

Chapter 19

Investigative Experience and Profile Accuracy

A Replication Study

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Summary

This chapter describes the research that sought to test the assumption by Hazelwood et al. (1) that investigative experience is an important attribute that those who construct criminal profiles should possess. This research replicated components of the study by Kocsis et al. (2) and compared a group of Irish police officers with two control groups of university students in a simulated profiling experiment designed to measure profile accuracy. The results of this experiment showed no significant difference between any of the groups in the number of characteristics correctly predicted. These findings provide some tentative support for the research of Kocsis et al. (2) and suggest that investigative experience may not be a necessary factor for the accurate construction of a criminal profile.

INTRODUCTION

Although offender profiling is used by law enforcement agencies in many countries and jurisdictions, there are no rules or guidelines on many issues, such as who should construct a profile and how they are qualified to do so, what materials are necessary to construct a profile, and how profiles should be used by investigators. Similarly, there is no agreed scientific framework underpinning the construction of criminal profiles.

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One prominent approach to the construction of criminal profiles is that adopted by the North American Federal Bureau of Investigation (FBI), which maintains that experience in investigating crimes is necessary for an individual to be an effective profiler (1,3,4). This perspective on the profiling of violent crimes advances the idea that criminal profiling is more of an art than a science. Indeed, Hazelwood et al. (1) further stated that the “most significant factor” differentiating experienced investigators from other potential profilers such as psychologists, for example, is that investigators “accept nothing at face value and go beyond what appears to be obvious . . . [and] check and verify every piece of information” (1, p. 210). It could be argued that this is not a differentiating factor at all, as psychologists by training would invariably cover all these steps.

Nonetheless, while such notions concerning the importance of investigative experience appear to have been adopted by many profiler training and accreditation programs (3,4), there is relatively little empirical research literature that has sought to directly examine the constituent skills involved in the construction of an accurate criminal profile (5). Possibly, the first important examination of this issue was a sub-component of the research by Pinizzotto and Finkel (6). This sub-component involved a controlled experiment testing profiling capabilities by comparing the accuracy of trained profilers with groups of experienced detectives, psychologists, and college students. All groups were given two closed (i.e., solved) crimes—a homicide case and a sexual offense case—and were required to complete a multiple-choice questionnaire regarding predicted characteristics of the offender. As these cases had been previously solved, the correct responses to the offender characteristics on the questionnaire could be scored, and thus, an objective measure of profile accuracy could be generated. The results of this experiment showed that the expert profilers were more accurate at predicting offender characteristics in the sex offense case, but this difference was not observed in the homicide case.

A decade passed before an attempt was made to replicate Pinizzotto and Finkel’s (6) study and develop upon their methodology. Kocsis et al. (7) also utilized a closed case to also gauge profile accuracy by comparing groups of profilers, police officers, psychologists, students, and psychics. This study also included a “stereotype” group that was asked to predict offender characteristics without receiving any details about the crime. This allowed a test of the notion that profilers were “better than bartenders” (8) and provided details beyond commonly held social stereotypes about certain types of offenders. The results of this study showed that profilers were descriptively more accurate than any of the other groups. However, when all the other groups were collapsed, thus giving a comparison between profilers and “non-profilers,” the former were statistically more accurate. Using a different type of crime, Kocsis (9) found similar results

in that profilers provided the most accurate profile of a serial arsonist, although they found that both senior detectives and fire investigators were outperformed by university students with no investigative experience. Additionally, the detectives did not outperform the “stereotype” control group.

Kocsis et al. (2) further examined the relatively poor performance of the police in their previous study (7). In a similar design, the same case study and questionnaire were given to groups of police of varying levels of investigative experience: (from most to least experience) senior detectives, homicide detectives, trainee detectives, and a police recruit group. A group of university chemistry students were used as an objective control, ostensibly because they were likely to “be highly analytical in their thinking skills” (2, p. 813). The “clear trend” (2, p. 819) that emerged was that the chemistry students—who had no investigative experience whatsoever—tended to outperform all the police groups on measures of accuracy.

