

IN THE COURT OF COMMON PLEAS
OF MONTGOMERY COUNTY
CRIMINAL DIVISION

COMMONWEALTH OF PENNSYLVANIA)	
Plaintiff-Respondent)	
)	
)	
v.)	Case No. 482 C 1991
)	
)	
MICHAEL THOMPSON)	
Defendant-Petitioner)	

**MEMORANDUM OF LAW IN SUPPORT OF MOTION FOR POST
CONVICTION DNA TESTING PURSUANT TO 42 Pa. C.S.A. § 9543.1**

Petitioner, Michael Thompson, hereby submits his Memorandum of Law in Support of Motion for Post Conviction DNA Testing Pursuant to 42 Pa. C.S.A. § 9543.1. The motion is presented in good faith and premised on the following facts and points of authority.

Respectfully submitted this ____ day of October 2008.

Craig M. Cooley, Esq.
Staff Attorney
Innocence Project
100 Fifth Avenue, 3rd Floor
New York, New York 10011
Megan Uhle
2-L Cardozo University School of Law

Leigh P. Narducci, Esq.
Narducci, Moore, Fleisher & Roeburg
589 Skippack Pike, Suite 300
Blue Bell, Pennsylvania 19422

I. Introduction

Michael Thompson is currently serving a 20 to 40 year sentence for the March 1990 rape of Karen Croom. Thompson claims he is innocent of this crime and seeks DNA testing pursuant to 42 Pa. C.S.A. § 9543.1 to prove his innocence. He is entitled to DNA testing because exculpatory results will prove his actual innocence. *See* 42 Pa. C.S.A. §§ 9543.1 (c)(3)(ii)(A-B).

On March 28, 1990, Croom was traveling along Route 202 in Montgomery County looking for the Goddard Avenue exit when she noticed another vehicle following her. She continued driving, but pulled over when she saw a red or blue light flashing on the dashboard of the vehicle following her—a vehicle she described as a Jeep Cherokee.

A man exited the vehicle and approached her vehicle. He flashed a silver badge and told her he was a plain-clothed police officer who had followed her for the past thirty minutes. The man asked for her license and told her he pulled her over for erratic driving and because her vehicle resembled one used by drug traffickers.

The man ordered Croom to move her vehicle to a nearby parking lot; she complied. He then ordered her out of the vehicle while he searched it and waited for back-up. When Croom asked him if “this was for real,” he screamed at her and told her he was tired of being hassled and that she was the eighth vehicle he pulled over that night. After his response, Croom complied and exited her vehicle. She was unsure where exactly he stopped her, but based on her description police believed he stopped her on Goddard Boulevard, across from the shopping mall, and approximately 1.5 miles from the Sheraton Hotel.

While Croom stood by the man's vehicle, she felt a prick in her arm; the man then forced her into his vehicle while she kicked and screamed. He told her: "Sit down, put your head down, shut up." At this point, she felt woozy; her legs went numb and her heart began racing. When she stopped fighting, he blindfolded her with a sleeping mask. Once in his vehicle, she noticed he tied the doors shut, preventing her from escaping. While they drove, she begged him not to kill her. He told her to shut up and put her head on the seat. When he parked, he took her by her arm and led her to what she described as a "motel-like" building where he repeatedly raped her for several hours.

After the assault, he drove her back to her vehicle. Once at her vehicle, he let her go; she entered her vehicle and drove to the Sheraton Hotel and told management what happened and they contacted the police who arrived shortly thereafter at 3:25 am. Officer Pilcicki spoke with her for about 20-25 minutes. He then transported her to Sacred Heart Hospital in Norristown where medical personnel examined her and collected a rape kit and her clothing.

Despite being near midnight (and dark) when she first confronted her assailant and blindfolded the remaining time, Croom was able to describe her assailant as being approximately 6', between 175-180 pounds, and in his mid to late 30s. She was uncertain of his eye color, but described his skin as pitted or pock-marked (i.e., acne scars). She also said he was clean shaven, had "sunken eyes," and had a dark complexion with a slightly receding hairline and loose facial skin. She said he wore an oxford type button-down shirt, a waist length leather jacket, black pants, grey/black socks and black shoes. The jacket was very simple and did not have any flaps or zippers. She provided this

description to Detective Robert E. Pilcicki and to Detective Christopher Kulzer. She also gave this description to Detective Bruce A. Saville.

On April 23, 1990, Chief Detective Oscar Vance hypnotized Croom in order to develop more information about the hotel and her assailant. She was unable, however, to provide any new information. The case grew colder when Croom failed to identify the motel where the assault occurred after visiting approximately 20 different motels. Between April 1990 and October 1991 the Upper Merion Police Department failed to identify a single suspect and did not show Croom a single photo or photo array that included potential suspects.

On October 3, 1991, the Upper Merion Police Department learned that the Pennsylvania (and Delaware) State Police had arrested Michael John Thompson for a series of roadway robberies along I-95 and Rt. 202. Thompson pulled women over, flashed a badge, told them he was a plain-clothed police officer, asked for their license and registration, and stole their purse when they retrieved this information. Significantly, Thompson robbed men and women and he *never* physically attacked or sexually assaulted any of his female victims. Instead, he simply took their personal belongings and absconded. Likewise, he drove a Chevy Cavalier during his robberies, rather than a Jeep Cherokee (or similar Jeep). Lastly, he had never been arrested for a violent offense like rape or kidnapping.

