

**Admissibility of DNA Evidence:  
Italy Under Attack**

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## *Introduction*

The differences between admissibility and reliability rules for DNA evidence in Italy and America have gained notoriety with the 2009 murder conviction of the American foreign exchange student Amanda Knox and her subsequent acquittal in 2011. Knox, residing in Perugia, Italy, was convicted of the 2007 brutal murder of her British roommate Meredith Kercher.<sup>1</sup> Lacking a clear motive, murder weapon, and time of death, Knox's conviction hinged on the DNA evidence found on her boyfriend's kitchen knife and the victim's bra clasp.<sup>2</sup> Although inconsistent in her alibi, Knox maintained that she did not kill her roommate.<sup>3</sup> The DNA evidence at the center of the trial was of such small trace amounts that it was only available after numerous enhancements in the testing.<sup>4</sup> The young Amanda Knox was first convicted by the first instance trial court and then acquitted by the Court of Appeals in early October of 2011 based on lack of reliable evidence.<sup>5</sup> In February of this year, the prosecution filed an appeal in the Italian Supreme Court asking that the original verdict be reinstated.<sup>6</sup> A New York Times reporter quoted his Italian colleague stationed in Rome as saying, "in Italy, the general assumption is that someone is guilty until proven innocent. Trials—in the press and in the

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<sup>1</sup> Kristi Oloffson, *Amanda Knox, Convicted of Murder in Italy*, TIME MAGAZINE, Dec. 04, 2009, <http://www.time.com/time/world/article/0,8599,1945430,00.html.com>.

<sup>2</sup> Rachel Donadio, *Details Only Add to Puzzle in Umbrian Murder Case*, N.Y. TIMES, Sept. 30, 2008, <http://www.nytimes.com/2008/09/30/world/europe/30perugia.html>.

<sup>3</sup> Nick Pisa, *Court victory for Amanda Knox as full review of DNA evidence used to convict her is granted*, DAILY MAIL, Dec. 18, 2010, <http://www.nytimes.com/2008/09/30/world/europe/30perugia.html>. See also Eric Niller, *How Doggy DNA Free Amanda Knox*, DISCOVERY NEWS, Oct. 04, 2011, <http://news.discovery.com/human/dna-evidence-knox-trial-111004.html>.

<sup>4</sup> Timothy Egan, *An Innocent Abroad*, N.Y. TIMES, June 10, 2009, <http://opinionator.blogs.nytimes.com/2009/06/10/an-innocent-abroad/>.

<sup>5</sup> Tom Kington, *Amanda Knox trial was flawed at every turn, says appeal judge*, THE GUARDIAN, Dec. 15, 2011, <http://www.guardian.co.uk/world/2011/dec/15/amanda-knox-trial-flawed-says-judge>.

<sup>6</sup> The Associated Press, *Italy Prosecutors File Appeal in Amanda Knox Case*, CBC NEWS, Feb. 14, 2012, <http://www.cbc.ca/news/world/story/2012/02/14/amanda-knox-charges.html>.

courts—are more often about defending personal honor than establishing facts, which are easily manipulated.”<sup>7</sup> Precisely because of this erroneous attitude and famous trial, the Italian criminal legal system which fascinated the international community, especially those in America, came under attack for its handling of DNA evidence.

The purpose of this paper is to compare the differences and similarities in the evidentiary rules for DNA in Italy and in the United States in the light of their two different legal traditions. This note will compare American and Italian rules of evidence and procedure for the admissibility of DNA in criminal trials and analyze the most relevant differences between the two systems. Based on this comparison, the note will argue that Amanda Knox would not have been convicted of murdering her roommate in American lower court because the DNA evidence would not have been admissible. In Italy, Knox had to wait for the Italian Appeals Court to overturn her conviction, in part because of the weight given to DNA evidence that was admissible in the lower court. However, it should be noted that if Knox had been convicted in an American trial court, she would not have had access to the broad appeal she did have in the Italian system.

Part I of this note briefly summarizes the differences between the common law model (often referred to as the adversarial model used in the United States) and the civil law model (known as the inquisitorial model used in Continental Europe) in how criminal trials are conducted and evidence presented. Knox’s conviction at the trial level can be attributed to some of the fundamental differences between the two legal systems and not simply due to an error made by the Italian court. Part II explains what constitutes the science of DNA evidence and how it is used in criminal trials to either identify or eliminate a defendant. Part III develops the

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<sup>7</sup> *Id.*

evidentiary rules and case law that establishes the DNA admissibility standards in the United States Federal Courts. Part IV delineates DNA evidence and admissibility standards in Italy based on the Italian rules of evidence and its code of criminal procedure. Also included in this section is the interpretation of DNA evidence, its method of collection, and Italy's current standard for certification. Part V focuses on the Amanda Knox case itself by summarizing the facts of the case and the rulings of the two courts that have heard the case so far. Finally, this note will conclude that the rules for DNA evidence in both systems are still developing and that it is dangerous to judge one legal system through the lens of another legal system. Whenever comparing two different legal systems it is important to be aware of parochialism, which assumes that the writer's system is the best and the most advanced.

### ***Part I: A Comparison of Two Legal Traditions: the Inquisitorial and the Adversarial Models***

Two distinct legal traditions are at the root of the differences between DNA evidence admissibility and criminal trial procedures in the United States and Italy. An understanding of these two different legal traditions is important so that one does not judge the validity of one system through the lens of the other. The inquisitorial system developed from Roman civil law and the adversarial system developed from British common law.<sup>8</sup> The United States uses an adversarial system of criminal procedure rooted in the Anglo tradition.<sup>9</sup> Italy traditionally had a total inquisitorial system of criminal procedure, which came from the ancient Roman law that dates back to the Twelve Tables, then updated by the Emperor Justinian's codifications and

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<sup>8</sup> Joseph Dainlow, *The Civil Law and the Common Law: Some Points of Comparison*, 15 AM. J. COMP. L. 419, 420 (1966-1967).

<sup>9</sup> STEPHEN C. THAMAN, *COMPARATIVE CRIMINAL PROCEDURE* 4, (2<sup>nd</sup> ed. 2008).

compilations, and later adopted by the Emperor Napoleon.<sup>10</sup> Today, Italy sees itself as a hybrid between the adversarial and inquisitorial systems after it adopted its new Code of Criminal Procedure in 1988.<sup>11</sup>

In the Yale International Law Review of 1992, William T. Pizzi and Luca Marafioti commented that one of the goals of any adversarial system is to achieve some sort of justice regardless of whether or not all of the truth necessarily emerges.<sup>12</sup> They also stated that in contrast, a goal of an inquisitorial system is to ascertain the truth at trial and to achieve that there must be few “evidentiary barriers.”<sup>13</sup> These distinct goals accentuate a difference between the two systems.

For civil law jurisdictions, the main source of the law is written legislation.<sup>14</sup> However, since all decisions are based on the same written legislation, these decisions will encompass similar reasoning without relying on judicial precedent per se.<sup>15</sup> In this inquisitorial system, the judge actively participates in the trial process.<sup>16</sup> The judge has access to the investigating file, known as the dossier, and he may request additional information from the investigative

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<sup>10</sup> Dainlow, *supra* note 8, at 420.

<sup>11</sup> See William T. Pizzi and Mariangela Montagna, *The Battle to Establish an Adversarial Trial System in Italy*, 25 MICH. J. INT’L L., 429, 430 (2004). See also Rachel A Van Cleave, *Chapter 9: Italy*, in CRIMINAL PROCEDURE A WORLDWIDE STUDY 303 (Craig M. Bradley ed., 2007).

<sup>12</sup> William T. Pizzi and Luca Marafioti, *The New Italian Code of Criminal Procedure: The Difficulties of Building an Adversarial Trial System on a Civil Law Foundation*, 17 YALE J. INT’L L. 1, 7 (1992).

<sup>13</sup> *Id.*

<sup>14</sup> *Id.* at 421-22.

<sup>15</sup> *Id.* at 424.

<sup>16</sup> Jeffrey J. Miller, *Plea Bargaining and Its Analogues Under the New Italian Criminal Procedure Code and the United States: Towards a New Understanding of Comparative Criminal Procedure*, 22 N.Y.U. J. INT’L L. & POL. 215, 217 (1989-1990).

authorities.<sup>17</sup> The judge, and not the attorneys, is the person responsible for developing the evidence at trial. It is the judge who calls and questions the witnesses.<sup>18</sup> Both the prosecutor and the defense attorney are generally limited to suggesting questions that the judge should ask and two opposing attorneys may ask follow-up questions.<sup>19</sup>

Common law, much younger than its civil law counterpart, was developed in England and stems from the British feudal system of governance and rendering justice.<sup>20</sup> This legal tradition heavily centers on the judicial precedent of local authorities.<sup>21</sup> The purpose of common law is the protection of the rights of the people and parliamentary law (statutory laws) tries its best not to encroach upon common law.<sup>22</sup> In the United States, most of criminal procedure law derives from the United States Supreme Court's interpretation of the United States Constitution.<sup>23</sup> All statutory laws can be challenged through the interpretation of this Constitution and its amendments.

In an adversarial system the prosecution and defense are competing parties who dominate the trial process. Each side conducts its own investigation. During the trial each side presents, examines, and cross-examines witnesses before a judge and/or jury. The judge plays a neutral role in the development of evidence. He should remain impartial throughout the trial. In comparing these two systems, one is still comparing apples and oranges. As John C. Reitz

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<sup>17</sup> *Id.*

<sup>18</sup> Pizzi, *supra* note 12, at 7.

<sup>19</sup> *Id.*

<sup>20</sup> Dainlow, *supra* note 8, at 422.

<sup>21</sup> *Id.* at 424.

<sup>22</sup> *Id.* at 422.

<sup>23</sup> Craig M. Bradley, *Chapter 13: United States*, in *CRIMINAL PROCEDURE A WORLDWIDE STUDY* 519 (Craig M. Bradley ed., 2007).

would put it, “jurors in the common law tradition bear some of the functional similarities to lay judges in the civil law tradition, but there are important differences in the way they come to and fulfill their offices.”<sup>24</sup>

In the civil law or inquisitorial system, the defendant and his counsel receive absolute and unlimited access to the entire dossier, which contains all of the evidence collected by the prosecution and the investigative authorities. In contrast, in the common law or adversarial system the defendant is entitled to evidence gathered by the prosecution that is material in determining his guilt in the precise case at hand. This gives the prosecution the power to decide which evidence is material to the case. Failure to make available to the defense all exculpatory and other material evidence would be considered prosecutorial misconduct that could cause a mistrial or grounds for appeal. At this point it is important to separate the two systems of criminal procedure.

### ***A. United States Criminal Procedure***

The rules of criminal procedure in the United States the rules are carefully spelled out in the Fourth, Fifth and Sixth Amendments to its United States Constitution and its Supreme Court’s interpretation.<sup>25</sup> Until the mid-twentieth century these civil rights for criminal procedure were limited to the federal government. However, beginning in 1949 these Amendments were gradually applied to state governments as well under the Due Process Clause of the Fourteenth Amendment.<sup>26</sup> This means that the Fourth Amendment, which protects individuals from

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<sup>24</sup> John C. Reitz, *How to Do Comparative Law*, 46 AM. J. COMP. L. 617, 621 (1998).

<sup>25</sup> Bradley, *supra* note 23, at 519.

