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Forensic expectations: Investigating a crime scene with prior information

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ABSTRACT

In a large body of research the influence of contextual information on decisions made in a broad range of disciplines has been studied. To date, the influence of these expectancy effects on the crime scene investigation has not been studied. In the present study we explored the effect of prior information given to crime scene investigators on their perception and interpretation of an ambiguous crime scene.
Participants ($N = 58$) were experienced crime scene investigators who were provided with a panoramic photograph of an ambiguous mock crime scene. The victim may have committed suicide or was murdered. Participants either received prior information indicating suicide, prior information indicating a violent death, or they received no prior information. Participants were asked about what they thought had happened at the scene of the crime, both at the initial assessment of the scene and at the end of the investigation when they were asked to describe the most likely scenario. They were also asked which traces they wanted to secure and why.
Results showed that participants interpreted the crime scene differently dependent on how it was presented to them. Both the initial assessment of the scene and the most likely scenario that was described after the investigation were influenced by the prior information the participants were provided with, even though roughly the same traces were secured by all, independent of the prior information.
Results demonstrate that prior information indeed influences the interpretation of the crime scene, but since the present study was exploratory further research is needed.

1. Introduction

On 14th February 2004 the famous Italian cyclist Marco Pantani was found dead in a hotel in Rimini. The autopsy revealed heart failure caused by an overdose of cocaine. His death was a supposed suicide and the case was closed. Ten years later the Italian authorities reopened the investigation. It is now questioned whether the overdose was taken voluntarily. It is not unlikely that someone else was involved as there are still unanswered questions about a head injury and indications that his body was moved. There is doubt whether the crime scene was examined thoroughly enough [1]. If someone forced Pantani to take the lethal dose of cocaine the supposed suicide could become a case of murder.

In such cases the way in which the crime scene is handled may be influenced by the initial classification of the situation by the crime scene investigators. Typically, the scene of an alleged suicide is investigated differently and less thorough than the scene of an alleged murder. In the present study we empirically investigate whether that initial classification of a crime scene as well as the further examination and interpretation of the scene of crime is influenced by prior expectations.

If the police are investigating a serious crime one of the first steps is often the examination of the crime scene. Since it is impossible to secure every single item or possible trace evidence at the scene, decisions have to be made during the examination about the relevance of the available physical evidence. There is only one opportunity to examine the scene of crime, so it is crucial that it is processed as precise and correct as possible.

One of the tasks of a crime scene investigator is to reconstruct what may have happened and, based on the reconstruction, to decide which traces are relevant and must be secured. The process of reconstructing the events before, during and after a crime is not a matter of ticking boxes on a checklist and following procedures, but involves active thinking. As all human thinking, this process can be prone to biases or errors in judgement.

In a large body of research the influence of expectancy effects or contextual information on decisions has been studied in a broad range of disciplines [2–5]. So far the influence of these expectancy effects on perception and decision-making at the scene of crime has been overlooked. In the present study we address that gap in the literature by exploring

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the influence of prior information on the perception and interpretation of an ambiguous crime scene.

1.1. Crime scene investigation

The process of reconstructing a crime usually begins with a walk-through of the scene. This preliminary round is done to give the investigator a rough idea of what happened, why it happened and how it happened. Inman and Rudin [6,7] describe that a preliminary hypothesis should be formulated at the start of the crime scene investigation. The hypothesis should be based on prior information and on the identification of potential evidence. The next step is the determination of the evidence: what evidence is present at the scene and which physical traces need to be secured. Finally, the evidence is secured. For example, fingerprints are 'lifted' and blood samples are taken for testing DNA.

Although there has been increased attention in papers on forensic science for the role of human cognition in the investigation of the crime scene [8–10] the main emphasis in most of the handbooks written about forensic science and crime scene processing is not on how the crime scene should be examined or how to find crime related traces. Instead, the focus of these handbooks is on preventing crime scene contamination and on the last step in the crime scene investigation: how to secure different types of physical evidence in an appropriate manner [11–15].

Saferstein [15] even writes that 'the know-how for conducting a proper crime-scene search for physical evidence is not beyond the grasp of any police department, regardless of its size. With proper training, police agencies can ensure competent performance at crime scenes. In many jurisdictions, police agencies have delegated this task to a specialized team of technicians. However, the techniques of crime-scene investigation are not difficult to master and certainly lie within the bounds of comprehension of the average police officer.