More importantly, Thompson did not match key physical characteristics offered by Croom, nor did he match the composite created by law enforcement. He did not have scars on his face; he did not have wrinkles (or crow's feet) on the side of his eyes; he did not have a receding hairline; and he was nearly 10 years younger than she described (she

placed her assailant in his late 30s; he was 27 when the rape occurred). Despite the significant difference in modus operandi, vehicle, and physical appearance, Upper Merion detectives contacted Croom, *informed her they had a suspect*, and asked her to come to Montgomery County to view a photo array that included the suspect. On October 11, 1991, *eighteen months after the assault*, Detective Bruce Saville, one of the officers who interrogated Thompson, showed her a photo array that included six photographs (Thompson's photograph was #4). After she viewed the photos for a short period, she picked Thompson's photo (photo #4).¹

At trial, the Commonwealth premised its entire case on Croom's identification. Despite the fact investigators and medical personnel collected an abundance of physical evidence, the Commonwealth *failed to link a single item of evidence* to Thompson. The prosecutor conceded this point during opening and closing statements when he informed the jury that it would have to rely solely on Croom's identification to find Thompson guilty. After *deliberating for twelve hours*, the jury ultimately convicted Thompson.

Thompson's case is the quintessential case for post-conviction DNA testing. To begin with, it is a "classic" single perpetrator *stranger* rape case where the absence of the defendant's semen and sperm will prove his actual innocence.² Moreover, his conviction is based on an identification made *nearly two years after* the offense. As the DNA

¹ It should be noted that Detective Saville is the same detective that elicited the false confession from Bruce Godschalk that led to Godschalk's wrongful convictions for two rapes he did not commit. The Innocence Project represented Godschalk and proved his innocence in 2002 with DNA testing. See www.innocenceproject.org/Content/154.php (last visited October 7, 2008).

² *E.g.*, *Commonwealth v. Brooks*, 875 A.2d 1141, 1147 (Pa. Super. 2005) ("This is not a rape-murder case where the absence of the defendant's semen could prove his innocence"); *People v. Travis*, 771 N.E.2d 489, 493 (Ill. App. Ct. 2002). ("*Rokita*... was the classic sole perpetrator case; if the DNA was not that of the defendant, the defendant did not commit the crime.").

exonerations have repeatedly established, eyewitness identification is inherently unreliable, particularly where the victim is the sole eyewitness,³ where the victim and the assailant are complete strangers,⁴ where investigators employ highly suggestive identification techniques,⁵ and where the victim does not identify the assailant for a prolonged period of time after the crime.⁶ Of the 221 DNA exonerations to date, eyewitness misidentifications have played a role in 75 to 80% of them.⁷

Moreover, Croom told detectives and testified at trial that her assailant was quite hairy and that she had “a great deal of hair” on her after the assault. The police collected numerous hairs from Croom’s person and clothing—none of which matched Thompson’s hair samples. In 1993, the hair evidence could not be subjected to DNA testing because mitochondrial (mtDNA) and STR DNA testing was not available. Now, however, if the hairs are rootless, the hair shafts can be subjected to mtDNA testing. Conversely, if the hairs have intact roots, they can be subjected to STR or mini-STR DNA testing.

³ *United States v. Wade*, 388 U.S. 218, 230 (1967) (“The impediments to an objective observation are increased when the victim is the witness. Lineups are prevalent in rape and robbery prosecutions and present a particular hazard that a victim’s understandable outrage may excite vengeful or spiteful motives.”).

⁴ The “primary concern expressed in cases discussing the problems with eyewitness identification relates to a witness observing and subsequently identifying a stranger... The accuracy of identification testimony is nevertheless much higher when matching a visual observation of a suspect to an already existing memory, as opposed to the identification of a stranger, where all relevant features must be mentally recorded from scratch.” *Moss v. Hofbauer*, 286 F.3d 851, 862 (6th Cir. 2002); accord *United States v. Wade*, 388 U.S. at 228 (“The identification of strangers is proverbially untrustworthy.”).

⁵ *United States v. Wade*, 388 U.S. at 228 (“A major factor contributing to the high incidence of miscarriage of justice from mistaken identification has been the degree of suggestion inherent in the manner in which the prosecution presents the suspect to witnesses for pretrial identification.”).

⁶ *Neil v. Biggers*, 409 U.S. 188, 199-200 (1972).

⁷ See www.innocenceproject.org (last visited June 20, 2008).

Accordingly, that the Commonwealth premised its entire case on Croom's questionable identification raises serious questions about the accuracy of Thompson's conviction. The jury's extended deliberations reinforce this point; had the evidence overwhelmingly demonstrated his guilt, the jury would not have deliberated for twelve hours. These questions and concerns, which could not have been conclusively answered with DNA technology in the early 1990s, can now be answered with modern DNA technology.⁸ Indeed, investigators and medical personnel collected a wealth of physical evidence from Croom's person and clothing (e.g., a rape kit and numerous hairs) that can be subjected to modern DNA tests to determine whether in fact the Commonwealth convicted an innocent man. The results of such testing can and will prove Thompson's actual innocence. As a result, he is entitled to DNA testing pursuant to 42 Pa. C.S.A. § 9543.1.

