenced to pay a provisional [compensation] of € 10.000,00.

Knox Amanda Marie is furthermore condemned to the reimbursement of the legal costs sustained by Patrick Diya Lumumba, which it is considered suitable to calculate, in light of the activities carried out during the many hearings and considering the relevance of the case, as amounting to € 40.000,00 in addition to a lump-sum refund, VAT and [CPA] as provided by law.

Both the defendants are condemned to pay compensation for the damages suffered by the plaintiff constituted by Aldalia Tattanelli, owner of the property located in Via della Pergola 7. In this regard, it should be noted that the criminal acts which are the subject of the charge, while not having caused, in themselves [in their own right], the damage suffered by Tattanelli (except for the breaking of the window), are related to this damage by an adequate causal relationship. In fact, the investigative activities carried out **[425]** in the property and the confiscation of the latter with the [resulting] enforced unavailability for its owner, are a direct result of the very serious deeds carried out in the property to the point that, without such crimes, the damage suffered by the owner for the damaging to, and unavailability of, the property would not have occurred (cf. Cassation 22.4.1985 No. 7462). The claim [of damages] therefore subsists because the current defendants are called upon to answer for the damage suffered by the owner of the house at Via della Pergola 7 and consisting of the damaging to the property and the non-enjoyment of the same [property] during the period of confiscation. These damages, since no evidence of their exact amount has been provided, will be settled in another trial [*in separata sede*]. Nevertheless, in relation to the period over which the confiscation was extended and to the income which could legitimately have been obtained from the availability of the property, a provisional [compensation] is granted equal to € 10.000,00.

Finally, both defendants, jointly and severally between them, are ordered to reimburse the legal costs of the plaintiff Aldalia Tattanelli, which it is considered reasonable to calculate, in light of the many hearings and considering the relevance of the case, as amounting to € 23.000,00 in addition to a lump-sum refund, VAT and CPA as provided by law.

The material evidence is confiscated as provided by Article 240 of the Criminal Code.

VERDICT AND SENTENCE

FOR THESE REASONS

Under articles 533 and 535 of the Criminal Procedure Code

[this Court] Declares

KNOX Amanda Marie and SOLLECITO Raffaele guilty of the crimes ascribed to them under chapter A) of the charges, into said crime being absorbed the felony contested under chapter C), as well as [guilty] under chapter B), D) limited to the mobile phones and E) and, as far as regards KNOX Amanda Marie, additionally the crime she has been charged with under chapter F), all these crimes must be joined by the element of continuance and, excluding the aggravations provided for by articles 577 and 61(5) of the Criminal Code, to both [accused] conceding the generic mitigating circumstances equivalent to the remaining aggravation, **[426]** condemns them, to a sentence of 26 years of imprisonment for KNOX and to a sentence of 25 years of imprisonment for SOLLECITO (base penalty for the reiteration, 24 years of imprisonment) and each of them to pay court costs and prison custody.

Under articles 29 and 32 of the Criminal Code

Declares

KNOX Amanda Marie and SOLLECITO Raffaele forbidden in perpetuity from holding Public Office and in a state of legal interdiction for the duration of the sentence.

Under articles 538 and following of the Criminal Procedure Code

Sentences

KNOX Amanda Marie and SOLLECITO Raffaele to the compensation, jointly with each other, for damages in dealings with the constituted plaintiffs John Leslie Kercher, Arline Carol Lara Kercher, Lyle Kercher, John Ashley Kercher, and Stephanie Arline Lara Kercher, damages to be liquidated in another trial and awarding an immediately executive provisional [compensation] equal to the amount of 1,000,000 euro each in favour of John Leslie Kercher and Arline Carol Lara Kercher, and to 800,000 euro each in favour of Lyle Kercher, John Ashley Kercher and Stephanie Arline Lara Kercher, in addition to a lump-sum refund, Value Added Tax and CPA as required by law;

sentences KNOX Amanda Marie to compensate for damages in dealings constituted by the plaintiff Patrick Diya Lumumba, to be liquidated in another trial and awarding an executive immediate provisioning of 10,000 euro.

sentences KNOX Amanda Marie to pay the reimbursement of the legal costs sustained by Patrick Diya Lumumba which liquidates in total to 40,000 euro in addition to a lump-sum refund, Value Added Tax and CPA as required by law.

sentences KNOX Amanda Marie and SOLLECITO Raffaele to compensate for damages in dealings with the plaintiff constituted by Aldalia Tattanelli to be liquidated in a separate hearing, and Lyle Kercher, John Ashley Kercher and Stephanie Arline Lara Kercher awarding to the same an immediately executive provisional [compensation] of 10,000 euro.

[427]

Sentences the accused to jointly pay the reimbursement of the legal costs of the plaintiff Aldalia Tattanelli which liquidates in total to 23,000 euro in addition to a lump-sum refund, Value Added Tax and CPA as required by law.

Under article 240 of the Criminal Code

Orders the confiscation of material evidence.

Under article 530 of the Criminal Procedure Code

Exonerates the accused of the residual charge under chapter D) because it was not proven that the crime was committed.

A deadline of 90 days is established for the sentencing report of the present verdict [to be filed].

Perugia, 4-5 December 2009

Drafters [*Estensori*][31]:

Dr Beatrice Cristiani, judge

Dr Giancarlo Massei, president.

[31] *Estensore* = a person who draws up a legal document