The objective of the study discussed in this chapter was to undertake a pilot replication study of Kocsis et al.’s (2) examination into the importance of investigative experience for the proficient construction of a criminal profile. Jackson et al. (10) hold that the success of profiling can be defined as the number of “hits” scored by profilers. In this study, a “hit” amounted to an accurate prediction of a characteristic on the questionnaire. To test the importance of investigative experience for the accurate prediction of offender characteristics, we compared a group of Irish police (Gardai) with two control groups. The first control group—the case study control group—was a group of undergraduate students who did not have any investigative or policing experience but received the same case materials as the police. The second group also consisted of undergraduate students, but this group did not receive the case materials and was only asked to predict the characteristics of a typical offender. The inclusion of a stereotype control group was to test the assumption that criminal profiling does no more than identify commonly held social stereotypes about certain types of offender, in this case a sexual murderer. It was hypothesized, based on the assertions of Hazelwood et al. (1) concerning the importance of investigative experience, that the police officers should provide far more accurate responses than either of the control groups of undergraduate students.

METHODS

Participants

This study consisted of three distinct groups of participants: the police group, the case study control group, and the stereotype control group. The police group consisted of 12 members (11 males and 1 female) of the Irish

police force, the Garda Siochana ($M = 34.5$ years). Six had the rank of Garda and six had the rank of Detective. The case study control group consisted of 19 undergraduate students (15 females, 2 males, and 2 of unspecified gender) ($M = 22.9$ years). The students had an average of 2.52 years of training in psychology ($SD = 1.12$ years). The stereotype control group consisted of 12 undergraduate students (9 female, 1 male, and 2 of unspecified gender) ($M = 21.75$ years).

The police participants were recruited through two independent points of contact in the Garda Siochana (the Irish police force). The undergraduate students in the case study and stereotype control groups were sampled by convenience in the University College Cork (UCC) and the University College Dublin (UCD).

Materials

A booklet was presented to participants, which, in the circumstance of the police participants and the case study control group, consisted of a cover sheet outlining the rough parameters of the study. This was followed by a case study of the crime to be profiled and a multiple-choice offender characteristics questionnaire. Owing to logistical and ethical constraints, it was not possible to seek and obtain a closed case from the police to use as the case study. Therefore, the offense used was adapted from a sexual homicide case reported in great detail in Ressler et al. (4), with additional information gleaned from Howitt (11) and Porter (12).

To measure the participant's predictions of offender characteristics, we adopted the questionnaire used by Kocsis et al. (7). The original questionnaire consisted of 30 response items. However, for this study two of the original items were not used, as their responses were explicit in the case study.* Thus, the resulting questionnaire used in this study consisted of 28 items. The computer package SPSS for Windows (13) was used for all statistical analyses.

In the case of the stereotype group, participants did not receive the case study. Instead, these subjects were provided with only the questionnaire and a cover sheet instructing them to identify what they thought the characteristics of a "typical sexual murderer" were.

Procedure

Twenty booklets were sent to one of the first point of contact in the Garda Siochana, and 15 were sent to the second point of contact for distribution

* These two items being "After the offense, did the offender alter the victim's body in any way?" and "Did the offender take away from the crime scene any possessions of the victim?"

among the police. Each booklet was distributed in an A4 envelope and included in each case a stamped, return-addressed envelope. The cover sheet instructed the participants to return the booklet using the stamped addressed envelopes.

Administration of the booklets to the case study control group was undertaken with students from UCC in a scheduled class. The researcher gave a brief address explaining the instructions and warned that because of the graphic nature of the case study some participants may find it disturbing and they were not obliged to take part, and even if they did start, they could withdraw at any time. The students were told the location where they could leave the booklets once they had completed them. A colleague of the researcher distributed the booklets to the students from UCD. She was fully briefed on the instructions to give and on the warning to deliver. On completion, the UCD students returned the booklets to the researcher's colleague.

