

## **Identifying How an Individual Becomes a Suspect: A Needed Addition to the Innocence Literature**

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*Flawed eyewitness testimony, faulty forensics, and police misconduct are common factors that may contribute to wrongful conviction. However, what brings someone over the threshold of suspicion where these factors are used to build the case against them? To answer that question, we built upon the limited number of previous studies examining how someone becomes a suspect in serious crimes (e.g., murder, rape). This exploratory study utilized Innocence Project materials pertaining to 232 exonerated clients and 75 individuals for whom post-conviction DNA testing was found to be an “inclusion” (i.e., supportive of the prosecution’s theory of guilt). Based on case files, we coded pathways to becoming a suspect. These pathways included tips, matched description, previous law enforcement encounters, physical evidence, and other scenarios; more than one pathway could be used for each individual. While several pathways were found to be similar in both groups, differences were seen in pathways related to physical evidence, officers putting individuals under duress during questioning, and proximity to the crime. This exploratory analysis provides a basis for designing future hypothesis-based research to further examine the observed associations and provide further insights into the investigative processes that can lead to wrongful convictions.*

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## I Introduction

Police officers have a large amount of discretion in making decisions on whom to arrest and how to investigate cases. However, most research in criminal investigations pertains to charging decisions or events that happen post-implication of a suspect (e.g., interrogation).<sup>1</sup> In innocence work, the same issue is faced. We have what Zalman<sup>2</sup> calls the innocence paradigm, i.e., variables that are said to be factors contributing to wrongful convictions. These factors include mistaken eyewitness identification, false confessions, tunnel vision, informant testimony, unsound forensics, prosecutorial misconduct, and ineffective assistance of counsel.<sup>3</sup> All these issues happen post-implication, meaning, after someone initially becomes a suspect. Minimal research has focused on what happens before someone becomes a suspect. We seek to analyze this specific portion of the investigatory process to identify how innocent individuals become a suspect.

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<sup>1</sup> Melinda Tasca et al, “Police Decision Making in Sexual Assault Cases: Predictors of Suspect Identification and Arrest” (2013) *Journal of Interpersonal Violence*, 28(6), 1157-1177, DOI: <[10.1177/0886260512468233](https://doi.org/10.1177/0886260512468233)> [Tasca et al].

<sup>2</sup> Marvin Zalman, “An Integrated Model of Wrongful Convictions” (2011) *Alb L Rev*, 74, 1465-1524 [Zalman].

<sup>3</sup> Jon B Gould & Richard A Leo, “One Hundred Years Later: Wrongful Convictions After a Century of Research” (2010) *The Journal of Criminal Law and Criminology*, 825-868 [Gould & Leo]; Kim D Rossmo & Joycelyn M Pollock, “Confirmation Bias and Other Systemic Causes of Wrongful Convictions: A Sentinel Events Perspective” (2019) *NEULR*, 11, 790 [Rossmo & Pollock]; Earl Smith & Angela J Hattery, “Race, Wrongful Conviction & Exoneration” (2011) *Journal of African American Studies*, 15(1), 74-94 [Smith & Hattery].

Researchers have also noticed the dearth of analysis in this line of questioning. In fact, Zalman and Larson<sup>4</sup> call for innocence researchers to examine the police investigation beyond the minutiae of eyewitness identification or interrogation. While the scholarship on individuals becoming suspects has been a neglected area, that does not mean it is nonexistent. First, we do have substantial knowledge about how police approach some specific crimes which gives us the ability to conjecture how suspects are identified. For example, there are many investigatory handbooks or pocket guides on responses to sexual assault. These detail how officers need to control the scene, identify physical evidence to be processed for possible forensic evidence, get detailed suspect descriptions to put out to the public or produce lineups, and get details of the assault itself to try to match to past crimes investigated.<sup>5</sup> This makes it reasonable to assume that people become suspects by leaving physical evidence, matching a description of a given suspect as identified by the public or others, or by matching a previous crime's modus operandi. Homicide investigation handbooks also stress the importance of collection of physical evidence and getting descriptions of possible assailants.<sup>6</sup> While these documents can help us hypothesize ways individuals become suspects, there have also been other pieces of literature that more directly touch on the subject albeit, not always with exonerees.

An example of this is a study published by the UK Home Office in 2007. This study examined 593 rape cases (with 640 assailants involved) looking at multiple variables including when the suspect was linked to the crime (e.g., at the time of the report) and victim-assailant relationship (i.e., 14% were strangers, 27% were acquaintances, and 22% were partners or ex-partners). They also examined how individuals became suspects. A suspect was identified through being named by the victim (67%), a victim description (6%), being named by an associate (4%), from being caught at the scene (3%), forensic match (2%), from their own admission (<1%), and from similarity to other offenses (<1%).<sup>7</sup> The authors did not analyze these frequencies in terms of the relationship between the victim and assailant, and it is likely suspect identification pathways differed for stranger compared to acquaintance and other types of relationships. To our understanding, this study focused largely on non-exoneration cases. To date, there is one such study we know of that examines this subject for exonerees.

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<sup>4</sup> Marvin Zalman & Matthew Larson, "Elephants in the Station House: Serial Crimes, Wrongful Convictions, and Expanding Wrongful Conviction Analysis to Include Police Investigation" (2015) *Alb L Rev*, 79, 941 [Zalman & Larson].

<sup>5</sup> John Brooks et al, *Pocket Guide for Police Response to Sexual Assault*, (NCJRS), online: [https://www.ncjrs.gov/ovc\\_archives/sartkit/tools/lawenforcement/Pocket%20Guide%20for%20Police%20Response%20to%20Sexual%20Assault.pdf.pdf](https://www.ncjrs.gov/ovc_archives/sartkit/tools/lawenforcement/Pocket%20Guide%20for%20Police%20Response%20to%20Sexual%20Assault.pdf.pdf) [Brooks et al]; Jennifer M Brown & Sandra L. Walklate (Eds), *Handbook on Sexual Violence*, (Routledge, 2011) [Brown & Walklate]; Robert R Hazelwood & Ann W Burgess (Eds), *Practical Aspects of Rape Investigation: A Multidisciplinary Approach*, (Routledge, 2016) [Hazelwood & Burgess]; John O Savino & Brent E Turvey (Eds), *Rape Investigation Handbook*, (Academic Press, 2011) [Savino & Turvey].

<sup>6</sup> Fiona Brookman, Edward R Maguire & Mike Maguire (Eds), *The Handbook of Homicide* (John Wiley & Sons, 2017) [Brookman, Maguire & Maguire]; John A Eterno & Cliff Roberson (Eds), *The Detective's Handbook*, (CRC Press, 2017) [Eterno & Roberson]; Burt Rapp, *Homicide Investigation: A Practical Handbook*, (Loompanics Unlimited, 1989) [Rapp].

<sup>7</sup> Andy Feist et al, *Investigating and Detecting Recorded Offences of Rape*, (NCJRS, 2007) [Feist et al].

Lowrey-Kinberg, Senn, Dunn, Gould, and Hail-Jares<sup>8</sup> examined 396 cases: 231 wrongful conviction cases and 165 near miss cases (where the defendant was acquitted at trial or had charges dismissed due to facts pertaining to innocence). The cases occurred between 1980 and 2012 and were considered “state violent felony cases,” which largely consisted of homicides and sexual assaults. They created eight mutually exclusive groups for how individuals became suspects by analyzing previous police literature and investigatory tactics. These groups were: victim or eyewitness identification, officer identification, civilian identification, intentional misidentification, physical evidence, criminal activity, physical proximity, and social proximity. They found that victim or eyewitness identification (24.24%), intentional misidentification (21.72%), and citizen identification (13.13%) were the top three ways individuals were first identified. The authors, utilizing multivariate logistic regression, also analyzed if certain characteristics like race, criminal history, or whether the victim survived the crime were related to how individuals became a suspect. Lastly, and important to note, is that it also appears that they did not separate their wrongful conviction and near miss cases within their analysis.

