

# Expert Intuition in Offender Profiling

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Offender profiling is an investigative strategy where law enforcement officers analyze various aspects of a crime to predict the characteristics of an offender. There are currently several schools of thought in profiling that cause disagreement and doubt within the field. One of the areas of disagreement is the value of an investigator's intuition, as opposed to relying on fact-based evidence. Intuition from expertise, referred to as educated intuition, develops through repeated pattern-recognition and context-specific knowledge. While educated intuition cannot be entirely removed from offender profiling, it should be limited by using a standardized profiling approach that relies mostly on physical evidence, forensics, and psychology. Through literature review, this paper aims to discuss the background and current state of profiling, profiling research, and the value of educated intuition in profiling.

**Keywords:** criminal profiling, criminal investigative analysis, investigative psychology, expert intuition, profile accuracy

## Introduction

Offender profiling, also known as criminal profiling, is a tool used by law enforcement to predict the characteristics of an unknown offender<sup>1</sup>. Profiling is not a new concept, but it has been made popular in the media<sup>2</sup>. One of the earliest cases where profiling was applied was the "Jack the Ripper" case in the 1880s<sup>3</sup>. Since then, profiling has been most commonly used by the FBI's Behavioral Analysis Unit. The early members of the Behavioral Analysis Unit were some of the first people to conduct research in the field of profiling and they created the method of profiling that's still used by the FBI today<sup>4</sup>.

The BSU's profiling method is not universally used, however. Several different approaches to profiling exist, with the primary methods being criminal investigative analysis, investigative psychology, and behavioral evidence analysis. There is no standardized method to create profiles, which has prevented further advancements in the field and created doubt in the ability of profilers<sup>5</sup>. One major source of doubt is that profiling lacks a strong evidence base and empirical data<sup>1</sup>. Additionally, this is an investigative process that heavily relies on logic<sup>5</sup>, so it's difficult to account for deviations from what can be logically assumed.

With attempts to move towards a standardized method, the value of expert intuition has come into question because logic and reasoning are necessary parts of profiling<sup>5</sup>, but it's difficult to study and understand how intuition can be used to predict offender characteristics. The reliance on intuition and prior experience, has been criticized by some<sup>6</sup> and valued by others. This paper will discuss the literature surrounding the history of

profiling, the profiling approaches, and intuition to determine whether expert intuition is valuable to profiling. Profiling is useful to law enforcement because the profile tells them the likely characteristics of an offender, which narrows their search and makes it easier for the perpetrator to be identified<sup>5</sup>. However, the usefulness of profiling is being hindered by its reliance on expert intuition and the lack of a standardized method. Expert intuition should be limited by employing a standardized profiling approach that relies on other investigative factors, like physical evidence, forensics, and psychology.

## Methodology

This paper aims to review the relevant literature regarding intuition and profiling by examining various quantitative and qualitative studies, as well as other research materials such as books and articles. The literature search was completed using the databases Google Scholar and PubMed. Key words included "criminal profiling", "criminal investigative analysis", "expert intuition", "behavioral evidence analysis", "investigative psychology", "intuition in decision making", and "profiling accuracy". Any studies that focused on criminal profiling in cybercrimes or racial profiling were deemed irrelevant since they focus on specific aspects of profiling, while this paper aims to give an overview. No date parameters were used when searching for literature because this paper includes the history of profiling, so older sources are relevant to this paper. When evaluating data from various studies, the sampled population was a key factor in extracting the relevant data and findings. When evaluating qualitative and anecdotal sources, the authors' perspectives and qualifications

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were a determining factor of inclusion and data reliability. The selected sources were then placed into 4 categories: history of profiling, the approaches to profiling, quantitative studies of profilers, and intuition.