II. Statement of Facts

A. The Crime

Karen Croom was traveling Route 202 just after midnight on March 29, 1991, when she noticed a dark-colored Jeep Cherokee following her.⁹ When the vehicle activated a red or blue light on its dashboard, she pulled over to the roadside thinking it was a police officer.¹⁰ The vehicle stopped behind her and a man exited the vehicle and

⁸ As Justice Blackmun presaged two decades ago: "As technology develops, the potential for... [forensic] evidence to provide conclusive results on any number of questions... [will] increase." *Arizona v. Youngblood*, 488 U.S. 51, 70 (1988) (Blackmun, J., dissenting).

⁹ NT, Trial, 2/19/93, at 58, 72. Croom was searching for the Sheraton Hotel on Goddard Avenue, where she had reserved a room for the night so she could attend a business meeting the following day.

¹⁰ *Id.*

approached her driver-side window.¹¹ He displayed a silver badge in a black fold-out wallet and asked for her license.¹² He explained that he had followed her for some time, and that she had been “all over the road.”¹³ He then told her that her vehicle resembled a vehicle used by area drug traffickers.¹⁴ He then asked her to pull into a nearby parking lot.¹⁵ Once in the parking lot, he said he called for backup to help with the drug search, and that it would be a short time before his backup arrived.¹⁶ Croom said she began feeling uncomfortable at this point, and asked him, “Is this for real?” to which he angrily replied, “This is the eighth car I’ve pulled over tonight and I’m tired of this.”¹⁷

He suggested that she sit in the back of his vehicle so he could search her vehicle.¹⁸ She exited her vehicle and leaned against the back door of his Jeep.¹⁹ He returned to the driver’s side of the Jeep, and then came back around the rear of the vehicle, where he suddenly grabbed her and stuck a needle in her right arm while throwing her in the back seat of his Jeep.²⁰ She struggled with him for approximately

¹¹ *Id.* at 63.

¹² *Id.* at 63.

¹³ *Id.* at 65.

¹⁴ *Id.*

¹⁵ *Id.* at 65, 69.

¹⁶ *Id.* at 74.

¹⁷ *Id.* at 75.

¹⁸ *Id.* at 76.

¹⁹ *Id.* at 77-78.

²⁰ *Id.* at 78.

thirty seconds,²¹ until he threatened her and blindfolded her.²² Towards the end of the struggle, she said she began feeling woozy and lethargic and her heart rate significantly increased.²³ He placed her on the floor in the back of the Jeep, with her legs underneath the front passenger seat, her head planted face down on the seat, and her arms spread across the back seat.²⁴ She said he then returned to the driver's seat, exited the parking lot, and drove for approximately 30 to 35 minutes.²⁵

When the car stopped, he led her by her arm out of his Jeep and into a room at a motel-like structure.²⁶ Although blindfolded, she was able to describe the room and the motel in detail at trial.²⁷ The man placed her on the bed, told her not to move, and made several trips between the room and his Jeep.²⁸ After making several trips, he moved her to the edge of the bed and reached his hand in between her legs.²⁹ When he realized she

²¹ *Id* at 81.

²² *Id* at 82.

²³ *Id* at 92.

²⁴ *Id* at 83.

²⁵ *Id* at 93. She said she was also able to see the dashboard clock by tilting her head back and looking down her nose underneath the blindfold, and thus claimed she was able to accurately keep track of the driving time. *Id.*

²⁶ *Id* at 96.

²⁷ *Id.* at 118-119. She described the room as “fairly large,” having two double beds with green patterned bedspreads, a large window, a door to the far right, some piece of furniture in the front, and a bathroom with a white shower-tub with glass walls. TT1 118-119. She described the exterior of the building as “a motel-like building, stucco, maybe only 10 units, no coke machine, no office, no vacancy sign.” *Id.* at 119.

²⁸ *Id* at 97.

²⁹ *Id* at 99.

had wet her pants, he became angry and led her into the bathroom where he washed her genitals and legs.³⁰

After washing her, he led her back to the bed and took off her shoes, socks, pants, and underwear.³¹ He then squeezed her thighs and inserted his finger into her vagina.³² She believed he ejaculated at least once or twice as he rubbed himself against her thighs.³³ He then pushed her shirts up over her chest and removed all of his own clothing except for his underwear.³⁴ He then moved her forward on the bed, bumping her head on the wall, and removed her shirts entirely.³⁵ He removed his underwear and put his penis in her face.³⁶ He then got off the bed, put on a condom, and had sex with her for several minutes in various positions on the bed.³⁷ She believed he ejaculated inside of her at least once and that he must have *ejaculated at least three and possibly four times* throughout the assault.³⁸ She told the police that *he was quite hairy* and that she had “a great deal of hair” on her after the assault.³⁹

³⁰ *Id* at 99.

³¹ *Id* at 103.

³² *Id* at 104.

³³ *Id* at 173.

³⁴ *Id* at 105, 173.

³⁵ *Id*.

³⁶ *Id* at 107.

³⁷ *Id* at 110.

³⁸ *Id* at 175.

³⁹ NT, Trial, 2/22/93, at 35; 168.

After he finished, he took her to the bathroom, placed her in the shower, and washed her from the neck down.⁴⁰ He then took her back into the room, threw her clothes at her, and told her to get dressed.⁴¹ He got dressed and went through her purse, asking her questions about her name, driver's license, credit cards, and the people in her address book.⁴² She said he wrote down some names from her address book and threatened to harm them if she went to the police.⁴³

He placed her in his Jeep, drove her to her vehicle, and told her to go to her hotel and act as if nothing happened.⁴⁴ When she arrived at the Sheraton Hotel, she told the front desk staff that she had just been raped.⁴⁵ The police arrived shortly thereafter, interviewed her, and took her to the hospital.⁴⁶

1. The Sexual Assault Examination

At the hospital, medical personnel conducted a rape examination and collected Croom's clothes, her address book, and a rape kit, which included fingernail clippings, her underwear, pubic combings, and vaginal, oral, and anal swabs and slides.⁴⁷ Her clothing consisted of a white sweatshirt, a blue t-shirt, a white t-shirt, a blue sweatpants,

⁴⁰ NT, Trial, 2/19/93, at 111.