The purpose of our study was to expand on this growing literature by pursuing an exploratory study identifying how individuals become suspects. To do this we analyzed a set of Innocence Project cases compared to a set of cases where DNA was found to include the suspect at the scene, presumably supporting the prosecutor’s theory of the crime. This study furthers the work Lowrey-Kinberg conducted in that it expands on ways to classify how individuals became suspects. Our work differs by allowing for the categorization of cases into two or more pathways of becoming a suspect. Also different is that our sampling design allowed a comparison of wrongfully convicted cases (exonerations) to cases in which the investigation had presumably correctly identified someone involved in the crime. In this way we sought to contribute to the growing scholarship on how individuals become a suspect and hope further research can expand upon our results.

## II Methods

Becoming a suspect in this research was defined as when authorities amplified resources on an individual or when they decided to focus their attention on a certain person. A suspect is formally investigated, and someone considered suspicious by law enforcement.<sup>9</sup> Therefore, simply having your name brought up in an investigation did not constitute becoming a suspect in this research, even if that meant there was minor suspicion against you. To be considered a suspect, the individual had to have been brought in for a witness identification, been interrogated for a long period of time, or have done something that quickly led to suspicion and arrest. This differs from a person of interest, who police might want to speak with during an investigation, but the police

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<sup>8</sup> Belen Lowrey-Kinberg et al, “Origin of Implication: How Do Innocent Individuals Enter the Criminal Justice System?” (2019) *Crime & Delinquency*, 65(14), 1949-1975, [DOI: <10.1177/0011128718793618>](https://doi.org/10.1177/0011128718793618) [Lowrey-Kinberg et al 2019].

<sup>9</sup> Madison Stacey, “FBI names Brian Laundrie a person of interest in Gabby Petito murder case, but he’s still not a suspect. What’s the difference?”, *WTHR* (21 September 2021), online: <https://www.wthr.com/article/news/crime/brian-laundrie-is-still-a-person-of-interest-not-a-suspect-whats-the-difference/531-fd501730-5b86-488b-9511-2e5d97e17638> [Stacey].

do not have the evidence to charge them or put them under formal investigation. Thinking of it in terms of filling a cup to a certain line is a helpful metaphor: while some things can fill the cup, you must reach a certain level to become a suspect. We viewed the totality of the circumstances to make that decision, but note a degree of subjectivity exists in this process.

### **A. Sample**

The sample for this research came from the records of the Innocence Project. The records examined included 232 clients who had been exonerated (mostly through the means of DNA testing) and 75 clients who had not been exonerated because new DNA was found that supported the prosecution's theory of guilt, meaning the client's DNA profile is found to be included in the physical evidence of the crime. In these situations, the Innocence Project closes that case and does not represent the client in further legal proceedings. Initial conviction dates ranged from 1976 to 2006 for the exonerated group and from 1974 to 2002 for the comparison (DNA inclusion) group. Case characteristics included murder, sexual assault (attempted and completed), and burglary.

### **B. Coding Procedure and Description of Pathway Categories**

The Innocence Project's internal records on these cases were the first source used in the analysis. These records included things like case evaluations and opening and closing memos which directly gave background on the cases. Other records included information that was submitted to the court like post-conviction relief applications (PCR's) and legal briefs, information obtained during the investigation of the case, including from police reports, and court decisions providing background on cases. In some cases, how an individual became a suspect was explicitly stated or could be inferred from details provided in these records. In other cases, the records did not provide sufficient information on this question. In those cases, open-source information was found via the Innocence Project website, the National Registry of Exonerations website, online law documents, and online media sources and the same process of analyzing these files would occur to see if the narrative of the case identified how the individual was first identified as a suspect. In cases where the primary researcher could not identify how an individual became a suspect via these routes, a consensus among three reviewers was attempted to be reached and when that did not happen, the way someone became a suspect was left unknown.

Prior research on how suspects are identified<sup>10</sup> was used to help organize this information into specific categories. As noted previously, our analysis expanded upon the Lowrey-Kinberg et al.<sup>11</sup> piece, allowing for multiple origin of implication pathways for each suspect. Using the previous cup analogy again, we are coding everything that fills that cup to the line of becoming a suspect. To identify the categories, the Lowrey-Kinberg et al.<sup>12</sup> article was initially used but was amended and expanded to include seven general categories and additional subcategories, in addition to an "unknown" and "other variables likely" category. These categories are described below and summarized in Table 1, and the Appendix contains additional examples of the classification decisions.

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<sup>10</sup> Lowrey-Kinberg et al 2019, *supra* note 8.

<sup>11</sup> *Ibid.*

<sup>12</sup> *Ibid.*

**Table 1.** Categories and Subcategories Used For Classification of Pathways For Becoming a Suspect

Category	Subcategories	Possible Paths
Tip	Public Tip	Single or Multiple
	Friend Under Duress During Questioning	Single or Multiple
	Accomplice Tip	Single or Multiple
	Victim Tip	Single or Multiple
Matched Description	Officer Identification	Single or Multiple
	Civilian (member of public) Identification	Multiple
	Victim Identification	Single or Multiple
Own Actions	None	Single or Multiple
Physical Evidence	None	Single or Multiple
Previous Law Enforcement Encounter	None	Single or Multiple
Proximity	None	Single or Multiple
Police Action	None	Multiple
Unknown	None	Single
Other Variable(s) Likely	None	Multiple

Tip refers to someone (i.e., the victim or public) offering information to law enforcement and this information resulted in a deeper investigation of the identified individual. The tip could be provided through a tip line or other electronic system used to report suspicious, nuisance, and criminal activity to the police, or in any other form.<sup>13</sup> The Tip pathway was further broken down by the source of the tip.

In the process of investigating crimes, especially stranger crimes, descriptions of a suspect's personal appearance and evidential characteristics (i.e., color of car used) can be obtained and used to create composites.<sup>14</sup> When an individual becomes a suspect due to a Matched Description, they become one because they are encountered during an investigation and match these personal or evidential characteristics provided previously from someone witnessing the crime (i.e., victim or eyewitness). Matched Description includes matching clothing and an earring a victim described, someone calling in saying a composite matches someone they know, or a police officer seeing someone on the street matching a description and bringing them in for an identification procedure. Matched Description was broken down into who identified the individual as matching a description: police employees, the public, or victims.

<sup>13</sup> Philadelphia Police Department, "Submit a Tip", online: <https://www.phillypolice.com/forms/submit-a-tip/>; "Project TIPLINE", online: *The Center for Evidence-Based Crime Policy (CEBCP)* <<https://cebcp.org/tipline/>>.

<sup>14</sup> Dawn McQuiston-Surrett et al, "Use of Facial Composite Systems in US Law Enforcement Agencies" (2006) *Psychology, Crime & Law*, 12(5), 505-517, DOI: <10.1080/10683160500254904> [Surrett et al]; Savino & Turvey, *supra* note 5; Sefanyetso, Justice T., *Personal Description: An Investigation Technique to Identify Suspects* (Doctoral Dissertation, University of South Africa, 2009) [Sefanyetso].

Own actions came into play when behavior that is perceived to be suspicious and strange brings a suspect to the attention of investigators.<sup>15</sup> Examples include people peering into parked cars that are not theirs or someone driving slowly and repeatedly around a crime scene.<sup>16</sup> It can also include things like emotional actions where lack of emotional reactivity to a murder might be perceived as guilt.<sup>17</sup> This category was used for individuals who became suspects because of physical, emotional, or verbal actions. Because these three categories are often seen together, there were no subsections for this group. An example of a case like this was when an individual was seen at all three wakes for the victim and seemed overly distraught over their death. Because of these actions, thought by police to be an out of proportion reaction, he became a suspect in the murder. This variable by no means was intended to place blame, it just describes that the actions of the person was part of what led to them becoming a suspect.