<sup>26</sup> *Id.*



unreasonable searches and seizures and any evidence seized in violation of this protection, the Fifth Amendment, which protects the defendants against self-incrimination, and the 6<sup>th</sup> Amendment, which guarantees various trial rights, including the right to an attorney, jury, and warnings prior to interrogation all apply to the states as well.<sup>27</sup>

Contrary to other countries, criminal procedure in the United States is determined by case law. This means that there is an after the fact interpretation of what should have been done so that the individual's constitutional rights are not violated. Over time, this case law has placed limitations on police procedures, including searches, arrests, interrogations, and the defendant's right to remain silent and receive counsel.<sup>28</sup>

The most significant case law is *Mapp v. Ohio*, in which the Supreme Court required that state courts follow the standards set by the federal courts.<sup>29</sup> This is significant because in the United States most criminal trials occur in state courts. However, violations of constitutional rights may always be appealed through the state courts up to federal courts.<sup>30</sup>

United States criminal procedure includes a pre-trial phase of preliminary hearings and pretrial motions, a trial phase, which must be speedy and public, and a post-trial phase of at least one appeal where the defendant is entitled to at least one appeal of his conviction.<sup>31</sup> It should be noted that appeals in federal courts were only successful in eight percent of the time in 1990.<sup>32</sup>

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<sup>27</sup> *Id.* at 519.

<sup>28</sup> *See generally id.* (The chapter argues that case law has placed limitations on criminal procedures in the United States).

<sup>29</sup> *Id.* at 219.

<sup>30</sup> *Id.* at 538.

<sup>31</sup> *See generally id.* (The chapter gives an outline of criminal procedure stages in the United States and then proceeds to explain each in detail).

<sup>32</sup> *Id.* at 547.

Because a defendant may not be placed in double jeopardy (tried again for the same crime) the courts usually address as many constitutional issues as possible in the pretrial and trial phases. No one paper could possibly delineate all the procedures for United States criminal law. The federal rules of evidence are discussed in *Part III* of this note.

In the United States there is a standard of beyond a reasonable doubt for criminal convictions on which all jurors must agree. This means that the prosecution must present its case so that every juror votes for conviction. In addition, the jury in the United States is made up of twelve citizens that are randomly selected, usually from the voter registration list of each jurisdiction. The only “professional jurors” are those selected for a grand jury who serve for a one year period. In some jurisdictions of the United States, a grand jury is frequently used to establish that there is sufficient evidence to bring a defendant to trial. In other jurisdictions, the preliminary hearing is the most common vehicle used to determine if a defendant will face trial.<sup>33</sup>

## ***B. Italian Criminal Procedure***

Italy’s old criminal code, the *Codice Rocco*, became unpopular because it was considered a product of the Fascist era.<sup>34</sup> The *Codice Rocco* was a reflection of an authoritarian political regime in the eyes of post-Fascist Italian legislatures. Under the *Codice Rocco*, the judge controlled the gathering of evidence of a crime during its pretrial inquisitorial phase.<sup>35</sup> This evidence-gathering phase was conducted in secret in the absence of the defense counsel, giving

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<sup>33</sup> *Id.* at 538- 40.

<sup>34</sup> Van Cleave, *supra* note 11, at 303.

<sup>35</sup> Pizzi, *supra* note 12, at 3.

the investigating authorities had the opportunity to put pressure on witnesses they interviewed.<sup>36</sup> The public trial phase that followed was often a formality because the pretrial investigation phase really determined the outcome of a case in most instances.<sup>37</sup> It is important to understand these traditions in the light of the *Nuovo codice di procedura penale*, Italy's New Code of Criminal Procedure, in place today.

After the adoption of the new Italian Constitution in 1947, the need for a new code became evident because the *Codice Rocco* did not include methods for protecting the guarantees of individual rights that were set out in its new post-World War II constitution.<sup>38</sup> In addition, the huge backlog of cases—often as long as ten years—created the need for reform.<sup>39</sup> The system under the old code was inefficient and the European Court of Human Rights repeatedly condemned the “fundamental denial of fairness caused by extensive delays.”<sup>40</sup> The Italian Parliament looked for a more radical solution to the backlog and scrutinized the adversarial system used in the United States.<sup>41</sup>

Italy adopted the *Nuovo Codice di Procedura Penale* (New Code of Criminal Procedure) in 1988, integrating some adversarial elements into its inquisitorial foundation.<sup>42</sup> This new procedure has “moved the Italian system in the direction of the American adversarial

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<sup>36</sup> *Id.* at 4.

<sup>37</sup> *Id.* at 3-4.

<sup>38</sup> See Elisabetta Grande, *Italian Criminal Justice: Borrowing and Resistance*, 44 AM. J. COMP. L. 227, 230-31 (2000).

<sup>39</sup> Pizzi, *supra* note 12, at 6.

<sup>40</sup> *Id.*

<sup>41</sup> *Id.* See also Grande, *supra* note 38, at 230-31.

<sup>42</sup> Pizzi, *supra* note 12, at 2.

system much more than any other civil law jurisdiction,” but not without scholarly criticism.<sup>43</sup>

The changes made to new code can be categorized into three broad categories. The first category encompassed changes that restructured the nature of criminal investigations. They were meant to take some of the discretionary power of the police away and instill safeguards for those being investigated.<sup>44</sup> The second consisted of changes that made criminal trials more consistent with democratic ideals of efficiency and morality.<sup>45</sup> The third category included procedures created to dispose of cases with greater efficiency such as moving a case to trial sooner by skipping the preliminary hearing stage, or by deciding cases right after the preliminary hearing stage which would eliminate the need for a trial altogether.<sup>46</sup> As a result, the Italian Code of Criminal Procedure remains a hybrid of adversarial and inquisitorial legal systems.

Some of the traditional inquisitorial elements still remain in today’s Code. For example, the victims of crimes are allowed to participate at trial through an attorney and they may request civil damages from the defendant for injuries sustained. Also, if the defendant is found guilty, his sentence is determined at the same trial because there is no subsequent sentencing hearing. In addition, the inquisitorial system does not have juries. The vast majority of cases are determined by trials. However, under the new Code, Italy has a process for deliberation in serious crimes such as treason, homicide, and kidnapping.<sup>47</sup> For these crimes, “juries” are made up of two professional judges and six lay people (*giudici popolari*) selected from an electoral

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<sup>43</sup> Grande, *supra* note 38, at 228.

<sup>44</sup> See Van Cleave, *supra* note 11, at 303.

<sup>45</sup> *Id.*

<sup>46</sup> *Id.* at 304.

<sup>47</sup> Pizzi, *supra* note 11, at 429.

list.<sup>48</sup> To be included on this list, the *giudici popolari* must have basic secondary education, be between the ages of thirty and sixty-five and have no criminal record.<sup>49</sup> For conviction, the jury needs only a majority to convict on murder and does “not need to be unanimous.”<sup>50</sup> The panel of judges is then required to explain its decision by listing the evidence presented and explaining how the evidence led them to the verdict. This explanation is called *motivazione* (motivations).<sup>51</sup> These opinions can be hundreds of pages in length and provide a detailed insight into the deliberation process, should the case be appealed.<sup>52</sup>

The new Code retained the broad appellate review in which all parties, including the victim, have the right to appeal the decision of the trial court.<sup>53</sup> The appellate court has the power to reverse any part of the decision, including the sentence and it may also hear any new evidence.<sup>54</sup> This broad review power is consistent with the classic inquisitorial tradition—unlike the adversarial system that requires a very narrow scope for appellate court review.<sup>55</sup> In the United States, for example, the most common reasons for the appellate court to review a conviction are lack of evidence, ineffective assistance of counsel, failure of the trial court to

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<sup>48</sup> *Id.* at 433.

<sup>49</sup> See THOMAS GLYN WATKINS, *THE ITALIAN LEGAL TRADITION*, 129 (1997).

<sup>50</sup> *Id.*

<sup>51</sup> Pizzi, *supra* note 12, at 15.

<sup>52</sup> *Id.* See also Part V (for a more detailed discussion of the *motivazione*).

<sup>53</sup> *Id.*

<sup>54</sup> *Id.*

<sup>55</sup> *Id.*

suppress evidence that was unconstitutionally obtained, prosecutorial misconduct or improper instructions to the jury.<sup>56</sup>

The new Code also incorporates many noteworthy adversarial elements. One element includes the limiting of written materials in the trial dossier. Article 431 of the Code of Criminal Procedure specifically limits the dossier to the charging documents, physical evidence connected with the crime, and evidence using unrepeatable procedures.<sup>57</sup> Apart from this, the prosecution and defense must present and develop at trial all other evidence.<sup>58</sup> A 2000 law amended the Code to add a title that allows for and regulates investigations by the defense attorney.<sup>59</sup> This amendment guarantees that both parties have equal standing in offering evidence to the judge. Prior to this change, judges would often ignore evidence brought forward by the defense attorney.<sup>60</sup> In addition, the two adversaries, the prosecutor and the defense attorney—not the judge—would call the witnesses and conduct the initial questioning. Each side is entitled to cross-examine the witnesses after direct testimony has been completed.<sup>61</sup>

The new 1988 Italian Code and its amendments retained enough of the inquisitorial system that all evidence was admitted and could be used for conviction in the Amanda Knox case. The DNA evidence, although too small to be retested, was included in Knox's trial dossier under Article 431 of the Italian Code of Criminal Procedure (ICCP). However, this evidence would have been inadmissible in an adversarial system such as the United States as explained in

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<sup>56</sup> Craig M. Bradley, *supra* note 23, at 547.

<sup>57</sup> See Pizzi, *supra* note 12, at 14 (discussing C.P.P art. 431).

<sup>58</sup> *Id.*

<sup>59</sup> Van Cleave, *supra* note 11, at 328.

<sup>60</sup> *Id.* at 328.

<sup>61</sup> See Pizzi, *supra* note 11, 436.

Part III. To establish this disparity between the two systems in terms of DNA admissibility standards, it is necessary to pay close attention to the rules of evidence in both countries and analyze the changes in the admissibility of forensic scientific evidence.

## ***Part II: The Science of DNA Evidence as developed in the United States***

To understand the complexity of the DNA evidence at issue in the Amanda Knox appeal, it is important to first have a basic understanding of what DNA is and how it is tested.

Deoxyribonucleic acid (DNA) is a biological molecule present in every single cell within the human being's body.<sup>62</sup> It contains a genetic blueprint unique to each human being.<sup>63</sup> DNA forms a long twisting chain known as a double helix that is made up of only four nucleotides.<sup>64</sup> This chemical structure was identified in 1954. More than 30 years later, samples of the human DNA began to be used in criminal justice systems.<sup>65</sup> In human cells, the DNA is wrapped into twenty-three pairs of chromosomes—one comes from the biological mother, the other from the biological father.<sup>66</sup> Unless a person has an identical twin, his DNA is unique making it a valuable tool for identification.<sup>67</sup> The key to this identification resides in the alleles contained in

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<sup>62</sup> William Harris, *How DNA Evidence Works*, A DISCOVERY COMPANY, 1, <http://science.howstuffworks.com/environmental/life/genetic/dna-evidence.htm>.

<sup>63</sup> *Id.*

<sup>64</sup> *Id.*

<sup>65</sup> DAVID L. FAIGMAN ET AL., MODERN SCIENTIFIC EVIDENCE: FORENSICS 54 (2006).

<sup>66</sup> Harris, *supra* note 62, 1.

<sup>67</sup> *Id.*

each of the twenty-three pairs of chromosomes. These pieces of genetic material replaced the genetic marker evidence such as blood groups.<sup>68</sup>

Prior to the use of DNA as a form of identification, fingerprints were the gold standard for linking a suspect to a crime scene.<sup>69</sup> Today, DNA evidence found at a crime scene can be used to either eliminate or identify a suspect.<sup>70</sup> The elimination is relatively easy. The reliability of the identification is dependent upon a variety of conditions: first and foremost is the amount of DNA present that can be attributed to the suspect and only this suspect. For example, sperm collected from a rape victim who has not had any other sexual encounter, is extremely reliable. Skin found under the fingernails of a victim who has struggled with the attacker is also very reliable. However, a single hair or a drop of blood found at a crime scene might be less reliable without other corroborating evidence that can establish how and when the hair or drop of blood arrived at the crime scene.