## Background of Offender Profiling

Offender profiling (OP) is defined as the use of behavioral knowledge and observation to predict the characteristics of a perpetrator. These predictions are often based on a crime scene or, if applicable, many crime scenes. Recently, OP has been most widely used by the Federal Bureau of Investigation and their Behavioral Analysis Unit, previously known as the Behavioral Sciences Unit (BSU). The BSU was formed in 1972 to develop methods that could be used by law enforcement to help identify unknown offenders, and it was led by FBI agent Howard Teten<sup>1</sup>. Even though the BSU was in its early stages, its services became available to all law enforcement agencies in 1972<sup>7</sup>. In the late 1970s, there was an overall increase in sexual serial killings<sup>8</sup>. With smaller law enforcement agencies at a loss, the BSU got approval in 1979 to begin the Criminal Personality Research Project<sup>7</sup>. This project aimed to use crime scene investigation and interviews with incarcerated offenders to identify patterns between the offenders and their crimes. This was the first project to analyze the overall crime while placing a special emphasis on the crime scene. Thirty-six sexual murderers were interviewed between 1979 and 1983 by John Douglas and Bob Ressler<sup>7</sup>. Included in this sample were Ed Kemper, the “Co-ed Killer” of California, and David Berkowitz, more famously known as the “Son of Sam”<sup>8</sup>.

After conducting interviews and reviewing the cases, the BSU found many significant results. Using these results, they created a motivational model for sexual homicide based on five components: social environment, childhood formative events, patterned responses to these events, actions toward others because of these events, and the killer’s reactions to their behavior. This model suggests that traumatic events in childhood often create problematic thinking patterns that are upheld by issues with relationships, distorted perceptions, and a lack of overall development<sup>4</sup>. These findings correspond to crime scene classification: using crime scene characteristics, like victimology and purposeful alteration of a crime scene, to give a detailed classification of the crime. Crime scene classification is still used by the FBI to guide investigations<sup>9</sup>.

Even though these findings still influence the FBI’s profiling methods, the Criminal Personality Research Project (CPRP) has limitations. For example, only 36 offenders were interviewed: all of them were men and 92% were white<sup>10</sup>. The sample size is too small and not diverse enough to apply the results to the entire population, especially since female offenders were excluded and minorities were underrepresented<sup>11</sup>. Although the small sample size was acknowledged as not being random or

indicative of the entire population<sup>11</sup>, the results of the CPRP are used for profiling a variety of offenders that don’t always match the sample. This provides a weak basis for the BAU’s profiling and the use of the motivational model they created.

The BSU became the Behavioral Analysis Unit (BAU), and they currently consult with law enforcement in areas such as criminal investigative analysis, investigative strategy, interview strategy, and threat assessment<sup>12</sup>. Over time, the FBI’s criminal profiling technique developed into what is now referred to as criminal investigative analysis. Simultaneously, other methods of profiling were being developed.

## The Approaches to Offender Profiling

As previously stated, offender profiling lacks a unified approach. However, various methods have been developed and implemented. Three of the most common approaches are criminal investigative analysis, investigative psychology, and behavioral evidence analysis. These approaches have considerable commonalities and differences, which will be discussed in this section.

Criminal investigative analysis (CIA) is the method of criminal profiling developed by the BSU. The Crime Classification Manual<sup>13</sup>, defines CIA as “the overall process whereby crimes are reviewed in their totality from a behavioral and investigative perspective.” In its entirety, CIA encompasses a broad range of services, including indirect personality assessment, trial strategy, equivocal death analysis, and criminal profiling<sup>3</sup>, so CIA refers to more than an approach to profiling. However, CIA does include a unique profiling technique. When CIA was developed to create profiles, the FBI relied on an organized/disorganized dichotomy. Crime scene characteristics, such as the cleanliness of the crime scene and placement of the victim, were used to evaluate the sophistication of the crime and then predict the offender’s characteristics. For example, if the victim’s body were hidden, that would indicate an organized offender, and a victim found in plain sight would suggest a disorganized offender<sup>3</sup>. While this dichotomy is used to inform a profile, it is generally understood that an offender will not completely belong in the organized or disorganized category, but instead their behavior will portray a mix of organized and disorganized characteristics<sup>5</sup>. This dichotomy is unique to CIA and is not present in investigative psychology or behavioral evidence analysis. CIA has been broken down into six phases, as described by Douglas et al. (2008)<sup>4</sup>. Phase 1 is profiling inputs; all the necessary information to create a profile, such as comprehensive case materials and background information on the victim, must be collected. In the next phase, referred to as decision process models, the information is organized to show meaningful patterns. Next, in the crime assessment stage, the profiler reconstructs events to better understand the behavior of the victim and the offender. The profiler assesses the classification of the crime,