The Physical Evidence pathway was not very common and was not divided into subsections. To be placed here, physical evidence must have been discovered which led to the individual falling under police focus. Physical evidence can include things like forensic matches, through DNA or fingerprints, or physical possessions being found at scenes that can be traced back to the suspect.<sup>18</sup>

Previous Law Enforcement encounters were another route to becoming a suspect. Of concern in this section was any previous encounter a suspect had with law enforcement which led to them becoming a suspect in the current case. For example, a police perception of a previous crime matching a current crime could lead to an individual becoming a suspect.<sup>19</sup> This variable was also not called Previous Arrest because some individuals in our sample were suspects in other crimes but were not arrested; because they were suspects in these other crimes, they became suspects in the current case. Note, this category was not used when an officer encountered someone

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<sup>15</sup> Belen Lowrey-Kinberg et al, "Pathways To Suspicion: Causes And Consequences Of Innocent Suspects' Origin Of Implication" (2018) *California Western Law Review*, 54(1), 2 [*Lowrey-Kinberg et al, 2018*]; Guillermo A. Martínez-Mascorro et al, "Criminal Intention Detection at Early Stages of Shoplifting Cases by Using 3D Convolutional Neural Networks" (2020a) *Computation* 2021, 9(2), 24, DOI: <10.3390/computation9020024> [*Martinez-Mascorro et al, 2020a*]; Guillermo A. Martínez-Mascorro, Jose C Ortiz-Bayliss & Hugo Terashima-Marín, "Detecting Suspicious Behaviour on Surveillance Videos: Dealing with Visual Behaviour Similarity between Bystanders and Offenders" (2020b) (2020 IEEE ANDESCON) 1–7, DOI: <10.1109/ANDESCON50619.2020.9272175> [*Martinez-Mascorro, 2020b*].

<sup>16</sup> Seattle Police Department, "Reporting Suspicious Behavior", online:

<https://www.seattle.gov/police/need-help/neighborhood-issues/reporting-suspicious-behavior>.

<sup>17</sup> Wendy P Heath et al, "How the Defendant's Emotion Level Affects Mock Jurors' Decisions When Presentation Mode and Evidence Strength are Varied 1" (2004) *Journal of Applied Social Psychology*, 34(3), 624-664 [*Heath et al*]; Wendy P Heath, "Arresting and Convicting the Innocent: The Potential Role of an 'Inappropriate' Emotional Display in the Accused" (2009) *Behavioural Sciences & the Law*, 27(3), 313-332 [*Heath*].

<sup>18</sup> Savino & Turvey, *supra* note 5; Lowrey-Kinberg et al 2019, *supra* note 8.

<sup>19</sup> Mark T Willman & John R Snortum, "Detective Work: The Criminal Investigation Process in a Medium-Size Police Department" (1984) *Criminal Justice Review*, 9(1), 33-39, DOI: <10.1177/073401688400900106> [*Willman & Snortum*]; Lowrey-Kinberg et al 2019, *supra* note 8.

before and thought they matched the description; in that scenario, the Matched Description-Officer Identification classification would be used.

For Proximity, the individual becomes a suspect due to some sort of closeness to the victim. That closeness can either be physical (lived with the murdered victim) or social (was an acquaintance of that victim). Opportunity theories in criminology allows for discussion on physical closeness to potential victims.<sup>20</sup> Knowing that you must have the opportunity to commit crime and to have the opportunity you must be in the proximity to commit it, police investigations often focus on those in physical proximity or social proximity to a victim.<sup>21</sup> Through our first analysis of the data, proximity was divided into subsections of physical and social proximity. However, these two subgroups overlapped quite a bit (i.e., a friend was last seen with a victim), so the variables were collapsed into one variable.

Police Action involved some sort of police action (other than recognizing a suspect from a description or putting a friend of the suspect under duress) including a mistake in judgement, mixing up a name provided by a public tip, or telling the victim that the next person they choose from a mugshot book will be brought in for a physical identification. This variable contained no sub-sections. This variable also includes law enforcement questioning someone they believe to be a person of interest, not quite a suspect yet, throughout the night to the point of confession. Direct statements of ridicule, lack of food and/or water, and lack of parental supervision for minors must be present to meet this variable description.

Sometimes, there is an unknown way individuals become a suspect. Criminal cases can be complex and much like evidence can be destroyed, so too can some important files.<sup>22</sup> Due to this, there was not always a complete picture on some cases leading to an imperfect system in classifying how someone becomes a suspect. For example, in one case someone was picked out of a lineup, but it was unclear how he ended up in said lineup. He believed it was because he was behind on probation fees and believed he was picked up because he was Black. However, due to lack of confirmation on this front, there was no way to determine how he was chosen for the lineup and therefore, no way to determine how he became a suspect. These cases were kept in their own category of Unknown.

Like the variable Unknown, Other Variable(s) Likely exists because there was not always a complete picture on how someone became a suspect. However, because we wanted to capture as much information as possible, there were cases where we had some idea how someone became a

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<sup>20</sup> Adam M Bossler & Thomas J Holt, "On-line Activities, Guardianship, and Malware Infection: An Examination of Routine Activities Theory" (2009) *International Journal of Cyber Criminology*, 3(1) [Bossler & Holt]; Bonnie S Fisher et al, "Crime in the Ivory Tower: The Level and Sources of Student Victimization" (1998) *Criminology*, 36(3), 671-710 [Fisher et al]; Bradford W Reyns & Billy Henson, "The Thief With a Thousand Faces and the Victim With None: Identifying Determinants for Online Identity Theft Victimization With Routine Activity Theory" (2016) *International Journal of Offender Therapy and Comparative Criminology*, 60(10), 1119-1139 [Reyns & Henson].

<sup>21</sup> Lowrey-Kinberg et al 2019, *supra* note 8.

<sup>22</sup> Cynthia E Jones, "Evidence Destroyed, Innocence Lost: The Preservation of Biological Evidence Under Innocence Protection Statutes" (2005) *Am. Crim. L. Rev.*, 42, 1239.



suspect but there were clearly other reasons involved. For example, there was a rape case at an apartment complex where someone working on the landscaping crew was implicated as a suspect. Initially, this suspect was pointed out and the victim did not identify this person. A second unsuccessful identification of this person occurred again until a third time when a lineup was prepared, and he was picked out and arrested. It was reasonable to assume that, because he worked on the landscaping crew, Proximity came into play for why he became a suspect. However, it was also reasonable to assume that something else came into play. Because of this, we captured the proximity variable but also put him under Other Variable(s) Likely.

### C. Analysis

We calculated frequencies and present summary statistics for each of the groups in our sample, and conducted separate analyses of cases in which a single pathway and those in which multiple pathways to becoming a suspect were seen. We did not conduct formal statistical tests because this was a descriptive study, rather than a test of specific hypotheses. For the comparison group in particular, the number of observations within some of these pathways was quite small (< 5). Thus, the differences that are highlighted in the results section should not be considered definitive differences, but are rather presented as findings warranting further investigation and replication.

## III Results

### A. Single vs. Multiple Paths

Table 2 presents the number of pathways (single or multiple) taken to becoming a suspect. Out of 232 in the exonerated group, 196 (84.4%) were able to be classified into a pathway to becoming a suspect. In the comparison (DNA inclusion) group, 64 of the 75 clients (85.3%) were able to be classified in a pathway to becoming a suspect. The frequency of single pathways was somewhat lower among the exonerated group (35.3%) than in the comparison (45.3%), with the opposite pattern seen with respect to frequency of multiple pathways (49.1% and 40.0%, respectively in the exonerated and comparison groups).

