Original Research

Prosecutors' Perspectives on Biological Evidence and Injury Evidence in Sexual Assault Cases

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Abstract

Little prior research has explored how prosecutors perceive and utilize biological and injury evidences in sexual assault cases. In this qualitative study, semistructured interviews were conducted with assistant district attorneys (ADAs) working in an urban district attorney's office in the northeastern United States. ADAs were asked to describe how biological and injury evidences could be probative and their strategies for using this evidence. The interviews suggest that prosecutors perceive the probative value of biological and injury evidences on a continuum, varying based on case characteristics. Prosecutors felt that undergoing a forensic medical examination in itself supported victims' credibility. Biological evidence bolstered victims' credibility if it matched the victim's account better than the defendant's. They perceived DNA evidence as helpful when it identified unknown suspects, confirmed identification of suspects by other means, or rebutted defendants' denial of sexual contact. DNA evidence was also helpful when victims were incapacitated, too traumatized to recall or talk about the assault, or too young to identify assailants, and when police used the information in interrogating suspects. The biggest limitation to biological

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evidence prosecutors cited was overcoming the consent defense. The ADAs reported they used DNA evidence even when it was not particularly probative, because it confirms the correct person is being prosecuted, it communicates the victim's and prosecution's seriousness, and it meets jury expectations in trials. Prosecutors found injury evidence useful because it corroborated victims' accounts and helped refute defendant claims of consensual sex. The findings may assist in educating others about biological and injury evidences in these cases, and could inspire professionals and advocates to work to develop and support a broad range of investigative methods.

Keywords
sexual assault, prosecution, biological evidence, injury, forensic evidence

Many victims of sexual assault undergo forensic medical examinations that can be long and grueling with the belief that injury evidence and biological evidence can help hold offenders accountable (Du Mont, White, & McGregor, 2009). Our society has invested in developing systems for collecting and assessing these forms of evidence with the same belief (see, for example, Greeson & Campbell, 2015). Research has not examined in any depth, however, how prosecutors perceive injury evidence and biological evidence in sexual assault cases and how they use these forms of evidence to pursue cases (see Briody, 2002). Through a qualitative analysis of interviews with eight assistant district attorneys (ADA) in an urban district attorney's office in the eastern United States, this article explores prosecutors' use and appraisal of biological and injury evidences in sexual assault cases.

The substantial difficulty of prosecuting sexual assault heightens the importance of understanding the utility of these forms of evidence for prosecuting sexual assault. According to 2015 Uniform Crime Reporting data maintained by the Federal Bureau of Investigation (U.S. Department of Justice, Federal Bureau of Investigation, Criminal Justice Information Services Division, n.d.), 37.8% of rapes reported to police agencies were cleared by arrest or exceptional means. The category of exceptional clearance is a designation that is intended to mean that the police have identified the alleged perpetrator, but something beyond the police agency's control prevents them from making an arrest (Spohn & Tellis, 2011). Court data from the 75 largest counties in the United States indicate that 27% of felony defendants charged with rape were not convicted in 2009, with case dismissal accounting for the largest percentage of these non-convictions (24%; Reaves,

2013). Only about one third of rape cases result in the conviction of the suspect of the original felony charge. In sum, these data show that, of sexual victimization in the United States that is reported to the police, only a small percentage results in arrest (between 12% and 45%; Alderden & Ullman, 2012; Bouffard, 2000; Spohn & Tellis, 2012), charging (between 7% and 27%), and conviction (between 3% and 26%; Lonsway & Archambault, 2012). More effective use of biological and injury evidences may increase arrest and prosecution in sexual assault cases by identifying suspects and bolstering victims' credibility. Quantitative studies of the relationship between injury evidence and biological evidence and legal outcomes in sexual assault cases (see Cross et al., 2014, for a review) have not fully illuminated the process of assessing and using these forms of evidence.

Only a few studies have explored how prosecutors think about and use injury and biological evidence in sexual assault cases. Peterson, Johnson, Herz, Graziano, and Oehler (2012) conducted a focus group with six ADAs from the Los Angeles County District Attorney's Office as part of a larger study. The ADAs reported that DNA testing was "vital" for corroborating victims' accounts and supporting their credibility, though they felt that the cost of testing and time required were too substantial to justify testing every case and testing was not strictly necessary if the investigation produced other corroborative evidence. They saw early availability of DNA evidence as "leverage" for obtaining guilty pleas and avoiding trials. This brief report on the focus group provided valuable information on ADAs' assessment of the value of DNA evidence and on DNA testing policies, but lacked information on how ADAs used biological evidence, in what ways it was valuable, and for which cases. The focus group also did not address the use of injury evidence.

