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The Adoption of Criminal Profiling for Drug Interdiction

By

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Foreword

The scope of anti-smuggling has grown considerably in the context of globalization. The anti-narcotics activities which were, formerly seen as the sole responsibility of Anti-Narcotics Force (ANF), customs and the police has spread into areas of management. All this makes for a notable opportunity to try out new ways of prevention of drug trafficking in particular. But the opportunity can be wasted if the people call for preventive action on the basis of rumor and supposition. This could lead them to devise preventive measures in the light of inaccurate and misleading information about the crime problem (drug trafficking) in question. For these reasons it is important that those setting up preventive schemes follow a number of key steps including:

1. Collect good quality information about drug trafficking incidents in the area in question.

2. Use the data to establish a clear and valid picture of the nature of the drug, timing, location, circumstances and the type of the drug trafficking incidents.

3. Devise preventive strategies, whether physical or social closely targeted upon the pattern of drug trafficking incidents.

4. Put the strategies into practice.

5. Evaluate the effect of the strategies upon drug trafficking incidents in rigorous way.

This paper is aimed to provide basic knowledge in profiling techniques, which the law enforcement agencies might employ for the reduction of drug trafficking. This paper catalogues the basic concepts and techniques to enhance the capabilities of personnel, dealing in preventive initiatives for drug interdiction. As such it draws upon the skills and knowledge of a number of techniques which are thought to be basic concept for profiling of drug traffickers.

This will also be a useful contribution to improve the delivery of criminal profiling education and to those who might otherwise have little chance to assess them. The scope of reducing drug trafficking by focusing on a particular group is now well established, this paper aims to develop ways to integrate this approach into day to day

drug interdiction efforts. Although it is for too early to draw any definite conclusions about the effectiveness of the profiling techniques it appears that the profiling techniques present opportunities as well as solutions for law enforcement agencies. But, we already know that profilers are getting the pivotal position in crime detection and criminal profiles are one of the effective tools to detect crime. This method also helps to keep record of not only the criminals but also the serial crimes in particular. The ultimate success of the profiling techniques rest on the effective use of analyzed intelligence to balance the demands of drug interdiction and problem solving. This strategic profiling is essential.

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Abstract

The paper intends to discuss the adoption of criminal profiling for the prevention of Drug Trafficking. It begins by defining and introducing the types of drug trafficking; the concept of psychological, behavioral or criminal profiling used in traditional crime; discussing methods such as inductive reasoning or deductive reasoning; and then proceeds to outline prevention methods, which may be used to examine the drug trafficking incidents. The paper suggests how the methods of criminal profiling can be adopted for the prevention of drug trafficking incidents, as an assistance of the investigations of law enforcement agencies against traffickers, and other criminals who focus upon the drug trafficking. To this end, the discussion presents a top-level mapping of behavioral evidence analysis within a drug trafficking context.

Keywords: Drug Trafficking, Criminal Profiling, Drug Interdiction, Inductive Profiling, Deductive Profiling, Victimology.

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Contents

Introduction 1

Structure of the Research Paper 2

Drug Trafficking & Drug Interdiction: An explanation 2

Extent of the problem (Drug Trafficking) 3

Types of Drug Trafficking 5

1) Freelance Drug Trafficking 5

2) Socially-bonded Drug Trafficking 6

3) Corporate-style Drug Trafficking 6

Levels of Drug Trafficking 7

Structure of Drug Trafficking 8

Literature Review 9

Inductive criminal profiling 12

Deductive criminal profiling 12

Drug Trafficking Profiling 15

Methods 17

Forensic Analysis of Drugs 18

Drug Trafficking Network Analysis 23

Victimology 24

Results 27

Conclusion 29

A written profile 30

References: 32

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Introduction

Law enforcement agencies are understandably keen to use any assistance from science, in their search for crime fighting aids. Advances such as finger prints identification and DNA Profiling has added greatly to the resources used by the law enforcing agencies in identifying criminals. Likewise, criminal profiling has attracted a great deal of interest within the circles of law enforcers. This is an open avenue to exercise attention together with profiling techniques and enforcement work.

The purpose of the paper is to consider the application of the profiling techniques to the interdiction/investigation of drug trafficking. In general terms, a profile can be defined as a concise biographical sketch of the offender. There are many applications of profiles to specific aspects of individual behavior. For example, medical tests can determine a patient's health profile, the examination of financial records may provide a basis for developing a person's financial profile, and a person's references may suggest a professional profile. These are examples of non-criminal profiles.

A criminal profile is different in that, while non-criminal profiles are based upon observable characteristics of the subject at hand, criminal profiles consists merely of hypothesis about what the actual characteristics of the known subject (i.e., criminal offender) might be. McCann (1992) makes this difference clear by indicating that criminal profiling (also called psychological profiling, and criminal personality profiling), includes analyzing various aspects of a crime in order to derive a set of hypotheses about the characteristics of an unknown offender. The set of hypotheses of criminal profile is simply a set of assumptions to be tested.

Drug traffickers' profiling would provide law enforcement agencies with physical and chemical information that may assist in identifying and disrupting drug traffickers and trafficking organizations. Detailed chemical analysis provides information which when compared to historical data allows investigators to determine the geo-location of cultivated drugs such as cocaine and heroin. Similar analyses of synthetic drugs afford

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information on synthetic route and precursor chemicals. When combined with physical evidence this information may also be used to help establish links between different seizures of illicit drugs. The basis upon which a criminal profile is able to generate hypothesis about unknown offenders appears to be either unclear or still in the developmental stage. Thus McCann (1992) points out that criminal profiling, which began in 1970, is still considered to be more of an art than a science.

Structure of the Research Paper

This paper would introduce the topic by explaining the drug trafficking in detail. Then attempt will be made to focus upon the design, development and evaluation of a comprehensive profiling method that enables the technical and psychological aspects to be combined and utilized within a coherent overall profile. A subset of representative drug trafficking categories has been selected for detailed evaluation to develop a comprehensive profile. The profile would base upon a novel combination of methods identified in the paper. Strategies will then be designed to facilitate the use of these profiles in the context of investigating, preventing, detecting, and responding to such incidents. This will involve the proposal of new methods for drug trafficking investigators (e.g. use of the profiles in drug interdiction).