An English court first used DNA evidence in 1986 to exonerate a seventeen-year-old boy accused of two rape-murder charges.<sup>71</sup> DNA evidence has been introduced in the American courts since 1987, when a Florida court convicted Tommy Lee Andrews of rape based on semen traces found in the rape victim.<sup>72</sup> Once DNA evidence was used by the prosecution, defense attorneys in the early 1990s began challenging the admissibility of DNA tests because of its questionable reliability. The first time the defense brought in an expert witness to challenge the

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<sup>68</sup> DAVID H. KAYE, *THE DOUBLE HELIX AND THE LAW OF EVIDENCE* 5 (2010).

<sup>69</sup> Dennis J Reeder et al., *Evolution of DNA Evidence for Crime Solving - A Judicial and Legislative History*, *FORENSIC MAGAZINE*, Jan. 06, 2005, <http://www.forensicmag.com/article/evolution-dna-evidence-crime-solving-judicial-and-legislative-history>.

<sup>70</sup> *Id.*

<sup>71</sup> *Id.*

<sup>72</sup> *Id.*



prosecution's claim about the technique used for DNA testing was in *People v. Wesley* in 1994.<sup>73</sup> Over time the admissibility standards have been developed and the challenges have centered on the methods used in collecting DNA and testing DNA.<sup>74</sup> Today, DNA evidence is so widely used that the United States government has a database with DNA samples of individuals who have been tested and all people serving time in prisons for felony convictions.<sup>75</sup>

There are two main types of forensic DNA testing used. The first is called RFLP-based testing and it requires a large amount of DNA and the DNA must be un-degraded.<sup>76</sup> This type of testing requires that the DNA collected at the crime scene must be very fresh. RFLP analysis uses four to six steps and the results are processed on an x-ray film called an autoradiograph.<sup>77</sup> The suspect's autoradiograph needs to line up with the RFLP radiograph for there to be a match.<sup>78</sup> Crime scene evidence that is either old or in very small amounts is usually unsuitable too for RFLP testing.<sup>79</sup>

The second type of forensic DNA testing is called PCR-based testing. This test has three steps.<sup>80</sup> It uses markers that occur in certain percentages of the population.<sup>81</sup> As soon as a

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<sup>73</sup> See Kaye, *supra* note 68, at 60-61. See also Faigman, *supra* note 65, at 58.

<sup>74</sup> *Id.* at 3.

<sup>75</sup> *Id.*

<sup>76</sup> Donald E. Riley, *DNA Testing: An Introduction For Non-Scientists An Illustrated Explanation*, SCIENTIFIC TESTIMONY AN ONLINE JOURNAL, Apr. 6, 2005, <http://www.scientific.org/tutorials/articles/riley/riley.html>.

<sup>77</sup> JOHN M. CONLEY AND JANE CAMPBELL MORIARTY, SCIENTIFIC AND EXPERT EVIDENCE 171 (2007).

<sup>78</sup> *Id.*

<sup>79</sup> *Id.*

<sup>80</sup> Riley, *supra* note 76, at 10.

<sup>81</sup> *Id.*

marker does not match, the suspect is excluded.<sup>82</sup> Subsequent markers are then used until the percentage of the population matching is so small that the suspect is most likely matched with a miniscule percentage that could possibly eliminate him.<sup>83</sup> This testing requires less DNA than RFLP and it also allows for partly degraded DNA to be included. PCR-based tests are very sensitive to any contamination of the DNA at a crime scene or within the testing laboratory.<sup>84</sup>

RFLP testing also requires a longer time period than PCR testing.<sup>85</sup> PCR uses constant regions of DNA sequences to prime the copying of variable regions of a DNA sequence, which it can do efficiently if the initial DNA is in good condition.<sup>86</sup> To prevent false results, carefully applied controls and techniques must be used.

The main objective of DNA analysis is to get a visual representation of the DNA left at a crime scene. To identify the owner of a DNA sample, the DNA profile must be matched either to DNA from a suspect or to a DNA profiles stored in a database.<sup>87</sup> The suspect is either included or excluded<sup>88</sup>. Sometimes, DNA results may be inconclusive.<sup>89</sup> This usually happens because there was not enough DNA to produce a full profile and the partial profile cannot exclude the suspect.<sup>90</sup>

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<sup>82</sup> *Id.*

<sup>83</sup> Conley, *supra* note 77, at 172.

<sup>84</sup> *Id.*

<sup>85</sup> Riley, *supra* note 76, at 10.

<sup>86</sup> *Id.*

<sup>87</sup> Conley, *supra* note 77, at 177-179.

<sup>88</sup> *Id.*

<sup>89</sup> *Id.*

<sup>90</sup> *Id.*

DNA evidence is powerful but also has limitations. For example, just because an individual's DNA is present at a crime scene does not guarantee that the individual committed the crime. Sometimes, the DNA evidence collected has DNA from multiple sources and it is often difficult to separate the alleles for each source.<sup>91</sup> Therefore, it is important that there be some other corroborating evidence such as motive in cases where people either know the victim personally or have good reason to have been at the crime scene. For example, there could be vast amounts of DNA evidence on a bus bench or in any other public place where a person was murdered.

The reliability of DNA evidence, like all scientific evidence is subject to the accuracy of the sample, the test used, the integrity of the examiner, and the cleanliness of the labs. Hence, very strict rules for DNA admissibility have been developed time through judicial review. Today's standards are based on a short but powerful history of review in American courts.

### ***Part III: DNA Evidence in the United States Federal Courts***

The history of using DNA evidence in the United States is quite complicated. First, DNA had to be established as reliable scientific evidence. Because the United States has an adversarial system, there is a series of old court cases that address this issue. The court cases demanded an understanding of how DNA is tested and its reliability interpreted. Finally, statutory law and case law determines the authenticity of DNA as evidence used in criminal courts.

#### ***A. The Rule for the Admissibility of Scientific Evidence***

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<sup>91</sup> William C. Thompson et al., *Evaluating Forensic DNA Evidence: Essential Elements of a Competent Defense Review*, CHAMPION, 16, 21 (Apr. 2003).

Unless a person is caught at the scene of the crime or seen as the perpetrator of the crime by witnesses or the victim, the prosecution must rely on the physical evidence found at the crime scene. This physical evidence often includes material whose identity is subject to scientific evaluation. The defining standards for admitting scientific evidence in the United States are *Frye v. United States* and *Daubert v. Merrell Dow Pharmaceuticals, Inc.*<sup>92</sup>

Prior to *Frye*, courts admitted any expert testimony as long as it was “qualified.”<sup>93</sup> An expert was considered an expert if he could “make a living selling his knowledge in the marketplace.”<sup>94</sup> Once the his expertise was established, then the testimony was admitted as evidence as long as it was relevant to the issues to be determined at trial and the jurors could comprehend the testimony.<sup>95</sup> This standard was referred to as the “commercial marketplace test.” Unfortunately, this standard proved difficult because the marketplace could not distinguish between scientific and popular ideas.<sup>96</sup> Soon a need for a more refined standard as to what was scientific evidence emerged.

In 1923, *Frye v. United States* separated the expertise from the expert. This acknowledged that a body of knowledge existed separate from an individual. Frye also ascertained that there was an intellectual marketplace as opposed to a commercial marketplace.<sup>97</sup> The court must determine whether the expert opinion is generally accepted in the particular field

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<sup>92</sup> DAVID L. FAIGMAN ET AL., MODERN SCIENTIFIC EVIDENCE: STANDARDS, STATISTICS, AND RESEARCH METHODS vi (2008).

<sup>93</sup> *Id.*

<sup>94</sup> *Id.* at 6.

<sup>95</sup> *Id.*

<sup>96</sup> *Id.* at 4-5.

<sup>97</sup> *Id.* at 6-7.

in which it belongs.<sup>98</sup> The defendant in *Frye* tried to use expert testimony to introduce evidence that the systolic blood pressure of a person changed when threatened with fear, rage and pain. This rise in systolic blood pressure would also accompany conscious deception, concealment of facts, or guilt of a crime.<sup>99</sup> Prior to trial, the defendant took this “deception test” and counsel sought to have the results of the test admitted into evidence through expert testimony.<sup>100</sup> The trial court and the Supreme Court held that the systolic blood pressure deception test had not yet gained enough scientific recognition among psychological authorities and was thus inadmissible. The Supreme Court noted that in order for scientific evidence expert testimony to be admitted into evidence, the testimony had to be based on generally accepted beliefs in the particular field in which it belonged.<sup>101</sup> *Frye* therefore excluded any newly researched scientific evidence from the courtroom. Despite *Frye*’s limitations, it remained the standard for which scientific evidence was evaluated for courtroom use for many years and a form of it is still used in many state court jurisdictions today.<sup>102</sup> For example, California uses a Kelly/*Frye* standard.<sup>103</sup>

The 1993 landmark opinion of *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, held that the *Frye* general acceptance standard was inconsistent with Rule 702 of the Federal Rules of Evidence.<sup>104</sup> *Daubert* reinforced four standards for the admissibility of expert testimony set out in Rule 702. Although the Federal Rules of Evidence 702 has been amended several times, the

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<sup>98</sup> *Id.* at 8.

<sup>99</sup> *Frye v. United States*, 293 F. 1013, 1013 (1923).

<sup>100</sup> *Id.* at 1014.

<sup>101</sup> *Id.*

<sup>102</sup> Feigman, *supra* note 93, at 12.

<sup>103</sup> Patrick J. Hagan and Pamela Winston Bertani, *State Variations on the Daubert Theme: California*, 3-4, <http://www.thefederation.org/documents/hagan.html>.

<sup>104</sup> *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993).

latest amendment that went into effect on December 1, 2011, adheres to the arguments set forth in *Daubert*.<sup>105</sup>

According to *Daubert*, a witness may give expert testimony if: (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue; (b) the testimony is based on sufficient facts or data; (c) the testimony is the product of reliable principles and methods; and (d) the expert has reliably applied the principles and methods to the facts of the case.<sup>106</sup> There, the plaintiffs were not allowed to introduce an expert's testimony that supported their theory that a drug the defendant manufactured was responsible for birth defects suffered by the plaintiffs.<sup>107</sup> The trial court granted summary judgment to the defendant because it believed that the scientific evidence was inadmissible since it lacked general acceptance in the scientific community.<sup>108</sup> The Supreme Court reversed, holding that the general acceptance requirement was inconsistent with rule 702 of the federal rules of evidence.

Scientific evidence continues to be a rapidly changing field and the narrow *Frye* standard excludes relevant and reliable information simply because it was novel. As a result, the Supreme Court expanded the trial judge's responsibility over the admissibility of scientific evidence.<sup>109</sup> Today, courts often hold *Daubert* hearings to assess the validity of the science prior to the

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<sup>105</sup> FED. R. EVID. 702.

<sup>106</sup> *Id.*

<sup>107</sup> *Daubert*, 509 U.S. at 582.

<sup>108</sup> *Id.* at 583.

<sup>109</sup> *See* Faigman, *supra* note 93, at 16.

trial.<sup>110</sup> It is under the new standards established by *Daubert* that DNA testimony is allowed into the courtroom.

### ***B. The Validity and Reliability of DNA Evidence***

The ability to identify an individual by his or her DNA is considered one of the most important advances in forensic science in the twentieth century.<sup>111</sup> It has replaced conventional blood typing and is capable of exceedingly high discrimination.<sup>112</sup> In favorable circumstances it can show that only one person in several billion could have been the source of the bloodstain admitted into evidence.<sup>113</sup> Consequently DNA typing has been subjected to the most rigorous scrutiny in the United States courts because its discriminating power is so great and so much is at stake when a suspect is associated to a crime scene only through DNA typing. The reliability of DNA testing may be determined by the proficiency testing through which *Daubert* criteria 1 and 3 may be satisfied.<sup>114</sup>

Experts who present and interpret the results of DNA tests must be “qualified by knowledge, skill, and experience, training or education.”<sup>115</sup> The expert’s knowledge and opinion must aid in the search for truth.<sup>116</sup> Because DNA identification involves laboratory findings and

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<sup>110</sup> *Id.* at 17.

