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Computerized Criminal Profiling

More Research is Needed

By Savanna G. Briggs

Abstract

This literature review summarizes past research and provides an overview of the methodologies previously used in criminal profiling. This review finds that generally there are very few empirical studies in the field of criminal profiling (only eighteen studies from a total of 129 examined met standards for empiricism). This may be because criminal profiling is often not taken seriously at an institutional level and so quality research may not be receiving adequate funding or, if it is, it may not be getting published because of the topic's unscientific reputation. Lastly, this literature review calls attention to one of the most recently published studies on criminal profiling that uses a latent class analysis system to statistically generate offender profiles. While the latent class analysis system has a couple of pitfalls, it is a major step towards standardizing criminal profiles and finally making criminal profiling an empirically driven science.

Introduction

"Criminal profiling is the process of using available information about a crime and a crime scene to compose a psychological portrait of the unknown perpetrator of a crime" (Muller, 2000). In essence, a criminal profiler is a psychologist who must try to identify a criminal only based on the environments they leave behind, which can be extremely difficult. Criminal profilers are usually contacted by police departments when the police have tried and failed to solve a case.

The average person's contact with criminal profiling usually involves media perceptions of criminal profiling on shows like Criminal Minds and Law and Order, or in movies like Silence of the Lambs. These media portrayals depict a gross disparity between fact and fiction when it comes to the efficacy and accuracy of criminal profiling. However, this does not mean that criminal profiling is impossible to use, it simply means that law enforcement officials have not yet effectively standardized it for use, until recently.

In the 1970s, James Brussel opened the Behavioral Sciences Unit (BSU) with two other special agents as a branch of the Federal Bureau of Investigation (FBI). After ten years, the BSU

(now known as the Behavioral Research and Instruction Unit; BRIU) would go on to teach special agents to profile murderers, rapists, arsonists, and a range of nonviolent offenders with skills involving abnormal psychology and applied criminology (Douglas & Burgess, 1986; Petherick, 2009). The product of teaching this topic for several years was a handbook on how to profile criminals by the crime scene they left behind; however, this handbook was based largely on investigative experience rather than empirical studies (Douglas, 2006). This is not what a developing science should be based on, as true science is not based selective anecdotes of success, but rather is based on experimentation.

In the 1990s, David Canter founded investigative psychology, a branch of psychology, which in its ideology, tried to offer a more scientific approach to criminal profiling, that he called offender profiling (Winerman, 2004). The largest difference between criminal profiling and offender profiling is that Burgess's criminal profiling lacked peer-reviewed empirical study, which is exactly what offender profiling called for (Winerman, 2004). However, Canter specifically called for greater empiricism, very few empirical studies has emerged since the institutional advent of criminal or offender profiling. As of 2007, about 129 peer-reviewed articles on criminal and offender profiling exist, only few of which use empirical methods- most are simply discussion pieces. Snook, Eastwood, Gendreau, Goggin, and Cullen (2007) found that several of these articles only used commonsense reasoning, sometimes based on hindsight bias, illusory correlations, and/or simple testimonials (Snook, Eastwood, Gendreau, Goggin, & Cullen, 2007). Further, Dowden, Bennell, & Bloomfield (2007) performed a systematic review of the existing literature from 1977 to 2007 and found that there are not nearly enough empirical articles in the field of criminal profiling (eighteen out of 129), and encouraged readers and researchers to do more research using inferential and descriptive statistics in order to add to the empirical grounding on which criminal profiling stands.

With these statistics in mind, it is easy to see that in comparison to other fields of psychology, criminal profiling has been lacking empirical, quantitative support for almost forty years. In 2015, a peer-reviewed empirical study that employed the use of statistics showed the effectiveness of using statistically-derived profiles (Fox & Farrington, 2012; Fox & Farrington 2015). This study showed that if law enforcement were to use statistically-derived profiles of (burglary) criminals, they would more than triple their arrest rate of those criminals, in comparison to other police departments not using these profiles. This article, as well as a few others (Kocsis, 2006; Snook et al., 2007) have shown that offender profiling has the potential to work as an applied branch of psychology, it is just a matter of how one utilizes and standardizes it so that it no longer relies on intuition. One of the most important questions to ask with this newly published research in mind is, should offender profiling be taken more seriously in the field of psychology? With Fox and Farrington's 2015 study, offender profiling has demonstrated its ability to work if statistically standardized, and could eventually become a critical tool for law enforcement use.