Drug Trafficking & Drug Interdiction: An explanation

Drug trafficking is a global illicit trade involving the cultivation, manufacture, distribution and sale of substances which are subject to drug prohibition laws. Drug trafficking, also known as drug distribution, is the crime of selling, transporting, or illegally importing unlawful controlled substances, such as heroin, cocaine, marijuana (Tetrahydrocannabinol drugs or THC), methamphetamines, opiates (heroin and morphine), amphetamines, phencyclidine (PCP), and their metabolites. While, Interdiction refers to the interception of illegal drugs before they reach local dealers and consumers. This technique attacks trafficking head-on, as it correctly identifies the trafficker as the fundamental problem and facilitator of the drug industry. From a policy

perspective, interdiction intends to limit the supply of drugs, causing the price to substantially increase, which in theory, ultimately decrease consumption of drugs.

Extent of the problem (Drug Trafficking)

Statistics from recent years have illustrated a dramatic rise in the incidence of drug trafficking. The trend of globalization has led to an explosion of drug trafficking. More than 420 million shipping containers traverse the seas every year, transporting 90 percent of the world's cargo[1]. Most carry legitimate goods, but authorities cannot inspect them all, and some are used to smuggle drugs — or just as importantly, the chemicals used to make meth and cheaply process coca leaves and opium poppies into cocaine and heroin. Airplanes, submarines, speedboats, trucks, tunnels — taken as a whole, the systems used to move illegal drugs around the world comprise a logistics network likely bigger than Amazon, FedEx, and UPS combined.

Today, the global market for illicit drugs nets over $500 billion annually-roughly the size of Switzerland's economy. It is one of the top five largest industries in the world after the arms trade, accounting for at least one percent of the global economy (S.M. Janner, 2011). In 2014, transnational organized crime groups across the globe were estimated to have generated between approximately one fifth and one third of their revenues from drug sales. Europol identified some 5,000 international organized crime groups operating in countries in the European Union in 2017, and estimated that more than one third were involved in drug trafficking. This makes drug trafficking more widespread across organized crime than organized property crime, smuggling of migrants, trafficking in human beings, excise fraud or any other illicit activity (UNODC, 2017).

Mobile communications offer new opportunities to traffickers, while the dark net allows users to anonymously buy drugs with a crypto-currency, such as bitcoin. While

[1] https://news.vice.com/article/drug-trafficking-meth-cocaine-heroin-global-drug-smuggling

drug trafficking over the dark net remains small, there has been an increase in drug transactions, of some 50 per cent annually between September 2013 and January 2016 according to one study (UNODC, 2017). In 2015 about a quarter of a billion people used drugs. Of these, around 29.5 million people or 0.6 per cent of the global adult population were engaged in problematic use and suffered from drug use disorders, including dependence.[2]

Furthermore, Drug traffickers in countries all over the world corrupt officials at all levels of law enforcement and government in order to continue with their criminal activities unimpeded. As a result, citizens in affected areas have to live with compromised law enforcement institutions. Today, this is seen in different continents, where illicit cultivation of cannabis plant, coca bush and opium poppy continue unbridled, resulting in less stable government institutions and the corruption of government officials. Traffickers establish new transit routes by exploiting weak governing institutions, financing corruption and terrorism with the gains made by engaging in illicit activity. These facts clearly portray the extent of the problem and suggest that the present drug interdiction approach alone is not a sufficient basis for tackling the problem. To more effectively combat drug trafficking, it is necessary to understand the reasons and motivations for incidents, and the methods by which they are perpetrated, and then use this as a means of informing investigation and detection activities.

This paper will explain the concept of criminal profiling, which is used to provide a picture of an unknown offender, by analyzing his or her crime perpetration. The paper will also consider ongoing research relating to how these methods can be used for drug related crimes. The discussion begins by presenting a background to the profiling concept, before proceeding to review the common approaches used within traditional criminal investigations. The desirability of profiling drug traffickers is then considered, leading to an overview of the accompanying technical methods that could be used to

[2] World drug report 2017 UNODC

assist the evidence gathering process. The results section shows how these methods can be mapped into a behavioral evidence analysis approach, in order to provide a potential top-level profiling method for drug trafficking. When the paper refers at the male perpetrator, it is always meant the male and female criminal.

Types of Drug Trafficking

Before devising any prevention strategy, we have to understand the methodology of trafficking across different levels. Characteristics of drug distributors vary from place to place and changes over time. However, having some basic understanding of the characteristics or behaviors of drug distributors could help establishing counter-measures and protect the welfare of individuals and communities. Generally, drug trafficking can be categorized into three groups:

1. Freelance drug trafficking,

2. Socially-bonded drug trafficking and

3. Corporate-style drug trafficking.

1) Freelance Drug Trafficking

This involves independent traffickers or petty criminals with no obvious tie to any group or organization. They are not very sophisticated and use common everyday technology to communicate. In the locations where they operate in, they have no formal hierarchy or division of labor. Every person is his own boss. Freelance traffickers are often drug addict as well. They usually supply small quantities of drugs, but supplies can be unpredictable. Their area of operation is not easily defined but it is common to find them to be confined to a certain street or locality. They operate very visibly. They use forms of threats to secure themselves and use each other as look-out to detect police presence. They are usually involved in drug trafficking to earn a living.

2) Socially-bonded Drug Trafficking

Socially-bonded trafficking is based on socially constructed ties[3]. The ties could be based on family ties "family business", race, ethnicity, nationality, kinship and neighborhood communal business". They may also be based on ideological or cultural commitments such as groups of Rastafarians[4] or a network of distribution of designer drugs known as the "ravers"[5].

These traffickers are in small groups which share a common feature that binds members of the group together. They sell drugs together. The group may have or may not have a name. Like freelance drug trafficking, the level of communication in socially-bonded drug trafficking is not very sophisticated. Although they look organized with division of labor, the relationship is still loose and not formal. It is not predictable, the quantities they can supply. They have no defined area of operation but it is possible to tie them to a neighborhood or geographic territory. The transactions are barely hidden. They too use violence and intimidation to operate freely. They are involved in drug trafficking to survive and support each other.