**Table 2.** Number of pathways to becoming a suspect, by group

<b>Single or Multiple Pathways</b>	<b>Exonerated (n=232)</b>	<b>Comparison Group (DNA Inclusion) (n=75)</b>
Single Path	82 (35.3%)	34 (45.3%)
Multiple Path	114 (49.1%)	30 (40.0%)
Unknown	36 (15.5%)	11 (14.7%)

### *Frequency of Pathway Categories*

Table 3 presents the total number of pathways taken. The most common pathways for the exonerated group were Tip-Public Tip (20.0%) followed by Own Actions (12.0%), Matched

Description-Officer Identification (10.3%), Tip-Victim Tip (10.0%), Proximity (8.9%), and Matched Description-Victim Identification (8.6%). In the comparison group, Tip-Public Tip (23.7%) was most common, followed by Matched Description-Officer Identification (18.6%), Tip-Victim Tip (13.4%), Own Actions (13.4%), and Physical Evidence (8.2%). Matched Description-Officer Identification and Physical Evidence pathways were seen more often in the comparison group than in the exoneration group (Figure 1). In contrast, the Tip-Friend Under Duress, Proximity, Police Actions, and Previous Law Enforcement Encounter pathways were found more often in the exoneration group, with the largest difference seen with Police Actions (6.9% and 0.0% of pathways in the exonerated and comparison groups, respectively).

**Table 3.** Number and Percentage of Suspects within each Pathway, by Group

<b>Pathway</b>	<b>Exonerated Group</b>	<b>Comparison Group (DNA Inclusion)</b>
Tip-Public Tip	70 (20.0%)	23 (23.7%)
Tip-Friend under Duress	19 (5.4%)	2 (2.1%)
Tip-Accomplice	5 (1.4%)	1 (1.0%)
Tip-Victim	35 (10.0%)	13 (13.4%)
Matched Description-Officer	36 (10.3%)	18 (18.6%)
Matched Description-Civilian	15 (4.3%)	5 (5.2%)
Matched Description-Victim	30 (8.6%)	6 (6.2%)
Own Actions	42 (12.0%)	13 (13.4%)
Proximity	31 (8.9%)	4 (4.1%)
Police Action	24 (6.9%)	0 (0.0%)
Physical Evidence	13 (3.7%)	8 (8.2%)
Previous Law Enforcement Encounter	14 (4.0%)	1 (1.0%)
Other Variable(s) Likely	16 (4.6%)	3 (3.1%)
Total Number of Pathways	350 (100%)	97 (100%)

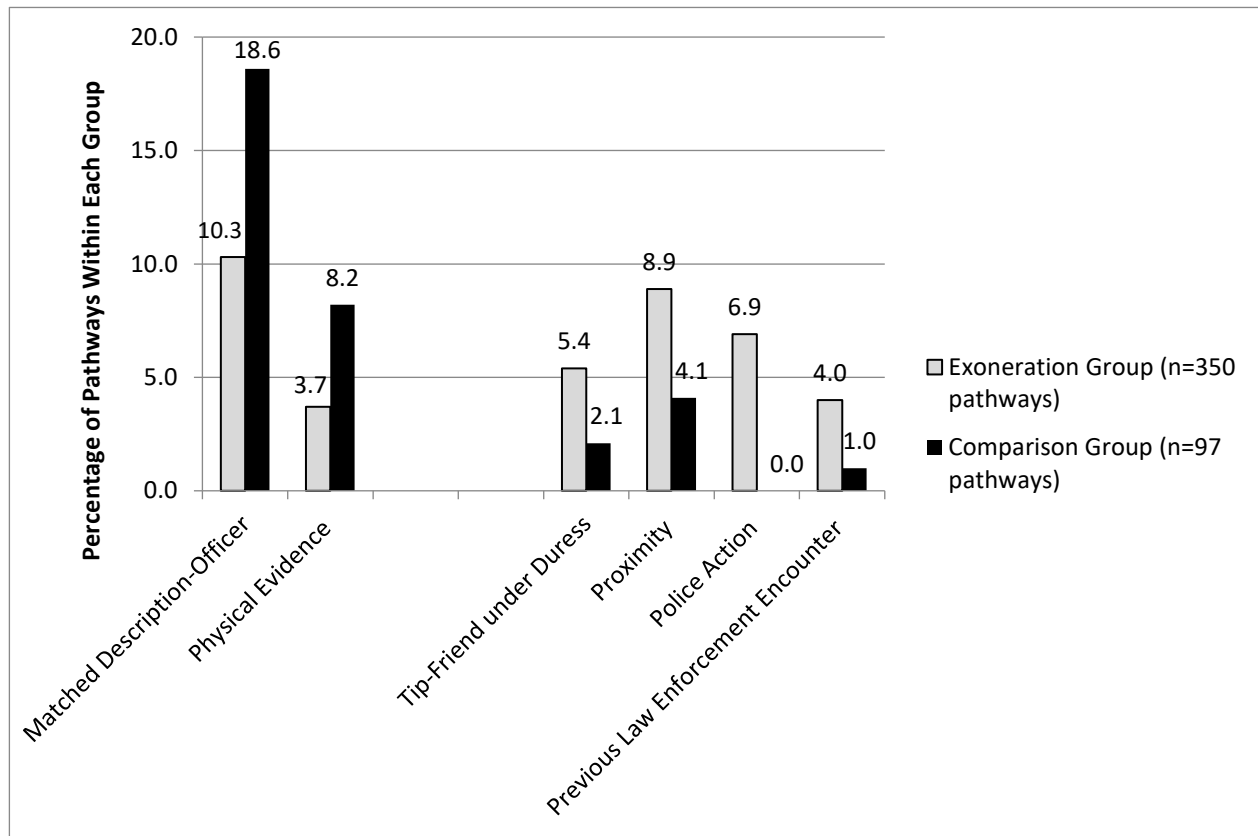
**Figure 1.** Pathways with Differences Between Groups, Based on Total Number of Pathways

Figure 1 depicts the pathways in which there was an approximate two-fold difference in the frequency in the two groups. In the first set (Set A), the pathways were more common among people in the comparison group (i.e., cases for which DNA testing supported the prosecutor's theory of the crime). In the second set (set B), the pathways were more common in the exoneration group.

### B. Analysis of Single Pathway Cases

Table 4 presents the pathways for the 116 individuals (82 exoneration group, 34 comparison group) who were categorized as having a single pathway through which they had become a suspect. In the exonerated group, the most common single pathways were Matched Description-Officer Identification (31.7%), Tip-Public Tip (17.1%), and Tip-Victim Tip (12.2%). In the comparison group, the most common paths here were Matched Description-Officer Identification (35.3%), Tip-Victim Tip (23.5%), Tip-Public Tip (14.7%), and Physical Evidence (11.8%). No one in either group had become a suspect due solely to Police Actions or from a member of the public recognizing a suspect from a description.

Among these single pathway cases, there were pathways that appeared to differ in frequency in the two groups (Figure 2). Matched Description-Victim Identification (e.g., when a victim looked through information like a mug book to see if they recognize their perpetrator) more often led to wrongful conviction (9.8% for the exonerated group compared to 2.9% for the

comparison group). However, Tip-Victim Tip (i.e., when the victim directly implicated the person by name) as the sole pathway to that person becoming a suspect more often led to the correct identification of the perpetrator (12.2% and 23.5%, respectively for the exonerated and comparison groups). The other large differences were seen with Proximity and Physical Evidence, albeit in different directions. Becoming a suspect solely because of being found in some sort of proximity to the crime or victim was a more common single pathway for the exonerated group (8.5%) than for the comparison group (0.0%). In contrast, having physical evidence in a case as the only support to suspecting an individual appeared more likely to indicate a true perpetrator (1.2% and 11.8%, respectively, for the exonerated and comparison groups).

