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Definitions: Serial Homicide Case Linking and Matching

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The Murder Accountability Project www.murderdata.org would like to suggest some standard definitions for the words “link” and “match” as they are applied to the practice and art of serial case comparison, particularly serial homicide cases. This piece is not intended to be a hornbook of forensic processing of homicide scenes. Rather, it is to suggest a way for those new to the field to use descriptive terminology and understand the differences between linked cases and matched cases.

Linked Cases

Linked cases are those which are known to have been committed by the same offender. Such a linkage is provable in a court of law. The identity of the offender may or may not be known to law enforcement, but facts learned through investigation establish beyond a reasonable doubt that the cases under examination were committed by the same offender or offenders committing their crimes together.

Cases may be linked to each other by the following factors:

- Physical Evidence
- Offender Confession
- Witness Statements
- Circumstantial evidence

In a paper presented in 2014 by Dr. D. Kim Rosmo to the International Criminal Investigative Analysis Fellowship (ICIAF), Dr. Rosmo opined that factors linking crime included physical evidence; offender description; crime scene behavior to include the proximity in time and place of each crime to another; *modus operandi*; and signature behavior evidenced on the scene by the offender.¹

Former New York City Police Department lieutenant and homicide investigator Vern Geberth's list of factors linking homicides to each other include “. . . victimology, geographic region or area of events, the “signature” of the offender, similar M.O., and a review of autopsy protocols.”²

Not all authors agree on the factors making for case linkage. Comparison of differing lists of homicide case linkage factors is a discussion for another article.

¹ D. Kim Rosmo, Ph.D. “Linkage Analysis” (paper presented at the annual meeting of the International Criminal Investigative Analysis Fellowship, FBI Academy, Quantico, Virginia, May 13, 2014).

² <http://www.practicalhomicide.com/Research/BlackSexSerKillers.htm>, viewed 5/7/2018.

Physical Evidence

Serial cases, meaning two or more cases of homicide, are most firmly linked together through physical evidence. Currently the best example of physical evidence is the collection of deoxyribonucleic acid (DNA) from one individual at the scene of two or more homicides under examination. The homicides may or may not be suspected to be part of a series. Again, the offender may not be known and the DNA may be unidentified, but the finding of her/his DNA at two or more murder scenes presents an extremely strong argument for that person either committing the murders or at least being on the scene of the murders.

A second example of case linkages is the presence of the same fingerprints on two or more murder scenes. While the fingerprints may not have been identified to a suspect, their presence alone presents a strong argument for the presence of that person on the scene or committing the murder.

A third example of cases linkages may be found in the forensic examination of ballistics evidence. Class characteristics of the same firearms evidence, such as fired .38 Special or .22 Rimfire shell casings, or bullets exhibiting the same number of lands and grooves, direction of twist, when recovered from the scene of a homicide, may suggest a relationship between or among multiple cases.³

Individual characteristics, or markings on fired bullets or shell casings, may exhibit scratches, extractor marks, striations, and breech face impressions unique to a firearm. A firearms examiner will use these individual characteristics to establish that bullets or shell casings fired from the same firearm were recovered from two or more homicides.⁴

It is even possible that by using individual characteristics the firearms examiner may be able to determine that one or more unfired rounds recovered on the scene of a homicide were worked through the action of the same firearm without being fired.

Firearms evidence may be effective in linking cases together. Further investigation would be required to place in the hands of an offender the firearm through which the recovered evidence was fired. While helpful in linking cases together, firearms evidence is slightly less proof positive of one offender committing the crimes as is the physical evidence of DNA or fingerprints. A firearm need not be in the same offender's hand when evidence from that firearm is recovered from the scene of a murder.

Further processing of firearms evidence may place the arm in the hand of one offender. His or her fingerprints may be located on interior portions of the firearm, such as a magazine, or on unfired rounds.⁵ Moreover, s/he may have left their distinctive DNA on the arm when cleaning or handling it.

There are other examples of physical evidence such as tool mark impressions, shoe impressions, and blood evidence. One would argue that if blood evidence is recovered there is a likelihood of

³ Vincent J. M. Di Maio, *Gunshot Wounds Practical Aspects of Firearms, Ballistics, and Forensic Techniques*, (New York, NY: Elsevier Science Publishing Co., Inc, 1985), chap 2 passim.

