

In which ways has forensic evidence collection for the conviction of a serial killer evolved over the years as seen from a criminalistic point of view?

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Abstract

Detecting and catching a serial killer in the shortest time possible after his very first strikes is a key factor in order to minimize the number of victims, they are able to affect, in order to achieve this, optimal techniques and equipment are crucial. Over the past 40 years, the evolution of technology has been astronomical; this transformation has drastically affected most, if not all professional areas, including the criminalistics field.

This investigation consists of exploring the different manners in which the recent technological advances have shaped the examination tactics of forensic evidence into what is it today. To fulfil the previously mentioned objective one of the focal points of this investigation consists on the comparison between two serial killer cases from 2 different decades which date 30 years apart (1980's - 2010); the contrast between these two, looks into multiple aspects within each of the cases, some of which include the modus operandi, the physical evidence and the testimonial evidence that was found in each of them and the impact each of them represented during the investigation process.

Keywords: Killer, Serial Killer, Modus Operandi, Crime Scene, Forensic Evidenc, Convicting Evidence

Resumen

Detectar y atrapar a un asesino en serie en el menor tiempo posible después de sus primeros ataques es un factor clave para minimizar el número de víctimas a las que este tipo de pueden afectar, para lograr esto, las técnicas y equipos óptimos son cruciales. En los últimos 40 años, la evolución de la tecnología ha sido astronómica; esta transformación ha afectado drásticamente la mayoría, si no todas, las áreas profesionales, incluido el campo de la criminalística.

Esta investigación consiste en explorar las diferentes maneras en que los recientes avances tecnológicos han dado forma a las tácticas de examen de la evidencia forense en lo que es hoy. Con el fin de cumplir con el objetivo mencionado anteriormente, uno de los puntos focales de esta investigación consiste en la comparación entre dos casos de asesinos en serie de 2 décadas diferentes que datan con 30 años de diferencia (1980's - 2010); el contraste entre estos dos analiza múltiples aspectos dentro de cada uno de los casos, algunos de los cuales incluyen el modus operandi, la evidencia física y la evidencia testimonial que fue encontrada en cada uno de ellos y el impacto que cada una de estas significó ante la investigación.

Palabras clave: Asesino, Asesino en serie, Modus Operandi, Escena del crimen, Evidencia forense, Evidencia de convicción

Introduction

Forensic evidence collection can make or break a criminal case, it influences the way it is developed and its outcome in infinite ways. Most serial killers' cases are extremely time-sensitive as they are prone to strike over and over again until either they are caught or one of their twisted objectives is fulfilled, which is why forensic evidence collection techniques and methods are especially important when it comes to these type of cases.

40 years ago, tools that are common nowadays such as biometrical recognition scans or DNA swabs were not available and serial killer cases were investigated with techniques that were not very precise, quick or efficient which lead for criminals, including serial killers, to roam around free and continue their attacks for dangerously extended periods of time which resulted in higher victim count as well as higher rates of constant public fear.

One of the most striking examples of the previously mentioned issue is the world-known American serial killer Ted Bundy, who is believed to have killed over 30 women over the span of 4 years in different states all throughout The United States. One shocking factor of this specific case is that within the time frame where his murders took place, Bundy, was also arrested and processed through the legal system several times due to minor misdemeanors and even when all of the evidence on his serial murders were latent, the authorities were not able to connect him with the killings up until a surviving victim of his gave a statement where she identified him.

However, as the decades passed and evolution took place, new technologies were gradually introduced and applied into criminalistics and forensic investigation; this has lead to the development of the forensic evidence investigation models and methods accessible nowadays which have been proven to be extremely more reliable. This correlation also gives a possible insight on the rate in which these methods will evolve and how many others will be

developed over the next 20, 50, or even 100 years from now, resulting each time on more precise techniques which represent a hopeful future for criminalistics and forensic evidence investigation.

Justification

The main objective of the present investigation is to demonstrate how the collection of crime scene evidence leading to criminal convictions has evolved over the years based on two specific cases of widely known serial killers who were active during two different time frames.

In order to achieve the fundamental goal for this research, complete and in-depth knowledge about the different evidence collection tactics was the main starting point in which the research was based on; this was accomplished by looking into the particular cases of two convicted serial killers who were active during two different time frames, and also very specific pieces of evidence and their collection methods.

Being fully aware that there is a considerable amount of different studies available where evidence analysis and its evolution through different periods of time is analyzed, it is important to take into consideration that only very few of these actually show a thorough contrast of evidence collection and its techniques between two specific timeframes by focusing on specific serial killers and as this project does; which is one of the main reasons why this study is unique and relevant.

Crime and murder are social phenomena that have been present all throughout history and will most likely continue to happen over the next upcoming centuries; this is the reason why studying these phenomena is essential nowadays. which is the leading motive why the present investigation was carried out in the first place.

Research question

In which ways has forensic evidence collection for the conviction of a serial killer evolved over the years as seen from a criminalistic point of view?

Objectives

General

Determine the transformation that took place in the criminalistic field regarding the collection of evidence leading to the criminal sentence of a serial killer based on the specific cases of Ted Bundy and Anthony Sowell.