<sup>111</sup> DAVID L. FAIGMAN ET AL., MODERN SCIENTIFIC EVIDENCE: THE LAW AND SCIENCE OF EXPERT TESTIMONY, [Chapter 20: Forensic Identification Subspecialties], § 20-9.2.1 (1997).

<sup>112</sup> *Id.*

<sup>113</sup> *Id.*

<sup>114</sup> *Id.*

<sup>115</sup> FED. R. EVID. 702.

<sup>116</sup> DAVID L. FAIGMAN ET AL., MODERN SCIENTIFIC EVIDENCE: THE LAW AND SCIENCE OF EXPERT TESTIMONY, [Chapter 15: The Admissibility of DNA Evidence], § 15-2.0 (1997) (discussing 1 McCormick on Evidence, § 13, at 54).

statistical interpretation of these findings as well as the principles of molecular biology, several expert witnesses might be needed. Trial judges, the gatekeepers of expert testimony, are generally accorded a great deal of discretion in evaluating the qualification of these expert witnesses.<sup>117</sup> To permit testimony of DNA findings as relevant, the technology used to examine DNA must satisfy the standard of scientific evidence used in the United States. The general acceptance test stems from *Frye v. United States* and the scientific soundness test stems from *Daubert v. Merrell Dow*. In addition, some jurisdictions have adopted special statutes that provide for the admissibility of DNA analysis. For example, a Tennessee statute allows for the admissibility of DNA evidence without prior expert testimony.<sup>118</sup> Maryland's standards restrict the fragment length of polymorphism analysis of DNA.<sup>119</sup>

Applying the standards for admitting scientific evidence to DNA has had several different results in the courts. The use of DNA evidence in criminal cases began around 1985 and the focus was on the problems raised in transferring the technology of modern molecular biology from the medical and genetic laboratories to the forensic laboratory.<sup>120</sup> However, the underlying theory that DNA profiling was capable of identifying the source of a DNA sample was never in doubt. It was the laboratory procedure that was questioned.<sup>121</sup> There was concern over controlling the experimental conditions of the analysis and the interpretation of the results.<sup>122</sup> In

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<sup>117</sup> *Id.* at 636.

<sup>118</sup> *Id.* at 637.

<sup>119</sup> *Id.*

<sup>120</sup> *Id.* at 639.

<sup>121</sup> *Id.* at 640.

<sup>122</sup> Faigman, *supra* note 65, at 58.



questioning the validity of some laboratory procedures, the Supreme Courts of various states have excluded some aspects of DNA evidence.<sup>123</sup> However, the vast majority of these courts have upheld the admissibility of DNA evidence in general.<sup>124</sup>

The more recent court cases have focused on the validity of profiling because of the misgivings over the statistical interpretation of similarities within the profiles. However, there is little doubt that properly conducted profiling is a scientifically acceptable procedure to help identify the origin of certain biological materials.<sup>125</sup> Pertinent to the DNA profiling is the assessment of frequencies and match probabilities and likelihoods.<sup>126</sup>

### ***C. The Procedures for Collecting DNA Evidence***

DNA evidence falls under the category of real evidence and is therefore subject to authentication before it can be introduced into a trial court.<sup>127</sup> Real evidence usually refers to an item that was directly involved in the events that are at issue in the case. A murder weapon or stains on a victim's clothing are examples of real evidence. In the United States, the requirement for authentication of evidence is rigorous and mandated under FRE 901.<sup>128</sup>

Rule 901 recognizes three general principles. First, authentication is a condition necessary for admissibility. Second, this condition is satisfied by evidence showing that the “matter in question is what the proponent claims.” Third, the showing must be sufficient to

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<sup>123</sup> Faigman, *supra* note 116, at 637.

<sup>124</sup> *Id.*

<sup>125</sup> *Id.* at 641.

<sup>126</sup> *Id.* at 653-56.

<sup>127</sup> See DAVID P. LEONARD & VICTOR J. GOLD, EVIDENCE: A STRUCTURED APPROACH 46 (2<sup>nd</sup> ed. 2008).

<sup>128</sup> FED. R. EVID. 901.

support a finding.<sup>129</sup> DNA authentication must show an unbroken and untarnished chain of custody. The testing and evaluation of the DNA evidence needs to meet a certain standard that supports the claim that the evidence is what it is purported to be (i.e., that of a known individual). DNA evidence is also limited by statistical accuracy. For example, it is not enough to show that the DNA evidence indicates that the perpetrator belongs to a certain ethnic group or that he is related to a specific family. In addition, even if the authentication or identification requirements are fulfilled, there is still no guarantee of admission of an item into evidence as other obstacles such as hearsay may remain.<sup>130</sup>

In addition, even if real evidence is properly authenticated, it can nevertheless be excluded under FRE 403 for prejudice, confusion, waste of time, or other reasons.<sup>131</sup> Prejudice is relatively easy to determine. However, confusion is often cited, especially when the DNA evidence links a defendant to an article of clothing that must be linked to the crime scene. Confusion also occurs if there are more than one DNA profiles present on the same piece of evidence. Some proponents view laboratory integrity as a key to *Daubert* admissibility and believe that failure to meet these minimum-testing thresholds should bar the evidence. Others view laboratory problems in testing relevant to the weight of the evidence and not its admissibility. Most courts agree with the second viewpoint.<sup>132</sup> Regardless, the statutory requirements for DNA testing in America are rigorous.

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<sup>129</sup> LEONARD, *supra* note 127, at 48.

<sup>130</sup> See FED. R. EVID. 901, advisory committee note to subdivision (b).

<sup>131</sup> FED. R. EVID. 403.

<sup>132</sup> See *United States v. Morrow*, 374 F.Supp.2d (2005); see also David L. Faigman et al., *Modern Scientific Evidence: The Law and Science of Expert Testimony*, 4 MOD. SCI. EVIDENCE § 31:17 (2011-2012 Edition).

The 2004 federal statute that specifically spells out all the requirements for DNA testing is 18 U.S.C.A. § 3600.<sup>133</sup> The purpose of this statute is two-fold: to enumerate the conditions for DNA evidence to be admissible in court, and to determine whether an applicant can secure court ordered testing of DNA. For example, the first section requires the government to be in possession of the DNA and to preserve it for future retesting. The second section states that there must be a careful chain of custody that ensures that the evidence has not been substituted, contaminated, tampered with, replaced or altered in any way.<sup>134</sup> These two sections govern the DNA's authentication.<sup>135</sup> In *United States v. Fasano*, the Supreme Court stated that the defendant was entitled to a post-conviction DNA testing of the evidence under the Innocence Protection Act.<sup>136</sup> The innocence protection act also implies that the United States is not impervious to wrongful convictions. The *Fasano* Court ruling insures that the government must be in possession of enough DNA evidence for retesting. This implies that there is such a thing as too little DNA evidence.

Although United States judges are neutral parties in preparing a case and play no investigatory role, they influence the admission of evidence by determining whether the standards for admissibility have been met. It is up to the judge to establish the authenticity of expert testimony. Failure to do so could be a basis for appeal.<sup>137</sup>

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<sup>133</sup> 18 U.S.C.A. § 3600 (2004).

<sup>134</sup> See *United States v. Fasano*, 577 F.3d 572, 576 (2009) (for a summary and application of this statute in footnote 4).

<sup>135</sup> *Id.*

<sup>136</sup> *Id.* at 578.

<sup>137</sup> Federal Rules of Appellate Procedure § 4, 28 U.S.C.A. (2011).

Currently, the procedures for gathering and testing DNA evidence are statutorily determined. Like all the other evidence, its admissibility can only be challenged as judicial error. When the genetic strands of coding found in DNA are compared and they identify the perpetrator of a crime, the scientific community holds this “genetic DNA fingerprint” to the greatest degree of reliability. There will not be a false match or a false positive result.<sup>138</sup> However, such a strong position within the scientific community is not without legal criticism.<sup>139</sup>

#### ***D. Criticism and Caveats of DNA Evidence***

The criticism of DNA evidence has evolved as the technology has developed and databases have been created. DNA evidence was first used to convict, then exonerate, and then to convict again. When Peter Neufeld and Berry Scheck wrote their book in 2000 on behalf of the Innocence Project of the Cardozo Law School at Brooklyn’s Yeshiva University, DNA evidence was used to exonerate people wrongfully convicted of crimes.<sup>140</sup> The DNA capabilities at the time of the project were limited to the testing bodily fluids like semen and blood.<sup>141</sup> Because there was such public notoriety over these wrongful convictions, there was a fear that future juries would overvalue DNA evidence and ignore other corroborating evidence. Another concern that arose during this time period was whether or not there could be Fourth Amendment right violations in demanding DNA samples from suspects. The Fourth Amendment has never

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<sup>138</sup> Francis C. Amendola, *DNA or genetic fingerprinting*, 22 A C.J.S. CRIMINAL LAW § 1053 (2011).

<sup>139</sup> See Section D below

<sup>140</sup> Geoffrey C. Rapp, *DNA’s Dark Side*, 110 YALE L.J. 163, 164 (200).

<sup>141</sup> *Id.* at 167.

protected crime scene evidence. It only protects illegal searches and seizures.<sup>142</sup> Today, suspects are required to surrender their DNA in the same manner that they are fingerprinted when charged with a crime. A national databank of DNA samples has been created from those arrested and people already incarcerated for previous crimes committed.

By 2010, as a result of a “cold hit” with a person’s DNA profile and crime scene evidence, old cases sometimes called “cold cases,” are reopened and the defendant can then be charged and subsequently convicted of that crime.<sup>143</sup> This new capability enhanced by the DNA database runs the risk of convicting a defendant on DNA evidence alone.<sup>144</sup> However, most of the criticism centers on partial matches that are usually the result of damaged samples. The main concern is that DNA all by itself carries great risk of error in coincidental matches, or other injustices such as racial profiling.<sup>145</sup>

Currently, the most significant criticism of DNA evidence is the failure of American courts to fully explore the exact point at which a match statistic becomes legally sufficient evidence of guilt.<sup>146</sup> According to legal scholar Andrea Roth, this exact point should be 99.9% as opposed to cases that have supported a 91% accuracy standard.<sup>147</sup> This gives rise to the question of whether a DNA match statistic which is based on probability, is capable of inspiring the “moral certainty” required by the reasonable doubt standard. Today, scientific knowledge

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<sup>142</sup> *Id.* at 169.

<sup>143</sup> Andrea Roth, *Safety in Numbers? Deciding when DNA Alone is Enough to Convict*, 85 N.Y.U L. REV. 1130, 1130-31

<sup>144</sup> *Id.*

<sup>145</sup> *Id.* at 1145.

<sup>146</sup> *Id.* at 1150.

<sup>147</sup> *Id.* at 1157.

itself is thought of as “inherently probabilistic” as opposed to “absolute certainty or truth.”<sup>148</sup>

For this reason Roth argues strongly for a uniform sufficiency threshold for cases where DNA evidence is the only evidence present. This high standard would guarantee moral certainty and eliminate reasonable doubt.<sup>149</sup>

Finally, a recent study has challenged the admissibility and reliability of DNA evidence in general. In June 2009, Israeli forensic science researchers published a paper that exposed the possibility of creating artificial DNA that can fool forensic testing procedures. Their research demonstrated that the current American forensic science system is incapable of distinguishing between artificial and genuine DNA. The Israeli researchers created artificial saliva and artificial blood samples that could be planted at crime scenes.<sup>150</sup> As the growing field of scientific DNA research expands, a greater number of people possess the knowledge and equipment to fabricate DNA.<sup>151</sup> Whether these people will use this knowledge to either intentionally implicate or intentionally exonerate a defendant remains to be seen. However, there have been instances where incarcerated people have tried to fool the court.<sup>152</sup> Ultimately, the current admissibility standards may need to be re-evaluated and there may need to be better trained and qualified forensic analysts who operate independent laboratories.<sup>153</sup> The problem today is that the people

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<sup>148</sup> *Id.* at 1161-62.