Kruse's (2012, 2016) ethnographic study examined the use of biological evidence in sexual assault cases in the context of a more general study on the role of forensic evidence in the Swedish criminal justice system. Kruse argues that medical and laboratory findings are not useful as objective indicators in isolation, but only when prosecutors make them meaningful by weaving the findings together with other evidence from the investigation to create a compelling narrative about the case, a process that Kruse terms "legal story-telling." The development and use of forensic evidence involves translation among the different ways that police detectives, crime scene investigators, crime laboratory professionals, prosecutors, and judges understand this type of evidence. Kruse's work provides insights on how knowledge and communication processes underlying a criminal case investigation influence the use of forensic evidence. However, it does not explore sexual assault cases in depth. Moreover, the Swedish system differs substantially from many other countries because one crime laboratory serves the entire

country, and verdicts are determined by teams of judges combined with lay assessors who are nominated by political parties and appointed by municipal councils—no juries are involved.

One question of interest in the current study is the possibility of a "crime scene investigation (CSI) effect" in sexual assault cases. The CSI effect refers to jurors' developing unrealistic expectations for forensic evidence from having watched fictional television shows, such as the columbia broadcasting system show CSI, about collection of forensic evidence and its use in prosecution (see, for example, Cole, 2015). A 2005 survey of 102 prosecutors by the Maricopa County Attorney's Office in Phoenix, Arizona, found that 38% reported losing cases because of the CSI effect and 72% believed that jurors who were CSI viewers unduly influenced other jurors (Maricopa County Attorney's Office, 2005, cited in Smith, Stinson, & Patry, 2011). Scientists, however, disagree whether a CSI effect on juror expectations exists (Shelton, Barak, & Young, 2011; Smith et al., 2011; Young, Barak, & Shelton, 2009); there is no empirical evidence to date on its effect on trial outcomes. Further study of the possibility of a CSI effect and its actual impact on prosecution outcomes in specific types of cases is warranted.

Method

Using semistructured interviews with ADAs, the current study sought to develop a thorough and nuanced understanding of how they perceive and use biological and injury evidences when prosecuting sexual assault cases. The authors conducted interviews with eight ADAs working in an urban district attorney's office in the northeastern United States. All of the ADAs were part of a unit specifically organized to prosecute child, adolescent, and adult sexual assault cases. Unit supervisors, who oversaw the activities of the ADAs and who try cases themselves, were included in the sample. All but one of the ADAs were female and all were non-Hispanic White. We did not ask their age, but most appeared to be in their 30s and 40s.

Prior to their interviews, researchers instructed the ADAs to select and review cases in which they believed the injury evidence and/or biological evidence was probative (i.e., providing evidence the ADA could use in court) and cases in which the evidence was not probative. This method has been used previously in related research (e.g., Spohn & Tellis, 2012) and has the benefit of refreshing interviewees' memory and grounding their observations in case experience. Prosecutors typically chose to discuss cases involving female victims and male assailants. The victim–assailant relationship varied across the cases selected; some cases prosecutors discussed involved strangers while others involved relatives, casual acquaintances, and intimate

partners or former intimate partners. Some of the cases discussed involved child and young adolescent victims, although most involved older adolescent and adult victims as the prosecutors interviewed typically handled those cases. There was little or no discussion of the race and ethnicity of victims and assailants.

We use the term *injury evidence* to refer to documentation of injuries inflicted in the assault and *biological evidence* to refer to body products found on the victim or the victim's clothes or at the crime scene and the DNA evidence that may be derived from these products. Using the selected cases to ground the discussion, the ADAs were asked to describe the way in which biological and injury evidences could be probative or not, and their strategies for using these forms of evidence. Prosecutors were also asked whether they perceived a CSI effect in sexual assault cases, and how it affected their work with biological and injury evidences. The use of interviews helped us uncover information that was not included in the case files but that otherwise informed the prosecutorial decision-making process.

The first two authors conducted the interviews together, each lasting approximately 60 to 75 min. Interviews were audio-taped if participants consented; if not, the interviewers took detailed notes and typed accounts of the interviews from these notes directly after the interview. Following the analytical methods described in Miles and Huberman (1994) and Ayres, Kavanaugh, and Knafl (2003), researchers used a four-step analytical process: initial code identification, within-interview analysis, across-interview analysis, and consensus analysis. During the initial code identification, researchers independently coded three interviews each and met to establish a codebook with definitions for each descriptive code and potential subcodes. Significant statements (i.e., excerpts) representing each code or subcode were identified, agreed upon by both coders and used as examples for each code. These initial codes were then used to guide researchers during the within-interview analysis. During this analytical stage, researchers read each interview separately to get the "gestalt" of each and identify potential themes and additional codes. In addition, the researchers conducted within-interview analyses to discover significant statements, patterns, or phrases for each prosecutor. During this process, researchers independently coded each transcript line by line. Once the within-interview analyses were completed, researchers then conducted across-interview analyses by looking for commonalities and differences across interviews. The researchers then organized the across-interview findings into preliminary themes related to the research questions and study aims. Once the across-interview analyses were completed, the researchers met to compare findings and develop a consensus analysis.