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organized/disorganized aspects, the offender's behavior with the victim, the motivation for the crime, and crime scene dynamics. Phase four, the criminal profile, is where the development of the profile occurs. The profile could include information about the offender's background, physical characteristics, habits, and behavior before and after the offense. It may also include investigative recommendations. The fifth stage is the investigation; the profile is utilized by the investigative agency to evaluate suspects, and the recommendations made by the profiler are applied. The final stage is the apprehension of the offender. The assessments made by the profiler are reevaluated throughout the process, and the profile may need to be adjusted if new evidence becomes available. CIA is largely inductive, meaning that the profile is a matter of probability based on the premises, such as the physical evidence. It is also abductive in nature, meaning that profilers will use logical reasoning to select the best theory or hypothesis regarding the profile<sup>5</sup>.

One major strength of CIA is that it is simple, easy to teach, and can be used by law enforcement officials who do not have knowledge of psychology<sup>14</sup>. It does not rely on technical and complex jargon, which allows investigators to easily interpret and apply the profile. This simplicity stems from the foundation of CIA, the organized/disorganized dichotomy, but it's also responsible for the shortcomings of CIA. Profilers classify an offender as either organized or disorganized based on which category the majority of the crime characteristics fall into. The classification of these individual characteristics, as well as the classification of the offender, is dependent on the profiler's interpretation of the crime scene elements, making interrater reliability an issue with the classification system. Since CIA is inductive, it uses information from similar, past crimes to generate a conclusion. This can lead to overgeneralization because as the crimes and their characteristics become rarer, there is less data to compare the crime to and the profile becomes weaker<sup>11</sup>.

While CIA was being developed in the United States, investigative psychology was being developed in the UK<sup>12</sup>. Investigative psychology (IP) uses psychological input in the entire investigative process. IP can be thought of as the scientific study of three steps in the investigation process: the evaluation and use of investigative information, police decisions and actions, and the inferences that are made about crimes<sup>15</sup>. Since IP relies so heavily on the profiler understanding human behavior, IP can only be employed by psychologists. IP compares crimes to past offenses with similar characteristics because the approach is employed with the assumption that similar offenders will commit similar crimes. As with CIA, this can lead to overgeneralization<sup>11</sup>.

IP is already used in the U.S. Air Force Office of Special Investigations (AFOSI). They conduct criminal investigations and counterintelligence operations. The Behavioral Sciences Directorate at AFOSI is made up of psychologists and behavioral science experts who are involved in criminal investigations,

threat assessment, and counterintelligence operations. The psychologists in AFOSI are referred to as investigative/operational psychologists (IOPs)<sup>16</sup>. One important contribution of the IOPs is cognitive interviews, which are rapport-based conversations with a suspect or victim that promote cooperation. AFOSI found that when they used a cognitive interview, they were able to get a higher information yield compared to a standard law enforcement interview<sup>17</sup>. Cognitive interviews are a unique aspect of IP and one of the approach's greatest strengths.

The third profiling method, behavioral evidence analysis (BEA), emphasizes the importance of physical evidence in identifying behavioral patterns that may suggest characteristics of the offender. Specifically, BEA examines forensic analysis, forensic victimology, and crime scene analysis. Developed over the last 15 years, BEA is a newer method of profiling that seeks to create a profile where the only characteristics presented are those supported by scientific evidence. It also aims to create profiles that will be refined and altered as new evidence is found rather than relying on a clinical, and often static, profile. BEA has several foundational principles, such as uniqueness, separation, behavioral dynamics, behavioral variance, and unintended consequences. The principles serve as a basis for BEA and draw from behavioral and biological sciences<sup>14</sup>. A primary advantage of BEA is that it examines each case individually, rather than generalizing from past cases, making it a deductive approach<sup>11</sup>.

While all the approaches aim to produce a profile that will limit the suspect pool, they all prioritize different aspects of the process; CIA emphasizes typologies and classification, IP is based in psychological understanding, and BEA focuses on physical evidence. CIA and IP are both inductive and contain concrete steps to creating a profile, while BEA is deductive and does not have a fixed procedure. However, both CIA and BEA incorporate the concept of a profile that should be reevaluated and refined as the circumstances change, while IP produces a more static profile. These differences affect the final outcome, the profile. A CIA profile may include the likely age, gender, and occupation of an offender, but will also speculate on the cause of behavior or include elements such as an offender's emotional age or their likely personal history. A BEA profile, in contrast, will not include the suspected age, gender, or intelligence of an offender because these judgements cannot be logically assumed from physical evidence<sup>11</sup>. An IP profile will most likely include extensive statistics and data regarding the characteristics of the crime and the psychology of similar offenders<sup>14</sup>.