3) Corporate-style Drug Trafficking

These are well organized criminal groups with a sole motive of making large profits. They use sophisticated technology to block law enforcement. The structure of such groups is large, stable and hierarchical. However, employees are usually kept in the dark about the operations of the organization, who is involved, and they are closely supervised. Employees are only provided with small amount of drugs to supply so as to limit the amount they could steal. Those in the positions of power may share similar characteristics such as ethnicity, or kinship. This group of traffickers usually moves large quantities of drugs. Their places of operation vary depending on economies of scale. Their drugs are well packaged, highly priced and disguised (concealed). The

[3] Toward the Development of a Typology of Illegal Drug Markets (2000) by Richard Curtis and Travels Wendel

[4] Have distinctive codes of behavior and dress, including the wearing of dreadlocks and the smoking of cannabis.

[5] Partygoers/Clubbers

transactions are hardly open. They use threats of retaliations, hire armed guards, employee lookouts and utilize surveillance technology.

This is the level at which most drug cartel operates. Warden's Five Ring Model[6] of a drug cartel indicates that such a group has leadership (a leader), organic essentials (sources of drugs) infrastructure (i.e. buildings, access and control of roads, airways and water transport), population (growers, processors, distributors), and field forces (street soldiers).

Levels of Drug Trafficking

The trafficking process generally consists of three locations. From production to transshipment centers and finally the consumption stage. The mission of the traffickers is to get the drugs from the suppliers to the consumer as efficiently as possible without being detected. Their place in the chain is the most important and, therefore, the most lucrative. The implied value added of trafficking is estimated at more than 2,000% (M. S. Jenner, 2011). Generally, three types of drug traffickers conduct sales at three levels based on location. Any type of drug trafficker can operate at street -level, indoors or through deliveries:

i. Streel-level trafficking. This occurs outdoors. The sales may be between anonymous buyers and sellers or between buyers and sellers who know each other.

ii. Indoor trafficking. As the name implies, sales occur indoors. This may be in apartments, basements, nightclubs, lodges and bars.

iii. Delivery trafficking. This type of distribution offers drug users the opportunity to have drugs delivered directly to their home, office or other safe location.

[6] Represents a theory of military strategic attack, named in honor of Col. John A, Warden III, a former US Air Force Officer and theorist of air power.

Structure of Drug Trafficking

Drug trafficking is a complex activity with no easily defined structures and behaviors. However, there are seven major characteristics that can be used to define the structure and behavior of drug traffickers. These include[7]:

a. communication,

b. organization,

c. movement,

d. environment,

e. transactions,

f. security, and

g. motivation.

Communication: refers to how information is exchanged among drug suppliers, drug users and drug traffickers. This includes pagers, face-to-face, landlines, cellphone, middle-men, postal mail, e-mail, and computers. Some of the communication devices are sophisticated and used to prevent law enforcement interception of communication between traffickers. A scrambler, for example, attaches to an ordinary radio, and "scrambles" the normal radio frequency with a number of different codes. Only someone with a receiver coded to the particular scrambler frequency can decipher the transmitted message, the transmission is unintelligible to all other receivers. Digital encryption devices are used to send messages in code, and are often secured so that they can be accessed only after a security number is punched directly into the device.

Organization: refers to the relationship, grouping and operational hierarchy of drug traffickers. The drug traders could be independent individuals, loose knit groups or highly organized criminal organizations.

[7] John Eck and Jeffrey Gersh (2000) "Drug Trafficking as a Cottage Industry".

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Movements: includes the transportation of drugs from one location to another and the quantities of drugs. This may involve using private vehicles, commercial airlines, private airplanes, private boats, public transportation, rail, people and animals.

Environment: refers to places or locations where drug trafficking occurs. These include a house, apartments, entertainment places, commercial places, public areas, lodges, abandoned buildings and vehicles.

Transactions: includes how drugs are packaged, priced and disguised (concealed). Drugs may be sold openly or secretly.

Security: includes the protection drug traffickers put around them to ensure they operate freely. Drug traffickers seeks security to protect themselves from other offenders and protection from law enforcement agencies. They use threats of retaliation, intimidation, surveillance of approaches (lookouts), armed guards, identification checks and screening.

Motivation: is basically the reason for continued existence. Some traffickers are purely involved to make a living and for survival. Others use it to make large profits and to fund other unscrupulous activities.

Literature Review

The origins of profiling can be traced back many centuries. In 1486 a guide 'Malleus Maleficarum' was published about identifying witches[8]. The purpose of criminal profiling methodology remained to assist in the process of investigation, moving from a universal set of related suspect behaviors and characteristics to a unique set of related suspect behaviors and characteristics. It is further used to gain insight into the state of mind of criminals during the commission of their criminal offence (modus operandi) and to gain insight into offender fantasy and motivation in some cases. Criminal

[8] The European Witch Hunters' Manual, by Heinrich Kramer & Jacob Sprenger 1486-1487. http://www.thoughtco.com

profiling can also be defined as a systematic method developed for analyzing forensic evidence at a more thorough and complete level than traditional methods.

In recent times, Professor Brent E. Turvey has revived this art into practice. He considered criminal profiling a method to understand the mind of an unknown perpetrator or to gain an insight into how the perpetrator behaves if a specific situation occurs (Turvey, 2003). The modern approaches including of Bundeskriminalamt[9] considers all the facts of a crime and focus on crime reconstruction, instead of focusing the development of an offender profile. The profiling technique has included many other disciplines in recent times:

1. Criminology, dealing with the study of criminal behavior itself.

2. Psychology and psychiatry, dealing with the scientific study of human behavior and mental illness.

3. Forensic science, dealing with the physical evidence.

Although there is no doubt about the sciences that build the basis, there is a wide range of methodologies within which they are combined but conclusions are often based on statistical arguments. One inference of the criminologists is the modus operandi (MO). The MO describes what the perpetrator did, at which time, how he reached his result, the tactics and methods, and the characteristics of his or her doing. In the early days of criminology, it was assumed that a perpetrator could not vary his methods and tactics, and had no autonomy of decision about his/her MO. Today there exist doubts about this, and it is considered that a perpetrator is able to learn and to improve (Turvey, 2003).

