Intelligence-led crime scene processing. Part II: Intelligence and crime scene examination

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ABSTRACT

A better integration of the information conveyed by traces within intelligence-led framework would allow forensic science to participate more intensively to security assessments through forensic intelligence (part I). In this view, the collection of data by examining crime scenes is an entire part of intelligence processes. This conception frames our proposal for a model that promotes to better use knowledge available in the organisation for driving and supporting crime scene examination. The suggested model also clarifies the uncomfortable situation of crime scene examiners who must simultaneously comply with justice needs and expectations, and serve organisations that are mostly driven by broader security objectives. It also opens new perspective for forensic science and crime scene investigation, by the proposal to follow other directions than the traditional path suggested by dominant movements in these fields.

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1. Introduction

In part I, we defined the trace as the singular building block of pertinent information about a crime and crime series and we described an important role that forensic science has to play besides its end product as court evidence: as an integral part of an intelligence-led managerial philosophy. The potential of traces in this perspective has been demonstrated, at the very least, for linking entities, which itself is a basic function of crime intelligence.

In this second part, we will consider crime scene processing within this framework. This activity consists in collecting data that feed different processes. The collection of data is the object of great attention in typical intelligence processes: it must be selective, timely, and planned according to the relevancy and accessibility of data, as well as the availability of resources. The collection plan is systematically updated in function of new knowledge and needs. Crime intelligence is thus fed by this data. It then drives the system by influencing priorities and deployment of resources as well as determining new informational needs according to a variety of

security objectives. As a corollary, crime scene processing should be directly influenced by such processes.

This view contrasts with how crime scene examination is considered in the traditional justice-oriented conception. In most jurisdictions around the world, crime scene examination is carried out under police responsibility and resources are limited. The actual task of crime scene examination or processing is undertaken by crime scene examiners, who themselves are sworn or non-sworn police officers.[1] They are generally trained to follow very normative quality assurance procedures in order to detect, recognise and, if necessary, collect the "best" quality and quantity of traces. However, performance indicators seem to show very disparate outcomes between crime scene investigators across different institutions or even within the same crime scene unit [1–7]. Despite frequently defined standard operating procedures,

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[1] The term 'sworn' is used here to characterise a police employee who has police powers; i.e. an officer who can, amongst other things, apprehend criminals, prevent and detect crime and maintain public order along with community interaction. This term is commonly used because police officers are generally sworn to an oath. In most jurisdictions, sworn officers have typically attended a Police Academy or specific Police School to acquire general and specific policing skills. In contrast, to 'sworn', the term 'non sworn' or 'civilian' is applied here to a police employee who does not have police powers, but is crucially contributing to police functions through his or her skills specific to a specialised area, e.g. crime scene examination.

most of the work at the scene, qualitatively and quantitatively, seems to be mainly influenced by individual attitudes. Beyond workload, factors such as personal knowledge and interests, individual ability to recognise relevant traces, as well as confidence between partners and awareness are assumed to play a predominant role [2,4–6,8,9]. Part of the explanation may be related to the fact that procedures are rarely if ever, focussed on intelligence or investigation but remain within a narrow individualisation and court oriented paradigm. There is a confusion resulting from a lack of mutual comprehension between police searching to meet, often implicitly, their needs in terms of investigation and security through policing models and intelligence processes (mainly security-oriented), and how the forensic science community conceives its role (mainly court/justice-oriented). This confusion is crystallised by the fact that procedures for investigating crime scenes do not clearly separate factors that serve security objectives or investigation, and basic principles oriented towards more traditional views of forensic science (*i.e.* mainly gathering evidence for court purposes). This is particularly evident when considering manuals dedicated to non-forensic personnel (*e.g.* [10]) that prescribe how to view a crime scene without considering, more holistically, the constraints faced by actors of a policing model.

This paper starts by clarifying the uncomfortable position of the crime scene examiner operating within an often implicit complex dual situation delineated by justice and security objectives. An example relates the actual treatment of a specific series of burglaries which has developed in Switzerland. It illustrates how intelligence aspects have been effectively used, ignored or have not reached crime scene investigators in the follow-up of the case. From this basis, the forensic science literature and recommendations resulting from a number of reports and research projects will be mentioned in order to explain how crime scene investigation is now conceived within the forensic science community, and what it considers as desirable progresses.