⁴¹ *Id* at 112. She did not know where her clothes had been placed during the assault. *Id.* at 190.

⁴² *Id* at 113.

⁴³ *Id* at 114.

⁴⁴ *Id* at 120.

⁴⁵ *Id* at 122.

⁴⁶ *Id* at 123-24.

⁴⁷ NT, Trial, 2/23/93, at 22, 34, 77; Ex. 8.

and blue socks.⁴⁸ Upper Merion investigators took custody of the rape kit and clothing at the hospital later that night.⁴⁹

2. Croom's Description

From the hospital, the police transported Croom to the police station where several officers interviewed her.⁵⁰ She described her assailant as having “very dark hair, slight receding hairline, short in the front longer in back, smaller eyes, sunken slightly with skin around them, long nose, kind of small mouth, [and] acne or pock marks.”⁵¹ She also said he was about 6’ tall, 180 pounds, and looked between 35 to 40 years-old. She said he wore “a dark leather waist-length jacket, a white oxford dress shirt with black pinstripes, penny loafer shoes and [...] dark slacks.”⁵² She worked with Detective Kulzer to create a composite of her assailant.⁵³

3. The Investigation

The day after the incident, Croom and Detective Saville visited approximately twenty local motels to try to identify the location of her assault. Their search proved futile; she could not identify any of the hotels as being the one.⁵⁴ Three weeks later, on April 23, 1990, Detective Vance hypnotized her in an attempt to elicit further information

⁴⁸ Ex. 9.

⁴⁹ Ex. 8.

⁵⁰ NT, Trial, 2/19/93, at 127-28.

⁵¹ *Id* at 129; Ex. 1.

⁵² NT, 2/22/93, at 28.

⁵³ *Id* at 44-45.

⁵⁴ *Id* at 164.

about her assailant and the assault.⁵⁵ The hypnosis failed to generate any new leads and nearly a year-and-a-half passed before the police made any progress.⁵⁶

4. Michael Thompson Becomes a Suspect

Thompson first came to law enforcement's attention when the Pennsylvania State Police (PSP) and Delaware State Police (DSP) investigated a string of police-impersonation purse snatchings along the Route 95 and Route 202 corridor between Delaware and Pennsylvania.⁵⁷ During these purse-snatchings, Thompson followed *male* and female motorists and either flashed his headlights or pulled alongside their vehicles and displayed a badge.⁵⁸ Once the drivers pulled over, he represented himself as a detective or police officer and requested their license. When they retrieved their purses or wallets to remove their licenses, Thompson grabbed the purses or wallets and fled in his vehicle.⁵⁹ The PSP and DSP ultimately identified him through his vehicle, which *was a light-colored Chevrolet Cavalier*.⁶⁰

On October 3, 1991, the Upper Merion Police Department learned that the PSP and DSP arrested Thompson for the abovementioned offenses.⁶¹ Upper Merion investigators obtained Thompson's mug shots and on October 11, 1991, *more than a year-and-a-half after the assault*, they contacted Croom and asked her to come to the

⁵⁵ NT, Trial, 2/22/93, at 173.

⁵⁶ *Id.*; Ex. 2.

⁵⁷ Ex. 3.

⁵⁸ Ex. 6.

⁵⁹ *Id.*

⁶⁰ *Id.*

⁶¹ Ex. 3.

police station to look at several photos.⁶² When she arrived, they showed her an aerial photo of the Concord Motel, which she could not identify, although she “noticed similarities.”⁶³ They also showed her a photo array consisting of eight photographs, including one of Thompson (photo #4). Croom identified Thompson as her assailant.⁶⁴ Investigators subsequently arrested and charged Thompson charged with Croom’s assault.⁶⁵

While Thompson conceded responsibility for the purse and wallet snatchings, he proclaimed (and still proclaims) his innocence regarding Croom’s violent and prolonged sexual assault. Indeed, Thompson targeted both male and female victims. Moreover, he never physically or sexually assaulted his female victims; he merely used the police ruse to gain access to their purses. Thus, his motive was purely monetary—not sexual or sadistic.⁶⁶ Furthermore, Pennsylvania authorities could not link Thompson to a Jeep Cherokee or similar vehicle. As mentioned, he used a Chevy Cavalier to perpetrate his roadway robberies.⁶⁷

5. The Physical Evidence and Forensic Results

Victoria Cordova of National Medical Services Laboratory examined the rape kit specimen and Croom’s clothing. The swabs and smear slides tested negative for semen

⁶² NT, Trial, 2/19/93, at 134.

⁶³ *Id.* at 135.

⁶⁴ NT, Trial, 2/22/93, at 152; Ex. 5.

⁶⁵ NT, Trial, 2/19/93, at 155.

⁶⁶ Exs. 4, 6.