<sup>149</sup> *Id.* at 1184.

<sup>150</sup> Kristen Bolden, *DBA Fabrication, a Wake Up Call: The Need to Reevaluate the Admissibility and Reliability of DNA Evidence*, 27 GA. ST. U.L. REV. 409, 409 (2011).

<sup>151</sup> *Id.* at 415.

<sup>152</sup> *Id.* at 419.

<sup>153</sup> *Id.* at 424, 438.

who gather the evidence from the crime scene bring it to their own laboratories to be tested. That in itself creates the opportunity for the possibility of abuse.

#### ***Part IV: DNA Evidence and Admissibility Standards in Italy***

In Italy, statutory law primarily governs the use of DNA evidence. There is some case law that governs the use of DNA evidence in the Italian courtroom. However, the reliability and acceptability in the use of DNA profiling and identification for forensic evidence are at the discretion and interpretation of the presiding judge. Consequently, the way DNA evidence is used in the pretrial, trial, and appeal levels of adjudication varies case by case. Its lack of authenticity does not automatically exclude and its weight has no statutory limits except what is given to every piece of evidence presented in court under the ICCP and Italian rules of evidence.

##### ***A. Italian Rules of Evidence***

Italian evidence law is governed by Book Three of the ICCP. Under Italian law there is an inherent concept of freedom of proof, which means that any matter that is relevant may in principle be used as evidence.<sup>154</sup> Major changes brought about by the reform of 1889 were in the field of evidentiary law. For example, both parties have the initiative and control in the presentation of evidence through examination and cross-examination of witnesses. The judge is still allowed to ask questions.<sup>155</sup> However, the Italian system now uses official, court-appointed

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<sup>154</sup> J. R. Spencer, *Evidence*, in EUROPEAN CRIMINAL PROCEDURES 594, 602 (Mireille Delmas-Marty & J.R. Spencer eds., 2002).

<sup>155</sup> Antoinette Perrodet, *The Italian System*, in EUROPEAN CRIMINAL PROCEDURES 348, 357 (Mireille Delmas-Marty & J.R. Spencer eds., 2002).

experts but the parties can call their own experts to challenge the work of that appointed expert.<sup>156</sup>

Moreover, Italy has one of the strongest exclusionary laws in Europe regarding illegally and improperly obtained evidence.<sup>157</sup> For example, ICCP Article 188 prohibits the use of evidence obtained by any technique likely to have altered the defendant's capacity to recall or evaluate the facts. For example, evidence obtained during lengthy interrogations of suspects may not be admissible. Article 191(1) further excludes evidence that was obtained in breach of "prohibitions laid down by law."<sup>158</sup> However, the move toward excluding illegally obtained evidence began prior to the 1988 ICCP. In the 1960s and 70s evidence was declared inadmissible (*inutilizzabile*) if it had been obtained in some way that infringed the rights of citizens as protected by the Italian Constitution.<sup>159</sup> For example, Italian law excluded evidence obtained from suspects by the police without a formal hearing or the presence of a defense lawyer.<sup>160</sup>

In Italy, the judge should be internally convinced (*intimo convincimento*) of a defendant's guilt to convict him. In the United States, the jury gives weight to evidence and the judge only determines the admissibility of the evidence. In Italy, it is important for the judge to understand

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<sup>156</sup> Spencer, *supra* note 154, at 634.

<sup>157</sup> See *id.* at 608 (for the argument that Italy has harsher exclusionary rules than Germany, France and England).

<sup>158</sup> *Id.* at 609.

<sup>159</sup> *Id.* at 608.

<sup>160</sup> See *id.* at 609 (The exclusion of evidence was provided for by the 1930 Code, art. 295. and a 1968 court decision).



the distinction in the rules of evidence or the means of proof and the means for researching the proof.<sup>161</sup>

It is important to note a distinction under the rules of evidence in the Italian system between the means of proving (*mezzi di prova*) and the means for researching the proof (*mezzi di ricerca della prova*).<sup>162</sup> ICCP Article 507 authorizes judges to examine proof *sua sponte* “after the evidence has been produced in court.”<sup>163</sup> This article has been interpreted broadly, allowing for extensive judicial inquiry.<sup>164</sup> However, in ruling on the admission of evidence the judge is bound by two limitations: the evidence must be both relevant and not superfluous.<sup>165</sup>

One of the fundamental rules in Italian evidentiary law is that an accused person is presumed innocent as it is in other major European countries such as France and Germany.<sup>166</sup> This cardinal principle of criminal justice has a legal basis in Article 6(2) of the European Convention on Human Rights.<sup>167</sup> The burden of proof generally resides on the prosecution. However, the burden of disproving has also rested on the accused. In Italy, Article 112 of the Constitution states that the public prosecutor is under the obligation to prosecute. He must present all allegations and charges to the court.<sup>168</sup>

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<sup>161</sup> See generally ASTOLFO DI AMATO, KLUWER INTERNATIONAL ENCYCLOPEDIA OF LAWS: ITALY, 200-1 (2011) (for a discussion of ICCP Art. 194-271).

<sup>162</sup> *Id.*

<sup>163</sup> Grande, *supra* note 38, at 246.

<sup>164</sup> *Id.* at 247.

<sup>165</sup> See generally Amato, *supra* note 161, at 200-1 (for a discussion of ICCP Art. 194-271).

<sup>166</sup> *Id.* See also Spencer, *supra* note 154, at 596.

<sup>167</sup> *Id.*

<sup>168</sup> *Id.*

Furthermore, the common law standard of “beyond a reasonable doubt” is very similar to the continental European standard *une intime conviction*. This means that the court must not convict, except when one is “personally convinced” that the defendant is guilty. Even though “*intime conviction*” and “beyond a reasonable doubt” have different origins, it is very likely that the actual level of certainty required by the two standards to convict is almost identical. The Italian law puts the matter in terms of *libero convincimento* (free conviction). This principle means that the conviction is based on objective elements and not external pressures such as popular opinion.<sup>169</sup> All three phrases denote a level of certainty that is higher for criminal cases, than the “balance of probabilities,” which is the standards for civil cases.<sup>170</sup>

The Italian rules also allow for a mixing of criminal and civil trials, the admission of character evidence at trial, and the very tight exclusionary rules of ICCP 188 and 191.<sup>171</sup> The Amanda Knox case included a defamation case against her with regard to the implication of another person (*calunnia*) and a civil case brought by the victim’s parents (*parte civile*). *Parte civile* proceedings are widely available to anybody who has suffered a loss on account of the offense. Such a person can ask the public prosecution for compensation for the loss.<sup>172</sup> In most civil law countries, including Italy and France, *parte civile* is significant in defamation cases because defamation constitutes a crime as well as a tort.<sup>173</sup> In the accusatory system of England and the United States, evidence on the character of the accused is only relevant and permissible

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<sup>169</sup> *Id.* at 601.

<sup>170</sup> *Id.* at 600.

<sup>171</sup> *See id.* at 608-9.

<sup>172</sup> Antoinette Perrodet, *The Public Prosecutor*, in *EUROPEAN CRIMINAL PROCEDURES* 415, 454 (Mireille Delmas-Marty & J.R. Spencer eds., 2002).

<sup>173</sup> UGO A. MATTEI ET AL., *SCHLESINGER’S COMPARATIVE LAW* 856 (7<sup>th</sup> ed. 2009).

in the penalty phase of a trial, unless the defendant opens the door to the evidence earlier by bringing it in himself. In Italy, the courts are automatically told of the defendant's criminal record and nothing prevents the court from hearing about the disreputable tendencies of the accused as long as they can be attached to previous misbehavior.<sup>174</sup> In addition, hearsay evidence, evidence relating the comments of a third party in court, is also admissible in Italy.<sup>175</sup>

Therefore, in the Amanda Knox case the evidence that would have been excluded in the United States, such as her sexual exploits and drug use, was included in her Italian trial. The two civil cases would have also been litigated separately in the United States were also included in the same trial in Italy. This combination of trials exemplified one of the hybrid aspects of the Italian legal system.

## ***B. The Italian Criminal Procedure Code***

Italian criminal procedure has a long, rich history that dates back to the *Risorgimento* (unification of Italy) and comes from the Napoleonic Code. It was modernized in the 1930 *Rocco Code* and reformed in 1988 with major changes made in 1999.<sup>176</sup> The Italian Constitution specifies some fundamental principles of criminal procedure. These include the right to a legitimate judge, the principle of equality, personal liability, and the dignity of a person.<sup>177</sup> Innocence is presumed until the final stages of the criminal process have been completed. There is a right to a defense counsel in all stages of the proceedings and the judiciary is the guardian of

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<sup>174</sup> Spencer, *supra* note 154, at 616.

<sup>175</sup> *Id.* at 617.

<sup>176</sup> Perrodet, *supra* note 155, at 348.

<sup>177</sup> *Id.* at 350.

individual liberty.<sup>178</sup> Title IV of the Constitution is devoted to the *magistratura* (the judiciary system), which defines the role of the judges and public prosecutors. The judge's role is different for each stage of the proceedings.<sup>179</sup>

Italian criminal proceedings can be divided into four separate phases: (1) the preliminary investigation phase (*indagini preliminari*); (2) the preliminary hearing phases (*udienza preliminare*); (3) the trial phase (*dibattimento*); and (4) the appeals phase in a different court.<sup>180</sup> Within forty-eight hours of a crime being reported, the police are required to notify the public prosecutor who then has six months in which to complete a formal investigation and gather evidence.<sup>181</sup> The prosecutor can request a special pre-trial hearing (*incidente probatorio*) for witnesses or evidence that might not be available at trial. This testimonial hearing can be used for future trial proceedings and is included in the file for trial.<sup>182</sup> The prosecutor gathers evidence, including exculpatory evidence. Then the defendant is notified of the pending charges against him. At this point a preliminary investigating judge (*guidice per le indagini preliminari*, or “*gip*”) is assigned and determines whether or not the defendant should stay in jail. This completes phase one.

During phase two, the preliminary hearing, a new judge called the preliminary hearing judge (*giudice per l'udienza preliminare*, or “*gup*”) evaluates all the evidence collected and decides whether or not to continue to trial or to drop the charges (*rinvio o giudizio*).<sup>183</sup> The

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<sup>178</sup> *Id.* at 351.

<sup>179</sup> *Id.* at 355.

<sup>180</sup> Pizzi, *supra* note 12, at 7.

<sup>181</sup> Grande, *supra* note 38, at 233.

<sup>182</sup> Pizzi, *supra* note 12, at 12.