Specific

In order to achieve the previously stated general objective, the following specific objectives were proposed:

1. Identify the Modus Operandi and the evidence collected for Ted Bundy's criminal sentence. (time frame, criminalistic statistics).
2. Identify the Modus Operandi and the evidence collected for Anthony Sowell's criminal sentence. (time frame, criminalistic statistics).
3. Describe the transformations the evidence collection process went through based on the two cases previously stated by creating a contrast between both of them.

Chapter 1 Crime

1.1 Murder

The United States Department of Justice defines murder as “the unlawful killing of a human being with malice” (The United States Department of Justice Archives, 2020). This leads to the conclusion that murder is a social phenomenon that describes the premeditated *homicide*¹ of one or more people; this means that whoever committed the homicide planned their murder and chose their victim(s) as a specific target.

1.1.1 Types of murder

According to the United States Department of Justice Archives murder is divided into degrees based on different criteria such as intention, awareness and consciousness of the killer at the moment of the crime and whether if it was premeditated and planned or not (The United States Department of Justice Archives, 2020). After looking into the previously listed variables and criteria, each murder is analyzed and classified into one of two main possible degrees. As it is stated by The United States Department of Justice Archives, the most severe type of murder is known as **first-degree murder** which means the homicide was premeditated and planned; this degree of murder is punishable by death (The United States Department of Justice Archives, 2020). An example of a case that could help further understand first-degree murder would be as it follows: A man has been stalking a woman for 2 weeks, he then buys a hammer, gasoline and a lighter with the intent of killing her. A week later, he breaks into her house and hits her with the hammer on the head, which results in her death; he then proceeds to cover her

¹ According to the Merriam-Webster dictionary, Homicide a killing of one human being by another. (Merriam-Webster Dictionary, n.d)

corpse with gasoline and lights it up to destroy the evidence. The next degree of murder recognized by U.S law is called **second-degree murder** which occurs when murder was committed without strictly having been planned out; it is punished with a jail sentence which might also include life sentence (The United States Department of Justice Archives , 2020). This degree of murder is considered slightly less severe based on the conditions and events that led up to the killing. An example of a case considered second-degree murder could be: A married couple is having an intense argument and out of rage the husband violently pushes his wife down a staircase which results in the wife hitting her head and dying.

Upon the United States Department of Justice, first-degree murder is legally seen as more severe than second-degree murder and it is also penalized as such (The United States Department of Justice Archives , 2020).

1.2 Manslaughter

Besides the categories previously demonstrated (first and second-degree murder) there is a third type of homicide that a killer might be charged with, but conditions regarding this one differ from the two previous ones and it is known as manslaughter; according to H.G. legal resources, this term is used to describe involuntary homicide, which occurs when one person unintentionally kills another or when one or more people die because of the irresponsible actions of someone else, meaning that it was not a premeditated murder however the person who caused is still considered legally guilty of homicide (H.G. legal resources, n.d). An example of a case of manslaughter would be a man is driving his car at a regular speed, without the influence of any drugs or alcohol. While he is driving, his breaks suddenly stop working and his car strongly collides against another vehicle causing the driver inside the other car to lose their life. The case previously stated is still considered homicide but not murder upon U.S Law.

1.3 Serial Killer

Over the past few decades, the meaning and conditions of what makes a serial killer have been debated over from different points of view and fields including psychology, criminalistics, academia, and clinics. Actually, as stated by a report published by the FBI (FBI, 2010) under the title of “Serial Murder”, the conditions that differentiate a regular murderer from a serial killer are the following:

- serial killings can be perpetrated by one or more offenders (all offenders must actively participate in the murder(s) in order to be considered “killers”)
 - serial killers must have two or more proven murder victims
 - incidents should be occurring in separate events, at different times for them to be considered serial
 - the time period between murders separates serial murder from mass murder
- (FBI, 2010)

1.4 Crime Scene Investigation

Crime Scene Investigation, also referred to as CSI is one of the most crucial steps in a criminal case investigation as it is the process performed by an official entity of inspecting an active or non-active crime scene with the main goal of collecting physical evidence pieces that might be relevant or helpful for the solving of the case. The information collected through this process is presented in court after being analyzed by forensic scientists with the purpose of proving the guilt or innocence of a suspect or to help better determine how a crime occurred; a few of the factors that physical evidence is able to determine include the time frame in which

the crime was committed, how many people were present at the scene and the body proportions of both the perpetrator and the victim.

An article released by the Michigan State Police lists what are the main goals that crime scene investigation processes look forwards to fulfill. It goes as it follows:

- “- Determine what happened
- Recognize probative evidence
- Document evidence locations
- Collect and preserve evidence
- Maintain chain of custody”

(Michigan State Police Department, n.d.)

Chapter 2 Crime scene evidence collection

2.1 Forensic evidence types

It would be extremely hard to assimilate and fully understand forensic evidence if all of the pieces collected were studied under the same guidelines, conditions and criteria; that is one of the main reasons why it is divided into two following types of evidence:

Transient Evidence, also known as fragile evidence, refers to elements of physical evidence that degrades and deteriorates over time meaning that it will lose its reliability as time progresses if it is not preserved properly.

