

# Quality Of Recent Offender Profiling Research: A Rapid Structured Review

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## **Declaration**

I declare that this submission is my own work. Where I have read, consulted, and used the work of others I have acknowledged this in the text.

Signed: Ciarán Ward

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## **Abstract**

Despite its popularity, the state of offender profiling (OP) research was poorly understood before Fox and Farrington (2018) published a meta-analysis detailing the evolution and findings of OP research over time. There has not been another review of the literature since that time. Therefore, the present study used a rapid structured literature review (RSLR) approach to critically analyse OP research articles published in 2023, and investigate the direction and changes of the research since Fox and Farrington (2018). Eight articles were selected according to the inclusion and exclusion criteria. The contents of each were analysed to identify their topics, sample sizes, sampling techniques, data collection locations, crime types, uses of statistics, numbers of variables, results, and effect sizes. The findings suggest some positive changes in OP research, with an increased use of inferential statistics and larger sample sizes. However, they also reveal a greater need for effect size reporting, and that a number of methodological issues still exist. These findings provide insight into the current state of OP research, and the potential direction of future research. Improvements to reporting and areas of future research for the field are also suggested. The present study may guide the direction of a larger analysis of OP research in the future.

## Introduction

Offender profiling (OP) is an investigative technique which identifies an offender's major personality, behavioural, and demographic characteristics by analysing their crime scene behaviours (Dowden et al., 2007; Fox & Farrington, 2018). The aim of OP is to create a profile of the type of person who would commit the offence to decrease the number of potential suspects, not to reveal the offender's exact identity (Janosch et al., 2023). The technique is often used by law enforcement, psychologists, and consultants in serial criminal investigation.

The exact number of profiles created for law enforcement worldwide is unclear, as most profiles are linked to active or unsolved cases and remain confidential. However, OP is exceedingly popular, with the Federal Bureau of Investigations (FBI) reportedly receiving over 1200 profiling requests per year in 1996 (Witkin, 1996, in Dowden et al., 2007).

The popularity of OP in investigative fields and the general public is due in large part to representation in media. Television programs such as *Cracker*, *CSI*, and *Mindhunter*, autobiographies written by profilers, and more recently Youtube channels, such as *JCS*, illustrate OP and profilers as knowledgeable, infallible, and effective. As put by Woodworth and Porter (2000) "A common stereotype of a criminal ' profiler' is of an insightful outsider or eccentric intellectual who can solve crimes by relying on a combination of intuition and keen insight into the criminal mind" (pg. 242). This has led to an inaccurate perception between OP's reputation and its actual capabilities (Kocsis, 1999, as cited in Dowden et al., 2007).

While there has been an increase in empirical research centred around OP in recent years, the volume of research undertaken concerning its validity and effectiveness is low (Dowden et al., 2007; Fox & Farrington, 2018; Ribeiro & Soeiro, 2021). Therefore, this article aims to critically review and analyse the contents of recent OP publications, and investigate the changes and direction of OP research.

## **Traditional Vs Geographic**

Traditional offender profiling, hereafter OP, fits the standard understanding of profiling: It matches crime scene behaviours to offender characteristics to suggest key personality and demographic characteristics, which aids in prioritising suspects (Dowden et al., 2007; Fox & Farrington, 2018; Janosch et al., 2023). There are many OP approaches, most famous being the FBI approach with the Organised/Disorganised Typology of Serial Killers (Ressler et al., 1988). However, for the present study, they will all be referred to as OP.

Geographic profiling is a computer-based OP approach, which links an offender's crime scene locations to statistically estimate the probable location of their residence (Rossmo, 1997). Distinct from OP, which matches crime scene behaviours and offender characteristics to prioritise suspects, geographic profiling examines elements such as public transport routes and travel times to prioritise search areas for likely to lead to a successful arrest (Canter & Gregory, 1994; Spaulding & Morris, 2023a; Spaulding & Morris, 2023b).

Despite their differences, OP and geographic profiling both aim to assist in police investigations, and are popular areas of research in OP literature.

## **Justification for Content Analysis**

Conducting a content analysis on OP research is important for a variety of reasons.

OP is an extremely popular field, both in media and psychological and criminological research. However, the field of OP lacks uniformity, with numerous terms, schools, and differing definitions. Researchers covering one sample or topic may collect a variety of differing or opposing results and conclusions, due to differing testing methodologies and terminologies (Fox & Farrington, 2018). This lack of synthesis hampers OP as a field. Identifying,



analysing, and summarising this research in a structured manner would benefit OP research.

Additionally, as an applied discipline, OP is often used to assist in criminal investigations. However, it lacks uniformity and standardisation, and there are few evaluations of its overall effectiveness. Some research has questioned whether OP meets a satisfactory standard for use in apprehending offenders (Fox & Farrington, 2018). Investigating the findings and quality of current research may reveal the modern standard of OP.