<sup>183</sup> *Id.* at 13.

preliminary hearing must be conducted within 30 days of the prosecutor's request. The hearing takes place in open court chambers and must be attended by the public prosecutor, the defense counsel for the accused, and the victim (*parte civile*) as well as any other private parties. At the end of the hearing, there are either no grounds for prosecution or the case proceeds to trial. At that time the public prosecutor's dossier is made available to the parties.<sup>184</sup>

The third phase is the trial phase. Under the new Code, the trial judge no longer has unrestricted access to the file. He is expected to approach the case with a *tabula rasa* (with an open mind). The new system requires the evidence to be produced by the parties at trial.<sup>185</sup> The judge is allowed to question witnesses at the conclusion of the examination and can suggest new issues to be addressed. The defendant is also allowed to speak at any point in the trial and challenge witness testimony. It should be noted that the defendant is not under oath to tell the truth, nor can he later be convicted of lying at his trial.<sup>186</sup> To reach his ruling, the judge may use no evidence, except that which has been admitted and presented adversely at trial. The judge or a bench of judges evaluate whether the evidence is sufficient to establish the guilt of the defendant. The judge may not deduce the existence of a fact from circumstantial evidence unless it is serious, precise and consistent. Then, he or they must set out the elements of the facts and of the law that form the basis of the judgment in a reasoned explanation called the *motivazione*.

The judge states the evidence he has accepted and the reasons for rejecting evidence to the

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<sup>184</sup> Valerie Dervieux, *The French System*, in EUROPEAN CRIMINAL PROCEDURES 218, 266-67 (Mireille Delmas-Marty & J.R. Spencer eds., 2002).

<sup>185</sup> Grande, *supra* note 38, at 243.

<sup>186</sup> See Stephen P. Freccero, *An Introduction to the New Italian Criminal Procedure*, 21 AM. J. CRIM. L. 345, 360 (1994).

contrary.<sup>187</sup> This *motivazione*, which can be hundreds of pages in length, provides detailed insight into the deliberation process should the case be appealed.<sup>188</sup>

Most trials in Italy are conducted in the *Corte di Assise* with a single judge or for very serious cases, with a bench of judges. The *Corte di Assise* has jurisdiction over offenses that carry a prison sentence of life or greater than twenty-four years of imprisonment.<sup>189</sup> In contrast, a tribunal court is restricted to no more than four years of jail time.

In the fourth phase Italy has three courts of appeal. The *corte di appello* (court of appeal) also known the *distretto* hears only appeals from the *tribunale*. The *corte di assise di appello* (assize court of appeal) hears all other appeals. In this appeals court there is always one judge and six jurors chosen from the general public.<sup>190</sup> The highest court, the *corte di cassazione* (court of causation), commonly referred to as the *Corte Suprema*, has the final jurisdiction.<sup>191</sup> There is one *corte di cassazione* for all Italy. The task of this court is to ensure “exact observance and uniform interpretation of the law, the unity of the law, and the respect for limits of confidence between the different jurisdictions.”<sup>192</sup>

In Italy, the avenue of appeal allows the court to review a decision on its merits. The appeal must be filed within ten days of the sentencing.<sup>193</sup> The wide array of appeals possible include a reconsideration of the evidence, a reconsideration of the verdict, a reconsideration of

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<sup>187</sup> Perrodet, *supra* note 155, at 370.

<sup>188</sup> Pizzi, *supra* note 12, at 15.

<sup>189</sup> Perrodet, *supra* note 155, at 355.

<sup>190</sup> See above Part I. B. on p. 11 for a detailed discussion of the juror system in Italy.

<sup>191</sup> Mattei, *supra* note 173, at 512.

<sup>192</sup> Perrodet, *supra* note 155, at 365.

<sup>193</sup> *Id.* at 406.

the civil liability of the *parte civile*, and/or nullification of the entire trial court proceeding.<sup>194</sup> A verdict of acquittal is announced if there is a violation of anything listed in ICCP Article 530. These usually include a lack of evidence or evidence of a contradictory nature or a doubt as to existence of any cause of justification for the offense.<sup>195</sup> Judging from the ruling of the court of appeal in the Amanda Knox case, Knox appealed her conviction of the murder based on lack of evidence, the unreliability of the testimonies and the misinterpretation of the weight given to the DNA. She also appealed the judgment of the civil case of Kercher's parents (the *parte civile*) and the case of defamation of character (*calunnia*) against her.<sup>196</sup> However, the focus of this paper is on the weight given to the DNA evidence.

### ***C. The Meaning of DNA Evidence and How it is Collected in Italy***

In the Italian court, the standard for collecting DNA evidence is determined by the credibility of the DNA expert's testimony. According to ICCP Article 220 the expert (*perito*) is nominated by the judge. Article 225 allows the public prosecutor and the defense attorney to nominate an expert (*consulente tecnico*). However, there can only be as many consultants as there are experts.<sup>197</sup> The expert will be questioned as to how the evidence was collected and tested, and as to the significance of the findings. Therefore, each case is specific and judged on its own merits.

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<sup>194</sup> *Id.* at 398.

<sup>195</sup> *Id.* at 407.

<sup>196</sup> Elisabetta Povoledo, Amanda Knox Freed After Appeal in Italian Court, N.Y. TIMES, Oct. 3, 2011, <http://www.nytimes.com/2011/10/04/world/europe/amanda-knox-defends-herself-in-italian-court.html?pagewanted=all>.

<sup>197</sup> Perrodet, *supra* note 155, at 379.

Doctor Patrizia Stefanoni, the forensic examiner in the Amanda Knox case, provided a clear summary of how in Italy DNA establishes individual identity during her expert testimony. She explained that DNA is incapable of giving any temporal information.<sup>198</sup> It is impossible to know when DNA evidence was deposited at a particular scene. When identifying DNA, one looks for peaks that are the same size. These peaks are called allele. In a complete genetic profile, which is rarely used in DNA evidence, there would be sixteen points from fifteen pairs of chromosomes. The probability of finding another person with the same genetic profile would be one in a trillion people.<sup>199</sup> Therefore, for DNA analysis, the emphasis is placed on how material is handled and amplified in the laboratory. She further testified to how DNA evidence is collected in Italy.

When biological items arrive in a laboratory they are catalogued, allowing them to be indentified throughout the testing process. The scientific police use the information system called SQL LIMS. Catalogued items are then photographed. The first treatment consists of extracting DNA from cell and only the part of interest is kept. Dirt, bacteria and molds are removed. This extraction of DNA is mechanical and performed by a bio-robot.<sup>200</sup> This is considered the first phase of analysis.

The second phase of analysis determines the quantity of DNA present and it is immersed into an aqueous solution and the DNA concentration is then measured. The DNA is then subjected to another process known as amplification, which makes copies of the DNA. It is possible to have a very small amount of DNA copied to give enough so that several allele can be

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<sup>198</sup> Stefanoni was a biologist working with the Forensic Genetic Section of the Scientific Police of Rome. *See* Sentenza della Corte d.Ass., 4 Marzo 2010, n. 7/2009, 180 (English Translation), available at <http://www.perugiamurderfile.org/viewtopic.php?f=10&t=259>.

<sup>199</sup> *Id.* at 187.

<sup>200</sup> *Id.* at 184.



examined.<sup>201</sup> The final stage is called “electrophoreses,” which allows for a visible picture of a genetic profile. The entire procedure is called PCR.

The more points of DNA analyzed, the more likely it is to be able to associate a trace to a specific person. Thus, the scientific police are able to confirm the DNA located at specific crime scenes or areas of interest.<sup>202</sup> When two or more traces are in the same biological sample, the analysis is more complicated because some of the points of one individual can be identical to some of the points of another individual and in the visual photograph they lie on top of each other and are sometimes separated by the Y chromosome.<sup>203</sup> The accuracy in reading DNA samples is highly dependant on the integrity of collecting the samples. Cross-contamination occurs when materials are moved without changing gloves or placed closely together in unsealed containers, or time has lapsed and other contamination can occur at the scene itself.

#### ***D. The Current Standard for Certification of DNA Evidence in Italy***

Until 2009, Italy did not have DNA certification requirements and it did not adhere to international forensic standards for the collection of DNA. Italy was the only major member of the European Union that failed to join the *Prüm Convention*. The *Prüm Convention* created minimum DNA sharing and testing guidelines in order to minimize potential contamination and faulty DNA testing analysis. The Convention also allowed for international direct access to national DNA databases to assist in crime investigation and identification of suspects. Its

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<sup>201</sup> *Id.* at 185.

<sup>202</sup> *Id.* at 187.

<sup>203</sup> *Id.* at 188.

purpose was to aid in cross-border cooperation in combating terrorism, crime and illegal migration.<sup>204</sup>

Italy passed Law No. 85 in 2009 that ratified the *Prüm Convention*. This law also established an Italian National DNA Database.<sup>205</sup> However, this law has been highly criticized for its omissions. For instance, Article 8 of Law No. 85 does not provide serious and adequate security measures for unauthorized access or data tampering and Article 9 does not establish a proper chain of custody. Furthermore, Articles 13 and 14 fail to have a provision for the removal of the DNA information from the database on individuals who were later determined not guilty from the database. The last and most common criticism of Law No. 85 is the use of DNA profiling and its ability to inject “hidden racism” into the justice system.<sup>206</sup> However, the most significant problem with the new Italian law is the lack of protection for a chain of custody, which is absolutely necessary in the United States in order to protect against possible alteration and contamination of evidence. Therefore, Law No. 85, despite its enactment after the Kercher murder, would not have aided Amanda Knox in her defense against DNA evidence. Even if Italy had ratified the *Prüm Convention* at the same time everyone else did in 2005, neither Knox nor Sollecito would have been in the European DNA Database because they did not have a criminal history. Even Guede’s previous breaking and entering crime would arguably not have made into the database on time since he committed that crime only two weeks prior to the murder. Furthermore, the law did not clarify the standards for DNA collection. What Law No. 85 does

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<sup>204</sup> Prüm Convention, July 7, 2005, art. 2-7.

<sup>205</sup> See *Italian DNA database: The devil is in the details*, EDRI-GRAM, Aug. 26, 2009, <http://www.edri.org/edri-gram/number7.16/dna-database-italy>.

<sup>206</sup> *Id.*

show is that Italy is progressing towards a more consistent recording of DNA profiles of criminals like its American and European counterparts.

### ***Part V: The Use of DNA as Presented in the Amanda Knox Case and Why it Was Discredited in the Italian Appellate Court***

The information regarding the Amanda Knox trial is taken from the *motivazione* written by the judges of the *Corte d'Assise of Perugia*. The *motivazione* is similar to a trial transcript because it includes all of the evidence and testimony presented at trial. However, unlike a trial transcript in America, this *motivazione* reveals what pieces of the evidence the judges considered to be important and what pieces of the evidence the judges considered to be unimportant. In the United States, a trial verdict is rendered without any explanation. Consequently, the appeal courts in the United States are not permitted to consider the factual evidence. These courts may only consider the procedures by which the evidence was obtained. The first section discusses the facts of the case that trial court considered important. A separate section delineates the DNA evidence presented at trial. The third section summarizes the decision of the trial court and the last section analyzes the issues that the court of appeal either upheld or reversed.

#### ***A. The Overall Facts of the Case***

On November 2, 2007, Meredith Kercher was found murdered in the apartment she shared with Amanda Knox and two other women, Filomena Romanelli and Laura Mezzetti. A duvet covered Kercher's body and large bloodstains were found all over her bedroom.<sup>207</sup> Kercher's bedroom was located in the far back of the apartment and Knox's bedroom was located in the middle. Both girls shared the back bathroom located between their bedrooms. The

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<sup>207</sup> See Sentenza della Corte d.Ass., *supra* note 198 at 23.

other two women shared the bathroom located in the floor.<sup>208</sup> Six people, in addition to two policemen, were present in the apartment at the time Kercher's body was discovered. The policemen were present because they were investigating another crime at the apartment building. Cell phones had been found near the scene of that crime and the police had traced a call made to one of the cell phones to Amanda Knox's phone. Romanelli indentified the two found cell phones as belonging to Kercher.<sup>209</sup>

Unable to locate Kercher, Romanelli's boyfriend broke open Kercher's locked bedroom door and discovered her body lying under the duvet. The police ordered everyone out of the house and no one was allowed to enter the bedroom.<sup>210</sup> Shortly after the grizzly discovery, the investigative unit of the Perugia police arrived. Kercher's body was removed from the apartment and her bedroom was secured until the scientific police had completed their investigation.<sup>211</sup> After examining the body, the coroner estimated the time of death somewhere between 10 p.m. on November 1 and 4:30 a.m. on November 2, 2007.<sup>212</sup> The cause of death was strangulation due to the crushing of the hyoid bone and the slitting of the throat area with a knife.<sup>213</sup> The wound on the left side of the neck was very deep and wide, indicating a cut with a large, sharp knife. However, the wound on the right side of the neck was much smaller, indicating the width

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<sup>208</sup> *Id.* at 24.