This literature review surveys some of the more recent empirical articles that exist on criminal profiling as well as some of the more current discussion pieces, so that it can be argued in the face of new information that criminal profiling should no longer be considered pseudoscience, due to its potential to work if standardized. This literature review also argues that criminal profiling should receive more empirical support, as it will likely prove to be a valuable use research money and could greatly benefit law enforcement.

Methods

This literature review will only be using articles from the early 1970s onward, because that is when the Behavioral Sciences Unit (BSU; now known as the Behavioral Research and Instruction Unit, or BRIU) in Quantico, Virginia opened, giving criminal profiling institutionalized legitimacy. After that, more literature becomes available as the National Institutes of Justice gave grants to the BSU to study the efficacy and accuracy of criminal profiling. The majority of articles in this literature review, however, will be more recent, from 1995 to the present as a more current gauge of where the field of criminal profiling is now, as it is currently still a subject of hot debate. A majority of articles are from forensic psychology journals and criminal justice journals, such as Criminal Justice and Behavior and the International Journal of Offender Therapy and Comparative Criminology. A large portion of these articles is from databases like Psychology: A SAGE Full Text Collection, WorldCat, as well as PsycINFO.

Arguments against Criminal Profiling

The first criminal profiling issue addressed by Snook et al. (2008) is that current criminal profiling by individuals is based on anecdote more than science or statistics, and it is said that the only reason people still believe in criminal profiling is due to reasoning error. To date, this is generally considered true. Douglas, one of the two other FBI agents Brussel opened the BSU with was quoted as saying, "degrees and academic knowledge [are not] nearly as important as experience and certain subjective qualities" (Muller, 2000). While experience and "certain subjective qualities" may be important in some fields as a prerequisite, those qualities alone cannot be the basis of any science. Snook et al. (2008) has a valid argument against criminal profiling on an individual basis, which is the way it exists now, because it is not standardized.

The second issue that Snook et al. (2008) takes with criminal profiling is that it lacks a body of empirical evidence to support it (Snook et al., 2008). This is also true, because it has been shown by a meta-analysis that there are only 129 articles that exist about criminal profiling, and only 18 of which are empirical articles. One explanation for this is that criminal profiling articles face a journal rejection rate of 80-90% (Dowden, 2007), possibly because criminal profiling has been viewed as "more art than science" (Muller, 2000) over the past few decades. Snook et al. (2008) argue that because criminal profiling lacks a body of empirical evidence, it should be abandoned altogether (Snook, et al., 2008). However, if a field cannot be treated with some legitimacy, how can it get funding to produce empirical articles? Furthermore, if there is funding to conduct an experiment, how would an empirical body of evidence prove useful if it cannot get published?

There may also be a small amount of empirical articles on criminal profiling because research institutions may not be taking criminal profiling seriously. This may be the case because in recent decades, "psychics" have joined the field of criminal profiling, adding to the connotation of pseudoscience to the words "criminal profiling". In reality, the literature reveals that criminal profiling has a much greater, untapped potential that researchers may not be getting grants or funding to find. If researchers do get these grants to empirically study criminal profiling, one can see that it would be extremely difficult to get these findings published, for reasons mentioned above. So far, this is a field that seems to have great potential, but may be facing some institutional bias.