## **Prior Reviews and Meta-Analyses on OP**

Meta-analyses by Dowden et al. (2007) and Fox and Farrington (2018) were the main inspirations for the present study. Both aimed to critically analyse the volume, methodology, and empirical validity of OP research, and were instrumental in bringing attention to the lack of 'legitimate' research in the field.

### **Dowden et al. (2007)**

Dowden et al. (2007) conducted a content analysis of OP journal articles published from 1976-2007. They examine 132 studies from 53 journals for variables such as publication date, crime type, and statistical sophistication. Books, book chapters, and unpublished documents were excluded, as were articles on geographic profiling and case linkage analysis.

The researchers reported that the number of OP articles increased over time, with over 61% of articles published during 1996-2007. Additionally, the number of peer-reviewed OP articles increased after 1995, going from 36% of articles to 88%, with a similar increase in inferential statistics use, going from 12% to 41%. However, over 50% of articles published after 1995 used no analysis at all, with discussion pieces and basic assumption studies being the most common article topics. Unspecific crime was the most common crime type (41%), followed by homicide (30%), and psychologists contributed the most to the research, authoring 34% of articles, followed by police (8%) and FBI agents (7%).

## **Fox and Farrington (2018)**

Fox and Farrington (2018) conducted a content analysis of all published OP research from 1976-2016. The researchers analysed 426 publications, including articles, books, book chapters, etc., to investigate their topics, quality, statistical sophistication, and more.

Consistent with Dowden et al. (2007), the researchers reported an increase in OP publications over time, with over 80% from 1996-2016. One third of publications were profile development articles, with another third being general discussion pieces. The number of peer-reviewed publications increased significantly after 1986, going from 16% to 74%. Half of all OP publications used no form of sampling, variables, or statistics, with the use of advanced inferential statistics increasing from 0% to 33% after 2005. Peer-reviewed journal articles were the most common publication type, and unspecific crime was the most common crime type. Lastly, psychologists contributed the most to OP research, authoring 43% of publications, followed by criminologists (17%).

## **The Present Study**

The present study aims to critically review and analyse the contents of publications on OP research from between January 2023 and December 2023, to investigate the direction and changes to OP research after Fox and Farrington (2018). This study will be an effective means to judge the changes to OP research, and as a structure from which to build a larger review in the future.

## Methods

A rapid structured literature review (RSLR) was employed for a content analysis of publications on OP research from between January 2023 and December 2023. RSLRs are used to collect and condense research findings. They are effective while under time and resource constraints. RSLRs are similar to systematic reviews, however both differ in scale and analysis methods (Smith et al., 2013). They are often used in the identification of research priorities and as preliminary reviews of empirical literature in an area intended for future study. However, the scope of an RSLR is limited compared to that of a systematic review, and nuances may be overlooked due to time constraints (Moons et al., 2021).

Articles for the present study were selected based on the following inclusion and exclusion criteria:

### Inclusion Criteria

- Academic journal articles regarding the subject of OP published between January 2023 and December 2023 (01/01/2023-31/12/2023).
- Academic journal articles regarding the subject of geographic profiling published between January 2023 and December 2023.

### Exclusion Criteria

- Publications that were not academic journal articles, such as books, book chapters, unpublished documents, and trade articles.
- Articles covering case linkage analysis (CLA), as its methods are very different from those of OP and geographic profiling.
- Articles regarding the subject of racial profiling, racial discrimination, racial bias, and racism.
- Articles specifically covering offences targeting minors or non-adults.

The present study originally intended to include articles regarding OP published between 01/01/2017 and 31/12/2023. However, during sample

collection, the number of abstracts collected which fit this inclusion criteria was determined to be too large for the present study to fit within the criteria of an RSLR. For that reason, and time constraints, the selection criteria of the present study was updated to include only abstracts of articles published between January 2023 and December 2023.