**Table 4.** Number and Percentage of Pathways Among Single Pathway Cases, by Group

<b>Path</b>	<b>Exonerated Group</b>	<b>Comparison Group (DNA Inclusion)</b>
Tip-Public Tip	14 (17.1%)	5 (14.7%)
Tip-Friend under Duress	5 (6.1%)	1 (2.9%)
Tip-Accomplice	1 (1.2%)	1 (2.9%)
Tip-Victim Tip	10 (12.2%)	8 (23.5%)
Matched Description-Officer	26 (31.7%)	12 (35.3%)
Matched Description-Public (Civilian)	0 (0%)	0 (0%)
Matched Description-Victim	8 (9.8%)	1 (2.9%)
Own Actions	6 (7.3%)	1 (2.9%)
Proximity	7 (8.5%)	0 (0.0%)
Police Action	0 (0%)	0 (0%)
Physical Evidence	1 (1.2%)	4 (11.8%)
Previous Law Enforcement Encounter	4 (4.9%)	1 (2.9%)
<b>Total Number of Pathways</b>	<b>82 (100%)</b>	<b>34 (100%)</b>

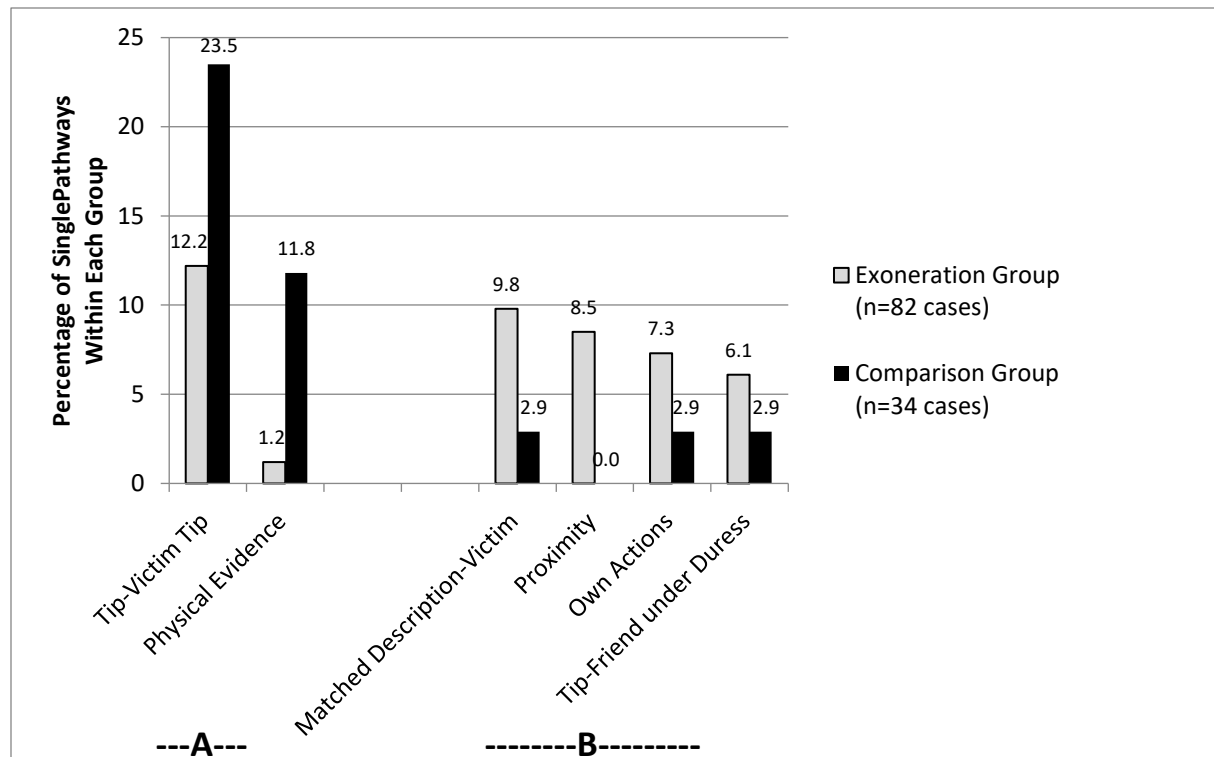
**Figure 2.** Pathways with Differences Between Groups Among Single Pathway Cases

Figure 2 depicts the pathways in which there was an approximate two-fold difference or greater in the frequency in the two groups for pathways with 5 or more cases in total among the single pathway's cases. In the first set (Set A), the pathways were more common among people the comparison group (i.e., cases for which DNA testing supported the prosecutor's theory of the crime). In the second set (set B), the pathways were more common in the exoneration group

### C. Analysis of Multiple Pathway Cases

Table 5 represents the most common categorizations for the 144 individuals (114 exonerations, 30 comparison group) classified as having become a suspect through multiple pathways. The exonerated group categories include every path with more than two clients and the comparison group categories include every path with two or more clients. The most common multiple path classification in the exonerated group was Tip-Victim Tip/Matched Description-Victim Identification (13.2%) followed by Tip-Public Tip/Matched Description-Civilian Identification (9.6%), and Tip-Public Tip/Tip-Friend under Duress During Questioning (7.9%). In the comparison group, Tip-Public Tip/Own Actions (20%) was the most common multiple pathway followed by Tip-Victim Tip/Matched Description-Victim Identification (10%), and Tip-Public Tip/Matched Description-Civilian Identification (10%).

The larger differences in frequency of multiple pathways between the groups are shown in Figure 3. Some multiple pathways were seen in the exonerated group, but not in the comparison group, suggesting these are particularly problematic in terms of correctly identifying perpetrators. The most common of these, seen in 7.9% of the exoneration cases, was a public tip coupled with

investigators putting someone under duress during questioning (Tip-Public Tip/Tip-Friend under Duress During Questioning). In contrast, a public tip coupled with an individual's own actions was somewhat more commonly seen in the comparison group than among the exonerated group.

**Table 5.** Most Common Multiple Path Categorizations

<b>Path</b>	<b>Exonerated Group</b>	<b>Comparison Group (DNA Inclusion)</b>
Tip-Victim/Matched Description-Victim	15 (13.2%)	3 (10%)
Tip-Public/Matched Description-Civilian	11 (9.6%)	3 (10%)
Tip-Public/Tip-Friend Under Duress	9 (7.9%)	0 (0.0%)
Tip-Public/Own Actions	6 (5.3%)	6 (20.0%)
Own Actions/Proximity/Police Action	5 (4.4%)	0 (0.0%)
Tip-Public/Matched Description-Officer	4 (3.5%)	1 (3.3%)
Proximity/Other Variable(s) Likely	3 (2.6%)	0 (0.0%)
Tip-Public/Other Variable(s) Likely	3 (2.6%)	2 (6.7%)
Tip-Accomplice/Own Actions/Police Action	2 (1.8%)	0 (0.0%)
Own Actions/Police Action/Other Var Likely	2 (1.8%)	0 (0%)
Tip-Public/Physical Evidence	1 (1.0%)	2 (6.7%)
Matched Description-Officer/Own Actions	0 (0.0%)	2 (6.7%)
<b>Total</b>	<b>(53.5%)</b>	<b>19 (63.3%)</b>

<sup>a</sup>. Percentages based on total number of multiple variable clients (114 for the exonerated group and 30 for comparison (DNA inclusion) group)