Recent Research Has Changed the Direction of Criminal Profiling

In 2012, Fox and Farrington did a latent class analysis of burglaries based on solved burglary cases for four police departments in Florida. A latent class analysis is taking a group of people with similar characteristics (arrests for burglaries in this case), and then differentiating classes of people within this category (Fox & Farrington, 2012). The most important part about this study is that the Latent Class Analysis was statistically derived, which is one of the first steps towards standardization. Fox and Farrington conducted an empirical study on four police stations, using one police station as an experimental group, and three others as control. Using the statistically derived profiles that they created for burglars in 2012 (example of these profiles in Figure A), Fox and Farrington found that the experimental police station, with the help of the statistically derived profiles, more than tripled their arrest rate (as compared to the control).

Figures

Offense style	Offense description	Offender description	
Opportunistic	Unlawful entry—Entry left open No preparation or tools Unoccupied residence Low value items stolen Little evidence left behind	Young offenders Adolescent onset Short criminal career Low offending frequency Do not know victim	Mostly male, but some female offenders Versatility, prior petty theft/shoplifting arrests Do not have a car
Organized	Clean but forced entry Tools brought to scene No evidence left behind High value items stolen that often require fence/network	Older offenders Adolescent onset High offending frequency Limited versatility—Prior arrests for theft/burglary	Often have a car Cohabiting or have partner May have met victim
Disorganized	Forced entry Scene left in disarray Tools and/or evidence left Low value or no items stolen	Young offenders Early onset Long criminal career High offending frequency	Versatility—Past arrests for drug offenses Do not know victim
Interpersonal	Occupied residence Target is victim—Not objects Attempted, threatened, or committed violence at scene Personal items stolen	Adult aged Late criminal onset Solo offender Have a car Single/not cohabiting	No record—But if arrested usually for violence Select female victims Know of victim

Figure A: Fox and Farrington's (2015) Figure as an Example of Latent Class Analysis

Gaps in the Recent Research

Fox and Farrington's (2012 & 2015) study may have been problematic for a couple of reasons. Some of the reasons their data could have been flawed include variations in collection of evidence, or even possible accidental guiding of witness statements when reporting the burglaries the Latent Class Analysis was based on, both of these flaws are common flaws in gathering evidence on the part of the police. They also may not have surveyed the dataset of arrest records thoroughly enough (analyzed and coded 405 arrest records between the years 2008 and 2009). However, this is a minor issue that can easily be confronted with more uniform guidelines about how to describe crime scenes so that criminal profilers (ideally the ones creating the statistically derived profiles) can get an accurate picture of the crime scene. Nevertheless, Fox and Farrington took a step in the right direction. The fact of the matter is that there is not enough evidence to support such a conclusion to say at this point that criminal profiling is a foolproof system, but with enough work, it could get to that point.

There is also a difference in types of serial crime and offenders for serial crime. This means that serial burglaries, although they may have similar offend/cool-down/offend styles, are not exactly comparable to serial killers, rapists, and arsonists. Making a statistically derived profile for burglars may be somewhat easier to do based solely on arrest records because there may be more understandable motives underlying burglaries. However, making a statistically derived profile for serial killers, rapists, and arsonists may be more difficult because the only way to create a database for these types of offenders is to interview them to understand their pathology and motivations for committing the crimes they did. Interviews with already-imprisoned serial offenders to create a database has some issues in its internal validity, one issue being that incarcerated serial offenders may tend to lie or have different pathologies than serial offenders who have not been caught (Muller, 2000). Another fact to consider is that there are not many truly serial killers, rapists, and arsonists that are incarcerated, so any potential database would be based on a relatively small population, which can create flawed or anomalous profiles if they were to be statistically derived.

Discussion

With this literature review, I am calling for an end to private criminal profilers, or "psychics," that are contracted out and hired as a single person for nearly all cases, with exceptions for extreme serial killers that do not fit a computer-generated criminal profile due to the unique nature of their crimes. In that kind of situation, the best we could do is to let the BSU/BRIU step in, simply because they have the most exposure to specifically serial populations.