The previous contention demonstrates the lack of emphasis on probably the most important first step: the initial assessment of the crime scene. All further decisions about the physical evidence are based on the initial perception and interpretation of the crime scene. It is important to think about were crime related traces can be found in each specific crime scene. For example, it may not be useful to first search for latent fingerprints on the front door when there are no signs of a forced entry. The contention, however, suggests that investigating a crime scene is a routine process that does not involve active thinking and that crime scene investigators do not require any special expertise.

An explanation for the fact that this first step is underexposed in handbooks on crime scene investigation could be that it is difficult to draft general guidelines on how to process a crime scene. The main argument is that every crime scene is unique. In a Home Office paper Tilley and Ford [16] wrote: 'In practice, however, almost all scene examination is less than fully comprehensive, since exhaustively combing every scene for any contact materials is clearly impractical. Prioritisation in scene examination seemed generally to be ad hoc. SOCOs [scenes of crime officers] value the professional autonomy to determine what should be examined and collected from the scene of an incident.'

This ad hoc decision making style may explain why instructions in police guidelines and handbooks on how to search a crime scene is limited to merely mentioning that the search must be conducted in an objective, systematic and methodological manner [13,17]. However, important questions such as why certain traces should be collected and how the crime scene is interpreted should not be overlooked, as the answers to these questions are the foundation of the further investigation.

Mistakes made during the investigation of the crime scene are impossible to rectify in hindsight. Once the crime scene is processed it will be released, meaning that the crime scene will no longer be protected [18]. Trace evidence can be damaged and items can be removed or added to the scene, making it impossible to restore it to its original state at a later time. There is only one chance to properly process the scene, so it is crucial that it is done as precise and objective as possible.

1.2. Information

The visual inspection of the crime scene or 'walk-through' is not the only source of information that a crime scene investigator has at the start of the investigation. Before the investigator enters the scene he or she is briefed about the situation, typically by uniformed police officers. The investigator for instance receives information about how the body was found or who the victim is, to the extent that it is known at that time. That additional information can help the investigator with the reconstruction of the events before, during and after the crime. A hypothesis, which may help determining what kind of evidence to look for and where, can be formulated based on the information. Thus, crime scene investigators need information to search for and interpret evidence [10].

However, there is a chance that this case information unduly influences the investigator's thinking and interpretation and evidence that does not fit with the information is overlooked. Cooley and Turvey [19] note that information can consciously or unconsciously create expectations that can, as they put it, contaminate the forensic examiner's objectivity. The influence of these expectancy effects on perception and reasoning in the forensic domain is extensively explained by Risinger, Saks, Thompson, and Rosenthal [20], Saks, Risinger, Rosenthal, and Thompson [21], and more recently by Kassin, Dror, and Kukucka [22]. Although there has been increased attention for this 'forensic confirmation bias' [22], the influence of such expectancy effects on perception and decision making at a scene of crime has not been examined yet. Prior information about a case could influence expectations about what may be found at the crime scene. It is important to process a crime scene objectively, but how objective is the investigation when the examiner's objectivity is contaminated by expectations?

Expectancy effects occur most frequently when ambiguity is greatest [21,23]. Cooley and Turvey [19] point out the challenge for forensic examiners in a laboratory to interpret ambiguous stimuli (e.g., incomplete fingerprint), but that is also true for crime scene investigators. Objects found at the crime scene can be quite ambiguous in that scene. Objects may be interpretable in more than one way, depending on the explanation adopted of what has happened. The expectations about the case and the crime scene cannot only influence the interpretation of the crime scene as a whole, but also what is recognized as evidence and which pieces of evidence are secured. The complex nature of crime scene investigations raises the question if and to what extent, the investigators are vulnerable to expectancy effects.

To date expectancy effects or the influence of contextual information have been found in many different areas in the forensic (laboratory) domain, such as fingerprint comparisons [24], interpretation of DNA [25], polygraph examinations [26], interrogations [27], and recently also in verbal credibility assessment [28], forensic anthropology [29] and bite-mark comparisons [30]. Although these effects have been demonstrated in many studies, it has to be noted that some studies did not find an influence of contextual factors on forensic comparisons [31,32].

In the present study we address how experienced crime scene investigators are influenced by their expectations while processing an ambiguous crime scene. It is hypothesized that prior information received by crime scene investigators influences their expectations and thus influences the assessment of what happened at the scene of crime and the traces that are secured.

2. Method

2.1. Participants

Fifty-eight experienced Dutch crime scene investigators participated in the experiment. They were recruited among six different police