⁴ Ibid.

⁵ By convention, a clip feeds rounds to a magazine, and a magazine feeds rounds to the chamber of a firearm. An exception is the use of half-moon clips to place rimless, .45 Auto rounds into the chambers of a revolver.

DNA being recovered as well, and DNA is better evidence of case linkage than blood types alone.

The examples of physical evidence discussed here are not all-inclusive. Investigators should be open to the suggestion of other types and kinds of evidence that may be recovered from their own cases which may serve to link homicides together.

Offender Confession

A second method of linking cases together is through offender confession, admission, or statement. When a suspect or offender admits to two or more murders, s/he should be able to do so with specificity. In other words, their unprompted statement⁶ must match the facts of the case with regard to critical elements such as time, place, victim, mechanism of death, body disposal site, et cetera.

Should the suspect or offender be able to utter a detailed and accurate statement matching the known facts of the case, then we can believe that s/he either committed the murder or was present when it was committed. A false statement will likely not contain the accuracy found in a detailed, true confession.

Confessions and statements should be taken with a view towards using them in a criminal court proceeding. That is, the statements should be admissible in court. Inadmissible statements, while not coerced, could be probative in linking cases together.

Witness Statements

In a story headlined “How to make eyewitness evidence more reliable,” Daniel Medwed told the “Boston Globe” that while eyewitness testimony was a persuasive form of evidence, “It’s also one of the most problematic; in fact, it’s ‘the number one cause of wrongful convictions.’”⁷ Medwed teaches law at Northwestern University.⁸

Given that eyewitness testimony can be unintentionally misleading, it must be buttressed in a witness statement. Your author used to ensure the accuracy of eyewitness identification by asking if the witness knew the suspect. The typical response was ‘yes;’ they went to high school together or worked together. That is, not only was the witness identifying the suspect, they knew the suspect.

However, it is unlikely that the same schoolmate eyewitness would be present on the scene of two or more homicides, especially if they were committed in different jurisdictions. Should such an eyewitness be discovered on multiple homicide scenes that would be cause for a separate investigation.

Circumstantial Evidence

In the opinion of this writer, circumstantial evidence can be very effective as a case linkage tool, especially when presented to a jury. Circumstantial evidence is a combination of a number of

⁶ An unprompted statement is one where leading questions were not asked of the offender and s/he was not shown photographs of the victim or scene.

⁷ <https://www.bostonglobe.com/ideas/2015/02/27/how-make-eyewitness-evidence-more-reliable/0VcxPJW3F996nXSMmaNI5L/story.html>; viewed 01/13/2018.

⁸ Ibid.

variables. Such variables may not necessarily be the same for each series of cases yet when the variables are combined they present a certain uniqueness.

A pick list of variables making up circumstantial evidence could include victim selection in terms of gender and age; offender MO; victim encounter site; murder site; body recovery site; body disposal; cause of death; and weapon selection. Again, this is not meant to be an all-inclusive list but rather a suggestion that circumstantial evidence can include an ever-changing list of variables unique to a series of cases.

A recent example is the discovery of human remains partially buried in the crawl space beneath an apartment building in Washington, D.C., in the 100 block of Wayne Place, Southeast.⁹ The first victim was found on April 25th, 2018 during work on the apartment building. A police search of the area revealed two additional, female victims buried behind the building. The remains of the two victims were mingled together. The Medical Examiner for the District of Columbia found that two of the victims were shot and the third evidenced trauma.

Variables in these three deaths include victim gender; gunshot wounds; other trauma; victim concealment; proximity of the body disposal sites to each other; and time of death. Another variable is the “what else like this?” factor (further explained below). The Medical Examiner estimated that the victims were buried more than a year ago.¹⁰

It is reasonable to form a working hypothesis that the three victims are linked together through circumstantial evidence as either a series of murders or a mass murder.

Matched Cases

A quick, short-hand way of expressing the difference between linked cases and matched cases is that linked cases are **known** to have been committed by the same offender, whether or not identified; while matched cases **look** as though they might have been committed by the same offender. A set of matched cases may be viewed as a precursor to their becoming a set of linked cases.