Several profiling methods have been developed and are being used by the law enforcement agencies like FBI (Federal Bureau of Investigation), RCMP (Royal Canadian Mounted Police), BKA (Bundeskriminalamt) and from several scientists and criminal

[9] The Federal Criminal Police Office of Germany

profilers, such as Turvey, Britton, Canter and others. The criminal investigative approach used by the law enforcement and more specifically by the Behavioral Analysis Unit (BAU) within the FBI is intended to "assists law enforcement agencies by their review and assessment of a criminal act, by interpreting the offender's behavior during the crime and the interactions between the offender and the victim during the commission of the crime and as expressed in the crime scene" (Vettor, et. al. 2013). The research activity for profiling methods is based on the idea of the modus operandi and the offender's signature. For a better understanding, it is necessary to explain the two basic differences to provide a statement about an offender of a specific crime. The process has become an investigative tool that allows the law enforcement agencies to identify likely suspects (descriptive offender profiling) and analyze patterns that may predict future offenses and victims (predictive offender profiling). Wilson, Lincon and Kocsis (1997) list three main paradigms of profiling including diagnostic evaluation, crime scene analysis, and investigative psychology. While, Ainsworth (2001) identified four, clinical profiling (synonymous with diagnostic evaluation), typological profiling (synonymous with crime scene analysis), investigative psychology, and geographical profiling.

Another type of criminal profiling is referred to as linkage analysis. Gerard N. Labuschagne (2006) defines linkage analysis as "a form of behavioral analysis that is used to determine the possibility of a series of crimes as having been committed by one offender." Gathering many aspects of the offender's crime pattern such as modus operandi (MO), ritual or fantasy-based behaviors exhibited, and the signature of the offender, help to establish a basis for a linkage analysis. Labuschagne (2006) further insist that in gathering and incorporating these aspects of the offender's crime pattern, investigators must engage in five assessment procedures, obtaining data from multiple sources, reviewing the data and identifying significant features of each crime across the series, classifying the significant features as either modus operandi or ritualistic, comparing the combination of modus operandi and ritual or fantasy-based features

across the series to determine if a signature exists, and compiling a written report highlighting the findings.

There are mainly two types of criminal profiling, inductive criminal profiling and deductive criminal profiling. In general terms, deduction involves moving from a level of theory to specific hypothesis, whereas induction entails inferring about a whole group on the basis of knowing about a case or a few cases.

Inductive criminal profiling

Inductive criminal profiling involves deriving rules from a set of specific cases or observations to form a generalization – these generalizations are called premises (Turvey, 2003). To build a profile in this way, observations of many crimes have to be analyzed, to filter out clusters of signs and symptoms. The result then describes an average offender (of a specific crime) (Turvey, 2003). Furthermore, an inductive criminal profile is generalized to an individual criminal from initial behavioral and demographic characteristics shared by other criminals who have been studied in the past. It is the product of incomplete, statistical analysis and generalization (very often without comparison to norms), hence the descriptor inductive.

Deductive criminal profiling

Deductive profiling differs significantly from the inductive reasoning. Rather than analyzing a large amount of data from different cases, a profiler has to analyze a specific crime scene and the physical evidence that is discovered (Turvey, 2003). As deductive criminal profiling deals with only one offence of a specific crime, the issue of professional experience becomes much more important. Results from an inductive criminal profile also support the process of reasoning during development of a profile in a deductive way (Turvey, 2003). Three methods of deductive criminal profiling are in practice:

1) operational case analysis,

2) crime scene analysis,

3) behavioral evidence analysis,

1. **Operational case analysis.** The operational case analysis is a method developed by the BKA (Bundeskriminalamt). The important point of the German approach is, that there is no focus to develop a profile. The aim of the OCA is to reconstruct and analyze the case.

a) Collection of information. During this stage any kind of information including forensic reports have to be gathered, like autopsy reports, photographs, videos, maps, traces, facts and more. The information has to be objective data, evidence given from witnesses has to be ignored at this point.

b) Decision-making process. This step is used to provide information about the risk to the victim, the risk to offender, a case classification and the first impression about the primary motive.

c) Reconstruction. A detailed analysis of the sequence of the offence has to be provided as well as a conduct classification.

d) Case characteristics. This step reveals a conclusive classification of the motive, the victim selection and selection of the crime scene. The case characteristics also provide information about the aspects control, escalation, progression, staging, undoing and the dynamics at the crime scene.

e) Offender profile. This stage is used to build an offender profile, regarding the offender's psychological and physical characteristics, education, present circumstances, previous convictions, home and anchor points and the offender's conduct before and after the offence.

2. **Crime scene analysis.** As the name suggest, this method is used to draw an impression of the crime's perpetration. This method was developed by the Behavioral Science Unit (BSU) of the FBI and is based upon six steps (Petherick, 1999):

a) Profiling input. Any relevant information of the specific case has to be collected. Relevant information may include photographs of the crime scene, a background check of the victim, autopsy protocols, and any information that can be gathered about the time before, during and after the crime.

b) Decision process models. Gathered information has to be arranged in a coherent and logical order. These developed patterns can highlight relations to one or more other crimes, which follow those patterns. This can establish the assumption of the perpetrator as a serial offender.

c) Crime assessment. The next stage is used to understand the role of the victim as well as the role of the offender, by reconstructing the sequence of events and the specific behavior of victim and perpetrator.

d) The criminal profile. This process deals with providing knowledge about physical and behavioral characteristics of the perpetrator. This knowledge may be used for tactical decisions.

e) The investigation. The profile now has to be distributed to the investigating and requesting law enforcement agencies and the police officers. The profile has to be reassessed if no suspects are identified, or if new evidence is gathered.

f) The apprehension. During this process the profile has to be cross checked against the characteristics of the offender who has been apprehended.

3. **Behavioral evidence analysis.** The Behavioral Evidence Analysis (BEA) is another method developed by Brent Turvey and is an implementation of deductive reasoning (Turvey, 2003) and this process falls into following several parts:

a) The equivocal forensic analysis. A full forensic analysis has to be performed. This includes physical evidence, witness statements and/or the corroboration of the two. This has to be done to establish the victim and the offender's behavior by reliable sources.

b) Victimology. Victimology is an important step of Behavioral Evidence Analysis, and is a form of risk assessment. The knowledge of the victim's characteristics can give the investigators a hint about the offender's motive, modus operandi and the determination of offender fantasy behavior. As such, it is necessary to spend a lot of time profiling the victims.

c) Crime scene characteristics. The next step is to analyze the crime scene characteristics. For example, Turvey lists the method of approach, method of attack, method of control, location type, nature and sequence of sexual acts, materials used, any verbal activity and precautionary act s. These characteristics are determined from the forensic evidence and the victimology, and can help the profiler to discriminate between modus operandi (MO) and the offender's signature behavior.

d) Modus Operandi & Signature Behavior. The MO is a summary of habits, techniques and peculiarities of behavior of an offender that varies with the growing experience of the offender. Whereas the signature behavior means that the behavior of the offender must be so unusual and distinctive as to be like a signature[10]. Douglas (1992) describes it, with simple words. The specific MO is used by the offender, because it works. The offender is able to commit the specific crime. The signature behavior (Douglas calls it signature aspect) is a unique behavior, that is developed by the offender's fantasies and which are need to be expressed by this special behavior. Having considered the basis of these approaches, it is also relevant to examine the applicability of profiling in the context of drug trafficking crime.