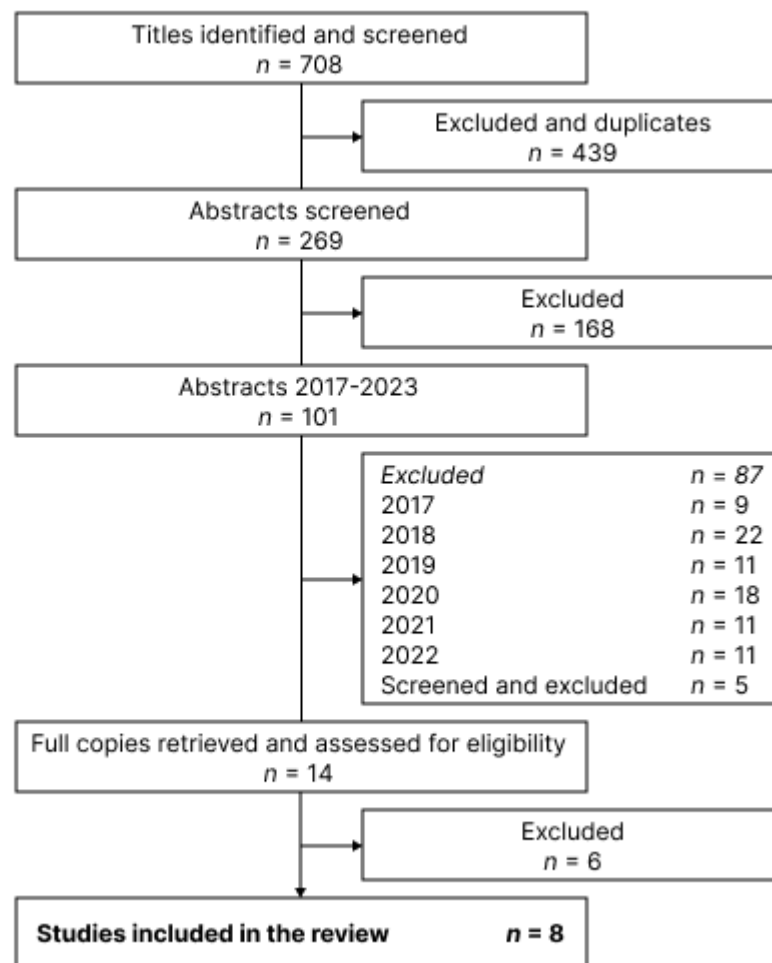
## Search Methods

An electronic search of several psychological, criminological, and medical journal databases, primarily PsycINFO, PsycARTICLES, and PsycTESTS, was conducted to identify suitable publications for inclusion in this study. The search was conducted using the online databases available to Dun Laoghaire Institute Of Art Design + Technology via Ebsco. The primary search strategy used is shown in Table 1.

**TABLE 1.** Example of search strategy

1	TX ( Profiling OR Psychological Profiling OR Offender Profiling OR Criminal Profiling OR Criminal Investigative Analysis OR Crime Scene Analysis OR Criminal Personality Profiling OR Personality Profiling OR Investigative Psychology OR Behavioural Profiling OR Behavioural Evidence Analysis OR Geographic Profiling OR Statistical Profiling OR Crime Action Profiling )
2	TX ( criminal* or offender* )
3	NOT TX ( racial profiling or racial discrimination or racial bias or racism )
4	2017-2023
5	Academic Journals
6	1 AND 2 AND 3 AND 4 AND 5

A total of 708 journal articles were identified using the primary search strategy. Each title was examined to determine its suitability for the focus of the present study. 269 titles matched with the study focus. The abstracts of these titles were examined to determine if the study met the inclusion criteria. 101 abstracts met the inclusion criteria. After updating the selection criteria, this left a total of 14 abstracts which met the inclusion criteria. The full papers of the 14 articles were reviewed, which resulted in a final total of 8 articles being included in the present study (Fig. 1).



**Figure 1.** Flow chart of study selection process

## Quality Appraisal

The quality of each article was assessed by their peer review status. Articles not subject to peer review were excluded from the present study.

## Data Synthesis

To increase comparability, modified versions of the coding scheme and measures used by Fox and Farrington (2018) were used where possible. All eight articles were coded using the measures illustrated in Table 2. See Appendix A for a full list and description of the categories for each measure.

**Table 2.** Name, description, and categories of each measure used to code each article

Measure	Description	Categories
Topic	The purpose or subject matter of the article	General Discussion Piece; Profile Development Article (See Appendix A)
Author Name	The name of the author/authors	Name of author
Affiliation	The self-identified professional affiliation of the author at the time of publication	Psychologist; Forensic Psychologist/Psychiatrist (See Appendix A)
Department/Agency	The place of employment of the author at the time of publication	Basic descriptor (ie. Trinity College Dublin = University)
Journal	The name of the journal the article is published in	Name of journal
Sample Size	The sample size collected and used for analysis	≤100; ≤500; ≤1000; >1000

Sampling Technique	The organisation, facility, or database from which the sample data was collected	Basic descriptor (ie. Law Enforcement)
Data Collection Location	The country from which the sample data was collected	English name of country. Multiple countries = 'Multiple Locations'
Crime Type	The main type of crime studied	Generalised groups (ie. Serial homicide and sexual homicide both = Homicide)
Use of Statistics	The sophistication of the statistics used in analysis	No Statistics; Basic Descriptive Statistics; Advanced Inferential Statistics
Number of Variables	The total number of variable used for analysis	≤10; ≤20; >20
Results	The overall support of the article, based on the proportion of supported and unsupported hypotheses reported	Fully Supported; Majority Supported (See Appendix A)
Effect Size(s)	The overall effect size of the article, based on the proportion of small, medium, and large effect sizes reported	Majority Large; Medium, Leaning Large (See Appendix A)

## Results

Eight articles were included in the review. The topic, journal, data collection location, and crime type of each article are presented on Table 3. The names, affiliations, and departments/agencies of each author are presented on Table 4. The sample sizes, sampling technique, use of statistics, number of variables, results, and effect sizes are presented on Table 5.