(Oxford Dictionary, n.d)

Some examples might include:

“ - Hairs, fibers, glass, fractured objects

- Shoe and tire impressions
- Bare foot impressions (latent)
- Bare foot impressions (in blood)
- Fire accelerants (point of origin)
- Body fluids (blood, semen, saliva)
- Skin cells (items touched or worn)
- Latent fingerprints
- Gunshot residue and patterns”

(Michigan State Police Department, n.d)

Tangible evidence, also known as solid evidence, refers to the material evidence pieces that are physically palpable which will not deteriorate over time.

Some examples of tangible evidence might include:

- “ - Toolmarks (focus on point of entry)
- Firearms
 - Other weapons (knives, clubs, etc.)
 - Fired bullets
 - Fired cartridge cases
 - Unfired cartridges
 - Drugs and paraphernalia
 - Documents (checks, notes, receipts)
 - Computers and devices”

(Michigan State Police Department, n.d)

2.2 Forensic evidence categories

When discussing forensic evidence, there are four main sections in which the collected evidence is classified in order to speed up and facilitate the crime-solving procedure; according to CSAFE (Center for Statistics and Applications in Forensic Evidence, 2018) the 4 divisions into which forensic evidence is categorized are:

1. DNA: consists of the information found on the biological samples collected such as hair saliva, blood, sweat, urine, semen or other body fluids. DNA evidence is one of the most precise and reliable forms of evidence as it is unique to each person which makes it very hard to duplicate or forge meaning that if the DNA of one of the possible suspects matches with the one found in the scene of the crime they are being accused of, then it most likely means they were present on the scene.

(Center for Statistics and Applications in Forensic Evidence, 2018)

2. Trace Evidence: it comprised of the objects or fragments of objects that were involved during the perpetuation of the crime and were left behind. This may include shattered

glass pieces, clothing fibers, soil, paint, debris and bullet casings. This type of evidence pieces might also sometimes contain pattern evidence such as fingerprints or hair fibers.

(Center for Statistics and Applications in Forensic Evidence, 2018)

3. **Pattern Evidence:** it's known as pattern evidence the pieces of evidence that are left on the crime scene as impressions made by either the criminal or an object. This type of evidence can help determine the objects present in the crime scene or the amount of force the criminal used as well as doing comparisons between the patterns found and the possible objects that the suspects that might have used.

(Center for Statistics and Applications in Forensic Evidence, 2018)

4. **Digital Evidence:** refers to all of the evidence that can be obtained from a technological device that was involved during the commitment of a crime Digital evidence is very hard to analyze and can be easily tampered with, meaning that it is often not considered as reliable as other types of evidence.

(Center for Statistics and Applications in Forensic Evidence, 2018)

2.3 Forensic Evidence groups

As well as being divided into transient and tangible, evidence is also classified into two other much more general additional sections:

Physical Evidence, which consists of all physical and tangible objects or fragments regardless of size, shape or color that are in one way or another relevant to a criminal investigation.

Testimonial evidence, which consists of all statements made under oath regarding a criminal case (such as witness statements); this type of evidence is also known as direct evidence or *prima facie evidence*²

2.4 Forensic evidence collection techniques

Forensic evidence often presents itself in various different ways that must be explored from different points of view in order to obtain as much information as possible; that is the reason why different collection methods exist and must be implemented. The Michigan State Police has released a document where the different evidence collection techniques are listed, and it goes as it follows:

“Outside Photography

Scene location established by landmarks, street signs, addresses and adjacent areas.

All access routes to/from the scene

All entrances/exits to the structure(s)

360° perimeter view of the overall scene

Inside Photography

Arrangement of rooms and furnishings.

Relative locations of items, objects, and landmarks.

Relative locations of evidence.

Interior overall views with an overlapping series for each room (include ceilings, doorways, hallways, etc.)

Include intermediate and close-up views of individual items of evidence.

² According to the Merriam-Webster dictionary, Prima Facie Evidence is the evidence that is legally sufficient to establish a fact or a case unless disproved. (Merriam-Webster Dictionary, n.d)

Maintain continuity between intermediate and close-up views.

Intermediate views must establish the location of the items with the use of reference points.

Close-up views should normally fill the frame.

Scales and evidence markers should be incorporated after the initial intermediate and close-up views are taken.

Intermediate views must establish the location of the items with the use of reference points.

Taking Notes

Document conditions such as:

- Doors locked/open/closed
- Lights on/off
- Windows open/closed
- Shades up/down
- Temp/weather conditions
- Odors

Document the general condition of victim(s) such as:

- Position of body
- Apparent wounds present
- Clothing
- Personal belongings
- Describe nearby evidence”

(Michigan State Police Department, n.d)

2.5 Evidence preservation

Evidence preservation is a crucial step when it comes to the solving of serial killer criminal cases and criminal convictions knowing that its wrong handling can lead to the evidence being contaminated, losing reliability or becoming useless which can affect the legal process of the criminal convictions of serial killers. Taking into account the previous information, it must be noted that different types of evidence require different preserving methods in order to remain in optimal condition.

2.6 Chain-in-custody

According to the Nation Center for Biotechnology Information, it is the process of evidence documentation that must be presented in court for the evidence to be relevant and taken into account legally. This documentation process must contain certain data regarding the evidence such as the dates of collection of the evidence, location of recovery and locations from which and to where the evidence was transported, etc.