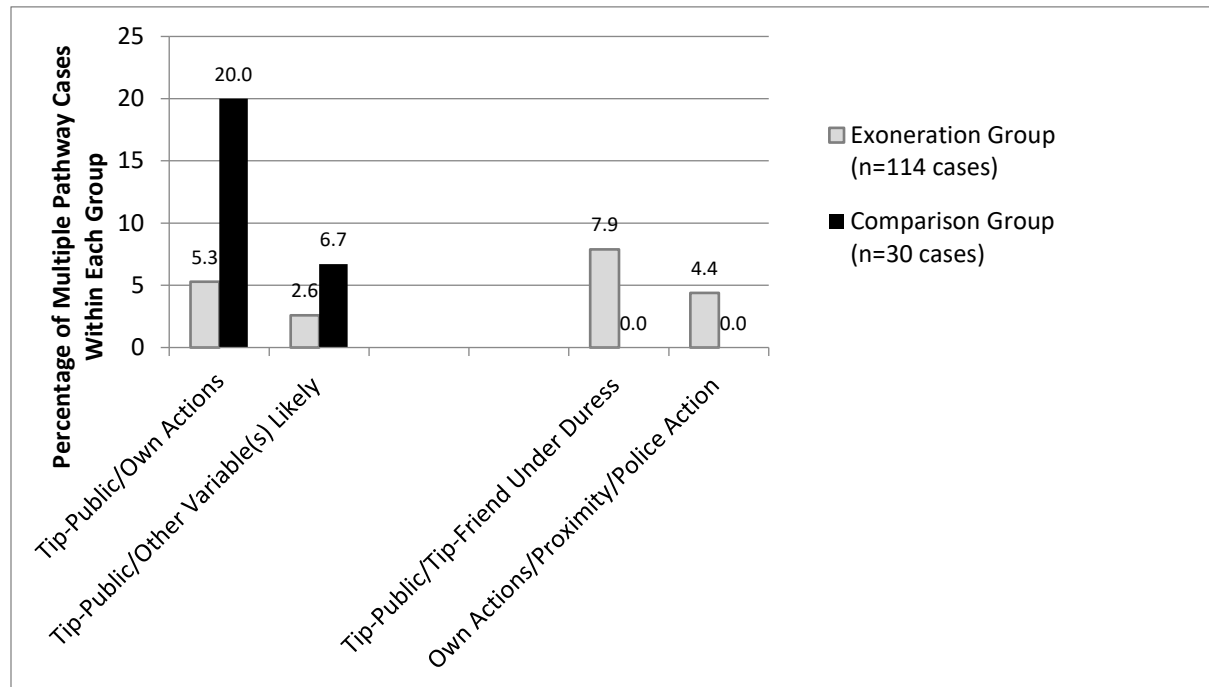
**Figure 3.** Pathways with Differences Between Groups Among Multiple Pathway Cases

Figure 3 depicts the pathways in which there were an approximate two-fold difference or greater in the frequency in the two groups for pathways with 5 or more cases in total among the multiple pathways cases. In the first set (Set A), the pathways were more common among people in the comparison group (i.e., cases for which DNA testing supported the prosecutor's theory of the crime). In the second set (set B), the pathways were more common in the exoneration group

The results discussed above were for the exonerated group with initial conviction dates from 1976 to 2006 and the comparison group with initial conviction dates from 1974 to 2002. An additional analysis was done to constrict this to 1976-2002; results were similar to that of the full sample.

#### IV Discussion

The purpose of this analysis was to build upon the previous study by Lowrey-Kinberg et al.<sup>23</sup> pertaining to how people who were wrongfully convicted of a crime became a suspect. We were able to include a comparison group and allow for multiple pathways. This research has tangible impact because it allows for greater insight into police investigations and allows for the law enforcement community to question their current tactics and consider ways to change them. Research shows that there is little in the scientific literature that has a genuine impact on police

<sup>23</sup> Lowrey-Kinberg et al, *supra* note 8.

procedure, like how to prioritize suspects, and it is our hope that this research will do just that.<sup>24</sup> The below discussion goes in depth on what this research found and how it can impact the investigatory process of law enforcement today.

Some of the differences observed in the frequency of pathways may be indicative of potential areas of strength, and of weaknesses, in investigative processes. For example, the true perpetrator was found more when an officer identified someone as matching a description of a suspect (18.6% in the DNA inclusion group compared to 10.3% in the exonerated group). This finding may reflect the emphasis and training police receive on observational skills.<sup>25</sup> In contrast, turning to the Police Action variable, when police actions led to a suspect, correct identification of the perpetrator occurred less often (6.9% of the exonerated group and 0% of the comparison group). This variable included police actions against a person of interest where they question them for numerous hours and often restrict sleep, food and/or water, and directly accuse these people during that time. The Reid Technique is an interrogation technique widely used in North America. It is also a technique that emphasizes getting confessions through confrontations (forceful accusation) and minimizations (moral justifications for suspected actions). The idea of forceful accusations and the procedure of the Reid Technique has been criticized by many as leading to false confessions, and there was more evidence of that in this study (Hirsch, 2013; Kozinski, 2017; Moore and Fitzsimmons, 2011).<sup>26</sup> Also, looking to the pathway of Tip-Friend under Duress During Questioning where the wrong suspect was more often found, we see another pathway where duress led to the wrong person being implicated. Research shows that isolation, fatigue, and fear can lead to false confessions to escape from the situation an individual is in.<sup>27</sup> It seems reasonable to say that the same was true for someone under duress during questioning when they named someone they knew in order to remove themselves from a scenario that was isolating, fatiguing, and fear inducing.

Evidence can be divided into two separate groups: testimonial evidence and physical evidence. Testimonial evidence is evidence given from statements while physical evidence is any type of object (Fisher and Fisher, 2012). One important aspect of our findings was that physical evidence seemed to more often point to a true perpetrator (8.2% of the comparison group and 3.7% for exonerated group). The single path suspects data also reiterates the power of physical evidence to find the right person. When only one way an individual becomes a suspect was via physical evidence, that typically meant the suspect was part of the comparison (DNA inclusion) group

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<sup>24</sup> Nadine Deslauriers-Varin & Francis Fortin, “Improving Efficiency and Understanding of Criminal Investigations: Toward an Evidence-Based Approach” (2021) *Journal of Police and Criminal Psychology*, 36(4), 635-638.

<sup>25</sup> Raymond A Dahl, “Importance of Observation in Law Enforcement” (1952) *The Journal of Criminal Law, Criminology, and Police Science*, 43(1), 103-113; CBS Interactive, “NYPD Cops Learn Skills of Observation -- in Museum Art Class”, *CBS News* (25 October 2010), online: <https://www.cbsnews.com/newyork/news/nypd-cops-learn-skills-of-observation-in-museum-art-class/>.

<sup>26</sup> Alan Hirsch, “Going to the Source: The New Reid Method and False Confessions” (2013) *Ohio St J Crim L* 11, 803; Wyatt Kozinski, “The Reid Interrogation Technique and False Confessions: A Time for Change” (2017) *Seattle J. Soc. Just.*, 16, 301; Timothy E. Moore & Lindsay C. Fitzsimmons, “Justice Imperiled: False Confessions and the Reid Technique” (2011) *Crim LQ*, 57, 509 [*Moore & Fitzsimmons*].

<sup>27</sup> Moore & Fitzsimmons, *ibid*.



(11.8% and 1.2%, respectively, in comparison and exonerated). There were qualitative differences, however, between the physical evidence involved in the exoneration cases compared to the evidence involved in the comparison group. Out of the 15 pieces of evidence identified as used to becoming a suspect in the exonerated group, hair and bitemark evidence was used four times, but were not used once in the comparison group. Hair and bitemark evidence are based on minimal empirical support for identification of individuals and have been implicated in numerous wrongful convictions.<sup>28</sup> Differences in the type of physical evidence used to implicate suspects should be examined in future research.