All eight articles were categorised as Profile Development Articles.

The majority of articles (6) were all published in the *Journal of Investigative Psychology and Offender Profiling*, with the remaining articles published in the *Journal of Aggression, Maltreatment & Trauma* (1) and *Victims & Offenders* (1), respectively.

The data collection locations were unexpectedly varied, with a number of articles (3) collecting data from multiple countries, and the remaining articles (5) each collecting from unique locations. The most common country for data collection was the United Kingdom (3), followed by both Spain (2) and Canada (2). One article (Spaulding & Morris, 2023b) consisted of nine US cases, one UK case, and one Canadian case.

The most popular crime type was homicide (4), followed by both sexual assault (2) and theft (2).

**Table 3.** Topic, journal, data collection location, and crime type of each article

Title	Topic	Journal	Data Collection Location	Crime Type
Femicide in Northern Ireland during the	Profile Development Article	Journal of Investigative Psychology and	Northern Ireland	Homicide (Femicide)



COVID-19 lockdown: A model for differentiating male offender characteristics		Offender Profiling		
Geographical profiling incorporating neighbourhood-level factors using spatial interaction modelling	Profile Development Article	Journal of Investigative Psychology and Offender Profiling	Japan	Theft (Residential Burglary)
Predicting the Criminal Record of Spanish Stranger Rapists from Their Crime Scene Behaviours	Profile Development Article	Journal of Aggression, Maltreatment & Trauma	Spain	Sexual Assault
Prediction of serial perpetrator residence: Part II—Evaluation of prediction model accuracy	Profile Development Article	Journal of Investigative Psychology and Offender Profiling	Multiple Locations (9 US, 1 Canadian, 1 UK)	Homicide (Serial)
Profile of Serial and Single-Victim Homicide Offenders	Profile Development Article	Victims & Offenders	Brazil	Homicide

in Brazil: A Brief Descriptive Study				
The crime and the place: Robbery in the night-time economy	Profile Development Article	Journal of Investigative Psychology and Offender Profiling	UK	Theft (Robbery)
The significance of unusual acts in sexual homicide	Profile Development Article	Journal of Investigative Psychology and Offender Profiling	Multiple Locations (Canadian + French cases)	Homicide
UK and Spanish stranger sexual offenders crime scene behaviours and previous convictions: A cross-cultural comparison	Profile Development Article	Journal of Investigative Psychology and Offender Profiling	Multiple Locations (UK + Spain)	Sexual Assault
Totals	Profile Development Article: 8	3 Journals	Northern Ireland: 1	Homicide: 4
		Journal of Investigative Psychology and Offender Profiling: 6	Japan: 1	Sexual Assault: 2

		Journal of Aggression, Maltreatment & Trauma: 1	Spain: 1 (2)	Theft: 2
		Victims & Offenders: 1	Brazil: 1	
			UK: 1 (3)	
			Canada: (2)	
			France: (1)	
			Multiple Locations: 3	

*Note: Numbers in brackets indicate number of times included across all articles, including multiple location articles*

A total of thirty three authors contributed across all articles. Almost half of all authors (15) self-identified as psychologists, specialising in a variety of fields. The next most common affiliations were both forensic psychologists/psychiatrists (5) and other fields (5), followed by both criminologists (3) and students (3), and then law enforcement (2). It is important to note that many authors would qualify for multiple categories (eg. One author self-identified as a health and forensic psychologist). In total, and excluding students, over half of authors (19) self-identify with an affiliation related to criminology, or forensic, investigative, or criminal psychology/psychiatry.

Two-thirds of authors were employed or in attendance in a university at time of article publication (22), with under one-third (10) employed in law enforcement, and one employed in a hospital.

**Table 4.** Name, affiliation, and department/agency of each author of each article

Title	Author Name	Affiliation	Department/Agency
Femicide in Northern Ireland during the COVID-19 lockdown: A model for differentiating male offender characteristics	Johnston, R.	Student	University (University of Huddersfield)
	Synnott, J.	Psychologist (Investigative)	University (University of Huddersfield)
	Ioannou, M.	Psychologist (Investigative & Forensic)	University (University of Huddersfield)
	Ashton, S.	Psychologist (Investigative)	University (Prairie View A&M University)
Geographical profiling incorporating neighbourhood-level factors using spatial interaction modelling	Hirama, K.	Psychologist (Investigative)	Law Enforcement (National Research Institute of Police)