(National Center for Biotechnology Information, 2019)

Chapter 3 Evidence found regarding the Ted Bundy case

3.1 Modus Operandi and Signature

The Netflix Documentary “*Conversations with a Killer: The Ted Bundy Tapes*” (Berlinger, Doran, Kamen, & Wilkes, 2019. United States.: Netflix), states that Ted Bundy was active as a serial killer between the years 1974-1978.

According to a statement about Ted Bundy from the book “Real-life Monsters: Psychological Examination of the Serial Murderer” by Stephen J. Giannangelo “Pretty young girls with hair parted in the middle” were Ted Bundy’s “go-to victims.” (Giannangelo, S. J. (1996). *Real-Life Monsters: A Psychological Examination of the Serial Murderer.*)

As stated by Clark Prosecutor, Ted Bundy committed his crimes across different states to minimize the probability of having his murders linked together or being caught. Some of the different states where he committed murder are Florida, Idaho, Colorado, Utah, Washington. (Clark Prosecutor, n.d)

Ted Bundy’s way of luring his victims to his car (where he often murdered and carried his victims) was by creating a fake story or asking for help for things such as carrying a heavy object to his car. (Clark Prosecutor, n.d)

Some other relevant aspects regarding Ted Bundy’s Modus Operandi and Signature are:

- He raped a great percentage of his victims (before or after death)
- He often engaged in necrophilia
- All of his victims were female
- Most of his victims were younger than 25 years old
- Some of his victims were minors
- A relevant amount of his victims were college/university students

(Clark Prosecutor, n.d)

3.2 Convicting Evidence

3.2.1 Physical Evidence

As stated by the Clark Prosecutor website, one of the most relevant evidence pieces on the Ted Bundy case is the dental imprint he left on Lisa Levy's buttock after biting her. This specific piece of physical pattern evidence was what determined that Ted Bundy was in fact guilty. When two forensic dental experts who were involved in the case investigation noticed the unusual way in which some of the teeth that created the bite mark were crooked, they were able to deduce that the person who inflicted the bite mark on Lisa's corpse was Ted Bundy. After Ted's bite mark was proven to be the same bite mark found on Lisa's body, Bundy was declared as guilty of the Chi Omega sorority murders. Ted Bundy was charged with two first-degree murder counts (Lisa Levy and Margaret Bowman) for which he was sentenced to death. (Clark Prosecutor, n.d)

Some other known physical evidence pieces that played a key role in ted Bundy's case are:

- The corpse of the daughter of a police officer. The victim had been raped and strangled (Melissa Smith)
- The naked corpse of a woman who had been beaten and strangled. (Laura Aime)
- The Volkswagen Beetle Bundy stole and was caught when a police officer ran the plate.
- A list of incriminating items found in his car during a police search, which include:
- A ski mask, a crowbar, handcuffs, trash bags, rope, an icepick, etc.
- A set of keys that unlocked the handcuffs found on one of the victims that managed to escape Ted (Carol DaRonch).

(Clark Prosecutor, n.d)

3.2.2 Testimonial Evidence

According to the Clark Prosecutor website, after over a decade of denying all accusations made against him, eventually, Ted Bundy confessed to 30 murders under oath, making this statement one of the most important pieces of testimonial evidence in his case. However, the exact number of his victims remains unknown.

Some other known testimonial evidence pieces that played a key role in ted Bundy's case are:

- Nita Neary's eyewitness testimony (a Chi Omega member) when she identified Ted Bundy in court after seeing him leave the sorority on the date of the Chi Omega murders
- Over ten people made non-official and out-of-court testimonies of having seen Ted Bundy on dates and locations that match the dates of the murders and incidents he was accused of.

(Clark Prosecutor, n.d)

Chapter 4 Forensic evidence found regarding the Anthony Sowell case

4.1 Modus Operandi and Signature

As portrayed in the study on Anthony Sowell's case found in the book "Real-life Monsters: A Psychological Examination of the Serial Murderer", he usually targeted people "engaging in a high-risk personal lifestyle who is an easy target that might not be missed."

(Giannangelo, S. J. (1996). *Real-Life Monsters: A Psychological Examination of the Serial Murderer.*)

According to The Cleveland News Channel, some other aspects relevant to Anthony Sowell's Modus Operandi and Signature are:

- All of his victims were female
- All of his victims were black
- He usually raped his victims
- His victims were usually drug-addicted or alcoholic women
- Most of his victims were homeless
- The ages of his victims ranged between 25 and 52 years
- At least eight of his eleven known murder victims were strangled
- He kept all of the cadavers of the women he killed inside or in the area surrounding his house.

(Cleveland News Channel, 2009)

4.2 Convicting Evidence

4.2.1 Physical Evidence

As claimed by News 5 Cleveland, a reliable news source, on October 29th, 2009, the Cleveland police department arrived at Anthony Sowell's house with an arrest warrant to his name. At the time the police arrived, Sowell was not home, so they proceeded to go inside. When his house was searched the police found the remains of two decomposing cadavers. The day after, the police came back and inside and around the parameter of Anthony Sowell's house, the remains of 9 other corpses were found.

One consistent physical evidence found in most of Sowell's murder victims where strangling patterns on the cadavers.

(Cleveland News Channel, 2009)

4.2.2 Testimonial Evidence

The cadavers found inside and around Sowell's house on the dates 29th and 30th of October 2009 were later identified with the following names:

“Tonia Carmichael, Nancy Cobbs, Tishana Culver, Crystal Dozier, Telacia Fortson, Amelda Hunter, Leshanda Long, Michelle Mason, Kim Yvette Smith, Diane Turner, and Janice Webb.”