RESULTS

Both Pinizzotto and Finkel (6) and Kocsis et al. (7) used analysis of variance (ANOVA) to test for differences in accuracy scores between their test groups. However, in a follow-up study, Kocsis et al. used the non-parametric equivalent of the ANOVA, the Kruskal–Wallis test, citing “the non-normality of the scores and fairly small sample sizes” (14, p. 670). Thus, it is necessary here to briefly justify the statistical tests used in this study. First, as the sample sizes are different in each of the three groups, non-parametric tests would have to be used if the population groups' variances differed. However, they do not differ; thus, the assumption of homogeneity of variance is fulfilled ($P > .05$), thereby allowing the use of parametric ANOVA.

Second, although a normal distribution was observed in the police group ($P > .05$), the scores in the case study and stereotype control groups were not normally distributed ($P < .05$ for both groups). However, Glass et al. (15) noted in their meta-analysis that non-normality has a minimal effect on the Type I (rejecting a true null hypothesis) error rate in ANOVA. Furthermore, Tabachnick and Fidell (16) noted that if there are more than 20 degrees of freedom for error in the ANOVA (and in this study there are 41 as can be seen in Table 2, then the test is robust to violations of normality. Thus, it was decided that ANOVA was a suitable and appropriate test to use. The alpha level (α) was set at .05.

For the police group, 35 test booklets were distributed. Thirteen booklets were returned, but in one case a page of responses had not been filled. This case was not used, resulting in 12 participants in the police group, with a usable response rate of 34.28%. The booklets for the case study and the

stereotype control groups (which did not contain the case study) were mixed together and distributed randomly among the participants. Sixty booklets were distributed overall, 30 of which were “stereotype” booklets. Nineteen booklets were returned from the case study control group giving a response rate of 63.3%, and 12 stereotype booklets were returned, a response rate of 40%.

The measure of total accuracy used was simply if the response given by the participant correctly matched the actual characteristics of the offender. From the sources used (4,11,12), it was possible to obtain the correct responses for 11 of the items on the offender characteristics questionnaire. Thus, a total of 11 items were scored for this study. The mean, minimum, and maximum total accuracy scores are presented in Table 1.

On examination of the means in Table 1, it can be seen that the police were marginally more accurate than the other groups. The police group also had the highest minimum and maximum scores. One police participant correctly identified all 11 characteristics. This outlier was not included in the results reported herein, but even including this outlier did not lead to statistical significance. To determine whether there was a difference between groups, we used a one-way ANOVA to compare the groups’ mean total accuracy scores. The assumption for homogeneity of variance was fulfilled ($P > .05$) (Table 2).

Table 1
Mean Profile Accuracy

	Total correct		
	<i>N</i>	<i>M</i>	<i>SD</i>
Police	11	6.55	1.03
Case study control	19	6.36	1.21
Stereotype control	12	6.08	1.16

Table 2
**Analysis of Variance (ANOVA) Table for Total Accuracy
between Groups**

	Sum of squares	<i>df</i>	<i>M</i>	<i>F</i>	<i>P</i>
Between groups	1.27	2	0.634	.475	.625
Within groups	52.07	39	1.335		
Total	53.33	41			

As can be seen from Table 2 and as was expected following inspection of the means in Table 1, there were no significant statistical differences between the groups on accuracy scores ($F = .475$; $df = 2, 39$; $P > .05$). Thus, the police group did not significantly outperform the group of undergraduate university students who had access to the same case material, nor did they outperform the stereotype control group who had no case material on which to base their predictions.

DISCUSSION

This study attempted to test the assumption that investigative experience is a vital attribute needed for constructing an accurate criminal profile (1). This objective was accomplished by providing a group of police and groups of undergraduate students with detailed information about a real-life sexual homicide crime scene and by comparing each group on the total amount of offender characteristics they accurately predicted. A stereotype control group did not receive any case information and instead was asked only to describe a typical sexual murderer. As far as this author is aware, this is the first study of its kind in Ireland. It is also unique in that it obtained a sample, albeit small, of Irish police with regard to criminal profiling.