No information identifying victims is presented in the results; in a few instances, minor facts were altered to protect victim identities. Some quotes presented below pertain more to investigation than prosecution. We decided to include them in this article because (a) we wanted to report faithfully the range of responses received, (b) some investigation directed by thedistrict attorney's (DA's) office takes place after arrest to build a case, and (c) this prosecutor's office worked closely with the sexual assault unit in the county's major city, often conferring with police even prior to arrest.

Results

Prosecutors reported that biological and injury evidences were useful in multiple ways for prosecuting sexual assault. They described a variety of defense strategies to counter biological and injury evidences.

The Value of Obtaining a Forensic Medical Examination

Prosecutors felt undergoing a forensic medical examination was vital in itself because it helped support the credibility of the victim. This held true even for acquaintance cases in which the identity of the assailant was known. These prosecutors believed juries would perceive victims' decisions not to submit to forensic medical examinations as atypical for someone who was truly raped, and as a result, "the DA's office struggles with [victims declining a rape kit] because juries struggle with it." One prosecutor offered this explanation:

> At trial, you're gonna say, "So you were saying you were raped, but you didn't bother to go to the hospital, among other things, to find out if perhaps you'd contracted a disease? Your health was compromised or that evidence could be collected." We can always explain why someone didn't do it, but we're always starting from a defensive position when we do that. . . a rape kit is always important. (ADA 4)

Another prosecutor talked about how the intensive demands that forensic medical examination kits require of victims help solidify the credibility of the victim, because only "true" victims could consent to such invasive procedures. Here again, the primary focus was on how the jury would perceive the victim's behavior following the assault.

> Everybody has to hear that the victim consented to a two-hour or more invasive procedure, which helps support the credibility of their claim. (ADA 7)

The Value of Biological and Injury Evidences

Prosecutors identified various ways in which biological and injury evidences were helpful. Depending on the case, the perceived impact of biological evidence ranged from settling the issue of guilt ("dispositive," in one ADA's words), to enhancing the value of other evidence, to simply demonstrating the seriousness of the prosecution team and victim in going forward with the case, even if the biological evidence was not probative.

Biological evidence can identify unknown assailants. One perceived strength of biological evidence was its potential for helping police identify suspects in stranger cases. One prosecutor provided this explanation:

> In [stranger rape] cases, the biological evidence is. . . —almost always—dispositive. . . In the age of DNA, the biological evidence is going to tell us who did that. The case then becomes essentially untriable from the defense perspective. Really the only thing the defense can do is nibble around the edges and say the chain of custody is cloudy or the testing is unreliable in some crazy way, but really, there's no defense. . . (ADA 4)

> Lot of those [stranger rape] cases are solved by CODIS where he gets arrested two years later for something completely different and gets a felony conviction for unarmed robbery, something completely unrelated. Then all of a sudden, his DNA is in CODIS and we have it solved. (ADA 3)

Occasionally, biological evidence is the only means through which a stranger assailant is identified, according to the prosecutors. Crime laboratories can derive a DNA profile from biological products (e.g., semen, blood, hair, etc.) found during a forensic medical examination of the victim or on victims' clothes, bed sheets, or other objects. The crime laboratory can enter DNA profiles that meet quality criteria into the Federal Bureau of Investigation's national Combined DNA Index System (CODIS) database. CODIS contains two indexes (Federal Bureau of Investigation, n.d.; Telsavaara & Arrigo, 2006). The Convicted Offender and Arrestee Index contains DNA profiles of persons convicted of violent crimes, who are required to provide biological samples. Many states also require arrestees to provide DNA samples for this index. The Forensic Index contains DNA profiles generated from investigation of other crimes. Submitting DNA profiles can identify an unknown suspect if there is a match or "hit" to another DNA profile in one of these indexes. CODIS hits can occur years after the assault, but prosecutors talked about the need to be alert to obtaining an indictment on the DNA profile of an unknown suspect before the statute of limitations on the crime expires. One ADA offered this example:

> It was a complete stranger. I think he was selling magazines or something like that in her dorm room. . . She let him in to look at the brochure of magazines, and he raped her while inside the apartment and left. . . She basically immediately goes to the hospital and gets a rape kit. They identify the presence of sperm in her rape kit. They create a DNA profile. . . as soon as we got CODIS, it goes into CODIS. There's no hits [and] basically goes unsolved. . . before the statute of limitations tolled, another DA indicted the DNA profile. . . Then three years later, this past fall or this past winter, the gentleman who was the source of the DNA basically was arrested in another state. . . (ADA 2)

In other cases, the prosecutors discussed that the police investigation revealed the name of the suspect through other means (e.g., eyewitnesses to the contact between the suspect and victim), and biological evidence is used to confirm the suspect as the perpetrator of the sexual assault. For example, in one case an ADA described, a stranger assailant used the victim's cell phone during the crime and police identified him using telephone records, but used DNA to establish that he had committed the sexual assault. Police can obtain a biological sample (e.g., an oral swab) from the suspect voluntarily or through a court order, or much more rarely, through a biological sample collected during an investigation (e.g., saliva on a drinking glass). DNA from this comparison sample is then matched with DNA collected from the victim.