<sup>209</sup> *Id.* at 25.

<sup>210</sup> *Id.* at 32-33.

<sup>211</sup> *Id.* at 100.

<sup>212</sup> *Id.* at 131-32.

<sup>213</sup> *Id.* at 118.

of the blade to have been about three centimeters. The victim also suffered sexual violence, indicative of non-consensual sexual intercourse.<sup>214</sup>

All of the occupants of the building were interviewed. The investigative police learned from Knox that she had returned to her apartment the morning of November 2, to shower and change her clothes after having spent the night of November 1, at her new boyfriend, Raffaele Sollecito's, apartment.<sup>215</sup> Romanelli told the police that Knox had called her earlier that same morning to report that there might be something wrong at their apartment because the front door was open and no one appeared to be home.<sup>216</sup>

The police learned from Kercher's other girlfriends that they had eaten dinner with Kercher at her apartment on November 1, and they left at about 9 p.m.<sup>217</sup> They also said that Kercher had been seeing one of the boys living downstairs named Giacomo Silenzi.<sup>218</sup> Silenzi admitted to having a romantic relationship with Kercher; but he also told the police that Rudy Guede, someone he had played basketball with near the house, had expressed interest in Knox and had previously come over to the girls' apartment.<sup>219</sup> Guede was not originally a suspect. However, upon learning that he was interested in Knox, the police named him as a suspect and then searched his apartment.<sup>220</sup> The police obtained Guede's DNA from his apartment on

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<sup>214</sup> *Id.* at 121.

<sup>215</sup> *Id.* at 38.

<sup>216</sup> *Id.* at 29-30.

<sup>217</sup> *Id.* at 33-34.

<sup>218</sup> *Id.* at 39. *See also* NINA BURLEIGH, *THE FATAL GIFT OF BEAUTY: THE TRIALS OF AMANDA KNOX*, xix (2011) (asserting that Kercher was seeing her neighbor).

<sup>219</sup> *Id.* at 39, 42.

<sup>220</sup> *Id.* at 39-40.

November 20.<sup>221</sup> The DNA found in Kercher's vagina, on her bra strap, the cuff of her sweatshirt, and on her purse was then matched his DNA.<sup>222</sup> Further biological traces of Guede were located on the toilet paper in the front bathroom of the girls' apartment.<sup>223</sup> The bloodstained footprints coming from Kercher's room were later connected to a pair of Guede's shoes that were also found in his apartment. It should be noted that Sollecito also wore the same type and size shoes and the footprints were at an earlier time attributed to him.<sup>224</sup> By the time of the trial, the prosecutor presumed that Guede was the perpetrator of the murder. However, the prosecutor reasoned that Guede had assistance from Knox and Sollecito because there was very little evidence that Kercher had struggled.<sup>225</sup>

Other non-DNA evidence also implicated Rudy Guede. Four days prior to the murder, on October 27, 2007, Guede was charged with breaking and entering into a nursery school in Milan in which he stole a jack knife and money.<sup>226</sup> This knife matched the type of knife used to cut Kercher's throat. Guede had also broken into a law office some days prior into by throwing a rock through the window in the same way that Kercher's apartment was broken into.<sup>227</sup> Two other knives were also attributed to the crime. One was a knife found in Sollecito's kitchen and

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<sup>221</sup> *Id.* at 195.

<sup>222</sup> *Id.* at 195.

<sup>223</sup> *Id.* at 43-44.

<sup>224</sup> *Id.* at 333-34.

<sup>225</sup> *Id.* at 45.

<sup>226</sup> *Id.* at 47.

<sup>227</sup> *Id.* at 45.

the other was a knife found in the girls' kitchen. However, the coroner was unable to determine which of the three knives was the actual murder weapon.<sup>228</sup>

According to the testimony of both Knox and Sollecito, they spent the entire evening of November 1 at his apartment having dinner, watching movies, and smoking marijuana.<sup>229</sup> Knox testified that when she took a shower in her bathroom she noticed some blood on the sink and a drop or two on the bathmat. She assumed that the blood was from one of the roommates. After her shower Knox dressed in her own bedroom and blow-dried her hair in the front bathroom. At that time she noticed that someone had failed to flush the toilet.<sup>230</sup>

According to Knox she then returned to Sollecito's apartment with her mop to clean his kitchen floor because they had spilled water the night before.<sup>231</sup> Knox told Sollecito that she thought that there was something odd at her apartment because the door was opened.<sup>232</sup> She tried to phone Kercher without success.<sup>233</sup> Worried, both Knox and Sollecito returned to her apartment where they noticed that Romanelli's bedroom window had been shattered with a rock. The glass and the rock were still on the floor.<sup>234</sup> Sollecito called the police and the Knox called the other girls who returned home immediately. The police then arrived, albeit for another reason.<sup>235</sup>

Further police investigation of the neighborhood revealed additional information that was

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<sup>228</sup> *Id.* at 172.

<sup>229</sup> *Id.* at 65.

<sup>230</sup> *Id.* at 65.

<sup>231</sup> *Id.* at 85.

<sup>232</sup> *Id.* at 29.

<sup>233</sup> *Id.* at 66.

<sup>234</sup> *Id.* at 30.

<sup>235</sup> *See id.* at 25 (stating that the police was at the apartment to investigate the theft of two cell phones).

used at trial. A nearby neighbor heard a loud, long scream from a woman coming from Kercher's apartment at approximately 11:30 p.m. on November 1. She also heard someone running down the metal stairway and along the path.<sup>236</sup> Another witness confirmed that she too heard running steps on the pathway at about the same time. However, she was unsure whether there could have been more than one person running.<sup>237</sup> A local drifter named Antonio Curatolo<sup>238</sup> thought that he remembered seeing Knox and Sollecito in a square located between Knox's and Sollecito's apartments between 9:30 and 11:30 p.m. on the evening prior to the murder.<sup>239</sup>

After several lengthy police interrogations, both Knox and Sollecito had inconsistencies in their testimonies. For example, Sollecito claimed that Knox was not with him the whole evening. Knox also reported visions that implicated her boss, Patrick Diya Lumumba in the murder.<sup>240</sup> Sollecito's computer indicated that he was not asleep in the morning as he stated because music was being playing from his computer. In addition, the computer records also indicated that the computer had been turned off between the hours of 9 p.m. and 5 a.m.<sup>241</sup> Knox was further implicated as an accomplice because she removed the mop from her apartment and had allegedly purchased bleach in the morning of November 2.<sup>242</sup> There were also other reasons both Knox and Sollecito were implicated in assisting Guede with murdering Kercher (i.e., an

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<sup>236</sup> *Id.* at 96.

<sup>237</sup> *Id.* at 97.

<sup>238</sup> *Id.* at 79. Curatola was a homeless heroin addict who testified that he saw Knox and Sollecito near the murder scene on November 1. *See also* Burleigh, *supra* note 218, at xx.

<sup>239</sup> *See* Sentenza della Corte d.Ass., *supra* note 198 at 80.

<sup>240</sup> *Id.* at 68.

<sup>241</sup> *Id.* at 338-44.

<sup>242</sup> *Id.* at 74.



eyewitness account placing them near the scene of the crime at the time of the crime and a presumed motive of a possible sex orgy). However, this paper will not expand further on this evidence as it focuses only on the DNA evidence presented at trial.<sup>243</sup>

### ***B. The DNA Evidence Introduced at Trial***

The scientific police analyzed 460 specimens for DNA evidence and presented the results in the trial dossier.<sup>244</sup> 228 of the specimens came from areas other than the Kercher-Knox apartment. Samples were gathered from Sollecito's apartment, car and Guede's apartment.<sup>245</sup> The gathering of biological evidence began the day the murder was discovered.<sup>246</sup> The police gathered blood samples, hair, footprints, blood on the sheets, and soiled toilet paper. Throughout the gathering of evidence, Knox and the other roommates had access to their apartment although Knox stayed either at the police station for interrogation or Sollecito's apartment for the first few days.<sup>247</sup>

The police removed several items of interest from the scene of the crime, some of which were subsequently tested for DNA. The victim's body was examined for DNA of other people. When examining the semen, the only DNA present was that of Guede, and not of Sollecito's as first assumed. The blood scatterings around Kercher's room and on the sheets as well as the bloody footprints leaving her room belonged to the victim. One non-blood related footprint in

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<sup>243</sup> For a discussion of the reasons for why Knox and Sollecito were implicated see Julia Grace Mirabella, *Scales of Justice: Assessing Italian Criminal Procedure Through the Amanda Knox Trial*, 30 B.U. INT'L L.J.

<sup>244</sup> See *Sentenza della Corte d.Ass.*, *supra* note 198 at 183.

<sup>245</sup> *Id.* at 211.

<sup>246</sup> *Id.* at 107.

<sup>247</sup> *Id.* at 100.

the hallway belonged to Knox, which was not unusual given that she lived in the apartment. Other DNA samples showed Knox's and Sollecito's presence at the apartment.<sup>248</sup> In addition, Guede's DNA was also found on the victim's handbag. Of all the items tested in the victim's room, only Guede and Kercher's DNA was found.<sup>249</sup> Biological materials found in the sink and bidet of the bathroom showed a mixture Knox's and Kercher's DNA. The traces on the toilet paper fit Guede's profile.<sup>250</sup>

At the center of the investigation was the bra that Kercher wore when she was murdered. The bra was discovered near the body in the victim's room on November 2<sup>nd</sup>.<sup>251</sup> The back part of the bra contained both Guede's and Kercher's DNA profiles. However, the bra was missing its clasp because it had been ripped off. The police later discovered the missing clasp on December 18 in Knox's bedroom, six weeks after the start of the investigation.<sup>252</sup> According to the police, they observed the bra clasp early as November 2 in Kercher's room but failed to collect it.<sup>253</sup> The clasp had a mixed genetic profile of Knox, Guede, Sollecito and Kercher.<sup>254</sup> Kercher's DNA was six times more than of either Sollecito or Knox.<sup>255</sup> Other items found in Knox's bedroom yielded no significant DNA results. The same was true for items tested from the other two roommates' bedrooms. A November 13 inspection of Sollecito's apartment did not

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<sup>248</sup> *Id.* at 198.

<sup>249</sup> *Id.* at 190.

<sup>250</sup> *Id.* at 192.

<sup>251</sup> *Id.* at 196.

<sup>252</sup> *Id.* at 100.

<sup>253</sup> *Id.* at 102.

<sup>254</sup> *Id.* at 197.

