


Review Article

Reconstruction of crime – A review

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	International Archives of Integrated Medicine, Vol. 2, Issue 10, October, 2015. Copy right © 2015, IAIM, All Rights Reserved. Available online at http://iaimjournal.com/ ISSN: 2394-0026 (P) ISSN: 2394-0034 (O)
	Received on: 10-09-2015 Accepted on: 08-10-2015 Source of support: Nil Conflict of interest: None declared.
	How to cite this article: Parmar P. Reconstruction of crime – A review. IAIM, 2015; 2(10): 49-53.

Abstract

Reconstruction of crime is very much essential to solve any mystery for police and investigative agencies. Correlation of victim, accused, weapon of offence, scene of crime, human behaviour, environmental evidences etc. are very important for the same. A crime reconstruction must require keen observation, understanding of science, recognition of evidences, and application of critical thinking with logic.

Key words

Crime, Reconstruction, Scientific method, Evidence, Ethics.

Introduction

To solve the crime and its mystery, various studies are very much helpful like fingerprinting, voice fingerprinting [1], forensic serology, forensic pathology, forensic Onychology [2], study of bone [3] and teeth [4], medico-legal autopsy [5] along with crime scene reconstruction. Reconstruction of crime is very much essential to solve any mystery for police, detectives and investigative agencies. Fiction characters like Sherlock Holmes, Hercules Pierot, Mrs. Marple, byomkesh bakshi etc. were able to solve crime by gathering various evidences from crime spot and matching the clues which is not as easy as it seems in routine

which in turn ultimately correlate the sequence of incidents took place. In many cases, reconstruction of crime is turn to be headache for investigative authorities and time consuming. Correlation of victim, accused, weapon of offence, scene of crime, human behaviour, environmental evidences etc. are very important for the same to come to a fruitful conclusion. A crime reconstruction must require keen observation, intuition, understanding of science, recognition of evidences, and application of critical thinking, abstract thinking with logic.

Logical analysis of the physical evidence along with corroborative evidence and other facts to form a theory regarding the actions that took

place in the commission of a crime is called as crime reconstruction in true sense. Henry Lee told that it is not just the physical evidence that is included in formulation of a theory but it is a science of facts. "Reconstruction not only involves the scientific crime scene analysis, interpretation of crime scene pattern of evidence, and laboratory examination of physical evidence, but also involves systematic study of related information and the logical formulation of a theory to come to a conclusion" [6].

Scientific method approach

Scientific method approach is used in crime reconstruction in present context. Investigators form a theory about the crime and then test that theory against the physical evidence found at the scene or developed through laboratory experiments either it is right or wrong. If point of physical evidence is opposing to the theory, then that theory must be discarded and a new theory is applied. The investigator must be able to design, establish and conduct the same types of experiments in which data was available after the first set of experiments that could be used to determine the cause in subsequent events. "Crime reconstruction requires a broad base of knowledge regarding forensic science and an ability to determine the cause from the effect" [7]. The alternatives can be considered as falsehoods. "Falsification is the central concept behind the scientific method. Consequently, when developing a reconstructive analysis the investigator develops hypothesis that is attempted to disprove. If the hypothesis is falsified the investigator can opine that this hypothesis (or theory of the crime) is not conceivable with the evidence submitted and analyzed. The scientific method appears very similar to the writings of Sir Arthur Conan Doyle when he stated, 'You eliminate the impossible, then whatever is left, however improbable, is the truth' [8, 9].

Types of evidence examined

In the last few years, great concern was given on training of law enforcement personnel to

recognize and interpret bloodstain evidence at crime scene because bloodstains are the most common type of evidence present and need to be examined for a reconstruction of crime scene along with many other stains like grease, saliva, semen etc. However, the entire crime scene must be examined and all the evidence should be taken into consideration for fruitful outcome. Erroneous reconstruction occurs when some evidences are examined and others are missed. Missed evidences at crime scene lead to loopholes in reconstruction of crime. A "holistic" complete approach must be followed, including all the evidence in the case. Nothing can be ignored or "sorted out" as is done in some departments for efficiency and expediency as one little clue can open the doors of clarity and bring out horizon of justice.

The role of trace evidence in reconstruction is often overlooked. Trace evidence can show contact between the victim and suspect or the suspect and the environment of the crime including the path taken and some of the actions. Locard's principle of exchange is very much important for correlation of victim, accused, weapon, and crime scene. These clues need to be incorporated into the reconstructive analysis. The problem in using this type of evidence is that it requires a crime laboratory analysis before it becomes useful. The information is available for court purposes but is not present during the investigative phase. Many times when eye witness is not present, scientific evidences and circumstantial evidences are the key element to establish justice.

The position of an item may be extremely important in determining its role in a crime. This is information that cannot be determined by looking at the object in the laboratory. This information must be documented and processed at the scene. Without information regarding the location of the item it may be of no value for reconstructive purposes. This information is true not only for crime reconstruction, but also for the reconstruction of human behaviour. Pattern of human behavior is key to reconstruct the crime

and removing an artifact from its context destroys much of its potential to help reconstruct human behaviour [10]. Validity and reliability of science to solve crime is very crucial.