Although Fox and Farrington's Latent Class Analysis model could have been based on flawed police reports, it is still undeniable that the experimental police department tripled their arrest rate based on these statistically-derived profiles. Currently for police, all that exists, as a lead for cases is witness testimony, which can still lead to cold cases. Further research should continue Fox and Farrington's (2012; 2015) research and continue to statistically derive profiles, most importantly for the sake of standardization.
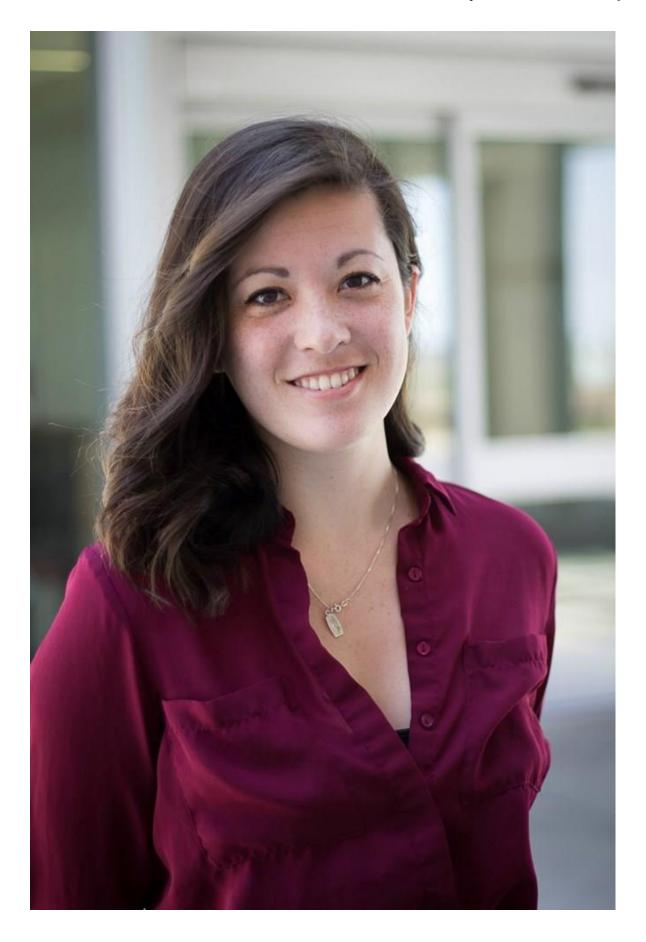
With standardization in mind however, statistically derived profiles should be based on solved cases of each specific crime (e.g. rapist profiles should be based on solved rape cases) for each specific region. Region is an important factor to account for because populations behave differently from place to place. For example, Caucasian middle-aged burglars may be common in an area simply because there is a high density of Caucasians in that specific city. To further the example, criminal profiles for burglary would likely be different for Merced, California than they would be for New York, New York, simply because there is a higher density of people and the age, sex, and other identifying information may be different from place to place. It is also encouraged that if statistically-derived profiles are created for each region, that they be updated every one to two years so that if there is a fluctuation in crime trends or types, it can quickly be identified so that law enforcement officers know which kind of offenders to look for from year to year.

Also, for every new criminal or offender profiling empirical study, there should be a large replication database created so that each experiment can be considered universally (or nationally) true, or can be proved wrong in some areas, as Muller (2000) implies, a new and emerging paradigm needs to be falsifiable in order to truly be a science and withstand criticism or testing (Muller, 2000). These are suggested steps in further legitimizing and solidifying the role of criminal profiling in academia and law enforcement.

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My name is Savanna Briggs, and I am from Fountain Valley, California. I am a Psychology major with a sociology minor with the hope of studying social psychology. I would like to study issues dealing with socioeconomic status and altruism, either together or separately. My current interest is in pro-social behavior after devastating national or statewide events, and how socioeconomic status plays into the pro-social behavior. Within the next two years, I hope to attend graduate school to continue studying social psychology.

My own curiosity about criminal profiling initially pushed me to search for material relating to this paper. I had seen media portrayals of criminal profiling in crime dramas, and thought criminal profiling was a very interesting concept. However, when I started thinking about criminal profiling from a psychological perspective, I began to think about just how hard it would be to actually create a standardized, generalizable criminal profiles based only on experience of the profiler.