It is possible that cases may be matched to each other before they are linked to each other. Matched cases can be a starting point for law enforcement to begin an investigation with the intent to link cases together. In other words, a set of cases may be matched to each other before they are conclusively linked to each other. A set of matched cases may be viewed as a starting point in a hypothesis. Further investigation of the hypothesis may result in a set of matched cases becoming linked cases.

Cases may be matched when they exhibit similar characteristics. These characteristics would include, but not be limited to:

- Victim selection
- Body disposal site
- Mechanism of death
- Method of offender operation (MO)

⁹ <https://www.nbcwashington.com/news/local/Women-Whose-Remains-Were-Found-in-SE-DC-Died-Violently-PD-481770411.html>, viewed 5/7/2018.

¹⁰ Ibid.

- What else like this?

Victim Selection

Whom does a serial offender seek as a victim? Does s/he seek males or females? Does s/he seek females alone in their own home during daylight hours (a person at low risk to be the victim of violent crime) or a sex worker on a darkened street at one o'clock in the morning (a person at high risk to be the victim of violent crime)? Does s/he seek as victims the presidents of local banks, or homeless, impoverished persons sleeping under bridge abutments? Homicides with similar victims can suggest that the offenses are part of a series.

Body Disposal Site

There are a great number of variables other than those listed above which may serve to match cases to each other. Take, for example, the victims' body disposal site. There is a high likelihood that two victims, each a sex worker, missing for weeks but not reported as such, whose cause of death is strangulation, found next to each other in a deep ditch, were killed by the same person. Once a serial killer finds a body disposal site that distances him from the killing and precludes the immediate discovery of the victim -- thus obscuring the offender's association with that victim -- he will continue to use that site until the potential for discovering his crimes increases or police presence increases in the area of the site.

Mechanism of Death

Simply stated, when an offender discovers a method of killing that satisfies him and precludes his capture, he is likely to continue using that method until other circumstances of which s/he has no control force him to change. That is, one who uses a firearm to kill is likely to continue to use that method. One who uses a knife is likely to continue to use that method. And a killer who uses a ligature to strangle his victims is likely to continue to use that method.

Selection of a victim who ultimately fights the offender, causing him to lose or partially lose control of the victim, could force a change in the offender's MO. At first blush the difference in MO may cause investigators to believe they are investigating a second, different offender, when such is not correct. Law enforcement is looking for the same offender who has merely changed MO sufficiently to make his crimes appear to be different.

Method of Operation

Dr. Robert Keppel wrote that "A killer's method of operation contains those actions that are necessary to commit the murders. They may change from one murder to the next as the killer gains experience and finds more beneficial methods of operation from murder to murder."¹¹

When an offender realizes that his victim selection, cause of death, and transportation of the deceased victim are successful and allow him to continue killing, he is likely to continue that method of operation (MO) until arrested or otherwise forced to change.

For example, one offender lured sex workers into his automobile, shot them in the head with a small caliber handgun, and placed one or more plastic grocery store bags on the victim's head so

¹¹ Robert Keppel, Ph.D., *Serial Offenders Current Thought, Recent Findings*, ed. Louis B. Schlesinger Ph.D. (Boca Raton, FL, CRC Press, 2000) p. 132.

that blood would not be transferred to the interior of the offender's auto. When found, the bags were still on the victim's heads. The offender's MO was successful in delaying his arrest and he used it repeatedly.

What Else Like This?

Simply stated, this case matching factor is little more than asking the question, "What else like this is happening around here?" For example, are there any other cases in the county (local cases) or the state (more distant cases) where bank presidents are abducted and shot, and where their remains are found days later in a nearby body of water?

As another example, consider the finding of teenage female victims, sexually assaulted, strangled, and found encased in blocks of concrete. Would we not begin to think of such cases as possibly related and committed by the same offender or offenders?

One would submit that two or more such cases exhibiting these factors are prime candidates for consideration as matched cases possibly committed by the same offender. Time between such cases, such as years, and distance between such cases, as east coast versus west coast, may dilute the effectiveness of matching the cases.

The object of the distinction drawn between the words "linked" and "matched" is to allow those engaged in the process of homicide investigation and crime analysis to speak about their work with precision and eliminate possible confusion among those working unsolved but possibly related cases.