(Cleveland News Channel, 2009)

As stated by The Cleveland News Channel, Anthony Sowell was first sentenced between five to fifteen years in prison in September 1990 after he pleaded guilty to the attempted rape of a woman in 1989.

Previous to Anthony Sowell's first arrest, and in the period of time between his release and second arrest, multiple complaints about Sowell and his behavior were made to the police but as victims never were willing or able to officially testify, all of these accusations were dropped. As stated by Cleveland.com, a news website for the state of Ohio, some of the

accusations that were dropped include multiple physical violence, rape or rape attempt accusations and the complaint about one of Sowell's neighbors about a "foul smell" in the neighborhood.

One particular case that stands out on Anthony Sowell's case is the one that took place on October 20th 2009 after an incident was reported by Sowell's neighbors where they claimed to have seen a naked woman fall out of Sowell's second floor, an ambulance is sent to the address and the woman is taken to a hospital. On that same evening, investigators visit the victim, but she refused to talk.

It was actually testimonial evidence which lead for Sowell to be discovered as a serial killer. On September 22nd 2009 a woman files a complaint against Anthony Sowell telling the police that he invited her inside his house to drink but soon after he got mad, became violent, raped her and choked her until she passed out, the woman claims that after these events she escaped. Weeks later on October 27th 2009 the woman meets up with detectives from the sex-crimes division; her statement and the information she discloses lead for the police to obtain both an arrest warrant on Anthony Sowell and a search warrant on his house which eventually lead for the remains of Anthony Sowell's eleven convicted murder victims to be found.

(Cleveland News Channel, 2009)

Chapter 5 Methodology

5.1. Investigation model

The model of investigation that will be carried out is a mixed methodology that will produce both quantitative and qualitative data which will be a definitive point for this project. The quantitative investigation is based on binary questions with only 2 possible answers; this type of inquiry usually produces mostly conclusive answers since they are based on statistics and mathematics in order to obtain results. As for the qualitative method, it bases itself on non-numerical questions and answers obtained from a targeted group who works as a sample; this method is “concerned with understanding human behavior from the informant’s perspective” as stated by Simply Psychology (Simply Psychology, n.d)

5.2. Instruments and population

In order to obtain information through a single method that is both quantitative and qualitative, a virtual survey consisting of both binary and open-ended questions will be designed and sent to a targeted group of people with previous background knowledge on the topic of criminal investigation. This survey will be held with the purpose of establishing arguments to back up the development of evidence analysis and its representative on-court value throughout the years with people with some previous general knowledge in law and criminal investigation.

The survey contains the following questions:

1. Desde un punto de vista netamente legal, ¿considera usted que la introducción de diversas tecnologías que ha ocurrido desde los años 80 hasta la actualidad (2020) ha influenciado y/o afectado la manera en la que se tienen en cuenta los diferentes tipos de evidencia del caso de un asesino serial ante la corte? ¿Si? ¿No? ¿Por qué? Y ¿Cuáles?

2. ¿Cree usted que el valor de la evidencia física ha incrementado ante la corte al examinar el caso de un asesino en serie desde los años 80 hasta la actualidad?
3. ¿Cree usted que el valor de la evidencia testimonial ha incrementado ante la corte al examinar el caso de un asesino en serie desde los años 80 hasta la actualidad?
4. ¿Conoce usted el caso del asesino en serie americano Ted Bundy?
5. Si su previa respuesta es si, cree usted que en caso de que los forenses quienes investigaron el caso de Ted Bundy durante los años 80 hubieran contado con la misma tecnología con la que cuentan hoy en día (2020), ¿su caso se hubiera desarrollado de la misma manera? ¿Si? ¿No? y ¿Por qué?

Chapter 6 Analysis

Disclaimer: Before proceeding to read the questions, please note that they are written in Spanish and not in English as the rest of this project given the fact that all of the people who they were directed to are Spanish speakers, so in order to reach a wider range and amount of people interviewed, switching the language was absolutely necessary. However, the remaining of the project (including the analysis) given will continue to be done in English.

6.1. Aim of the analysis

The following analysis intends to demonstrate a clear correlation between the answers obtained through the survey previously done and illustrate how these answers, coming from 17 different experts with knowledge in the topic support the thesis stated at the very beginning and throughout the entirety of this project.

6.2. Procedure of the analysis

Given the fact that the survey in question is made up of both binary and open-ended questions and for matters regarding coherence an order, the answers to the binary questions of the survey will be the first ones to be analyzed, followed by the answers of the open-ended questions and afterwards, a general analysis of all the answers obtained will be established.

6.3. Quantitative investigation (binary questions) analysis:

6.3.1. Binary question 1: “Do you consider that the in-court value of physical evidence in the case of a serial killer case has increased from the decade of the ‘80s up to the present day?”

¿Cree usted que el valor de la evidencia física ha incrementado ante la corte al examinar el caso de un asesino en serie desde los años 80 hasta la actualidad?