An issue with not having a standardized method is that profilers can interpret the same piece of evidence in different ways. For example, one of the offenders involved in the D.C. sniper attacks, a series of shootings that occurred for several months in 2002, left a tarot card at the scene of one of the attacks that said, "I am God." Robert Ressler, a FBI profiler who helped develop CIA, said that it was because the shooter wanted attention and to feel superior. Brent Turvey, the founder of BEA, thought

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that it was the shooter's direct response to public officials who had belittled him and that the card being left behind indicated that the sniper had no military training<sup>18</sup>. The investigation concluded when two people were arrested for the attacks, one had military service and the other did not<sup>19</sup>. While it is unknown which offender left the card, this is an example of how profilers can interpret evidence in different manners.

There should be a standardized approach to profiling that combines the strengths of these methods, while limiting the weaknesses. With no standardized approach, profiling can be subject to bias and depend on the strengths of the profiler. Ideally, the standardized approach would include physical evidence and forensic science, like BEA. The profile would also need to be regularly reevaluated until the offender is apprehended, as suggested by CIA and BEA. It would also include the psychological input from IP. However, with very little empirical data to shed light on the application and accuracy of these methods, it's difficult to structure a standard profiling approach.

## Investigative Experience in Profiling

The role of investigative experience and intuition varies in each of the OP approaches. CIA emphasizes the importance of investigative experience while it is less integral to BEA and excluded from IP. The effects of experience in offender profiling have been briefly studied, but there are many limitations with the current research. Kocsis et al. (2002)<sup>20</sup> examined the effect of investigative experience on profile accuracy. A closed homicide case was given to homicide detectives, senior police detectives, trainee detectives, police recruits, and undergraduate chemistry students. These groups represented different levels of investigative experience: the homicide detectives had the most experience, and the chemistry students had the least, but they were chosen because they most likely had analytical thinking skills. The chemistry students outperformed the other groups and delivered the most accurate profile. Gogan (2007)<sup>21</sup> did a pilot replication of this study and found a similar result. This study utilized three groups: the police group, the case study control group, and the stereotype control group. The police group included 12 members of the Irish police force, the Garda Siochana. The case study control group was composed of undergraduate students with an average of 2.52 years of training in psychology. The stereotype group also consisted of undergraduate students. The police and case study groups received the case study and questionnaire, while the stereotype group only received the questionnaire. This was to test if profiles could be accurate solely based on the stereotype group's assumptions of a "typical" offender. Based on the case study materials, it was possible for the participants to correctly answer 11 parts of the questionnaire, so a completely accurate profile in this instance would be 11 questions answered correctly. The police (N=11) were marginally more accurate than the other groups, with a

mean total accuracy score of 6.55. The case study control group (N=19) had a mean score of 6.36, and the stereotype control group (N=12) had a mean score of 6.08. These findings seem to support Kocsis et al. (2002)<sup>20</sup> and the conclusion that investigative experience is not a major factor in accurately profiling offender characteristics.

It should be noted that one police participant answered all 11 questions correctly and was, therefore, significantly more accurate than the rest of the participants. This was determined to be an outlier and not included in the reported results since it did not lead to statistical significance. However, with such a small sample size, one participant's high accuracy warrants further thought. The researcher claims that this data point did not statistically impact the results, but if that's the case, then it should've been included in the results and not labeled as an outlier. Furthermore, the researcher should have evaluated what factors led this individual to correctly analyze the case material and answer all the questions accurately. These factors could have included length of experience, additional training, or interactions with profilers.