⁶⁷ Ex. 4, 6.

and sperm, as did her clothing.⁶⁸ Cordova also analyzed several hairs recovered from Croom's sweat shirt, black tank top, white tank top, and sweat pants:

- **Sweatshirt**: Cordova identified blond head hairs, Caucasian dark auburn hairs, and Caucasian pubic hairs on the sweat shirt.
- **Black Tank Top**: Cordova identified a blond head hair, a Caucasian brown hair, and a Caucasian pubic hair on the black tank top.
- **White Tank Top**: Cordova identified a dark brown Caucasian pubic hair on the white tank top. This hair was dissimilar to Croom's pubic hair samples and thus could have originated from the assailant.⁶⁹ Moreover, the dark brown hair had *an intact root*.
- **Sweat Pants**: Cordova identified one light brown and one dark brown Caucasian body hairs on the sweat pants.⁷⁰ The light brown hair had *an intact root*.

Cordova concluded that the Caucasian head hairs identified on the sweatshirt and the black tank top exhibited similar characteristics and could share a common origin. Moreover, these hairs were *dissimilar* to Croom's pubic hair samples and thus could have originated from the assailant. Finally, Cordova said that the Commonwealth never submitted Thompson's hair samples to her for examination.

The Commonwealth sent the unknown hair samples collected from Croom's clothing and Thompson's hair samples to the FBI laboratory for additional testing. Wayne Oaks, an examiner with the Hair & Fibers Unit, compared the unknown hairs with

⁶⁸ NT, Trial, 2/22/93, at 80-83.

⁶⁹ *Id.* at 96.

⁷⁰ *Id.* at 85-90.

Thompson's hair samples. Oaks reported that most of the unknown hairs were not suitable for comparison purposes. Thus, he could not make any conclusions regarding whether the hairs could have originated from Thompson. The only hairs suitable for comparison purposes were several blond Caucasian head hairs that did not match Thompson's hair samples.⁷¹

The Commonwealth also had Croom's address book and photographs in her purse examined for fingerprints because the assailant repeatedly touched and handled these items. While the examination revealed several prints of value, none of them could be linked to Thompson.⁷²

6. Trial

Thompson went to trial in February 1993.⁷³ The primary issue at trial was the assailant's identity. To prove the assailant was Thompson, the Commonwealth relied entirely on Croom's identification, because none of the physical evidence could be linked to Thompson. The prosecutor conceded this point during opening statements and closing arguments when he urged the jury "to focus" its "attention on" Croom's "identification testimony":

You will not hear any testimony linking those hairs to that man or excluding those hairs from that man. They're inconclusive. So you're going to have to focus your attention on the identification testimony in this case and the credibility of [Croom]... [T]hose other things that are inconclusive don't make much sense because she knows, she was the only one there, she was the only one standing face to face with that man, she

⁷¹ NT, Trial, 2/23/93, at 22-34.

⁷² Exs. 11, 17.

⁷³ NT, Trial, 2/19/93, at 1.

was the only one that had the opportunity to see him that night. She's the only one who knew what he looked like.⁷⁴

Thompson presented a mistaken identification defense.⁷⁵ He also emphasized the lack of physical evidence, the many problems with Croom's identification,⁷⁶ and the numerous discrepancies between his physical appearance and Croom's initial description of her assailant.⁷⁷

After deliberating for *twelve hours*, the jury found Thompson guilty. The trial judge imposed a 20 to 40 year sentence.⁷⁸

II. Arguments

In 2002, the Pennsylvania legislature enacted 42 Pa. C.S.A. § 9543.1, which “permits an inmate to seek DNA testing of evidence used to convict him where such testing may establish his innocence of the crime(s) of conviction.” *Commonwealth v. Heilman*, 867 A.2d 542 (Pa. Super. 2005); *Commonwealth v. McLaughlin*, 835 A.2d at 750. To qualify for testing, petitioners must satisfy § 9543.1's prerequisites. See *Commonwealth v. Smith*, 889 A.2d 582, 583 (Pa. Super. 2005). Thompson satisfies these prerequisites and is entitled to DNA testing.

A. Thompson Can Specify the Evidence He Wants Tested and Demonstrate How Exculpatory Results Would Establish His Actual Innocence

⁷⁴ NT, Trial, 2/19/93, at 30-31.

⁷⁵ NT, Trial, 2/23/93, at 148-149 (“This is a case that involves identification. The strength or weakness of the Commonwealth's case all stands or falls on the issue of identification[.]”)

⁷⁶ *Id.* at 149, 162, 171.

⁷⁷ *Id.* at 160-161.

⁷⁸ NT, Trial, 2/24/93, at 56, 35.

Pursuant to 42 Pa. C.S.A. § 9543.1(c)(1)(I) and (c)(3)(ii)(A), Thompson must identify the evidence to be tested and establish how exculpatory results would prove his innocence. *See Commonwealth v. Smith*, 889 A.2d 582 (Pa. Super. 2005). Thompson satisfies these requirements.

1. Evidence to Be Tested

a. Croom's Clothing and Rape Kit

During her rape examination, medical personal collected the following items from Croom: (1) a white sweatshirt; (2) a blue t-shirt; (3) a white t-shirt; (4) blue sweatpants; (5) blue socks; and (6) a rape kit (i.e., vaginal, anal, and oral swabs and smear slides, fingernail scrapings and clippings, pubic combings, and underwear). Thompson would like to test these items of evidence.