			Science)
	Yokota, K.	Psychologist (Investigative)	Law Enforcement (National Research Institute of Police Science)
	Otsuka, Y.	Psychologist	Law Enforcement (National Research Institute of Police Science)
	Watanabe, K.	Forensic Psychiatrist	Law Enforcement (National Research Institute of Police Science)
	Yabe, N.	Another Field (Geography)	University (Tokyo Metropolitan University)
	Yokota, R.	Another Field (Information Science)	Law Enforcement (National Research Institute of Police Science)
	Hawai, Y.	Another Field (Unknown)	Law Enforcement (National Research Institute of Police Science)
Predicting the Criminal Record of Spanish Stranger Rapists from Their Crime Scene Behaviours			
	Janosch, H.	Psychologist (Criminology)	University (Universidad Camilo

			José Cela)
	Jordá, C.	Psychologist (Criminology)	University (Universidad Camilo José Cela)
	Nut, D.	Student	University (Universidad Camilo José Cela)
	Giles, S.	Forensic Psychologist	University (University of Liverpool)
	Almond, L.	Forensic Psychologist	University (University of Liverpool)
Prediction of serial perpetrator residence: Part II—Evaluation of prediction model accuracy			
	Spaulding, J. S.	Another Field (Forensic Science)	University (Hamline University)
	Morris, K. B.	Another Field (Forensic Science)	University (West Virginia University)
Profile of Serial and Single-Victim Homicide Offenders in Brazil: A Brief Descriptive Study			
	Silva, A. P. J.	Psychologist (Health & Forensic)	University (Universidade Metodista de São Paulo)
	Saffi, F.	Psychologist	Hospital (Hospital

			das Clínicas)
	Soares, A. R. A.	Psychologist	University (Universidade São Judas Tadeu)
	Rocca, C. C. A.	Psychologist (Health)	University (Universidade de São Paulo)
	Durães, R. S. S.	Psychologist (Health)	University (Universidade Metodista de São Paulo)
	Serafim, A. P.	Psychologist	University (Universidade de São Paulo)
The crime and the place: Robbery in the night-time economy			
	Wüllenweber, S.	Law Enforcement (Criminal Intelligence Analyst (Forensic Psychology))	Law Enforcement (Wilshire Police)
	Burrell, A.	Forensic Psychologist	University (University of Birmingham)
The significance of unusual acts in sexual homicide			

	Sun, P.	Student	University (Simon Fraser University)
	Beauregard, E.	Criminologist	University (Simon Fraser University)
	Chopin, J.	Criminologist	University (Simon Fraser University)
UK and Spanish stranger sexual offenders crime scene behaviours and previous convictions: A cross-cultural comparison			
	Almond, L.	-	-
	Rainbow, L.	Psychologist (Investigative)	Law Enforcement (National Crime Agency)
	Ramos Romero, M.	Criminologist (Law Enforcement)	Law Enforcement (Guardia Civil)
	Giles, S.	-	-
	McManus, M.	Forensic Psychologist	University (Manchester Metropolitan University)
	Nikolajeva, A.	Law Enforcement (Forensic Psychologist)	Law Enforcement (Eesti Politsei- ja Piirivalveamet)
<b>Totals</b>	33 authors	Student: 3	University: 22
	(Almond and Giles appear twice)	Psychologists: 15	Law Enforcement: 10



	each)		
		Criminologist: 3	Hospital: 1
		Forensic Psych: 5	
		Law Enforcement: 2	
		Another Field: 5	
		Psychologists	
		Investigative: 5	
		Criminal: 2	
		Health: 2	
		Non-Specific: 4	
		Investigative & Forensic: 1	
		Health & Forensic: 1	
		Law Enforcement	
		Forensic Psychologist: 2	
		Criminologist	
		Law Enforcement: 1	
		Another Field	
		Geography: 1	

		Information Science: 1	
		Forensic Science: 2	
		Unknown: 1	

Two articles used a sample of less than 100 cases/offenders; Two used a sample of less than 500 cases/offenders; Two used a sample of less than 1000 cases/offenders; And two used a sample that was larger than 1000 cases/offenders.

The majority of articles collected data from law enforcement facilities (6). The remaining cases made use of historic case data (1), or collected data from newspapers (1). One article which collected from law enforcement facilities also collected from census data.

All eight articles used advanced inferential statistics in their analyses.

Three articles used over twenty variables in their analyses, four used twenty or less variables, and one used ten or less variables.

All articles reported that their hypotheses were fully (6) or majority supported (2).

Half of the reviewed articles did not report any effect sizes (4). Of the articles that did report their effect sizes, two reported as 'Medium, Leaning Large', one reported as 'Majority Medium', and one reported as 'Majority Small'.