The “tag and bag” approach to the crime scene will destroy the potential that the crime investigator uses to reconstruct recent human behavior. According to Ogle, “It is important to remember that crime scene reconstruction begins with a systematic, meticulous, and competent endeavor by the crime scene processing team” [11]. The investigator must rely on documentation of the scene to establish these relationships. Perfect documentation and scientific collection of all evidences is the first step of solving crime. For example, the location of a gun may yield information regarding whether a death is a suicide, homicide, or an accident. Firing the weapon and comparing the test bullets with the fatal bullet by comparison microscope can only show that the gun in question was the one responsible.

What can be determined?

The position and actions of the people involved in the crime can also be recognized through the physical evidence left behind. The functional condition of an item also gives information. Sometimes evidence cannot be packaged and brought to the laboratory for further examination. This information must be carefully documented and recorded in sketches and photographs and the items must be accurately measured so their positions can be reflected in the sketches. The evidence clues can tell us information about the sequence of events and establish direction. Reconstruction evidence may not necessarily be present at the scene, but may take the form of inferred or derived conclusions. This inferred evidence is frequently used to establish the apparent motive. Verbal autopsy is a mode of investigation by asking questions to relatives and friends to gather necessary information to solve crime.

Tying it all together

Merely use of scientific method to decide certain activities from the clues is not reconstruction. Logic and critical thinking must be applied to the separate events that have been occurred. At this point, the alternatives must be considered. The theories of the detectives, the attorneys, the witnesses, the suspect, and, if living, the victim must be tested against the established events or facts. Recent scientific approaches like narco analysis, lie detection, brain fingerprinting etc. are very important to check validity and reliability of statement given by any but their admissibility in court is still a matter of question in certain countries.

The investigator should consider facts from various points to decide if there is a connection between them. One fact will affect the way in which another could have happened. Critical thinking is applied to these facts. However, one must be cautious in this approach to reconstruction. It is easy to go too far and say things that cannot be supported. This may be acceptable in the investigative phase, but not in court where each and every point must be explained and supported by the evidence. Collection, preservation and dispatch of scientific evidences to forensic science laboratory from crime scene is possible only when appropriate training and facility should be given to the investigator.

Why reconstruct the crime?

Ogle, a criminalist, wrote in a book on evidence collection, “Crime scene reconstruction is one of the major purposes for the collection of physical evidence” [11]. The question is why is this so important? Crimes are reconstructed for several reasons depending on the case. The investigation, the trial preparation, the defense preparation, the trial itself all can benefit from reconstruction. Knowing what happened makes the task of finding justice easier. Correlation of mens rea, actus reus and crime is very important to prove the crime and punish guilty.

The first step is to determine if there is a crime or what crime has been committed. After a crime is established, crime reconstruction is used to aid in determining the what, who, when, how, and why of the crime. The investigator becomes part of a team of persons involved in the investigation. The information developed in reconstruction is used by the following. Investigators conducting interviews to test the veracity of the statements, Criminal profilers in making a “profile” of the perpetrator, District Attorneys or Defense Attorneys to determine how to prepare and argue their cases in court, The Court in determining sentences.

Ethics

Reconstruction experts must be aware that the analysis rendered is, in many cases, going to be the deciding factor in how justice is dispensed. They cannot afford to allow rumour into their findings. They must pursue as much information as they can about a case. A reconstruction cannot be made without all the evidence. It is also necessary to know the limitations of one’s abilities. A disagreement between experts can usually be traced to one of them lacking knowledge about a type of evidence or the cause and effect. Manipulation of important evidences to hide crime is heinous practice by some investigators which must be punished.

“Forensic scientists have, for the most part, treated induction and deduction rather casually. They have failed to recognize that induction, not deduction, is the counterpart of hypothesis testing and theory revision too often a hypothesis is declared as a deductive conclusion, when in fact it is a statement awaiting verification through testing” [12].

The reform can also be defective because evidence was not accessible for analysis. This can be because law enforcement did not feel the evidence would be of worth and, therefore, did not submit it for laboratory analysis. But more frequently, it is because the analyst did not ask for photos and reports to help understand the

evidence. “The value of physical evidence varies from type to type and case to case. In some investigations, its potential may never be fully appreciated. In some jurisdictions it is a matter of the availability of trained personnel who can respond to crime scenes and collect the appropriate evidence” [13].

Crime scene and its study are very much important in various cases like firearm injury [14], dowry death [15], drowning [16], poisoning [17, 18] and drug abuse cases [19].

Conclusion

For rebuilding purposes, the worth of physical evidence and citations of the crime scene by experienced human resources cannot be overemphasized. The reconstruction analyst relies on correct, complete information to render a reconstruction of the procedures of a crime. Not all cases can or need to be reconstructed and the evidence in some of the cases does not need to be collected. In others, competent personnel are not available to respond to the crime scenes. Therefore, a reconstruction will not be possible. The workload at the crime laboratories has become so great that many laboratory workers no longer respond to crime scenes. They do not develop the skill essential for crime reconstruction. The forensic scientist must recognize the uses of the physical evidence and the meaning of reconstructing the crime.

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