Drug Trafficking Profiling

Criminal profiling has much to offer when a network such as the drug trafficking is involved. The process of developing a profile using the classical criminalistics methods is infeasible for the incidents of drug trafficking, and it has to be used in a different way.

[10] Brent Turvey (2003) pp. 65, 66

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To this end, the inductive and the deductive reasoning methods can be re-considered in the context of drug trafficking:

Deductive reasoning. For deductive profiling or behavioral evidence analysis the equivocal forensic analysis has to be performed, and the victim has to be profiled (Victimology). At least the crime scene characteristics have to be worked out. The process or journey of the trafficking generates footprints of the offender/trafficker. These can help to establish the behavioral aspects of the victim/destination and the offender/trafficker. This procedure is very similar to the equivocal forensic analysis for non-drug trafficking cases, but the analysis has to be performed in a different way (for some aspects). The primary investigation activity has to be reviewing audit trails, instead of interviewing potential witnesses.

Inductive reasoning. Inductive reasoning could also be used for drug trafficking profiling. The problems will be the same as for the common psychological profile, in terms of the necessity to gain a large amount of data, describing the offender's demographic characteristics as well as the behavioral aspects. As mentioned above, inductive reasoning can reveal clues to an investigator that provide input for the process of deductive reasoning.

Several papers and books exist, that deal with drug trafficking taxonomy. Sometimes it is talked about trafficker's profiles. However, much of the work to date is actually more related to categorization of the trafficking methodologies, and little prior work has been conducted in relation to the profiling of drug traffickers from a psychological perspective. Much of the existing material appears to be based upon anecdotal stereotypes rather than objective evidence. It is important to understand what types of offender are described by those taxonomies. Several works also try to describe the traffickers' characteristics, with discussions about the skill and the motivations of the perpetrators. This results in traffickers' classification such as freelance drug traffickers, socially bonded traffickers and corporate style drug trafficking. The term freelance

traffickers, is used to refer immature traffickers or petty criminals who are not able to develop their own exploits, and therefore rely upon selling or transporting the drug to support themselves or livelihoods. Meanwhile, socially bonded traffickers are those who are growers or the resident of areas where opium is cultivated or they are residence of the trade routes used for drug trafficking.

However, while such descriptions provide a useful means of distinguishing the motives of drug traffickers at a general level, a genuine criminal profile has to be developed in a specific way, supported by statistical methods and/or common criminalistics method, like equivocal forensic analysis, victimology and the analysis of the crime scene characteristics. The existing profiling efforts could be identified as a method of profiling using inductive reasoning. They show off fewer characteristics that help to describe an offender in a way it is needed in law enforcement investigations. The way a freelance trafficker is characterized can hardly help to draw a detailed picture of the perpetrator. It can probably help the investigators to understand the motivation, but a profile as described above cannot tell anything about the behavioral aspect such as what a perpetrator does to hide his footprints, or the tools he uses for communication.

In short, the existing taxonomy does not show off the MO or signature behavior, that is one of the very interesting and important aspects of profiling. A more detailed description of the trafficker could be provided by using the way of deductive reasoning, as it was shown before and described by the term Behavior Evidence Analysis (Turvey, 2003).

Methods

As expressed above, there is a discrepancy in the understanding of profiling as an art or a science. The discussion shows that there are probably some aspects of profiling that could be supported by the scientific method. However, there are also cases in which professional experience, probably supported by inductive reasoning, seems often to be more attractive, due to the speed this method shows results (Turvey, 2003).

Deductive reasoning is a slower way to establish a profile, but it allows more detailed statements about the probable perpetrator. It is suggested that inductive reasoning may only be applied if there is a chance to gather the important data in such an amount, which allows the gathering of meaningful results from that sample. The data needs to be a combination of demographic and technical attributes, and there needs to be an appropriate number of suitably similar cases from which to base a sample. A promising way to create drug traffickers' profile is deductive reasoning, using Behavioral Evidence Analysis. In order to have some data to work from, this kind of reasoning has to be applied to information collected from seized drug forensics.

Forensic Analysis of Drugs

Forensic analysis of drugs has become a recognized means of providing evidence in drug related crime cases. There are several Forensic laboratories, law enforcement research groups, and civilian researcher and research groups who give rulebooks to forensic investigators. For deductive reasoning the equivocal forensic analysis has to be performed. This is what Casey (2004) calls crime reconstruction he distinguishes between relational, functional or temporal clues, that could be gained. Relational clues describe interactions between objects, e.g. the use of a concealment method and sophistication level used to transport a particular drug and a mean/tool for the shipment of contents. Functional clues describe the way something works and/or how it was used. The temporal clues describe the timeline for evidence and events.

The determination of the country of origin of seized opium is another problem for the law enforcement agencies. Where does all the opium come from could provide the illicit traffickers with their wares and the clan destine factories with the raw material for the manufacture of drugs for the illicit market? Is it produced illicitly, or diverted from legal production? At what stage and in what countries is control lacking? The problem is no small one. Seizures in general, constitute only a small part of the total volume of illicit traffic.

The origin may be deduced from attendant circumstances, the itinerary of vessels on which the narcotics are smuggled, newspapers used for wrappings, and so on. It may be learned from the statements of the traffickers when arrested, or from what they tell undercover agents of a government. It may be apparent from marks, labels and the like, particularly in case of drugs that are diverted from legitimate uses. But all these means have very decided limitations. Newspaper wrappings may not mean anything, traffickers may not tell the truth, labels may he forged. It will be much more satisfactory if some characteristics of the drug itself can be used to tell its origin at least to supplement and confirm the other evidence possibly to show in some cases that suspicions may not be correct, in other cases to establish the truth beyond a reasonable doubt.