**Table 5.** Sample size, sampling technique, use of statistics, number of variables, results, and effect size(s) of each article

Title	Sample Size	Sampling Technique	Use of Statistics	Number of Variables	Results	Effect Size(s)
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		que				
Femicide in Northern Ireland during the COVID-19 lockdown: A model for differentiating male offender characteristics	≤100 (11)	Newspapers (3 different publishers)	Advanced Inferential Statistics	≤20	Fully Supported	Not Reported
Geographical profiling incorporating neighbourhood-level factors using spatial interaction modelling	>1000 (1089)	Law Enforcement (National Police Agency) + Census Data	Advanced Inferential Statistics	≤10	Majority Supported (4 Supported, 1 Unsupported, 1 Mixed Support)	Not Reported
Predicting the Criminal Record of Spanish Stranger Rapists from Their Crime Scene Behaviours	≤500 (233)	Law Enforcement (From CENDOJ (Judicial Documentation Center	Advanced Inferential Statistics	>20	Fully Supported	Medium, Leaning Large (2 Medium, 2 Large)

		of the General Council of the Judicial Power of Spain))				
Prediction of serial perpetrator residence: Part II—Evaluation of prediction model accuracy	≤100 (11)	Historic Case Data	Advanced Inferential Statistics	>20	Fully Supported	Not Reported
Profile of Serial and Single-Victim Homicide Offenders in Brazil: A Brief Descriptive Study	≤500 (189)	Law Enforce ment (3 maximu m security prisons)	Advanced Inferential Statistics	≤20	Fully Supported	Medium, Leaning Large (1 Weak, 6 Moderate, 4 Relatively Strong)
The crime and the place: Robbery in the night-time	>1000 (1624)	Law Enforce ment (West Midland	Advanced Inferential Statistics	≤20	Majority Supported (3 Supported, 2	Majority Small (6 Weak, 1 Very Strong)

economy		s Police)			Unsupport ed)	
The significance of unusual acts in sexual homicide	≤1000 (762)	Law Enforce ment (Sexual Homicid e Internat ional Databas e (ShIelD )	Advanced Inferential Statistics	>20	Fully Supported	Not Reported
UK and Spanish stranger sexual offenders crime scene behaviours and previous convictions: A cross-cultural comparison	≤1000 (892)	Law Enforce ment (Nation al Crime Agency and Guardia Civil)	Advanced Inferential Statistics	≤20	Fully Supported	Majority Medium (8-10 Small, 24 Medium, 3 Large)*
Totals	≤100: 2	Law Enforce ment: 6	Advanced Inferential Statistics : 8	≤10: 1	Fully Supported : 6	Not Reported: 4
	≤500:	Historic		≤20: 4	Majority	Majority

	2	Case Data: 1			Supported : 2	Small: 1
	≤1000: 2	Newspa pers: 1		>20: 3		Majority Medium: 1
	>1000: 2	Census Data: 1				Medium, Leaning Large: 2

*\*Potential error in article table of results. Author has been contacted for clarification*

## Discussion

The aim of the present study was to critically review and analyse the contents of publications on OP research from between January 2023 and December 2023, to investigate the direction and changes to OP research after Fox and Farrington (2018). Despite covering a small number of articles, the results of this review suggest a positive step forward with regards to analysis and investigation in OP research since 2016.

All eight articles were profile development articles, aiming to assess the efficacy of an OP model/method, propose a new OP model/method, or analyse offender characteristics and/or crime scene behaviours to create an offender profile(s). All articles made use of advanced inferential statistics. The majority of articles sampled data from law enforcement, judicial, or prison services for their analyses. Half of all articles used a sample size larger than 500 (Hirama et al., 2023; Wüllenweber & Burrell, 2023; Sun et al., 2023; Almond et al., 2023), and only one article used less than ten variables in its analysis (Hirama et al., 2023).

In line with Fox and Farrington (2018), the most common affiliation among authors in this review was psychologist, with just under half self-identifying with the position, and the most popular journal was the *Journal of Investigative Psychology and Offender Profiling*.

However, while the results suggest some advances in the field of OP research, an in-depth review and critique of the literature is required for a more accurate picture.

## **Critique of The Literature**

### **Femicide in Northern Ireland (Johnston et al., 2023)**

Johnston et al. (2023) developed a model of male femicide offenders, based on a sample from Northern Ireland during the COVID-19 Lockdown period from March 2020 to December 2021. Using Smallest Space Analysis, they reported two distinct types of male femicide offenders based on their findings: *Chronic Criminal Abuser*, which typically includes offenders with previous convictions and/or a history of domestic abuse; and *Mentally Disturbed*, which typically includes offenders with mental illness, suicidal ideation, and/or drug use.

However, the article exhibits a number of methodological issues. The model was constructed using a very small sample size, constituting only eleven offenders. This sample was collected from newspaper articles. While there are steps taken to maintain reliability, such as by ensuring that each offender and their offence was reported by three different news organisations in Northern Ireland, it is still limited by newspaper articles being overall more unreliable and less detailed than official police reports. Police do not disclose all information of a crime to news organisations, meaning this analysis can only be based on partial information at best. Additionally, data collection was performed by directly searching on Google for the name of each victim, in place of searching for reported offences from the time period, then narrowing down that collected result to homicides, and further narrowing that results down to femicides. Lastly, the article reports its results as percentages, a feature which is unnecessary and misleading with such a small sample, and does not calculate or report any effect sizes to demonstrate the magnitude of its findings.