From this background, we discuss why we consider that the path suggested by the forensic science community for improving the current situation is misleading, at least from a security perspective. In order to propose an intelligence-based conception, crucial points of decisions will be identified. They explicit the diversity of factors that influence how the police process crime scenes. This leads us to propose a possible general framework based on crime and forensic intelligence. This new framework takes into account intelligence factors and consideration of the immediate social and physical environment to lead to an efficient but modified view of forensic science and crime scene investigation.

2. Example

Let's consider an example of a series of burglaries that occurred between 2006 and 2008 in a specific region in Switzerland. Links between many cases came to light as the same DNA profile was reported in a number of cases. This DNA profile remained unidentified because its source was not in the national database (CODIS system). At the time, no specific measure nor any *crime analysis* was deemed necessary, especially since no intelligence-led structure or intelligence policy was in place in that particular law enforcement agency. The information was simply passed on to field investigators in case someone is apprehended and his or her DNA would become available for comparison (*reactive* attitude).

Because of the lack of knowledge of the *criminal and immediate environments*, each burglary was treated as an isolated case and crime scene processing was usually processed routinely. This went on despite the fact that the modus operandi of this series was relatively specific (same targets, night time, specific locations, etc.,

i.e. considerations on *the immediate environment*). Knowledge of the *physical environment* nevertheless led to the systematic DNA swabbing of the extracted door lock cylinders (when left on the scene) or around the door lock (when taken away). This was supported by the fact that there is a high detection rate of DNA in such circumstances and it was confirmed by the number of cases in this series that were ultimately linked through DNA profiles.

A year later (2007), this series was still active. In one burglary, the victim disturbed the burglars and a chase and fight followed (considerations on the *immediate environment*). The victim stated that the burglars were three. Later on, the DNA profile revealed on the door lock was found to be the same as in the previous cases belonging to this series (let's call it profile burglar no. 1). This was the first indication that this series of burglaries was committed not by a single burglar but probably by a group of three. Despite this new information, subsequent cases belonging to this series were still treated as individual events (lack of *crime analysis*). In some cases, scenes were not even attended (*strategic* considerations). In early 2008, the series continued and, once again, the same DNA profile was retrieved from door locks. But no forensic traces of the other two burglars were found, mainly because they were never looked for (lack of *intelligence* used at the scene). In one case, a partial DNA profile was retrieved on a door lock but quality criteria did not allow its introduction into the national database (insufficient number of loci to be introduced in CODIS), although it could have been used for pointing to potential suspects: DNA comparisons were asked between this DNA trace and the DNA profiles of other known burglars that were active at the time. But no matching DNA profile could be found. These known specific burglars had indeed nothing to do with this series (lack of *knowledge of the criminal environment*). Much later, once the series was identified and thoroughly studied, a DNA comparison was asked between the partial profile and the profile of burglar no. 1 and it was found to be a match (use of *intelligence*).

This highlights that *knowledge of the criminal environment* is not only useful in the decision for attending the scene and how to process it, but it can provide valuable information regarding the exploitation of traces usually processed for identification purposes as a linkage agent.

Finally, in one of the cases, a jewel box which had probably been moved by one of the burglars was searched for fingerprints and an identifiable fingermark was detected (*situational* and *physical* considerations). A name provided by the national fingerprint database (AFIS system) associated the mark to a finger of a man previously charged with burglaries. Following investigation, this led to the arrest of this known burglar and two accomplices who included burglar no. 1. This brought the series to an end. The case is summarised in Fig. 1.

This example shows many possible uses of forensic case data for investigation and crime analysis, as well as how contextual information can be used in order to detect traces.

It also highlights how difficult it is to detect and identify series of burglaries or other types of high volume crimes when they are perpetrated over a long period of time. Indeed, they get diluted in the cloud of all other cases and without a dedicated crime analysis unit, the risk is high that they will remain undetected. On the other hand, if the series is committed during a very short period of time, then the higher the chances that it will be detected, even if the policy and structure of the police force is not intelligence-led.

It appears that DNA linking integrated into crime analysis would have helped to select relevant crime scene work in the context of this series. The case actually made significant advances because of tacit information exchanges and individual initiatives. This kind of reasoning generally does not appear in standard operating procedures, neither for crime scene examination, nor for crime analysis.