Shortly after collecting her clothing and the rape kit, medical personnel transferred custody of these items to the Upper Merion Police Department (UMPD).⁷⁹ On April 9, 1990, Detective T. McGinley transported these items to National Medical Services (NMS) and transferred custody to Victoria Cordova who subsequently examined the items for the presence of hairs, fibers, semen, and sperm.⁸⁰ On October 31, 1990, NMS transferred custody of these items to Detective Saville who placed them into the UMPD “quartermaster.”⁸¹

Cordova used acid phosphatase (AP) mapping to identify the possible presence of semen on the rape kit items and Croom's clothing. Her tests were negative. Despite the

⁷⁹ Ex. 8.

⁸⁰ Ex. 10.

⁸¹ Exs. 12, 13.

negative results, the evidence should be re-examined for three reasons. First, there are newer, more sensitive serological tests that can identify semen from old samples. Second, the negative results may be misleading and incorrect. Third, Cordova may have been incompetent and performed the tests or interpreted her results incorrectly.

Newer serological tests, which attempt to identify p30 in a sample,⁸² are far more sensitive than older serological methods, such as AP mapping and cross-over electrophoresis.⁸³ For instance, the Seratec PSA test is at least *100 times more sensitive* than tests using cross-over electrophoresis and at least *10 times more sensitive* than the AP mapping test.⁸⁴ In nearly 17% (17 cases) of the casework samples tested in a recent study, the Seratec PSA test found positive p30 levels in samples that had previously tested negative for p30 and where there was no visible sperm.⁸⁵ Consequently, if the rape kit items and Croom's clothing are subjected to the Seratec PSA test, there is a good chance semen might be detected on all or some of these items.

⁸² P30 is a prostate-specific antigen that is produced in the epithelial cells that line the ducts of the prostate. P30 (like AP) is emitted from the prostate into the semen. Thus, if ejaculation occurs, there is a high concentration of P30 in the discharged seminal fluid. See Edwin L. Jones, Jr., *The Identification of Semen and Other Body Fluids*, in 2 FORENSIC SCIENCE HANDBOOK 353 (Richard Saferstein ed., 2d ed. 2005); F. Samuel Baechtel, *The Identification and Individualization of Semen Stains*, in 2 FORENSIC SCIENCE HANDBOOK 363-64 (Richard Saferstein ed., 1st ed. 1988).

⁸³ Cross-over electrophoresis has long been widely used in forensic casework in serology labs because it is inexpensive and easy to use. It is used to determine whether a substance is semen by placing a suspected semen sample in one well of an electrophoretic plate and antibodies created from a known sample in the other well. A small electric potential is then applied. If the suspected sample is semen, the antigens in the sample and the antibodies from the control will be drawn toward one another to form a visible line between the two wells. See Richard Saferstein, CRIMINALISTICS 351 (8th ed., 2004).

⁸⁴ See S.J. Denison, et al., *Positive Prostate-Specific Antigen (PSA) Results in Semen-Free Samples*, 37 CAN. SOC. FORENSIC SCI. J. 197, 200 (2004).

⁸⁵ *Id.*

Second, AP mapping “is the most commonly employed test used for the presumptive identification of semen.”⁸⁶ AP is “popular because it is present in large quantities in human semen, very stable, and relatively quick and easy to analyze.”⁸⁷ However, while “AP is a relatively stable enzyme, negative tests conducted on older evidential items should be interpreted with caution because the enzymes will lose activity over time.”⁸⁸ How a particular item of evidence was stored impacts how long the AP enzyme will remain active in a sample. For instance, “the longer, warmer, and more humid the storage conditions, the shorter the enzyme’s half-life.”⁸⁹ Thus, simply because Cordova failed to identify AP on these items of evidence, does not conclusively prove the absence of AP or seminal material. Instead, the manner in which the evidence was stored could have appreciably shortened the enzyme’s half-life. In short, there is a real possibility that Cordova’s results represent a false negative (i.e., the failure to identify a substance, when the substance is actually present).

Finally, as demonstrated by recent DNA exonerations, there is a strong possibility Cordova may have simply erred in her analyses. The IP has worked several cases where the State’s forensic serologist failed to identify semen or sperm on an item of evidence prior to trial, but upon re-examination of the evidence during post-conviction DNA

⁸⁶ Edwin L. Jones, Jr., *The Identification of Semen and Other Body Fluids*, in 2 FORENSIC SCIENCE HANDBOOK 331 (Richard Saferstein ed., 2d ed. 2005); accord Robert C. Shaler, *Modern Forensic Biology*, in 1 FORENSIC SCIENCE HANDBOOK 536 (Richard Saferstein, ed, 2d ed. 2002) (noting that AP testing is a “venerable technique for locating semen”).

⁸⁷ *Id.*

⁸⁸ Shaler, *supra*, at 536.

⁸⁹ *Id.*

proceedings an independent DNA laboratory was able to identify semen or sperm on the evidence.⁹⁰

b. Hairs Collected from Croom's Clothing

Cordova collected eighteen different hairs from Croom's clothing and placed them on eighteen separate slides.⁹¹ Thompson would like to test these hairs.