Opium is the most fundamental material of the illicit traffic of drugs and at the same time its characteristics make it the most suitable substance for an attempt to determine origins by physical and chemical means. Factory-made products, such as the pure salts of morphine or heroin, show very few points of difference, no matter where they are made although the products made in clandestine laboratories or factories are not wholly pure and still show some "marks of origin", frequently including characteristic adulterations.

Furthermore, opium is a crude natural product and like other such products differs greatly when produced in different parts of the world. These differences are due to methods of handling and shaping the cakes of opium, both by the national monopoly and before that by the peasant producer to the traditional methods of obtaining the opium and time of incision, number of incisions of each capsule, length of time the latex is left on the capsule before collection, how it is dried and so on. The differences in soil and climate of the poppy-growing regions and the differences in the variety of poppy grown. An expert with many years acquaintance with opium from different sources, merely by looking at a piece and cutting into it, noting its appearance, color, texture, odor, etc., can often tell where it came from. What is needed is to make such judgments

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more scientific, more definite, more quantitative, less dependent on vague impressions which cannot he fully explained dependent rather on physical and chemical criteria that can he used by competent chemists, anywhere in the world.

To be of any use for the present inquiry, the types must correspond fairly well to geographical regions or localities. They may not, however, correspond to the political boundaries of countries in all cases. Macedonia, for example, is divided between three countries, each of which allows opium production in its part of Macedonia. No study has yet been made of the necessary criteria for distinguishing Yugoslav, Bulgar and Greek opium. On the other side of the problem, within a large producing country such as Turkey, Iran or India, there may well be several quite distinct geographical types, produced in different provinces or districts. Turkey, for example, recognizes a broad distinction between "druggist" opium and "soft" opium, and these two kinds are produced in separate districts.

A broad array of data is necessary. By utilizing and confirming this existing knowledge, several geographical types can he recognized and described from the examination of only a few samples of known origin. Furthermore, once we are sure that certain characteristics vary geographically, a new type can be described from a few authentic samples, or even from a single one that is representative of at least part of the production of a country. For example, suppose a single authentic sample of Iranian opium, representative of the production of a particular province, is examined and fully described. Even if it should later be found that most Iranian opium is markedly different in certain respects, the sample first described would remain an example of one type of Iranian opium.

Equivocal Physical profiling involves many routine techniques used by forensic personnel around the world for all types of crime. For criminal activity, which spans many jurisdictions and associated languages, imaging has proven to be of great importance. Digital images of key features allow the process to generate reports that

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can be transmitted through liaison networks around the world including the jurisdictions where chemical drug profiling, or even routine analysis, may still be in development. A set of images depicting an illicit drug concealment can have immediate meaning to not only forensic scientists, but also investigators, community police, customs officers, intelligence analysts and others. This meaning can connect individual seizures or establish an alert for the future. Development in physical profiling is dependent upon establishing which key features should be recorded or measured, whether it be through imaging or scientific measurement. Just as chemical profiling seeks to examine the various constituents of the illicit drug, so too has research been conducted to establish reliable analytical techniques to profile common packaging materials such as plastic bags, films and adhesive tapes. The physical examination of the illicit 'Ecstasy' tablet or block of heroin can also reveal connections through minor imperfections in the tool used to press them. It is important for a forensic chemist to be able to identify the majority of the precursors, intermediates, and final products in order to establish grounds for prosecution.

While, Forensic drug analysis deals with the identification and quantification of illegal drugs and generally carried out in two steps, screening and confirmation. Once drugs are detected through screening, for example spot test kits (e.g., immunoassays, Marquis test[11], etc.), samples are then collected and sent to laboratories for confirmation tests that requires high sensitivity and selectivity toward drugs, as well as their metabolites, and is frequently carried out by GC/MS1[12]. Gas chromatography (GC) is based on the separation of volatile samples by their unique affinity for the column. Target drug compounds in the sample are identified by their retention times when samples are passed through chromatographic columns. The first step is to determine the major alkaloids that are present in heroin.

[11] Primary presumptive test used in Ecstasy testing kits, also be used to test for substances like Opiates, name after Eduard Marquis a Russian Pharmacologist.

[12] Gas Chromatography-Mass Spectrometry (GC/MS)

In addition to morphine, the opium poppy contains other alkaloids such as codeine, thebaine, papaverine and noscapine. These compounds are co-extracted with morphine and are found in varying amounts in heroin. This process quantifies the diacetylmorphine, morphine, codeine, acetyl codeine, 6- monoacetylmorphine, 3-monoacetylmorphine, papaverine and noscapine present in the heroin by a capillary electrophoretic technique. Much empirical evidence has been built up over time regarding the levels of these substances in heroin from different regions in the world. By calculating the ratios of these compounds to total morphine and comparing these values with figures obtained on thousands of authentic (known origin) samples it is possible to classify a heroin sample as having been produced in Southwest Asia (Afghanistan), Southeast Asia (Myanmar, Laos, Thailand, etc.), Mexico, or South America (Colombia).

It is pertinent to note that during the processing of morphine into heroin a range of solvents are employed. Strangely, solvents used in Southeast Asia are never used in Southwest Asia. The same applies to the other major heroin producing regions. When heroin is produced traces of the solvents used are trapped in the crystal lattice. By a process known as Static Headspace Gas Chromatography – Mass Spectroscopy, it is a very simple matter to determine which solvents are present and hence where in the world the processing occurred.

Again, anyone can produce methamphetamines with instructions found on the Internet and easily acquired chemicals. As the number of clandestine laboratories increases across the U.S. it is vital for forensic chemists to provide real-time, reliable results. FTIR-ATR[13] is an important tool for the forensic laboratory due to its ease of use and cleaning, lack of sample preparation, and chemical/physical ruggedness of diamond sampling crystals. In addition, the technique offers better sampling

[13] Fourier-Transform Infrared Spectroscopy (FTIR) Attenuated Total Reflection (ATR)

reproducibility by eliminating the possibility of sample contamination during sample preparation.

Drug Trafficking Network Analysis

Whereas trafficking analysis is done by an examination of existing record and accessible material, trafficking analysis requires a specific information. If there is nothing that logs shipment or trafficking records including port of shipment and destination, there is nearly no way to analyze anything trafficking-specific after the crime was committed. However, if the trafficking is monitored, some aspects of the trafficking could be analyzed.