When reviewing the limitations of his study, Gogan states that the small sample sizes hindered the chances of getting results with statistical significance. Also, the provided materials did not include crime scene and autopsy photos or crime scene schematic diagrams. Profiling, specifically CIA and BEA, emphasizes the crime scene as a way to understand the characteristics of an offender<sup>9,22</sup>. Since crime scene information, something that would be available in an investigation, was not given to the participants, it's important to point out that this study doesn't reflect all the information a profiler would have, which may have affected the accuracy of the profiles. Nonetheless, this study, as well as Kocsis et al. (2002)<sup>20</sup>, shows that investigative experience does not make profiles significantly more accurate.

Gogan (2007)<sup>21</sup> and Kocsis et al. (2002)<sup>20</sup>, as well as Kocsis et al. (2000)<sup>23</sup> which will be discussed in the next section, used undergraduate students in their studies because of their analytical thinking skills. Bennell et al. (2008)<sup>24</sup> aimed to examine the relationship between critical thinking and profile accuracy in the absence of investigative experience. The participants (N=36) were undergraduate students, all of whom reported that they were not extremely knowledgeable about profiling. After reading a case and completing a questionnaire, both similar to the one used by Kocsis et al. (2000)<sup>23</sup>, the students completed the Watson-Glaser Critical Thinking Appraisal-Form S (WGCTA-S). This test measures critical thinking skills and, according to Bennell et al.<sup>24</sup>, is an accurate measure of participants' capabilities. While the students scored highly on the WGCTA-S, indicating a high degree of critical thinking skills, the average profiling accuracy was approximately 38%. These results indicate that critical thinking alone is not sufficient for accurate profiling, but they do not reveal what is necessary.

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## The Accuracy of Professional Profilers

Currently, there is skepticism towards the accuracy of profilers and their ability to add useful insight to an investigation. This has led people to wonder if psychologists are better suited to profiling than profilers who have investigative experience. Psychologists may have more insight into human behavior and may be able to apply psychological principles in an investigation and when creating a profile<sup>23</sup>. On the other hand, professional profilers have experience with investigations and offenders and can use this experience when creating a profile<sup>5</sup>. Kocsis et al. (2000)<sup>23</sup> aimed to determine what skills an individual would need to create an accurate profile and whether professional profilers are more accurate than other groups.

While Kocsis et al. (2002)<sup>20</sup> and Gogan (2007)<sup>21</sup> focus only on police accuracy in profiling, Kocsis et al. (2000)<sup>23</sup> compare five different groups that are meant to represent attributes of successful profilers. These attributes were suggested by agents of the BSU and, given the BSU's success and notoriety in the field of profiling, the researcher determined them to be worthy of evaluation. The key attributes, as stated by Hazelwood et al. (1995)<sup>25</sup>, are appreciation of the criminal mind, investigative experience, objective and logical analysis, and intuition. Five groups were selected for this study: profilers (N=5), police (N=35), psychologists (N=30), students (N=31), and self-proclaimed psychics (N=20). Additionally, there was a stereotype group, as with Gogan (2007)<sup>21</sup>, to evaluate the accuracy of a stereotypical profile. The total accuracy of the profiles was measured, as well as the accuracy in four subcategories relating to the profile: cognitive processes, physical characteristics, offense behaviors, and social history and habits. In terms of total accuracy, there were only marginal differences between the groups, but profilers did have the highest accuracy. In the cognitive processes and social history subcategories, the profilers outperformed the other groups. The psychologists were the most accurate in the other two subcategories, but the researcher states that this could be attributable to sampling error, and the difference is negligible. With no definitive results, the researcher combined the police officers, psychologists, students, and psychics into one group (referred to as the nonprofilers) to compare their collective results to the results of the profilers. The profilers were significantly more accurate than the nonprofilers in terms of overall accuracy. In all subcategories, the profilers performed marginally better than the nonprofilers.

The major shortcoming of this study is the small sample of profilers. With only five profilers participating in the study, the participants may not accurately represent profilers as a whole, and it would be difficult to find any statistically significant differences between the groups' performances. Nevertheless, the results suggest that the collective abilities of the profilers are preferable to the abilities of the other groups, but the accuracy of the profilers was fairly low. These results also indicate that

psychologists possess skills that affect profile accuracy because they performed better than the police and psychics. This study does not provide enough conclusive evidence to prove what skills are necessary to produce an accurate profile. However, it indicates that the current methods of profiling need improvement, since the profilers performed only marginally better than the nonprofilers. From these studies, a conclusion cannot be made regarding the efficacy of profiling or profilers, because there is a need for more empirical research about the accuracy of offender profiling to increase its reliability and usefulness in criminal investigations.