Prosecutors also felt that the value of DNA evidence for identifying perpetrators went beyond stranger cases. They also saw DNA as important for identifying the assailant when the victim's ability to do so was compromised: for example, when victims are incapacitated at the time of the assault, too traumatized to recall or discuss the perpetrator, or too young to identify the assailant or testify to their knowledge. One ADA illustrated this point by discussing a case involving an 11-year-old girl who had been assaulted by someone close to her family.

> [The victim] came stumbling back to the area wearing only a long shirt. . . She was obviously traumatized. . .and she was only 11 years old and. . .she had trouble talking about the perpetrator and who he was. It became clear that she knew him. . . She was talking around it. . . It was saliva that was recovered, I think from her breast, that ultimately had his DNA on it. That took this case from being a very, very challenging case to prove in terms of identity, who actually did this. . . and made it basically a slam dunk. (ADA 4)

Biological evidence rebuts defendants' denial of sexual contact. When suspects denied sexual contact, ADAs were often able to use DNA evidence to undercut suspect statements and demonstrate that suspects had sexual contact with the victim. Sometimes this was critical for the prosecution:

> If there was no biological evidence in this case, I don't think we would have a case. I don't think it would've been charged. Given what we did have, we charged it, and it's an open case. . . it's the combination of the DNA being there and him saying that we never had sex. (ADA 1)

An ADA also reported that police sometimesused DNA evidence to catch suspects unawares and augment the biological evidence with self-incriminating information obtained through interrogation. The ADA share this example:

> [following the suspect's identification through CODIS] . . .within moments of him being arrested, they tell him that, "We're here about a sexual assault that occurred in [location]," and they ask him. . . "Were you ever in [location]?" He says, "I've never been to [location] in my life. I've never been to [location]. . . Did he ever spend time there? Did he ever vacation there? Trying to give him every opportunity to admit he was at least in [location]. When he says he's never been there, they then say, "The reason that we arrested you is your DNA has been linked to a rape kit from [location] in 1996." Then once he's confronted with the fact that his DNA is there, now completely predictably, it changes to, "Oh, you know what? I think I was in [location]. I think I was there in 1996, and I remember having consensual sex with somebody in [location] in 1996." That's something at trial, we'll be able to show his changing versions, his consciousness of guilt evidence. (ADA 2)

Sometimes contact with the victim was admitted in these cases but sex was denied; in some of their cases, claiming that sex was consensual was either implausible or not a defense because the victim was a minor. The ADAs mentioned cases in which a father, an adult cousin, and a mother's paramour assaulted victims and DNA evidence countered their denial. In other cases, the defendant denied having met the victim or having contact with her, and no other solid evidence placed him with her. For example,

> . . .[W]e prosecuted a security guard who propositioned a prostitute, and then when he got her into the building where he was a security guard, raped her and beat her up too. . . He gave a full statement to the police that he wasn't even working that night. He had never met this woman, didn't know her, no contact. We had records that show he was working that night, records that show that he had contact with her, we had his DNA. (ADA 3)

An ADA also cited a murder case in which DNA from a vaginal swab collected during an autopsy and the assessment of the age of the sperm found established that the defendant had sex with the victim around the time of the murder. As one ADA put it,

> The biological evidence is important because it places him there and it forces him to say he had sex around the alleged incident. (ADA 6)

Yet prosecutors shared that using DNA to rebut defendants' denial of sexual contact applied to only a minority of cases, as defendants usually claimed that sex was consensual:

> I don't think that there are many cases in which there is the suspect's DNA found at the scene, and you have a suspect just completely denying any sort of contact. I think it is much more likely that, when the parties are somewhat known to each other, you're like, "Oh, yeah, maybe I shouldn't have done that, but yeah, we had sex." (ADA 1)

Biological evidence supports victim statements. Prosecutors also described cases in which they believed the biological evidence was important because specific information about the biological evidence matched the victim's account better than the suspect's account, thereby supporting the credibility of the victim. In the examples given, the specific information that supported the victim's account was the location of the biological evidence. Some prosecutors felt that such evidence was particularly helpful in cases when they expected that the defense would question the victim's credibility.

> Sometimes we have pretty unfortunate victims. Having something that's a little bit more objective than subjective is definitely helpful. There might be a situation in which a prostitute is accusing a john of raping her. . . the john's gonna say, "Yeah, we had sex because I paid her 50 bucks. . . If the prostitute says, "Yeah, and he ejaculated on my pillow, and here's my pillow. Look, test this." Can he still come in and say, "Yeah, but it was still consensual, and I was paying her for it"? Yeah, but it still bolsters your victim. (ADA 1)

The following exchange further illustrates how prosecutors see the value of biological evidence for supporting victim statements and overcoming concerns that the victim's credibility will be challenged.