<sup>255</sup> *Id.* at 200.

yield any significant DNA results either.<sup>256</sup> There was no credible Kercher DNA present at his apartment.<sup>257</sup>

Although the police never determined which knife was the murder weapon, the knife found in Knox's kitchen contained Knox's DNA derived from the exfoliation of skin cells. It could only be determined that Knox had used the knife at some point.<sup>258</sup> The traces of DNA found on the blade as opposed to the handle was too small for DNA analysis. The knife found at Sollecito's apartment had clearly his and Knox's DNA and a small trace of Kercher's DNA on the tip of the blade. However, the amount was too small for positive identification and the cross-contamination possibilities in collecting the knife were high<sup>259</sup>

After all the DNA evidence had been evaluated, the trial court concluded that both Knox and Sollecito were present in the Knox-Kercher apartment. Great credence was given to Sollecito's DNA on the bra clasp and Kercher's DNA on the knife found at his apartment. However, the trial court ignored the following DNA issues. The DNA evidence did not in any way establish that Knox and Sollecito were present during the murder because their DNA was absent from significant places. Neither of the two's DNA was present in Kercher's bedroom. Kercher's DNA was not present on the mop that Knox removed from the kitchen on November 2 and took to Sollecito's apartment. Kercher's DNA was also not present in Sollecito's car or apartment. The only DNA of Knox and Sollecito present at Knox's apartment was DNA that one would expect to find given that she lived there and he was present at the time the body was discovered. In addition, the forensic expert stated in her testimony that her laboratory was not

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<sup>256</sup> *Id.* at 193-94.

<sup>257</sup> *Id.* at 194.

<sup>258</sup> *Id.* at 226.

<sup>259</sup> *Id.* at 231-32.

certified for DNA testing because certification was not mandatory in Italy. However she noted that the laboratory procedures they used would meet the requirements for certification.<sup>260</sup>

### ***C. The Decision of the Trial Court***

On December 5, 2009, Amanda Knox and Raffaele Sollecito were convicted by the Corte d'Assise of Perugia of several crimes related to the murder of Meredith Kercher. Knox was convicted of six of the seven charges against her. This includes *concorso* (complicity) for the killing of Meredith Kercher. In common law this would be considered accomplice to murder.<sup>261</sup> Knox's motive for committing the murder was the result of a drug-induced sexual orgy. Guede was the actual murderer. Knox was also convicted of complicity in constraining of the victim by means of violence and threats, and inflicting wounds with a knife. Besides complicity in murdering Kercher, Knox was charged and convicted of carrying a knife without a justified reason from Sollecito's apartment to hers. In addition, she was also convicted of procuring an unjust profit for herself by removing Kercher's property, 300 Euros, two credit cards and two cell phones, from the apartment.<sup>262</sup> Knox alone was convicted of the criminal offense of *calunnia* for knowingly trying to implicate an innocent person, namely her boss as Kercher's murderer.<sup>263</sup> As a result of these convictions, Knox received a life sentence (twenty-six years).<sup>264</sup> She was also ordered to pay five million Euros to Kercher's parents and thirty

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<sup>260</sup> *Id.* at 220.

<sup>261</sup> *Id.* at 10.

<sup>262</sup> *Id.* at 11.

<sup>263</sup> *Id.* at 12. The crime of *calunnia* is commonly translated as slander in English. However, this not accurate. *Calunnia* is the crime of making false criminal accusations against someone whom the accuser knows to be innocent or to fabricate false evidence.

<sup>264</sup> *Id.* at 12.

thousand Euros to the apartment building owner's attorney.<sup>265</sup> Neither Knox nor Sollecito were convicted of the charge of breaking and entering the apartment because the court believed that this crime was staged.<sup>266</sup> Rudy Guede, who was tried separately in a fast-track trial, was convicted as the actual perpetrator of Kercher's murder and sentenced to sixteen years in an Italian prison.<sup>267</sup>

The 397-page *motivazione* carefully laid out the evidence the court considered to be the most reliable. Included were the inconsistencies in Sollecito and Knox's early testimonies as well as DNA evidence that tied Kercher's DNA to the knife found in Sollecito's apartment and the DNA evidence found on the bra clasp allegedly worn by Kercher the night of her murder.<sup>268</sup> The court reasoned that this DNA evidence, even though amounts too small for retesting, was indeed reliable. In addition, the court hypothesized that Knox and Sollecito were in a square in front of the university where they met Guede and all three then proceeded to the house together.<sup>269</sup> The court found nothing to contradict the prosecution's motive that an erotic sexually violent encounter under the influence of drugs led to Kercher's murder.<sup>270</sup>

In an adversarial court such as in the United States, the DNA evidence considered by this trial court would not have been admitted into evidence because of the above-mentioned reasons

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<sup>265</sup> *Id.* at 13.

<sup>266</sup> *Id.* at 361.

<sup>267</sup> See *Sentenza della Corte d.Ass.*, *supra* note 198 at 14. See also Editorial, *Kercher murder case: a revolving door*, THE GUARDIAN, Oct. 04, 2011, <http://www.guardian.co.uk/commentisfree/2011/oct/04/kercher-murder-revolving-door>.

<sup>268</sup> See *Sentenza della Corte d.Ass.*, *supra* note 198 at 289-99.

<sup>269</sup> *Id.* at 361.

<sup>270</sup> *Id.* at 368

such as unreliable collecting procedures and the small diluted amount actually found.<sup>271</sup> The *columnia* charge would never have been prosecuted in the same criminal trial in the United States. Furthermore, *parte civile* proceedings in which the families of victims seek restitution would also be a separate civil litigation of which no criminal sentencing would be imposed.<sup>272</sup>

#### ***D. The Decision of the Court of Appeal***

On December 15, 2011 the Cortde d'Assise di Appello acquitted both Knox and Sollecito of all charges of complicity in the murder of Meredith Kercher. However, Knox was not exonerated for her conviction of slander for accusing the bar owner Patrick Diya Lumumba of carrying out the killing.<sup>273</sup> The Court said in its 144-page document that the forensic evidence used to support the original verdict was unreliable.<sup>274</sup> The DNA evidence could not ultimately prove that Knox and Sollecito were at the scene of the crime on the night of the murder. There were flaws in the collecting and testing of the DNA traces of the defendants. An independent review of the DNA evidence ordered by the appeals court discredited the DNA. The review said there were “glaring errors in evidence-collecting and that below-standard and possible contamination raised doubts over the DNA traces on the blade and on Kercher’s bar clasp.”<sup>275</sup>

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<sup>271</sup> See Part III.

<sup>272</sup> See generally, Ronald B. Sandler, *Differences between Criminal and Civil Law in the USA*, <http://www.rbs2.com/cc.htm>. There were two separate proceedings for O.J. Simpson in the murder of Nicole Brown and Ron Goldman. O.J. Simpson was found guilty in a civil trial for wrongful death and not-guilty in the criminal trial of murder.

<sup>273</sup> *Meredith Kercher: Court explains Amanda Knox acquittal*, BBC NEWS EUROPE, Dec. 15, 2011, <http://www.bbc.co.uk/news/world-europe-16209973>; see also Barry, *supra* note 274.

<sup>274</sup> Colleen Barry, *Italian appeals court says why it cleared Knox*, SEATTLEPI, Dec. 15, 2011, <http://www.seattlepi.com/news/article/Italian-appeals-court-says-why-it-cleared-Knox-2404928.php>.

<sup>275</sup> *Id.*

The appeals decision further criticized the lower court for speculating about what really happened the night of the murder and whether or not more than one person carried out the crime.<sup>276</sup> The appeals judge criticized the trial judge for the use of the word “probably” thirty-nine times in his written explanation of the evidence.<sup>277</sup> The appeals court also found that two of the witnesses whose testimonies the trial court heavily relied on were untrustworthy. One of these witnesses, who placed Knox near the crime scene the night of the murder, was a local tramp and a heroin addict. The second witness, a shopkeeper who accused Knox of buying bleach from her the morning after the crime, was called into question when she only came forward one year after the murder occurred.<sup>278</sup> In addition, independent forensic experts told the appeal court that the police had compromised the investigation by failing to follow international forensic protocols, such as properly securing the crime scene and proper interrogation of suspects.<sup>279</sup>

Finally, the court did acknowledge the fact that Knox’s and Sollecito’s alibis were inconsistent in several places. However, the court held that an alibi out of sync “is very different,” from the prosecutor’s claim of a “false alibi.”<sup>280</sup> Further appeals can only be heard in the Court of Cassation, Italy’s highest appeal court, which can only review possible technical errors in lower court cases. On February 14, 2012, Giovanni Gelati, the prosecutor from Perugia,

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<sup>276</sup> *Id.* See also Kington, *supra* note 5.

<sup>277</sup> Kington, *supra* note 5.

<sup>278</sup> Kington, *supra* note 5.

<sup>279</sup> Maurizio Troccoli, *Lack of motive and faulty evidence led to Amanda Knox acquittal: newly released court document*, NATIONAL POST, Dec. 15, 2011, <http://news.nationalpost.com/2011/12/15/lack-of-motive-and-faulty-evidence-led-to-amanda-knox-acquittal-newly-released-court-document/>.

<sup>280</sup> *Italian court explains ruling clearing Amanda Knox*, NORTH JERSEY, Dec. 15, 2011, [http://www.northjersey.com/news/international/121511\\_Italian\\_court\\_explains\\_ruling\\_clearing\\_Amanda\\_Knox.html](http://www.northjersey.com/news/international/121511_Italian_court_explains_ruling_clearing_Amanda_Knox.html).

filed a 112-page appeal to the Court of Causation asking that the original murder conviction be reinstated.<sup>281</sup> The prosecutor said that he is “very convinced” that Knox and Sollecito are responsible for the death of Meredith Kercher. He further alleged that the appeals sentence was a mistake because it is full of “omissions and many errors.”<sup>282</sup> The prosecutor’s appeal to the Court of Causation is the third and final stage in the criminal case and the court is expected to issue its decision towards the end of this year. However, this court cannot hear new evidence. The fatal blow to the prosecution’s case was the court-ordered DNA review in the appellate trial that discredited the critical genetic evidence used to convict the two.<sup>283</sup> Without irrefutable DNA evidence and the loss of the credibility of its two witnesses, the prosecution has little hope of having the verdict reinstated.

## ***Conclusion***

Neither the adversarial system, nor the inquisitorial system is perfect and one should not use the lens of one system to judge the other. In the adversarial system of the United States due process is extremely important because of the narrow scope of what issues may be appealed. This adversarial system by its very nature demands clarity and precision of the law. As a result, the use of DNA samples, as evidence has required that testing become more exact, the method of collection more careful, and the use of profiling more limited. In the adversarial system of the United States due process is extremely important because of the narrow scope of what issues may be appealed. It should be noted that the United States has been using DNA evidence in

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<sup>281</sup> The Associated Press, *supra* note 6.

<sup>282</sup> *Id.*

<sup>283</sup> *Id.*



criminal trials for a significant period of time but that it still continues to be challenged in the scholarly and legal arenas.

In the inquisitorial system, which includes Italy even though it is a hybrid, the scope of the appeal is much broader and therefore the issues of due process are not nearly as critical. It is the written law that governs the use of DNA as forensic evidence in Italy. However, it should also be noted that in Italy DNA evidence has not been used for as long as in the United States. The Knox case has created debate in Italy over possible reforms in its evidentiary codes so that innocent people are not wrongfully convicted. Public pressure is being put on the Italian parliament to reform its chain of custody requirements for DNA. Italy must preserve enough of a DNA sample for retesting to guarantee its reliability as the Knox case exemplified.

If the Italian court had the same standards of admissibility and reliability of DNA evidence in its hybrid-system that the United States system has developed, much of the DNA evidence relied on by the court for the conviction of Amanda Knox would not have been admissible and would not have influenced the trial court in forming its flawed arguments. To explain the lack of obvious and reliable DNA evidence, the prosecution and court assumed that DNA evidence was not present because it had been bleached away by Knox the morning after the murder. This led to the assumption of a motive based on her promiscuous behavior, which then led to belief in testimony of unreliable witnesses and the assumption that the perpetrator—Rudy Guede—must have had help. Nevertheless, the court of appeals eventually freed Amanda Knox by overturning the murder conviction after she spent four years in jail. The DNA evidence or lack thereof was finally ruled unreliable and therefore inadmissible. Italy, however, remains under attack for its lenient DNA rules of evidence and will remain so until reforms are legislated and DNA reliability questions are settled.

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