On November 13, 1991, Cordova transferred custody of the eighteen hair slides to Detective Saville.⁹² On November 14, 1991, Officer David Lacy (of the UMPD) transported the evidence to the FBI laboratory in Washington, D.C.⁹³ Following its

⁹⁰ Indeed, one of the Innocence Project's most recent exonerations—involving Ronald Taylor—proves this very point. At his 1994 rape trial, the State's serologist testified she examined the bed sheet where the rape occurred and found no signs of semen; the alleged lack of semen prevented the Houston Crime Laboratory from pursuing DNA tests that would have exonerated Taylor prior to trial. However, when the Innocence Project accepted his case, and had the bed sheet re-examined by a private DNA laboratory, the laboratory identified a semen stain and developed a DNA profile that ultimately exonerated Taylor and identified Roosevelt Carroll—a twice convicted sex offender—as the actual assailant. *See* Mike Tolson & Roma Khanna, *Mix-up on DNA Deals HPD Lab Another Blow*, HOUS. CHRON., Oct. 4, 2007, at A1; Roma Khanna, *DNA Tests Point to a Sex Offender as Actual 1993 Rapist: Convicted in 2 Earlier Attacks, He Lived Just Blocks from the Man Who Paid for the Crime*, HOUS. CHRON., Oct. 5, 2007.

In 1992 a Manhattan jury convicted Michael Mercer of a Harlem rooftop rape. Prior to trial, the State's serologist reported that the vaginal swabs tested negative for seminal fluid. When Mercer moved for DNA testing during the late 1990s, the post-conviction court denied his request due to the serologist's initial negative results. However, when a private DNA laboratory re-examined the swabs in 2003, using *conventional* serology techniques, it identified seminal material, which it subjected to STR DNA testing. The DNA tests produced a full profile that exonerated Mercer and identified a convicted serial rapist as the true perpetrator. *See* Robert D. McFadden, *DNA Clears Rape Convict After 12 Years*, N.Y. TIMES, May 20, 2003.

Likewise, a New Jersey court recently vacated Larry Peterson's 1989 rape-murder conviction after DNA testing excluded him as a potential contributor of the seminal material identified on the vaginal and oral swabs. Importantly, when the State's serologist examined the swabs in 1989, she did not detect seminal material. However, when the Innocence Project accepted Peterson's case and sent his evidence to a private DNA laboratory, the laboratory identified seminal material using *conventional* serology techniques. *See* Laura Mansnerus, *Citing DNA, Court Annuls Murder Conviction from 1989*, N.Y. TIMES, July 30, 2005.

⁹¹ Ex. 14.

⁹² *Id.*

⁹³ Ex. 16.

standard practice, the FBI laboratory returned the hair evidence to the UMPD after it completed its testing.

2. DNA Tests

The different types of DNA testing that can prove Thompson's innocence will be briefly discussed.

a. Short Tandem Repeat (STR) Techniques

Conventional STR and mini-STR tests focus on autosomal DNA markers. Autosomes are non-sex chromosomes. The genetic markers on autosomes *are shuffled* with each generation because half of an individual's genetic information comes from his or her father and half comes from his or her mother.⁹⁴ Thus, these tests are far more discriminatory than lineage marker DNA tests, *see infra*, because the genetic markers are *shuffled* with each generation thereby creating distinctive genetic profiles for each person.

(1). Conventional STR Testing

STR DNA testing offers several advantages over the first generation of DNA tests. First, it requires a minuscule amount of biological evidence. Second, it can be used on degraded samples. Third, it can be used to detect and decipher mixtures. Fourth, it can be used to detect masking so different profiles can be properly differentiated. Lastly, it is highly discriminatory.⁹⁵

⁹⁴ See JOHN M. BUTLER, FORENSIC DNA TYPING: BIOLOGY, TECHNOLOGY, AND GENETICS OF STR MARKERS 201-03 (2d ed. 2005).

⁹⁵ See *United States v. Boose*, 498 F.Supp.2d 887, 890-91 (N.D. Miss. 2007) (STR testing is "the most widely used by DNA labs . . . because it is capable of a high degree of accuracy, showing an overwhelmingly large probability that a suspect's DNA matches an evidence sample.").

Unlike first generation tandem repeat DNA tests, STR sections are comprised of much smaller repeat units, from 2 to 7 bases (as compared with 8 to 80 in earlier tests), and the total size of an STR is smaller, usually less than 500 bases (as compared with several thousand base pairs found in earlier tests).⁹⁶ The smaller number of base pairs means very small amounts of biological evidence—less than 1 nanogram (1 billionth of a gram)—can be easily amplified (using polymerase chain reaction (PCR)) and accurately profiled. As one prominent DNA textbook explains:

Modern-day PCR methods, such as multiplex STR typing, are powerful because minuscule amounts of DNA can be measured by amplifying them to a level where they may be detected. Less than 1 ng of DNA can now be analyzed with multiplex PCR amplification of STR alleles compared to 100 ng or more that might have been required [with earlier tests] only a few years ago.⁹⁷

The ability to utilize PCR is critical because “it permits a very tiny amount of DNA, such as would be found on a postage stamp, cigarette butt, or coffee cup, to be amplified to produce an amount large enough to be analyzed.”⁹⁸ Thus, Thompson can use STR testing on the two hairs recovered from the white tank top and sweat pants that had intact roots.

The shorter base pairs also make STR testing highly effective on degraded samples:

Fortunately, because STR loci can be amplified with fairly small product sizes, there is a greater chance for the STR primers to find some intact DNA strands for amplification. In addition, the narrow size range of STR alleles benefits analysis of degraded DNA samples . . . The potential for

⁹⁶ See NAT’L INST. OF JUST., DEP’T OF JUST., THE FUTURE OF FORENSIC DNA TESTING 39-40 (Nov. 2000).

⁹⁷ Butler, *supra*, at 146.