While this article demonstrates the potential for two distinct types of male femicide offenders, it is limited by the above issues. Future research on this topic should aim to collect a larger sample in collaboration with law enforcement, and measure effect sizes.



### **Geographic profiling in Tokyo (Hirama et al., 2023)**

Hirama et al. (2023) assessed spatial interaction modelling (SIM), a method of geographic profiling which examines origin zones (ie. Area of offender residence), destination zones (ie. Area of offence), and travel impedance between the previous zones to suggest which zones have high likelihoods of including an offender's residence (Oshan, 2021), and its ability to predict the residences of residential burglary offenders in Tokyo when incorporating neighbourhood-level factors (ie. Population of newcomers, number of police facilities, etc.). They reported that certain neighbourhood-level factors (ie. Population age, type of housing, population of newcomers) were positive predictors of a zone being an origin or destination zone, and that their proposed model which used SIM was more precise and just as accurate as other geographic profiling models.

The article presents many strengths and interesting results. Tokyo is a city with an incredibly large population. For analysis, the researchers divided the area of Tokyo into 1507 1 kilometre squared cells/zones, and examined neighbourhood-level factors using Japanese census data, allowing for a very rich study. They reported that a high number of police facilities did not make a destination zone less attractive to offenders, suggesting the number of police facilities may not be an effective deterrent against crime. Additionally, results reported that offenders from neighbouring origin zones were more likely to target the same destination zone; However, offenders from the same origin zone were more likely to target different destination zones.

While Hirama et al. (2023) produced an in-depth and well researched study, it exhibits one notable issue. The researchers hypothesised that origin zones would likely have a high population of residents aged 15-59. This age range is too large to suggest meaningful findings. According to the 2015 Japanese census (Statistics Bureau of Japan, 2019), the general population aged 15-59 years makes up 60.4% of the total population of Tokyo. Determining that zones that have high populations of people who make up 60.4% of the population are more likely to contain the residences of offenders fails to illustrate substantial data. Effect size is also not calculated or reported

to illustrate the magnitude of the significant findings. A future study focusing on the populations of smaller groups of age ranges (ie. 15-19, 20-24, etc.) per zone with effect sizes may be useful for more accurately determining likely origin zones.

## **Spanish Stranger Rapists Previous Convictions and Crime Scene Behaviours (Janosch et al., 2023)**

Janosch et al. (2023) developed a profile of Spanish stranger rape offenders, and examined if predictions could be made regarding the offender's previous convictions (PC) based on their crime scene behaviours (CSB). The researchers noted that a justification for their article was new research suggesting that similar offenders committing in different cultures exhibit differences in their characteristics and CSB, citing a paper by Almond et al. (2021). The researchers reported that predictions could be made regarding an offender's PC based on their CSB (eg. The PC for theft could be predicted with the CSB stealing valuables during the offence).

A strength of this article is shown in its effect sizes. For analysis, the researchers used odds ratio to measure the effect size of significant associations between PC and CSB variables, and reported two medium and two large effect sizes. While more research is required, this demonstrates the potential of moderate-to-powerful links between these variables, and suggests that predictions of PC can be made with CSB factors with some accuracy, which may assist in investigations with such factors by lowering the number of potential suspects.

Additionally, the sample used in this article, which consisted of 110 Spanish nationals and 123 non-Spanish nationals, was reported to have only one significant difference across all twenty one CSB and PC variables. This may suggest that offenders from different cultures committing in the same culture may exhibit similar CSB and PC. While not investigated by Janosch et al. (2023), it represents an interesting area of future research.

## **Geographic Profiling of Serial Perpetrator Residence (Spaulding & Morris, 2023b)**

Spaulding and Morris (2023b) proposed a new framework of geographic profiling, featuring three different profiling models. The researchers compared the validity and accuracy of the proposed models against those of existing geographic profiling models using historic case data of infamous serial homicide offenders. They reported that the proposed models demonstrated validity and accuracy similar to or greater than existing models.

The article presents a number of strengths. The proposed framework features three separate models of geographic profiling, each designed to operate and generate profiles when provided with different types and amounts of data (ie. One model was used when only body dump locations are known, another was used when encounter location and body dump locations are known). This allows a degree of flexibility absent in other existing frameworks (Spaulding & Morris, 2023a). Additionally, the reported hit score percentage for the proposed models was 4%, suggesting that the search time for an offender's residence using a profile generated by the proposed models would be over twelve times faster than a random search.