> If she says, "He bit my breast," and you've got a bite mark on a breast with saliva that matches the defendant, that's hugely corroborative. . . [T]he more we can show the victim was accurate about it, the more likely the jury is to accept the biological and the injury evidence for what she says it is. . . if you just do a rape kit and take a statement from the survivor, you will get a lot of useful evidence in some cases. Jurisdictions that stop there. . . are missing the point, which is in most cases, there is at least a significant risk that her credibility is still gonna be the issue in the trial. The more of her testimony you can corroborate objectively through other witnesses, through records. . . the more likely the jury is to believe. (ADA 4)

DNA confirms that the correct person is being prosecuted. The ADAs reported that the value of biological evidence was more limited in many cases because the suspect and the victim knew each other or the suspect admitted to sexual contact with the victim but claimed it was consensual. Yet prosecutors still felt the DNA evidence was important in these cases, if only to confirm that they were prosecuting the correct person. Even if the suspect had admitted sexual contact throughout the pretrial phase of the cases, they felt that there was no guarantee that the defendant would do so at trial. Presenting biological evidence supports the victim's statements regardless of what the defense does, in their view. One ADA described it as follows:

> We still have the burden of proving it. . .you can't assume that the defendant is gonna take the stand and testify to consent, so assuming that he presents no evidence, which he's under no obligation to do, we still have a burden of proving the elements of the crime and the fact that the defendant is the person who committed the crime. (ADA 2)

Biological evidence communicates the victim's and prosecution's seriousness. ADAs described the additional psychological effects that presenting biological evidence has on juries, even in consent defense cases. They felt that presentation of biological evidence helps demonstrate the seriousness with which the criminal justice system takes the complaint and can add weight to the victim's testimony even when the defendant has admitted sexual intercourse. The prosecution and defense may have the option of agreeing or stipulating that DNA testing was completed and the DNA profile matches the defendant's, but prosecutors may avoid stipulation to present expert testimony from the crime laboratory about the DNA evidence. One ADA explained,

> In cases where the defense is consent, the defense attorneys usually want to do that kind of stipulation because he doesn't want us to present a whole lot of DNA evidence. We generally will present the evidence and not stipulate to it. . . The reason for that is to convey to the jury that this was a thorough, detailed scientific investigation, because otherwise we can have very little to present other than the victim. In an acquaintance rape case, we have the victim, we have the DNA, that's it. If all we have is that and a stipulation, it's like, "Wow, there wasn't much investigation done." Psychologically it feels like a thin case. Whereas when you present the DNA evidence, it feels much less thin. . .[T]here's also a suggestion when you present DNA evidence, psychological suggestion, that the police believe her, because look at all the stuff they went through. . . (ADA 4)

Several prosecutors reported that they felt it was important to present biological evidence (including DNA evidence) because of juries' expectation of

forensic evidence (the CSI effect), to the point of having to explain its absence as well:

> I think it [the CSI effect] is real. I haven't talked to jurors after a trial, but after talking to friends and family members I feel that they expect to see something from the lab—DNA, prints. I think when there is no DNA evidence that the jury may find it hard to convict. . . The jury expects to see it there. . . even when it should not matter. For instance, I have brought a fingerprint expert in to explain to the jury why there was no fingerprint found at the scene, to explain to them how some surfaces there will not be fingerprints found. . . It has changed the criminal justice system. . . (ADA 6)

> I think now, with all of this stuff, we're always concerned about the CSI effect. . . I do think that there's something to be said for juries thinking that DNA solves everything. It doesn't because there's a lot of things that it can't tell you. (ADA 1)

In sum, all of the prosecutors were able to specifically identify cases in which they felt the biological evidence was probative. When viewed in total, the examples they provided suggest a wide range of ways in which biological evidence aided police and prosecutors investigating and prosecuting sexual assault cases. Although most acknowledged biological evidence was particularly important in identifying unknown suspects in stranger sexual assault cases, their perceptions of the value of biological evidence did not stop there. Rather, all identified other ways in which biological evidence was useful to their cases, including the ability to provide evidence during trial that objectively linked the defendant to the crime scene, develop timelines of events, assist in interrogations of suspects, corroborate victim statements, and establish the elements of a crime.

Injury evidence corroborates victims' accounts. The ADAs interviewed uniformly felt that injury evidence was particularly helpful to their cases. Unlike biological evidence in which the value of the evidence was highly contingent on the circumstances of the case, injury evidence was perceived by ADAs as useful regardless of case characteristics. There was little to no variation on how ADAs perceived the value of injury evidence in sexual assault cases. Many of the ADAs felt that injury evidence corroborated the victim's version of events and could refute suspect claims of consensual sexual contact. One ADA provided this observation:

> I think it's rare that you get it [injury evidence]. Most sexual assaults that we prosecute don't accompany a separate violent act apart from the rape itself.