Transnational drug trafficking involves the movement of illegal commodities across borders. In most cases, willing sellers and buyers collaborate to successfully achieve their goal. Naylor (2003) argued that drug trafficking consists of multilateral exchanges of inherently illegal goods between producers, distributors and consumers in a market-like context. Two elements of Naylor's definition are particularly relevant. First, drug trafficking involves the movement of an illegal commodity from source to user. The chain between the two comprises a given number of intermediaries. This could be referred to as the "economic" element because it is centered on the commodity trade.

Second, those exchanges occur in specific social and political contexts, the commodity itself is secondary. The contextual element of drug trafficking has been the subject of many analyses in geopolitics. Geopolitics are useful to explain the historical role played by Afghanistan in the production of opium poppy (Chouvy, 2010), the frequent use of Spain as a transit country towards Europe or the development of the cocaine industry in Colombia. In all cases, drug trafficking emerged and remained in place because of a combination of economic, geographic, cultural and political factors. Network analysis techniques are particularly useful when dealing with relational data. As Morselli (2009) puts it, "the network is a self-organizing structure that is essentially driven by

emergent behavior of its part". Network analysis seeks structure without assuming that participants are fully aware of their position. Network analysis is well adapted to empirical tests of the world-system perspective and has been used in major contributions (Mahutga, 2006; Smith & White, 1992; Snyder & Kick, 1979).

Victimology

Victimology would be the study of the victim/drug addicts, including the offender/drug trafficker and society. Victimology would be a social-structural way of viewing drug trafficking, law and the criminal and the victim. The social context provides challenging insights when the analysis of crime rates and crime situations are analyzed in the mirror of social change. The concept of social change is not easy to define, but there are key years of social change to which there is general agreement. For example, 1934 was one of the peak years of economic depression in the United States, in 1964 violence and crime in general started to increase, 1984 saw a shift in legal proceedings from offenders to victims' rights. In more contemporary times, the term "victim" has been expanded to imply a victim of war or an accident or a scam or identity theft. All of the various terms indicate meaning in general use. Victim is neither a legal nor scientific term. Victim as scientific concept, according to Mendelsohn (1976), may be viewed as containing four fundamental criteria:

i. The nature of the determinant that causes the suffering. The suffering may be physical, psychological or both depending on the type of injurious act.

ii. The social character of the suffering. This suffering originates in the victim and other reaction to the event.

iii. The importance of the social factor. The social implications of the injurious act can have a greater impact, sometimes, than the physical or psychological impact.

iv. The origin of the inferiority complex. This term, suggested by Mendelsohn, manifests itself as a feeling of submission that may be followed by a feeling of revolt. The victim generally attributes his injury to the culpability of another person.

This part of the profile would also be the thorough study and analysis of destination's characteristics. The characteristics of destination for drug traffickers can lend to interferences about trafficker's motives, modus operandi, and the determination of traffickers' characteristics. Part of destination analysis is the risk assessment. The drug trafficker's perception of risk regarding smuggling attempt will dictate his actions during offence planning, during offence execution, and after the offence/transaction has been completed.

Furthermore, it is important to recognize that the drug trafficker's perceptions regarding the risk level of a smuggling attempt is incomplete or just plainly wrong. Not only is the profiler interested in the amount of risk a destination places upon a trafficker, but also the amount of risk the trafficker is willing to take to reach the destination. It also includes the time/frequency of arrivals, his past travelling/shipping history particularly the source of traffic/routes adopted during the execution of past drug trafficking incidents. In deductive method of criminal profiling, almost as much time should be spent profiling risk assessment as rendering characteristics about the offender responsible for the crime.

In general, there are few undeniable principles before tackling the profile of the victim(s). There is always a reason why someone becomes a victim, though it sounds harsh, even for some judgmental, but it is a reality. Here the point is not to say that if someone gets raped, it is because the person deserved it. That is untrue. The idea behind this statement is that however absurd or twisted the reason can be, there is a reason why the offender chose to victimize the person. Even in a case of total opportunity victim, the victim still had a reason to be where and when the offender chose to commit his crime, and even might have triggered (consciously or unconsciously) the offense. Therefore, there is no such thing as just sheer bad luck in the victimization process.

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The last principle is that victimology is fundamental when building an offender profile as very often, for each specific victim profile corresponds a specific offender profile. The main goal of victimology is to determine the possible links between the victim and the offender and the context of the victim/offender relationship to establish the origins of the victimization or why the victim was chosen or targeted to define and narrow the suspect pool. The victimology research should be as wide as possible, and should include physical condition, culture, type of population, the integrity of law enforcement agencies, geographical position of the destination, social conditions of the masses, life style, family relationships, social behavior, private life and environment. Such kind of information would help to understand that why a destination is being targeted by the drug traffickers.

Victim selection is the process by which an offender intentionally chooses or targets a victim. The drug traffickers have particular selection criteria that satisfy their needs. The major factors that can influence this decision making process include, availability of market having easy targets to sell their product. The next factor of their selection is the location having easy accessibility like seaports and border areas, where they can easily dump their consignment for further distribution. Another selection criteria might include is the vulnerability of the victim as angels of death prey on sick or dying victims. The large metropolitans having youth in abundance are the likely targets of drug dealers as youth is considered the most vulnerable group among people.

If we can understand how and why a drug trafficker selects a particular area or group of people, then we may also be able to establish the relational links between the people and the drug traffickers. Additionally, if we come to understand the drug traffickers' overall strategy for the selection of the targeted group, then we have a better chance of predicting the type of people/area the drug trafficker may select in the future. A pre-surveillance behavior of the drug traffickers has mighty importance in the selection of the people who have been chosen as targets by them. This suggest that a reconstruction of the victim's attributes may give a direct insight into the fantasy of the

drug trafficker. Finally, it is important to try to determine that if the targeted area/locality have presented any resistance to the drug trafficker. This resistance could be gauged by the performance of the law enforcement agencies and the correctional institutions of that particular area.

Results

Criminal profiling is used to optimize investigation, to reduce the number of suspects, to set up a risk analysis or, in the best case, to catch the offender (Turvey, 2003). For drug trafficking crime, it is proposed that profiling could be used in the same way, respectively to achieve the same objectives. First of all, the equivocal analysis has to be done, so seized narcotics, in case of drug trafficking crime the crime scene, have to be examined for forensic evidence. Several questions have to be answered, e.g. what has happened until the detection of narcotics since the consignment is prepared and ready for shipment. The investigators should try to reveal when and which event occurred and who remained involved.