17 responses

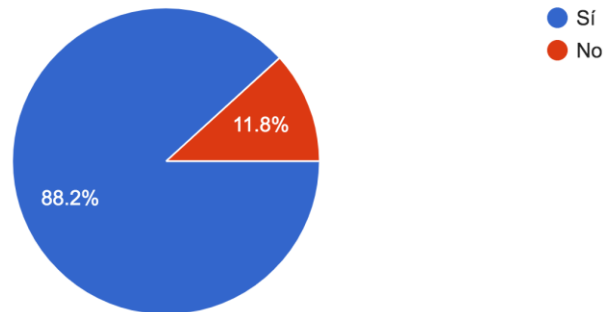


Figure 1: Evolution of forensic evidence collection survey, answers to question 2. (2020). Personal development.

The result obtained from this question was that 88.2% of the population (15 people out of the 17 who participated in the interview) agreed with the statement proposed; the result obtained backs up the central idea of the thesis of this project which states that the collection of evidence has drastically changed over the past four decades majorly influenced by technological developments that contribute to making the evidence collected much more accurate and reliable thus the reason why physical evidence has gained value (especially in court) over the years.

6.3.2. Binary question 2: “ Do you consider that the in-court value of testimonial evidence in the case of a serial killer case has increased from the decade of the ‘80s up to the present day?

¿Cree usted que el valor de la evidencia testimonial ha incrementado ante la corte al examinar el caso de un asesino en serie desde los años 80 hasta la actualidad?

17 responses

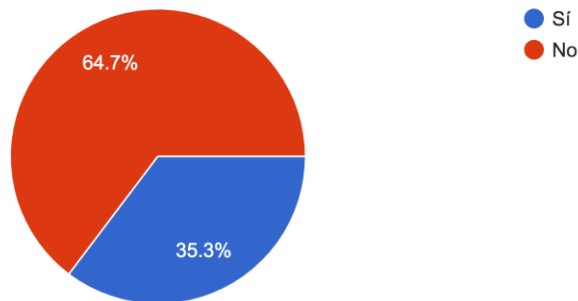


Figure 2: Evolution of forensic evidence collection survey, answers to question 3. (2020). Personal development.

The result obtained from this question was that 64.7% of the population who took the survey disagreed with the statement proposed; the result obtained also supports the idea previously presented throughout this project which states that only physical evidence has gained value and accuracy over the years due to the fact that both the collection methods and investigation of this evidence have evolved over the decades and as a result of the introduction of new technological advances. As for testimonial evidence, according to a concept proposed by this project, which is the reason why the investigation methods of said type of evidence are the same as the ones that were available in the decade of the 80s, which is why there should be no reason why they have gained in-court value since they are just as accurate as they were 40 years ago.

6.4. Qualitative investigation (open-ended questions) analysis:

6.4.1 Qualitative question 1: “From a purely legal point of view, would you consider that the introduction of various technologies that have occurred between the 1980s up to present

date (2020) have influenced and/or affected the way in which different types of evidence are taken into account on the case of a serial killer in court? Yes? No? Why? And which ones?”

15 out of the 17 people who answered this question agreed that technological advances that have had a drastic impact on the way the evidence of a serial killer’s case is examined and taken into account. Most of them also state that technological advances have made forensic evidence collection much easier, efficient, and accurate. Some types of technology that multiple people who took the survey mentioned they considered had a significant impact in the evolution of evidence analysis include DNA identification, biometrics, advanced cellphones, modern electronic devices as well as fingerprint scanners.

6.4.2. Qualitative question 2: “Do you consider that if the forensic agents who investigated the Ted Bundy case during the 1980s had had access to the same technology that is available today (2020), that the case would have been developed the same way? Yes? No? and Why?”

6 out of the 7 people who responded to this question consider that the Ted Bundy case would have been developed in a different way in the hypothetical case presented, they consider that if the forensics who investigated the Ted Bundy case back in the 80s would have had access to the equipment and tools that are available today such as DNA and CCTV, then Ted Bundy’s trial and killing span would have been much shorter. Even some of the people interviewed state in their answers that if today’s technology would have been available by the time Ted Bundy’s case was processed and investigated, then it is possible that some of the murders Bundy committed would have been prevented since he would have been caught quicker.

Chapter 7 Conclusions

7.1 General findings

The collection of the data obtained throughout the process of this project has repeatedly supported the main thesis that was proposed at the beginning. It also has helped determine the ways in which forensic evidence collection for the conviction of a serial killer has evolved over the years as seen from a criminalistic point of view.

The general outcome of this investigation project that can be visualized is that there was, in fact, a dramatic change in the ways forensic evidence was collected and analyzed over the past 40 years; one of the main factors that detonated said progress was the influence caused by technological advances in general that led to the introduction of new tools, mechanisms, and equipment.

Besides the main general finding which confirms the evolution in the collection and analyzing methods, it is essential to take into account that forensic evidence collection is an extremely broad topic with multiple layers, which is the reason why when studying deeper into the specifics of this subject there are going to be some areas that will present a bigger and more drastic development in their collecting tactics and mechanisms while other fields will show minor to no changes. Considering the information previously presented, it could be stated that the drastic change in the collection methods is mainly witnessed when it comes specifically to physical evidence where the new technologies have transformed the ways in which it is collected. While on testimonial evidence collection, there is not enough argumentative information or documentation that can confirm there was an imminent change specifically in the testimonial forensic evidence collection methods implemented over the past 40 years.