## Intuition

Intuition does not have a single definition, and there is not a widely accepted understanding of what intuition is. Intuitive responses are loosely referred to as being "reached with little apparent effort, and typically without conscious awareness" and with little to no conscious deliberation<sup>26</sup>. Intuition is often understood as the opposite of rational thought, which is when a logical conclusion is reached through deliberate consideration. Within the study of intuition and expertise, there are three conflicting views: naturalistic decision making (NDM), heuristics and biases (HB), and fast and frugal heuristics (FFH)<sup>27</sup>. NDM focuses on the successes of expert intuition<sup>28</sup>. NDM is based on smaller decisions within a larger task that are made by experienced decision makers. The experiments used to research NDM often present the subject with dynamic situations where the information could be changing, their goals may need to shift due to a changing situation, and the situation has high stakes<sup>29</sup>. Alternatively, HB reflects skepticism towards expert judgment<sup>28</sup>. Heuristics are mental shortcuts that aid decision-making and can cause error and biased judgment (Dale, 2015); HB sees intuition as a source of biases and errors. The third perspective, FFH, takes a more positive approach to intuition based on heuristics. FFH supports the idea that people do not rely on a cognitive strategy exclusively, but they will choose the best one given the situation. This is the idea of an adaptive toolbox, which contains the heuristics needed for different environments and people will use the tool that will allow them to make an efficient decision<sup>30</sup>. From the perspective of FFH, intuition and heuristics allow for quick decision-making that can be as accurate as analytical decisions<sup>27</sup>.

Aside from these schools of thought, there have been many attempts to conceptualize and distinguish intuition to gain a better understanding for future research<sup>31</sup>. Recently, scientists have adopted a dual-processing approach to understanding intuition<sup>26,32</sup>. The first system in the dual-process approach is the system that allows effortless processing and learning that can unconsciously inform a person's decisions. This system has been referred to as the tacit system<sup>26</sup>, System 1<sup>33</sup>, Type 1<sup>32</sup>, and the experimental system<sup>34</sup>, among other names. The second

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system requires effort and attention to reach a conclusion. It has been referred to as the deliberate system<sup>26</sup>, System 2<sup>33</sup>, Type 2<sup>32</sup>, and the analytic system<sup>34</sup>.

While the definitions of these systems tend to remain somewhat consistent, there are different approaches to the interactions between the processes. Some have approached these dual systems paradoxically<sup>35</sup>. A paradox is made up of elements that are related and exist simultaneously. When these elements are examined together, they may seem irrational or inconsistent<sup>36</sup>. Calabretta et al. (2017)<sup>35</sup> suggest a paradoxical framework that manages the tension between intuition and rationality to have equal contributions from both systems. By engaging with the paradoxical approach, intuition is not an alternative to rationality but a companion. The results of their study imply that individuals can integrate rational and intuitive approaches to decision-making rather than choosing one.

The dual-processing system is not universally accepted, however (e.g., Osman, 2004; Kruglanski & Gigerenzer, 2018; Gore & Sadler-Smith, 2011; Keren & Schul, 2009)<sup>34,37-39</sup> and some see intuition as a unified concept. Kruglanski and Gigerenzer (2018)<sup>37</sup> critique the dual-process theory due to its basis in assumptions and its lack of an overall explanation of the decision-making process. Instead, they submit that there is one decision-making process that does not favor an intuitive or analytic style. It is governed by rules from the adaptive toolbox, which is an element from the FFH approach, and these rules are chosen based on the environment. In this way, decision making does not exist as two separate spheres but as one cohesive mechanism. Contrarily, some view the intuitive system as multifaceted, while some see subsections of intuition as different systems entirely. Gore and Sadler-Smith (2011)<sup>38</sup> posit that in the intuition process, called intuiting, there are domain-general and domain-specific processes. The results of these processes are the four types of primary intuition: problem-solving, social, moral, and creative. Composites of these primary types can occur, resulting in secondary types of intuition.