Also, the type of drug and method of concealment be discovered, as this could be another clue to describe the trafficker's (Modus Operandi) MO, and also gives input for a risk analysis that helps to prevent further trafficking incidents. As a second step, the investigators need to provide details for the destination, in this part a detail of the receiver of shipment including the people intended for the sale of drugs must be considered as the victim of the crime. The investigators should get the details of receiving party or the person, his role in the process of trafficking whether active or passive, activity and awareness of drug trafficking. All those gathered information needs to be bundled in the third part, the crime scene analysis, to get a more comprehensive picture of the perpetration of that crime. That picture, together with specific expert knowledge, experience gathered by observations or generalizations provided by the inductive profiling method can help to develop a traffickers' profile.

The reasoning itself is very similar to the traditional profiling methods. The analysis results can show characteristics of the perpetrator in the same manner as for non-drug trafficking crime. The perpetrator's skills could be classified whether he/she uses special techniques, or whether it seems that there is no sophistication in the methodology in use. In addition, the route of the perpetrator or consignment can reveal whether or not the perpetrator is an expert trafficker, having an excellent knowledge of the route structure and the ability of the law enforcement officials across the route till destination.

Performing drug forensics can also help to find the perpetrator's link to other people around the world, this could provide special knowledge about the companies or organization involved in transactions of drug and chemical used in the preparation of consignments. The victimology has to be done in a cooperative way. Information about the destination can be provided by gathering forensic analysis of evidence, as well as by assessing the characteristics of the destination, locality and environment in the traditional method. The forensic analysis of the drugs may reveal important aspects about the destination or the demand or the type of drug in need as well. A perpetrator might have had contact to his receiver by email or chat clients, by traditional post with letters written, or by phone with associated notes being made and saved on the receiver's computer or phone. This could help for victimology as well as for a better understanding of the perpetrator's behavior. The gathered information has now to be used to provide the crime scene characteristics. It is possible to reveal the perpetrator's method of approach, the method of transaction, the method of concealment and others. The forensic analysis can help to reveal things such as the method of concealment of drugs.

From the pre-departure stage through to the point that a drug consignment leaves or is detected in transit or at the destination, there are many actors who come into contact with both traffickers and the consignments. Among these people or individuals who commit or are complicit in the commission of trafficking offences, and criminals on the

periphery of trafficking operations who facilitate the commission of crime. All of these people represent opportunities to combat trafficking. The literature reviewed and methodologies discussed in the paper suggest that an adaptation of existing profiling methods to the area of drug trafficking crimes is possible. If approached as indicated, these methods could be of value for law enforcement agencies, for investigating unknown drug traffickers, as well as for risk analysis or assessment.

Conclusion

This paper had outlined two approaches to profiling, namely the inductive and the deductive methods. Both are approved methods for criminal profiling in the general context. The initial question was, whether or not such methods can also be used to develop profiles for drug traffickers. This question has been positively answered. The inductive profiling method can be used whether there is a large volume of criminal cases, all related to the same kind of crime (e.g. drug trafficking). In this context, meaningful profiles can result only from relevant attributes that are analyzed in a representative sample.

The inductive profiling has the potential to help in identifying affinities between different crimes of a specific type, which can, in some cases, reveal serial offenders. Inductive profiling can also give the investigators an idea of who they are looking for. Therefore, inductive profile is often used as a generalization about the characteristics of offenders of a specific crime (Turvey, 2003). Some of the principal taxonomies that we have uncovered, although potentially based upon sound evidence, do not publish details of the underlying data. As such, we intend to conduct our own survey as part of the ongoing research in order to enable suitable empirical data to be collected. As the quality of an inductive profile depends on the existence of adequate data, it seems to be inappropriate to rely exclusively upon this method for law enforcement work against drug trafficking.

The deductive profiling instead, offers the possibility to develop offender profiles that provide clues to the investigators, without being in need of a representative sample. In addition, unlike the inductive profile, the deductive profile informs the investigators about every footprint that the offender's activity caused. The mechanisms are an important consideration for the deductive profiling method that can be used in extracting the drug trafficking footprints. Also important is the technology that enables one to create network footprints in a way that also maintains privacy protection.

A written profile

The ultimate goal of a criminal profile is to narrow down the field of investigation for a particular crime. A fully rendered deductive criminal profile should be written as a court-worthy document. The process involves gathering all the information about the crime in order to classify the crime by type and style. Only a correct classification will assist profiler in determining the direction of investigation. It should not be something that is done over drinks, or done over the telephone. There are several very important reasons for this. A written criminal profile is less likely to be misrepresented to others. If the conclusions of an unwritten profile must go through several people before they reach those who can use the information, they may suffer brutal revisions. In any case, constructing a written profile is the only way that criminal profilers can know that their conclusions are going to reach others, in context, without alternation or misrepresentation. Those who need the information can more easily reference a written profile. It can be photocopied, emailed, and distributed with greater facility, and reduce the amount of time that it takes to convey the information.

A written criminal profile provides for the investigative record of a case. In cases that see no movement in weeks, months, or years for whatever reason, verbal profile may be forgotten by not only who requested the information, but by the criminal profilers themselves. Additionally, if an investigation changes hands or jurisdiction, a written profile can follow it. A written criminal profile represents the methods and subsequent conclusions of a criminal profile in a given case. This information can be used to validate

the criminal profile at a later time. It can also assist the criminal profiler as a feedback mechanism for refining their techniques in instances where their profile was in error, for whatever reason.

A written profile is subject to the scrutiny of peer review. Peer review is another mechanism for the criminal profiler to get feedback on the veracity of their profiling methods. In the absence of peer review, which independently seeks to validate or invalidate methods, techniques, and conclusions, a criminal profiler's particular method cannot be trusted by the community that it seeks to serve. A criminal profiler must be willing to submit their work for the scrutiny of their peers. This can take the form of written profiles that are independently peer reviewed as part of the adversarial process, or by the willingness to openly published full criminal profile for criticism by the entire criminal-profiling community. It does not include written profiles that are submitted internally to private groups, or groups with a vested interest in promoting their own competency. Peer review must be public, and it must be independent.

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