> Sometimes, you see it when the women fight back. Sometimes, you see it when the offender is intoxicated or high too, or there's a robbery. There's something else going on in addition to the violence of the rape itself. . . [I]f you've got the DNA and you've got injuries, even if they knew each other, how do you explain what happened to her separate and apart? She didn't consent to getting her face beaten in or getting a bloody nose. . . I think that goes a long way in selling to a jury why she should be believed to the point that you're sending him to prison. (ADA 3)

When asked about the role injury evidence has in the case, one ADA offered this observation:

> Judges, juries love injuries. They love photographs of injuries. They love medical records depicting injuries 'cause it's another thing to corroborate what the victim's saying. (ADA 2)

Thus, injury evidence could also corroborate victim statements and help prosecutors build their case against the alleged perpetrators. Injuries were perceived as being suggestive of the serious nature of the incident and could help undermine claims of consensual sex, because sex does not typically result in serious bodily injury when it involves consenting adults.

Defense Strategies Against Biological and Injury Evidences

Despite the positive assessments of how biological evidence aided the prosecution of sexual assault cases, prosecutors also acknowledged its limitations. As one prosecutor noted,

> I would certainly rather have biological evidence than not have biological evidence, but I am. . . not convinced it's gonna completely knock your case outta the park. (ADA 1)

The consent defense. The single biggest limitation prosecutors cited was the challenge of overcoming the consent defense. According to the ADAs, most of the cases presented to the DA's Office for prosecution are cases involving victims and suspects who know each other. They found these incidents challenging because they are "she said, he said" cases, and the primary defense offered by suspects is that the sexual contact was consensual. Many of the ADAs interviewed reported that in these cases, the availability of biological evidence is less critical. As one ADA observed,

> If the suspect is a relative or acquaintance, it quickly becomes a consent defense and biological evidence is not probative. (ADA 8)

ADAs described many different types of cases in which they faced overcoming the consent defense, not just cases involving suspects who were known to victims. They thought that the consent defense can occasionally be effective in stranger cases if the suspect admits sexual contact and can plausibly argue that sexual contact was consensual. Defendants, they said, may even use the consent defense when victims are below the age of consent with the hope of obtaining jury nullification, that is, juries refusing to apply the law because they believe a conviction to be unjust in the case.

The ADAs recalled cases in which suspects originally denied sexual contact with the victims until confronted with forensic evidence. Once confronted with that evidence, the suspect would then admit there was sexual contact but claim it was consensual. The ADA observed that his strategy was sometimes successful if the defendant could provide a plausible reason for initially lying about the sexual contact.

> It was really strong DNA and fingerprints, and he at first tried to refute the DNA . . .then turned to consent in the middle of the trial. His new defense became consent because it's a lot easier to challenge the credibility of a human than it is to challenge the science of DNA or fingerprints. (ADA 2)

> There are certainly some cases that we've reviewed for indictment and actually prosecuted where the suspect gives an initial statement that he didn't—doesn't know her. It didn't happen. Then we get his DNA and, in fact, it's in the kit, and that on paper looks like a slam dunk. It looks like the nail in their coffin. The reality is, a lot of times, we see them go to trial and the defendant can occasionally come up with a valid reason why he lied to the police in the first place. . . [Describing one case in which the defendant initially denied sexual contact] [A]t trial, he got up and testified that he lied to the police because he was scared because he was married and he was afraid to lose his job, and he was acquitted. (ADA 3)

> Some type of acquaintance situation where either they were out on a date, they met online, they were coworkers. Any scenario that you can think of where the two people know each other, ranging from just a casual date to they had been in some type of dating relationship. . . In those cases, DNA really doesn't help because it's always a consent defense. (ADA 3)

Alternative explanations for DNA findings. Another defense strategy prosecutors encountered was plausible alternative explanations for why DNA was recovered from the victim or crime scene. Such a strategy might be particularly salient with child and adolescent victim cases in which consent is not a defense. One ADA gave an example from a child case:

> This case was a girl, claimed her uncle sexually assaulted her and put his mouth on her nipples and raped her, among other things. She got a kit done. They swabbed her nipple. His saliva was found on her nipple or amylase on her nipple. He claimed that she's a liar. They got in a fight that day—a physical fight—and he spit on her and it was spit that was on her chest area. . .they always explain it away. (ADA 5)

Questioning evidence collection and testing procedures. Although a less common and less reliable tactic, the prosecutors felt that defense attorneys were occasionally successful by challenging the integrity of procedures (e.g., chain of custody) or questioning crime laboratory conclusions on purportedly scientific grounds. At least one ADA shared a case in which she believed the strategy worked to question the reliability of the DNA evidence.