Although it is unclear where intuition comes from, experts in a specific domain experience intuition differently than those without significant knowledge or experience. Pattern recognition shapes intuition (Cicero et al., 2015)<sup>40</sup> and those with high levels of expertise possess intuition that tends to be more trustworthy (Dörfler & Ackermann, 2012)<sup>31</sup>. Pattern recognition compares the assessment of a current situation with past situations in order to choose a course of action that has previously been successful in similar scenarios<sup>41</sup>. This is apparent in problem solving applications of intuition<sup>42</sup> because problems can be solved quickly through the experience that comes from repeated pattern recognition<sup>43</sup>. Thus, experts repeatedly exposed to similar situations in a specific domain would be able to engage in this process more successfully than those who do not have this experience. Expertise-based intuition, as defined by Salas et al. (2009)<sup>41</sup>, is the intuition that occurs when the decision-maker

has a deep knowledge base from experience within a specific domain. It can also be called educated intuition<sup>26</sup>. This paper adopts this definition of expert intuition.

The studies done by Kocsis et al. (2000)<sup>23</sup> and Gogan (2007)<sup>21</sup> did not use professional profilers in their research and, therefore, did not measure the value of educated intuition. This is consistent with an overall lack of research on educated intuition within the field of profiling. However, data regarding educated intuition in other, similar fields does exist. For example, Akinci & Sadler-Smith (2020)<sup>44</sup> aimed to study “peak performing” police officers’ perspectives on the use of intuition in first-response situations to understand the processes of intuition further. The participants (N=27) were all deemed to be experts who had relevant experience of first response and would be able to give insight into their decision-making process in an interview. Through these interviews, the researchers found that intuition in first response could fall into two categories: recognition-based intuition and intuition-based inquiry. When the former occurred, officers took notice of contextual and behavioral cues that evoked “gut feelings or hunches.” Then, they could predict events, anticipate consequences, and follow procedural standards. When intuition-based inquiry occurred, the officers again took notice of situational cues and felt as though “something just didn’t seem right.” The officers were often unaware of what specific aspects of the situation caused these feelings and, as a result, they were compelled to further investigate the circumstances to resolve the feelings of unease. The main difference between recognition-based intuition and intuition-based inquiry lies in the officer’s need to gain further insight into the situation. With recognition-based intuition, the officer can apply previous experience to take procedural action while intuition-based inquiry compels the officer to make sense of their suspicions. The results of this study further conceptualize educated intuition and demonstrate its use and value in policing. Similarly, Wright (2013)<sup>45</sup> studied how homicide detectives conceptualize crime scenes and how those conceptualizations lead to inferences about a crime. There were 40 participants in this study; all of them were a part of the UK police force, and all of them were detectives who worked within specialist units focused on investigating homicide. The participants, therefore, had domain-specific knowledge that was being tested in this study. Each participant was given 20 crime scene photographs, each with a short description including the age and gender of the victim, where the victim was discovered, and the method of death. The detectives were asked to sort them into categories based on perceived similarities. They were asked to “think aloud” to demonstrate the cognitive processes of the detectives and the inferences they made. Higher-ranking detectives made significantly more inferences than the lower-ranking detectives, which suggests that more investigative experience and experiential intuition lead to a higher ability to make inferences. Additionally, the detectives created detailed ‘profile’

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like narratives based on the very limited crime scene information. From the photographs, they were able to create hypotheses about the type of homicide and then use that hypothesis to infer the victim-offender relationship, offender characteristics, and motive. These results suggest a natural connection between the intuitive processes of educated intuition and criminal profiling. This is discussed in the next section.

## Intuition in Offender Profiling

Profiling has been called an “art” rather than a science (Gogan, 2007)<sup>21</sup> due to the lack of a truly scientific procedure<sup>5</sup> and the inherent nature of profiling to be based on inferences<sup>3</sup>. However, criminal profiling cannot be simply defined as a series of inferences. While the cognitive processes related to profiling remain largely unknown, it cannot be denied that some processes or factors influence a profiler and, consequently, their profile. This was seen with the participant who created a completely accurate profile in Gogan’s (2007)<sup>21</sup> study.