7.2 Specific findings

As mentioned before, the evolution in the evidence collection methods can be most vividly seen when it comes to the collection of physical evidence. After conducting a thorough investigation consisting of a detailed theoretical framework and a methodology enriched by the perspective of multiple experts inside the legal and criminalistics fields, it was concluded that the introduction of new evidence collection tools played a highly important role in the evolution of forensic evidence collection. The introduction of said instruments was the most influential factor to the evolution of forensic evidence collection over all the other possible factors being taken into account.

Some of the more widely known evidence collection tools introduced during the period of time between the 1980s and 2010 that had a direct impact to the evolution of the collection methods of physical evidence are the following: DNA profiles, advanced fingerprint analysis, different types of biometric scans, security cameras and advanced dental scans; without these tools evidence collection would have not been able to evolve much over the past decades given the fact that nowadays basic crime scene investigation is developed mostly by using these specific tools and the majority of the old methods and equipment are not even used anymore.

7.3 Specific findings regarding the Ted Bundy case

Given the fact that this case is one of the most famous serial killer cases known at a worldwide level, the information available regarding this case was extensive and clear. All of the information retrieved was found to be coherent with the thesis proposed by demonstrating the ways in which forensic evidence collection for the conviction of a serial killer has evolved over the years.

Even though it is almost impossible to predict with 100% accuracy what the exact outcome of the case would have been if its investigators and forensic agents have had access to much more developed equipment and modern methods like they do nowadays, it is clear to see that the sources of this project, the people who took place in the digital survey and the research done, all confirm that the impact and change that the availability modern-day forensic tactics, implements, and knowledge would have had on the case would have been drastic in multiple aspects such as the timeframe of the murders as well as the victim count.

7.4 Specific findings regarding the Anthony Sowell case

Anthony Sowell's case is much lesser known than the Ted Bundy case, however, that didn't prevent this project to be developed in an optimal way. The time period in Sowell's case was developed is much more recent and there has not been an extremely dramatic development of forensics since his case was closed, which is the reason why it is predicted that this case most probably would have developed itself in the same way it did back in 2009-2010 given the fact that the equipment, methods, and tactics used to investigate his case have either remained the exact same or extremely similar of the ones available in present time (2020).

7.5 Specific finding obtained through the contrast of both cases

Although both of the cases studied during the making of this project are not associated with one another in any way and each of them presents divergent types of evidence, they played a highly influential role in the development of the present investigation. The thesis presented at the very beginning affirms that there is a direct correlation between the time period and the efficiency of resources available while solving a serial killer's case; meaning that the

closer a case is to present date, the more efficiently it can be solved due to the transformation that forensic evidence collection techniques have presented over the years; one of the aspects of the correlation between the two specific cases studied that validates and ratifies the previously mentioned thesis is the time span that it took to convict and process each serial killer. Ted Bundy's case which took place in the 1970s and 1980s took a longer time and numerous court sessions in order to be solved, even when the most modern techniques available for the era were being implemented; on the other hand, the Anthony Sowell case which happens to be much more recent, taking place in the late 1990s and the 2000s was solved much more efficiently and he was convicted in a significantly much shorter period of time than Ted Bundy was; this can be directly attributed to the forensic evidence collection tools available where much more precise and effective.

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Anex

Question 1

Desde un punto de vista netamente legal, considera usted que la introducción de diversas tecnologías que ha ocurrido desde los años 80 hasta la actualidad (2020) ha influenciado y/o afectado la manera en la que se tienen en cuenta los diferentes tipos de evidencia del caso de un asesino serial ante la corte? Si?, no?, por que? y cuales?

17 responses

Si, porque pueden encausar la investigación hacia el responsable de un delito, y dar certeza de la si responsabilidad. En estos momentos tenemos como medios: la búsqueda selectiva en base de datos, cámaras de vigilancia, tanto en espacios públicos como privados, interceptaciones de comunicaciones, exámenes de ADN que involucren al indiciado o imputado, métodos de identificación, tales como: características morfológicas de las huellas digitales, la carta dental y el perfil genético presente en el ADN.

Si, ayuda profundamente en el análisis de la evidencia ya que hay más elementos de evaluación

Si

No se

Si, ahora es más sencillo y certero el proceso de identificación de culpables

Si, las pruebas de ADN se consideran con probabilidades superiores al 90% haciendo que las Cortés crean y confíen en la certeza de dichas pruebas. La prueba balística para relacionar al dueño del arma con las huellas de las ojivas de plomo de una bala, también crean certeza del arma homicida.

Si. Siempre que haya un cambio en los paradigmas se afecta la manera en que se tiene en cuenta el objeto cambiado. El ADN y el estudio de la perfilacion criminal.

Si, los avances de la tecnología aplicados a la criminología y ciencias forenses han permitido a los Jueces tener mejores elementos para determinar la culpabilidad de un procesado, por ejemplo con los avances en temas de balística, pruebas de adn, entre otros.

Si. Cada vez que avanza la tecnología, se crean nuevas maneras tanto de recoger evidencia como de probar hechos. Aparecen nuevas herramientas como cámaras, cada vez de mejor resolución, o inclusive nuevos aparatos para el tratamiento de ADN. A su vez, las diferentes tecnologías utilizadas de almacenamiento y procesamiento de datos permiten seguir una huella más detallada en delitos que involucran la tecnología.