⁹⁸ *Id.* at 39.

analysis of degraded DNA samples is an area where multiplex STR systems really shine over previously used DNA markers.⁹⁹

Because Thompson's case is nearly twenty years old, STR testing will prove invaluable if any of the evidence has degraded.

STR testing can detect and decipher mixtures. Mixtures arise when two or more individuals contributed biological material to the sample being tested. Prior to STR and PCR testing, detecting mixtures was challenging.¹⁰⁰ However, as "detection technologies have become more sensitive with PCR sensitivity . . . the ability to see minor components in the DNA profile of mixed samples has improved dramatically over what was available with [earlier] methods only a few years ago."¹⁰¹ In particular, using "highly polymorphic STR markers with more possible alleles translates to a greater chance of seeing differences between the two components of a mixture."¹⁰²

STR testing can detect masking in a mixed sample. When two contributors to a mixed stain share one or more alleles, the alleles are "masked" and the contributing genotypes may not be easily decipherable. However, "by examining the STR profiles at other loci that have unshared alleles," a mixed sample "may be able to be dissected properly into its components."¹⁰³ This may prove valuable in Thompson's case,

⁹⁹ *Id.* at 146, 147.

¹⁰⁰ See COMM. ON DNA TECH. IN FORENSIC SCI., NAT'L RESEARCH COUNCIL, DNA TECHNOLOGY IN FORENSIC SCIENCE 158 (1992) ("Conventional serology is further limited, in that analysis of mixed-fluid stains in which two or more contributors are involved can mask an individual donor.").

¹⁰¹ *Id.* at 156.

¹⁰² *Id.* at 155.

¹⁰³ *Id.* at 157.

particularly for the swabs and smears slides because Croom's vaginal secretions may have overwhelmed or masked the assailant's DNA.

Finally, STR testing is the most discriminatory DNA test. The statistical probability of an STR match between two unrelated persons in the Caucasian American population has been conservatively estimated at 1 in 575 trillion.¹⁰⁴ Thus, given the United States' population, an STR profile is "effectively unique."¹⁰⁵ As the Tenth Circuit Court of Appeals recognized:

As far as scientists have determined, DNA is the most reliable means of identifying individuals. There is an infinitesimal chance that any two individuals will share the same DNA profile unless they are identical twins. Thus, a DNA match between two samples excludes the rest of the population from suspicion to a near 100% certainty.¹⁰⁶

(2). Mini-STR Testing

The newest form of STR testing is mini-STR testing, which is premised on the same principles as STR (i.e., DNA tests which look for short tandem repeats). Mini-STR testing, however, works incredibly well with "highly degraded DNA as well as very low amounts of DNA,"¹⁰⁷ because the PCR primers anneal closer to the repeat region than conventional STR kit primers.¹⁰⁸ Mini-STR testing may prove beneficial in Thompson's

¹⁰⁴ NIJ 2000 Report, *supra*, at 19.

¹⁰⁵ *Id.* at 25.

¹⁰⁶ *Banks v. United States*, 490 F.3d 1178, 1188 (10th Cir. 2007).

¹⁰⁷ Butler, *supra*, at 148.

¹⁰⁸ See *id.* at 150 ("[I]t is likely that miniSTRs will play a role in the future of degraded DNA analysis probably to help recover information that has been lost with larger loci from conventional [STR testing]."); see also P. Grubweiser et al., *A new "mini-STR Multiplex" Displaying Reduced Amplicon Lengths for the Analysis of Degraded DNA*, 120 INT'L. J. LEGAL MED. 115 (2006); Pablo Martin, Oscar Garcia, Cristina Albarran et al., *Application of Mini-STR Loci to Severely Degraded Casework Samples*, 1288 FORENSIC SCI. INT'L 522, 524 (2006)

case because the case is nearly twenty years old and degradation may be an issue. Likewise, mini-STR testing can be used on the minute roots from the two hairs with intact roots recovered from Croom's white tank top and sweat shirt.

b. Lineage Marker DNA tests

STR testing, as mentioned, focuses on the non-sex chromosomes that are repeatedly shuffled from generation to generation. Y-STR and mitochondrial DNA (mtDNA) tests, on the other hand, represent lineage markers, which are passed down from generation-to-generation without changing (except for mutational events).¹⁰⁹ Paternal lineages can be traced with Y chromosome markers (Y-STRs), while maternal lineages can be traced with mtDNA sequence information. Although not as discriminatory as autosomal STR tests, Y-STR and mtDNA still “have an important role to play in forensic investigations.”¹¹⁰

(1). Y-STR Testing: Paternal Lineage

Y-chromosome testing is valuable because Y-chromosomes are only found in males. Males and females have two sex chromosomes: males have an X chromosome and a Y chromosome (X,Y), whereas females have two X chromosomes (X, X). Because the vast majority of crimes where DNA is helpful involve male perpetrators (i.e., rape-murders), Y-STR tests can prove more beneficial than standard STR testing in certain

(“[O]ur data indicate that the mini-STR [tests] offer an effective tool for recovering information in degraded forensic samples that generated negative results or partial profiles with commercial STR kits.”); C. Romano, E. Di Luise, D. Di Martino et al., *A Novel Approach for Genotyping of LCN-DNA recovered from highly degraded samples*, 1288 FORENSIC SCI. INT’L 577 (2006).

¹⁰⁹ Butler, *supra*, at 201-03.

¹¹⁰ *Id.* at 201.