> [About a case with a hung jury] The defendant, through counsel, got up there and said, "DNA can stay alive for four days. You heard that from the Commonwealth's expert. You heard the Commonwealth's person from the crime lab, say she doesn't know how it got there. She could just say this, that, and the other thing. Nobody, at any time, ever identified my client [through witness accounts]. The Commonwealth wants you to believe that, just because that's his DNA in there, that he did this." It [this argument] convinced somebody [on the jury]. (ADA 1)

ADAs reported that the probative value of biological evidence was not necessarily static, but could sometimes change over time. They thought that the value of biological evidence could increase or decrease during the course of the investigation as additional information is gathered, suspects and witnesses are interviewed, and the evidence is scrutinized. One ADA illustrated this with a case in which she felt the biological evidence was initially valuable because it helped identify the suspect in the case, but then described how later the significance of that evidence was questioned. The case involved a teenaged daughter who reported being sexually assaulted in her home by an unknown male, who later was identified through biological evidence as the mother's paramour.

> What started off as a bad case, and then got to be a good case because his DNA matched and he said he never touched her, then goes into the realm of, wait, how did that happen? [The mother's DNA, however, was also found on the clothes the alleged victim was wearing] Could she have put on mom's clothes? If she put on mom's clothes, is his sperm in there because he had consensual sex with mom? How do you explain the semen on the clothes in the bedroom that the cops recover, after she's at the hospital saying it happened in the

> bedroom, so they go to the bedroom and they find the clothes? I think it just—I'm hoping that it doesn't give the defense attorney enough smoke and mirrors to be able to say, "But, the [state] can't explain to you how mom's DNA is on the clothes the victim was wearing." (ADA 1)

In this case, the presence of the mother's DNA on the victim's clothes, which was one source of the DNA match with the boyfriend, complicated the ADA's case because she felt that the defense could use the fact that the mother's DNA was found on the clothes to establish reasonable doubt. Thus, from the ADA's perspective, the biological evidence was both helpful and potentially hurtful to the case.

Explaining away injuries. Prosecutors mentioned cases in which the defense tried to explain away injuries, though they did not feel that this was successful very often. One strategy was to argue that they were not the result of assault.

> [with] less serious genital injuries. . .experts are forced to concede that injuries like this can be suffered during consensual sex, especially if people enjoy engaging in rougher varieties of sex. (ADA 4)

Another defense strategy prosecutors had observed was shifting blame for the injuries to someone else. One ADA described a case in which the victim was sexually assaulted and sustained nongenital injuries. The suspect was acquitted after he claimed that the sex was consensual and the injuries were sustained later when someone else assaulted the victim.

Discussion

Our data reveal that prosecutors are actively engaged in the development of narratives to explain the evidence in the case from the perspective of the jurors, and these narratives were used to help them not only decide on whether the case should be pursued or what further investigatory activities were warranted, but how the case would be presented in court should they decide to try the case. Our findings reflect Kruse's (2012, 2016) concept of "legal storytelling" in that biological and injury evidences are interpreted through existing cultural scripts and case characteristics. For prosecutors, this means interpreting biological and injury evidences from the perspective of case convictability. Many of our findings confirm past research on prosecutor concerns over case convictability (see Frohmann, 1997); prosecutor perceptions about biological and injury evidences were influenced by how they believe

jurors would react to the evidence and whether they felt conviction was likely. Several of the stories shared by prosecutors on the probative value of biological and injury evidences centered on issues related to suspect identification, victim credibility and corroboration, and seriousness of the case, factors which have been previously identified in the literature as key factors in securing convictions in sexual assault cases (Frohmann, 1997; Gray-Eurom, Seaberg, & Wears, 2002; McGregor, Du Mont, & Myhr, 2002).

Our findings indicate a range of case situations in which prosecutors saw biological evidence and injury evidence as probative. Biological evidence can be valuable in both stranger and non-stranger cases, albeit in somewhat different ways. Prosecutors felt that, even in cases in which the victims knew their assailants (e.g., intimate partners, relatives, and acquaintances), biological evidence had the potential to corroborate victim statements and positively impact victim credibility. Biological evidence was used by prosecutors in many different ways, contingent on other case factors. In some cases, the biological evidence was simply used by prosecutors to prove the most basic elements of the case—that sexual contact occurred between the suspect and victim. In other cases, biological evidence was used to assist in finding other evidence, to undermine suspect statements or demonstrate victim truthfulness. Prosecutors valued victims having a forensic examination in itself, which was consistent with results from previous studies (Alderden, 2008; Bouffard, 2000; Johnson, Peterson, Sommers, & Baskin, 2012; Tasca, Rodriguez, Spohn, & Koss, 2013).

Injury evidence was more likely than forensic evidence to be identified by prosecutors as probative. Most prosecutors believed injury evidence significantly helped their cases because it provided evidence of the seriousness of the incident and reduced the likelihood that suspects could successfully claim consent. Prosecutors did note instances in which the suspects' defenses attempted to provide alternative explanations for victim injuries, but overall, prosecutors tended to report more confidence that injury evidence was perceived by jurors as indicating a sexual assault occurred. In contrast, biological evidence was perceived as being more susceptible to defense strategies, particularly the consent defense.