As previously discussed, educated intuition develops with repetitive exposure to similar patterns. Anyone, if given enough time and experience, could develop educated intuition which would make it an intrinsic aspect of profiling or any profession. Akinci & Sadler-Smith (2020)<sup>44</sup> came to a similar conclusion: that educated intuition in police first-response is “inevitable and inescapable.” The difficulty of removing educated intuition from law enforcement scenarios is shown by Hine et al. (2018)<sup>46</sup>, who concluded that intuition is an intrinsic part of the decision-making process of police officers in use of force scenarios. Resultantly, it would be counterproductive to attempt to remove intuition from the profiling process. However, as shown by Kocsis et al. (2002)<sup>20</sup> and Gogan (2007)<sup>21</sup>, educated intuition from experience does not seem to be an important factor in profile accuracy.

Given that educated intuition can be developed by anyone with enough context-specific experience, profiling should have a standardized approach that limits educated intuition to prevent bias and unnecessary inaccuracy. Educated intuition can be acknowledged without overshadowing the fact-based aspects of the profile. This idea is apparent in the CRIME framework proposed by Petherick & Brooks (2021)<sup>5</sup>, for example. The CRIME structure includes the strengths of each of the profiling methods while also acknowledging their weaknesses. CRIME consists of five tiers of profiling development: crime scene evaluations, relevancy of research, investigative or clinical opinion, methods of investigation, and evaluation. This framework contains all the strengths of the current profiling approaches: physical evidence, forensics, psychology, and reasonable comparison to similar crimes. The third tier, investigative or clinical opinion, is where educated intuition would emerge. This step contains a profiler’s unique understanding of factors that may be relevant to the crime, such as past victim patterns. By design, this tier

carries less weight than the rest since it is not based on fact. This tier is included in the profile to provide suggestions and knowledge that may become relevant later in the investigative process. Accompanied by the other aspects of the CRIME framework, educated intuition is treated as a consideration rather than an absolute truth. This is how educated intuition should function as a part of profiling. This would address concerns that profiling relies on guesswork and general beliefs (Kocsis et al., 2000)<sup>23</sup> by pairing educated intuition with a detailed method based in evidence, but that method does not seek to eliminate educated intuition in its entirety.

## Concerns and Limitations

The main concern of anyone’s proposal of a unified profiling approach is a lack of research and literature on the process of criminal profiling<sup>5</sup>. This is the same concern of keeping educated intuition in profiling. Without strong empirical data on profiling accuracy and profilers themselves, it’s difficult for anyone to conclude how to further the field of profiling. As a result, the development of criminal profiling has stalled, and it hasn’t reached its full potential<sup>6</sup>.

Another possible limitation is that intuition can reflect bias<sup>47</sup>. If intuition remained in profiling, this bias could be reflected in profiles and make them less accurate. However, bias can be managed and minimized. Awareness of how bias affects decisions can prevent prejudices<sup>48</sup> before they affect investigations and evidence analysis. This awareness is not always sufficient to limit bias, so educated intuition should be recognized but not greatly affect the profile, as with the proposed CRIME framework<sup>5</sup>. This would help manage prejudice because any intuition that may be biased wouldn’t affect the direction of the investigation.

## Conclusion

Offender profiling is a useful tool for law enforcement because it can help guide investigations and provide information about known and unknown offenders. Over time, profiling has developed several approaches, including CIA, IP, and BEA. These approaches are very similar but emphasize different aspects of the profiling process. Included in the debate about the approach to profiling is the disagreement over what skills are important to profiling and what skills affect profile accuracy. Currently, there is little evidence to suggest what skills are needed for profiling and whether professional profilers have those skills.

Similar to the disagreement in profiling, there is variation in how intuition is conceptualized and understood. Intuition can be seen positively, as with NDM and FFH, or seen negatively, as with HB. Repetition of pattern-recognition develops context-specific knowledge, and, as a result, educated intuition is developed. The values and uses of educated intuition differ

across the approaches to profiling. To balance these perspectives and perpetuate growth in the field of profiling, educated intuition and prior investigative experience should not influence a profile because there is not sufficient evidence to indicate they are beneficial to profiling. They should be acknowledged, but the most relevant content in the profile should be based on evidence and scientific methods. This eliminates the issue of trying to teach profilers to ignore their educated intuition completely, but it would place the emphasis on scientific reasoning, like the use of forensics, physical evidence, and psychology. By using these to create profiles, and not intuition, profilers can lessen doubt in profiling, and it can become a more useful tool for law enforcement.

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