Another finding from our study is the relative ineffectiveness of specific types of testimonial evidence (i.e., matched descriptions on the part of victims or the public) as used to develop a suspect. Innocence scholars know well that eyewitness testimony can be faulty and a major contributor to wrongful convictions.<sup>29</sup> The separate analysis of single-path suspects provides additional support for the potential weakness of victim testimonials. Single path Matched Description-Victim Identification was seen more often when looking at the exonerated group (9.8%) compared to the DNA inclusion group (2.9%). A single pathway often consisted of someone looking through a set of pictures (often described as a mug book) or saying they “felt” like they recognized something about the suspect during their encounter. Research continually shows that eyewitness memory is flawed, human memory is fragile, and that we only have a set number of cognitive resources available at certain points.<sup>30</sup>

With eyewitness identification not being the most reliable form of evidence, there have been efforts to reform eyewitness identification and lineup procedures. One such specific reform mechanism is to get a confidence statement immediately following identification of a suspect. Confidence is a predictor of accuracy when choosing from a photospread.<sup>31</sup> Within our results

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<sup>28</sup> Gould & Leo, *supra* note 3; Erica Beecher-Monas, “Reality Bites: The Illusion of Science in Bite Mark Evidence” (2008) *Cardozo L Rev.*, 30, 1369; Vanessa Meterko, “Strengths and Limitations of Forensic Science: What DNA Exonerations Have Taught Us and Where to Go From Here” (2016) *West Virginia Law Review*, 119(2), 8.

<sup>29</sup> Stephen L Chew, “Myth: Eyewitness Testimony is the Best Kind of Evidence” (2018) *Association for Psychological Science*; Elizabeth F. Loftus, *Eyewitness Testimony* (Harvard University Press, 1996).

<sup>30</sup> Rachel E. Dianiska et al, “A Process Perspective: The Importance of Theory in Eyewitness Identification Research” (2021) *Methods, Measures, and Theories in Eyewitness Identification Tasks*, 136-168; Nancy K Steblay, “Eyewitness Memory” in Brian L Cutler & Patricia A. Zapf (Eds), *APA Handbook of Forensic Psychology, Vol 2: Criminal Investigation, Adjudication and Sentencing Outcomes*, (American Psychological Association, 2015) 187-224, [DOI: <10.1037/14462-007>](https://doi.org/10.1037/14462-007); Gary L Wells & Deah S Quinlivan, “The Eyewitness Post-Identification Feedback Effect: What is the Function of Flexible Confidence Estimates for Autobiographical Events?” (2009) *Applied Cognitive Psychology: The Official Journal of the Society for Applied Research in Memory and Cognition* 23(8), 1153-1163.

<sup>31</sup> Candace McCoy & Jacqueline Katzman, “Raising the Standard of Evidence for Initiating an Identification Procedure” (2021) *UCLA Criminal Justice Law Review*, 5(1); Gary L Wells et al, “Policy and Procedure Recommendations for the Collection and Preservation of Eyewitness Identification Evidence” (2020) *Law and Human Behavior*, 44(1), 3, [DOI: <10.1037/lhb0000359>](https://doi.org/10.1037/lhb0000359); John T Wixted et al,

regarding victim identifications, we can see a spectrum of confidence regarding the identification itself, with some being extremely high in confidence and others being lower on that spectrum. For example, Tip-Victim Tip as a single path typically saw a victim directly implicating their perpetrator by name. Due to this implication, it is reasonable to assume they had high confidence in their choice. With this high confidence came a greater likelihood of choosing the correct assailant (Tip-Victim Tip 23.5% for comparison and 12.2% for the exonerated groups). Traveling down the spectrum of confidence you have Matched Description-Victim Identification as a single path variable. This path often saw victims choosing suspects out of large sets of photographs and identifying someone they believed was their assailant. This pathway saw the wrong person being picked more often in our sample, 9.8% to 2.9% for the exonerated group and comparison group respectively. In this same vein, Tip-Victim Tip coupled with Matched Description-Victim Identification often saw a victim seeing someone in the days or weeks following the crime and, believing they matched the description of their perpetrator, calling them into law enforcement. This scenario saw the incorrect perpetrator somewhat more often chosen with 13.2% in the exonerated group and 10% in the comparison group. What this illustrates is that when you can reasonably assume the victim to be high on the spectrum of confidence (directly naming their assailant) there is evidence that they will more often choose the correct person, supporting the potential usefulness of getting a confidence statement after an identification procedure.

Most of our cases are sexual assaults or homicides. In general, these crimes are more likely to be perpetrated by someone known to the victim,<sup>32</sup> but an important caveat to note, however, is that our sample largely consists of stranger crimes. Thus, it would be inappropriate to generalize the proximity pathway findings in this analysis (i.e., proximity led more often to an incorrect identification of a suspect) to the broader population of sexual assaults and homicides. This means, in general, it could be useful to look at people who have access to the victim to find suspects, but when you are dealing with a possible stranger crime, a broader approach could be the better option.

Some of our Proximity pathway suspects were found in the area the crime took place because of some actions known to police (i.e., an automobile accident), and it is this proximity which led to their implication as suspects. This type of situation is an example of an interesting assumption of innocent people who are convicted; that they were in the wrong place at the wrong time.<sup>33</sup>

The public tip pathway was rarely seen in the larger (i.e., two-fold or more) differences between the groups that we noted. In the multiple paths analysis, however, Tip-Public Tip was frequently seen. Tip-Public Tip/Own Actions occurred in 7.9% of the exonerated group and 20% of the comparison (DNA inclusion) group. What this variable illustrated was another possible qualitative difference between these two groups. The Tip-Public/Own Actions variable typically

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“Initial Eyewitness Confidence Reliably Predicts Eyewitness Identification Accuracy” (2015) *American Psychologist*, 70(6), 515.

<sup>32</sup> FBI, “FBI - Expanded Homicide”, (2019), online: <https://ucr.fbi.gov/crime-in-the-u.s/2019/crime-in-the-u.s.-2019/topic-pages/expanded-homicide>; RAINN, “Perpetrators of Sexual Violence: Statistics”, online: <https://rainn.org/statistics/perpetrators-sexual-violence>.

<sup>33</sup> Kenneth J. Weiss & Clarence Watson, “Wrong Place, Wrong Time: The Central Park Five” (2013) *Journal of the American Academy of Psychiatry and the Law Online*, 41(3), 470-473.

saw an individual confessing something about the crime to someone else and that person would turn them into investigators. The comparison (DNA inclusion) group had more individuals confessing or doing some sort of action leading to suspicion when compared to the exonerated group. Upon examination of the Tip-Public Tip pathways in each group, it seems plausible that Tip-Public Tips in the exonerated group are more circumstantial than direct. In the exonerated group we often saw things like an individual's truck possibly put at the scene, an individual calling in to say that someone they know matches a description, and someone telling investigators that someone they know owed money to the victim. However, for the comparison (DNA inclusion) group we often saw an individual directly confessing to friends, bragging about having a gun, or making comments about a crime. Therefore, the Tip-Public Tip pathway in the comparison group had evidence that seemed to have a greater connection to the crime than the exonerated group. Further analysis needs to consider possible qualitative differences on this topic.

While this was the second known study examining exonerated individuals, there are limitations to its analysis. First, the sample sizes were small, and some pathways contained very few cases. Drawing definitive conclusions and generalizations from these data is not advised. As noted previously, the differences between groups discussed above are findings we consider noteworthy and that warrant further investigation and replication. Second, our comparison group might not represent most individuals who are the true perpetrators. This was a group that wrote into the Innocence Project meaning, this was a group that was actively involved in their post-conviction (and post-appeals) process, and generally the circumstances of the cases and evidence included ambiguities and complexities. This sort of group might not be representative of more definitive cases. Lastly, coding cases is inherently a subjective enterprise.<sup>34</sup> While cases were coded in this research from a primary coder and coding was discussed and agreement reached when initial differences were noted after review, some uncertainty and subjectivity is inherent in the coding. We have attempted to describe our categories thoroughly to allow readers to understand the process and rationale for decisions.