Figure 3: Evolution of forensic evidence collection survey, answers to question 1 part 1. (2020). Personal development.

Si. Porque permite establecer evidencia física y elementos materiales de prueba más fiables para conducir a la certeza legal para emitir una condena. En ese sentido las ciencias forenses han evolucionado bastante. Aunque también requieren tener claridad en el procedimiento técnico que se aplica porque también son susceptibles de manipular

No creo que la respuesta pueda darse sólo desde un punto de vista legal. Evidentemente las tecnologías actuales permiten tener mayor certeza sobre quién comete el ilícito (e incluso sobre si se cometió o no), permiten tener mayor conocimiento sobre la forma de operar de los asesinos seriales y facilitan no solo la labor investigativa sino también la captura. Tencnología como Internet, detección de huellas dactilares, pruebas de ADN, interceptaciones, videos, bases de datos de bancos y demás, big data.

Si claro, teléfonos, vídeos, identificador de voz, cámaras, ADN, todo ha servido como evidencia.

Definitivamente la incursion de nuevas tecnologías debieron haber cambiado las valoraciones que hacen los jueces a la pruebas, pues en la actualidad de puede procesar una prueba de adn en custion de horas, se puede observar la "huella dactilar" de una bala en cuestion de minutos, se puede hayar la trazabilidad de cuales partes ha estado una persona a traves de camara de vigilancia, gps de telefonos y de vehiculos, estas pruebas que tenemos en la actualidad pueden llevar pueden formar un conocimiento mas alla de toda duda razonable del juez de mayor certeza que con la pruebas que se podian recolectar en los años 80.

Sí, es más fácil recopilar evidencia para incriminar a las personas y de esta manera llevarlas a juicio con muchísimas más probabilidades de victoria por parte de la Fiscalía. Estas herramientas son cámaras, escáneres, reconocimiento facial, entre otras.

Sí, porque ha permitido establecer con facilidad la identidad del homicida, la prueba de ADN en las evidencias encontradas en la escena del crimen es un ejemplo de ello.

Si. Han generado pruebas más contundentes y eficientes.

Si, por la especialidad en el proceso de investigación que ha llevado a técnicas más científicas

Figure 4: Evolution of forensic evidence collection survey, answers to question 1 part 2. (2020). Personal development.

¿Conoce usted el caso del asesino en serie americano Ted Bundy?

17 responses

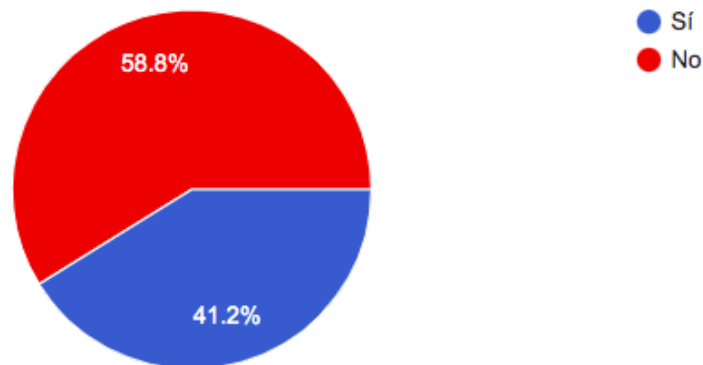


Figure 5: Evolution of forensic evidence collection survey, answers to question 4. (2020). Personal development.

Si su previa respuesta es si, cree usted que en caso de que los forenses quienes investigaron el caso de Ted Bundy durante los años 80 hubieran contado con la misma tecnología con la que cuentan hoy en día (2020), su caso se hubiera desarrollado de la misma manera? Si?, no? y ¿por qué?

No, porque con los medios tecnológicos actuales es probable que se hubiera identificado más rápidamente a Bundesliga, por ejemplo con las cámaras de seguridad actuales; además, no se hubiera dilatado tanto el juicio (5 años) si se hubiera tenido por ejemplo la prueba del ADN.

No

Si, pero no hubiera afectado mucho la verdad.

No, el caso se hubiera desarrollado de manera diferente y evitado el número de fallecidos, porque las pruebas de ADN hubieran permitido cercar el número de posibles sospechoso hasta llegar al autor de los homicidios.

Posiblemente hubieran encontrado elementos indiciados más rápidamente. Pero igual estos son casos complejos

creo que no se hubiera desarrollado de la misma manera, se hubiera esclarecido con mayor rapidez, al poder procesar con mayor certeza huellas dactilares y adn.

No. No tengo certeza de los detalles de la prueba que se adujo en contra de Bundy en su juicio, lo que conozco del caso es por los medios de comunicación, películas o series, por lo que esa información podría ser imprecisa. Sin embargo, las evidencias que permiten individualizar a seres humanos como huellas dactilares, carta dental o huellas genéticas (Adn) son fundamentales para establecer la inocencia o no del sujeto, y ello resulta aún más útil en casos de asesinos en serie. Con esas evidencias, cualquier juicio se desarrollará de manera muy diferente a aquel que no cuente con ese tipo de herramientas científicas.

Figure 6: Evolution of forensic evidence collection survey, answers to question 5. (2020). Personal development.