According to the ADAs, the probative value of biological evidence in sexual assault cases is contingent on the characteristics of the case and other evidence available. One useful metaphor is to consider the probative value of these forms of evidence as being on a continuum. Prosecutors perceived biological evidence as very probative when it helped identify suspects and in cases in which the consent defense was not plausible. Biological evidence was seen as moderately probative when the evidence identified the suspect or supported victim statements of sexual contact, but other evidence was still

needed to help prosecutors overcome the consent defense or deal with defense claims about the reliability of the DNA evidence collected. Biological evidence was perceived to be minimally probative when the presentation of biological evidence demonstrated belief in the victim and the thoroughness of the investigation, but was not otherwise key evidence in the case. The perceived significance of biological evidence is not necessarily static but could be fluid. Biological evidence that was initially deemed critical to the case may be less so as other evidence is gathered and the defense develops its strategies. Or it may become more important to prosecutors, if, for example, the defendant admits sexual contact pretrial but denies it during the trial.

The public's awareness of scientific and medical progress is an important part of the context for assessing the value of biological evidence. No assessment of the effect of these forms of evidence can ignore the probability that the public and therefore juries may expect this sort of evidence.

Limitations

This study involved a small sample from a single jurisdiction, limiting the generalizability of the findings, particularly as the DA's Office was well-coordinated with the police sexual assault unit. We relied on prosecutors to identify cases that exemplified how they perceived the value of injury and forensic evidence. This methodology produced very detailed accounts of how injury and biological evidence were perceived, but there is also the possibility that prosecutors may have focused on cases that were unique or memorable and not necessarily representative of all cases. The cases that the prosecutors chose to discuss involved female victims and male assailants, and there was little or no discussion of the race and ethnicity of victims and assailants. Thus, there may be limitations in the applicability of the findings for victims and assailants of different racial and ethnic groups, genders, and sexual orientations.

Future Research

New studies could explore the idea of a continuum of probative value for biological and injury evidences. Working with prosecutors, quantitative researchers could code the probative value of different forms of evidence across cases and report statistical results on the frequency of evidence with different probative value and the relationship of probative value to different case outcomes. More studies need to examine the specific ways in which police and prosecutors use biological and injury evidences to assist in investigations. Future qualitative research could also explore the probative value

and utility of other forms of evidence in sexual assault cases, such as surveillance video and various types of witnesses. Studies should also examine the use of biological and injury evidences in prosecuting other crimes—one prosecutor reported that forensic evidence was more valuable when she prosecuted other types of crime. Such an examination would help identify if and how biological and injury evidences are perceived and used differently across crime types. Research should also examine the use of biological and injury evidences in diverse populations. Sommers et al.'s (2006) study of records from a sexual assault forensic nurse examiners program found that White rape victims were more than four times as likely to present with a genital injury compared with Black rape victims, and raised the question of health disparities between these two groups. It would also be worthwhile to study the use of biological and injury evidences among victims whose disability makes it difficult or impossible for them to identify and/or testify against assailants. Future research should also examine whether the use of injury and biological evidence might vary by the race-ethnicity, gender, and sexual orientation of victims and assailants.

Conclusion

The growth of methods for developing and utilizing biological and injury evidences has permanently changed the prosecution of sexual assault in ways that are very significant but not well understood. Our findings suggest that forensic evidence does not magically lead to criminal justice outcomes by itself, but must be used thoughtfully in conjunction with other evidence as part of a well-considered strategy of investigation and prosecution. Forensic evidence is not a panacea. The professional and public perception of that evidence shapes its use and impact. Our findings highlight the value prosecutors placed on biological evidence (which prosecutors see value in introducing even when it is not probative). This information may assist advocates to educate others about the ways in which biological and injury evidences impact investigation and prosecutorial decision- making. In addition, these findings could help inspire professionals and advocates work to develop and support a broad range of investigative methods yielding an array of different forms of evidence, such as outcry witnesses who can help support victims' accounts. A recent article in Campus Safety magazine titled *9 Ways to Prove Sexual Assault Without Physical Evidence* (Winn, 2017) suggests some of the learning that can occur once one understands the role of injury and biological evidence and their limitations.

Recent years have seen increasing attention to protecting victims and achieving justice in response to sexual assault. Examples include enhanced

campus programs to respond to sexual assault (Wooten & Mitchell, 2016) and community initiatives to process untested forensic evidence kits (Campbell, Feeney, Fehler-Cabral, Shaw, & Horsford, 2017). We recommend that this increased attention also motivate more research to understand the role of biological and injury evidences in achieving justice in sexual assault cases, particularly as prosecution using forensic evidence is one choice that these other initiatives help facilitate.

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