That the police did not significantly outperform the two control groups—one of which did not have access to case materials—does not support the assertions of the FBI that investigative experience is a crucial attribute for a criminal profiler to possess (1,3,4). Instead, these findings appear to follow and support the patterns observed in previous empirical studies, indicating that investigative experience does not seem to be closely aligned to the accurate predictions of offender characteristics (2,7,9). The fact that the police did not outperform the stereotype group—who did not receive a case information and was asked to rely on stereotypical notions in describing a typical sexual murderer—must also be taken into account. This suggests that the police, akin to the control group, relied on a common social stereotype of the type of offender when completing the questionnaire. This points to a possible cognitive process that the police participants may have employed: the availability heuristic, whereby individuals make judgments of probability based on the ease with which they can recall similar instances (17). The implication for criminal profiling is that the profiler may remember details about previous offenders that for whatever reason had a significant impact on them. According to the logic behind the availability heuristic, the participants may have overestimated the occurrence of the characteristics of their prototypical sexual murderer and predicted those characteristics for the specific offender on the case study. It is an important implication

for criminal profiling that even for police with investigative experience, an individual's stereotyped views may take precedence over specific crime scene details when predicting offender characteristics.

As with any research, this study had its limitations that must be clearly acknowledged. First, the relatively small sample sizes impeded the chances of statistically significant differences being found. Furthermore, some caution should be observed in considering the representative size of the samples. Secondly, the material used for the case study was less than ideal. The optimum material would have been a real "closed" crime that had taken place, and the relevant leading investigators would have identified the correct responses to all 28 items on the questionnaire to give a complete measure of accuracy. Unfortunately, ethical and logistical constraints did not permit for such measures for this pilot study. Indeed, the main limitation of the case study used was not the material itself *per se*, but the fact that all 28 correct responses for the questionnaire about the offender could not be gleaned from the available sources, thus reducing the total number of items that could be used to measure accuracy and the chances of finding differences between the groups. Furthermore, although the case material was detailed—so much so that an ethical warning was necessary to the participants as to its graphic and potentially disturbing nature—there were "missing" details such as crime scene and autopsy photos, and crime scene schematic diagrams [although Kocsis et al. (14) do seem to question the necessity of such visual items].

Also, the type of crime used must be taken into account when interpreting the results. While noting that certain types of crime are particularly amenable to offender profiling (18), certain aspects of the crime can have an effect on the profile. This was demonstrated by Pinizzotto and Finkel (6) who observed different outcomes between groups for the homicide case and the sex offence case. Kocsis (9) further noted that individuating aspects of each case are important. For example, in rape cases where the victim survives, further information such as the verbal and physical behavior of the offender may be available. In short, the merits of different groups' accuracy cannot be judged by a single case alone, and ideally, in a study such as this, a number of different cases would be presented to participants.

In conclusion, the results of this study provide some tentative evidence to support the previous findings of Kocsis et al. (2) and suggest that, in contrast to the assertions of Hazelwood et al. (1), investigative experience does not appear to play an integral role in the accurate prediction of an unknown offender's characteristics. Therefore, this study contributes to the process of elimination into what does not contribute to accurate profiling. However, to paraphrase the title of Pinizzotto and Finkel's (6) study, perhaps it is time to focus on

the process as much as on the outcome. Previous research that has included expert profilers has shown that they provide “richer” and more accurate profiles. This ties in with many of the findings in cognitive psychology with regard to expert/novice differences (19), and it would be very useful to analyze issues such as what these “expert” profilers pay attention to and what they ignore and tease out exactly how profiling experience improves profiling accuracy—if indeed this continues to be the case. Although we may be able to tentatively rule out investigative experience as being absolutely necessary, we need to begin to identify what does contribute to efficient, accurate profiling.

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