## V Conclusion

How an individual becomes a suspect is a research area that is in its infancy within innocence scholarship. There have been multiple calls for an examination of the entirety of the police investigation in relation to wrongful convictions.<sup>35</sup> This is the second study known to us addressing this question. Our study was able to examine a comparison group and, in the future, researchers need to continue to think of comparison groups of adequate size to perform hypothesis testing in this under-researched field. Future analysis could also partner with law enforcement to be able to get better access to details and insights regarding decision-making early in the investigative process. There were cases where no conclusion could be made on how individuals became a suspect and partnering with law enforcement could provide greater access to investigatory materials and narratives that could inform every case leading to a more complete

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<sup>34</sup> Diane G Cope, "Methods and Meanings: Credibility and Trustworthiness of Qualitative Research" (1969) Number 1/January 2014, 41(1), 89-91; Mai S Linneberg & Steffen Korsgaard, "Coding Qualitative Data: A Synthesis Guiding the Novice" (2019) Qualitative Research Journal.

<sup>35</sup> Zalman & Larson, *supra* note 4.

analysis. While we saw differences in this study that could inform ways to improve investigations, those differences need to be confirmed with additional studies which could include questioning how specific crimes affect suspect recognition, how race and gender could come into the discussion, and how state or local areas could affect suspect pathways.

## **VI Appendix – Additional Examples of Subcategories and Discussion of Single and Multiple Pathways**

### **A. Tip-Public Tip**

Public Tip involved someone from the public (i.e., not the victim or law enforcement) offering information to law enforcement which made them further investigate the information leading to the arrest of that individual. Public Tip was a single or multiple path variable. An example of single path Public Tip suspect includes an acquaintance of the suspect calling law enforcement and saying that his co-worker owed money to the murdered victims and law enforcement then focusing on that suspect. A common multiple path Public Tip suspect was Tip-Public Tip/Matched Description-Civilian Identification. This path saw a civilian contacting law enforcement and naming a suspect after seeing a sketch. Prior research would simply classify this as something like civilian identification to keep categories mutually exclusive.<sup>36</sup> However, our analysis posits that there are two points of implication involved in a case like this. First, the member of the public must identify that a certain person matches a description (point one) and then they must call the police and give them this tip (point two).

### **B. Tip-Friend Under Duress During Questioning**

This variable encompassed those who were implicated after someone known to them was questioned for hours and they mentioned or named the person in our sample as connected to the crime, making them a suspect. This fits under the tip category because this was an example of someone offering up a piece of information to law enforcement, implicating someone else, leading to resources focused on that individual. A single path example of this variable was seen when an individual was brought in during a murder investigation from a public tip. During questioning, this individual mentioned the name of the person in our sample and only then were resources focused on that person. A multiple path suspect was seen in the example of a murder where someone came forward, hoping to gain consideration for a friend in custody, and provided information about a murder that occurred. Over the course of the next few days, this person implicated a group of people including himself in a murder. The group he implicated included people in our sample whose path to becoming suspects were, therefore, Tip-Public Tip and Tip-Friend Under Duress During Questioning because the person who initially came in was providing a public tip by offering up information to law enforcement and then was subsequently questioned for two days and provided more statements and, likely due to duress, implicated these individuals in our sample.

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<sup>36</sup> Lowrey-Kinberg et al, 2018, *supra* note 15.

### **C. Tip-Accomplice Tip**

Tip-Accomplice Tip's typical scenario saw an accomplice (from events related to the crime under question or a previous one) contact law enforcement to offer information about a crime. This was a single or multiple path variable. A single path suspect was seen when an individual in our sample was arrested with others for a burglary in another state. An accomplice called prosecutors investigating a murder in another state and offered information that his accomplice in the burglary confessed to the murder, making this individual a suspect in the murder case. A multiple variable suspect involved police investigating a robbery at a Salvation Army where they arrested a group of people, including someone in our sample. One of the suspects in that group said the individual in our sample left the area for a short period of time during the robbery, putting him in the area of a sexual assault police were also investigating. Because of this, the individual became a suspect in that crime and his path to becoming a suspect was Tip-Accomplice Tip and Previous Law Enforcement Encounter.

### **D. Tip-Victim Tip**

Victim Tip was when information was offered from the victim. It could be a single or multiple pathway. A single path Victim Tip existed when a victim directly implicated someone by name. This occurred when a victim went to a suspect's house to do laundry and later left and called the police and told them this suspect (directly implicating them) raped her. There was no matching a description here needed because they knew the person they were accusing. An example of a multiple path suspect was an individual categorized as Tip-Victim Tip and Matched Description-Victim Identification. In this case a rape victim saw an individual she believed was her rapist. This victim wrote down the license plate of the individual and provided that to authorities who then traced it to the suspect included in our sample. There are two points of implication here: 1). The victim believed the individual was her rapist (matching the description) and 2). The victim had to call that information in (make a tip).

### **E. Matched Description-Officer Identification**

This path involved the suspect being brought in by law enforcement because they matched descriptive characteristics previously provided, officers noticed it, and officers made the arrest. Law enforcement employees can also be considered officers for this variable. A single path example involved an individual who was found in the area of a rape and matched the description given from the victim. This person was then detained and brought for a show-up and identified. This pathway can also include evidentiary material. For example, a robbery and murder occurred on a busy street and multiple witnesses described the getaway vehicle. Police saw a similar vehicle and arrested the people inside, bringing them in for an identification. This subcategory also included multiple pathways. An example of one such multiple pathway is a rape that occurred where the victim came in and helped create a composite by using a method of operation kit which overlaid facial features to create a likeness of the suspect. A civilian police employee then picked a series of photos from this likeness and created a lineup with them. Our suspect was subsequently picked out. This means the law enforcement employee had to pick out our suspect from the likeness (Matched Description-Officer Identification), the victim had to recognize someone in the group

(Matched Description-Victim Identification), and the victim had to provide information of what the suspect looked like to create the likeness (Tip-Victim Tip).

#### **F. Matched Description-Civilian Identification**

Matched Description-Civilian Identification was an identification by the public based on a description of the suspect provided to them. A common multi-path variable for this group was Tip-Public Tip and Matched Description-Civilian Identification. An example of this from our sample includes an individual who was identified by the public after the second victim in the case assisted law enforcement with creating a composite sketch. That sketch was broadcasted on TV and police received a call about the suspect believed to be matching the description leading to an arrest. There was no single variable suspect for this path.

#### **G. Matched Description-Victim Identification**

This variable was for when the victim(s) in the case identified a suspect based on their matching of a description of the perceived perpetrator. A typical single pathway example saw victims going to law enforcement precincts, viewing mug books, and identifying suspects from the mug books. This was only a single pathway because law enforcement was providing photographs to victims. Therefore, law enforcement was providing victims with the information, not the other way around.

A common multiple pathway pairing for this variable was with Tip-Victim Tip and Matched Description-Victim Identification. An example of this was when a victim saw their suspected perpetrator around the area they were in, believed they recognized them, and called the police to say they saw their rapist.

#### **H. More Examples of Multiple Variable Pathways Cases**

Most of the pathways occurred as single pathways in some cases and as part of multiple variable pathways in others. For example, a multiple variable case involving Own Actions was someone being stopped because they matched the description of a suspect and then they said they were in the vicinity of the murder when it happened. There was more to this case, but this illustrates how more than one variable can be involved because they matched a description and their verbal actions led to suspicion. Another case involved Matched Description-Officer Identification and Physical Evidence. In this case, an individual was found matching the description of a rape suspect and was also in possession of a radio that was taken from the scene. Another multiple pathway case involved Own Actions and Prior Law Enforcement Encounter where an individual seen driving around where a body was found multiple times and became a suspect after it was found he had prior sex offenses on his record.

An example of a more complex set of pathways in our analysis is a murder case in which someone was stopped and brought in for questioning because he looked like someone police were looking for in connection with the murder. Police realized this person they brought in was not the person they were searching for yet questioned him anyway. During questioning, this individual said they were in the area of the murder and was questioned harder and therefore, this individual

became a suspect due to Matched Description-Officer Identification (because he looked like the person police were looking for), Own Actions (because he said he was in the area of the murder leading to more suspicion), and Police Action (because they brought in the wrong person and questioned them anyways).