The article does present some issues. The introduction and literature review present in the article are short, and it lacks an explanation of each proposed model and their functions. However, this issue may be negligible, as this article is a 'Part II' to a separate 'Part I' paper (Spaulding & Morris, 2023a), which acts as an extended literature review of geographic profiling research, a justification for the framework, and an explanation of the utilities of each model. Arguably, both separate articles could have been published together as a single large article, yet it is overall inconsequential.

However, the sample size presents another issue. A total of only eleven historic cases were collected for the analysis, a sample too small to demonstrate substantial or meaningful results. Additionally, as they are designed to operate under different conditions, each proposed model was assessed using different proportions of the total sample size: One with six

cases; Another with four; And the last with only one case. This is noted as a limitation by Spaulding and Morris (2023b). The small sample may be the result of using only infamous serial offender cases for analysis. Future research evaluating the proposed framework with a larger sample size would be beneficial. Additionally, future research assessing the proposed framework and models' applicability to offences other than serial homicide would be useful.

### **Serial and Single-Victim Homicide in Brazil (Silva et al., 2023)**

Silva et al. (2023) conducted a comparison of the offender characteristics and crime scene behaviours between serial homicide offenders and single-victim homicide offenders in Brazil. They collected a sample of male offenders from three maximum security prisons, as they noted a lack of academic research on prison populations, and on the prevalence of serial and single-victim homicide offenders and their classifications in Brazil. When examining and comparing the sociodemographic data and crime details of the two samples, the researchers reported a number of differences between serial homicide offenders and single-victim homicide offenders, in areas such as age of first homicide, education level, relationship with victim, and more.

The article presents a number of strengths. A sample size of 189 participants was obtained for analysis, consisting of 102 serial offenders and 87 single-victim offenders. Data collection for each participant was performed by examining their offender records, and by conducting individual interviews, where participants completed two questionnaires for sociodemographic data (ie. Age, marital status, occupation, etc.) and crime details (ie. Criminal motivation, weapon use, relationship with victim, etc.), respectively. Additionally, the researchers measured the effect sizes of significant associations and differences between groups using Cramér's V and/or phi ( $\phi$ ), and reported one weak effect size, six moderate effect sizes, and four relatively strong effect sizes. While more research is required, this demonstrates the potential of moderate-to-powerful links between the variables and groups, and suggests that identifying certain characteristics and crime scene behaviours may be useful in lowering the number of potential suspects in both serial homicide and single-victim homicide cases.

However, while the effect sizes identify the differences between groups, they do not account for the similarities and differences within groups. For example, Silva et al. (2023) reported that single-victim offenders are more likely to know their victim compared to serial offenders, with a moderate effect size. However, they also reported that 43.7% of single-victim offenders did not know their victim, meaning a single-victim offender is almost as likely

to target a stranger as they are to target an acquaintance. Future research on this topic should aim to examine the differences and similarities between and within groups, to strengthen the profiles proposed in this article, and increase their accuracy.

## **Robbery in the Night-Time Economy (Wüllenweber & Burrell, 2023)**

Wüllenweber and Burrell (2023) examined the crime characteristics of robberies performed in the night time economy (NTE), to investigate their potential differences compared to robberies performed not in the NTE. The researchers classified a robbery as occurring in the NTE if the offence took place between 18:00 and 06:00, and was linked to a late night venue, such as a pub, bar, nightclub, takeaway, etc. The researchers reported that NTE robbery offences exhibit a higher presence of alcohol and violence compared to non-NTE robbery offences, and that approach styles differ between NTE and non-NTE offences.

However, while the analyses support these findings, it is important to note that most of the significant relationships had weak effect sizes, the exception being the involvement of alcohol in NTE offences, which had a very strong effect. The prevalence of weak effect sizes may be due to the samples collected for analysis. While the article used a large sample size, consisting of 1624 cases of personal robbery, the proportion of non-NTE offence cases (1421) is exactly seven times larger than the proportion of NTE offence cases (203). Future research using samples of similar size may better explain these findings.

Despite these issues, the article exhibits a number of strengths. As already mentioned, Wüllenweber and Burrell (2023) reported the effect sizes of the significant relationships, which was calculated using Cramér's V. While an unequal sample may explain the presence of weak effect sizes, it may also suggest that NTE and non-NTE robbery offences are more similar than previously thought. Further research is still required; However, demonstrating that there are negligible differences between the NTE and non-NTE robbery offences is as important and informative as demonstrating that there are significant differences, as it shows that resources and research covering non-NTE offences has the potential to be generalised to NTE offences, and may be used as a foundation for future research.



### **Unusual Acts in Sexual Homicide (Sun et al., 2023)**

Sun et al. (2023) analysed unusual acts present in sexual homicide cases, investigating their potential meanings, and comparing the crime commission processes of cases with unusual acts to cases with extreme acts to identify potential differences. Extreme acts are crime scene behaviours that are unusual for most offences, yet appear with surprising frequency in sexual homicide cases, namely bodily dismemberment, overkill, necrophilia, and foreign object insertion (FOI). While still uncommon in these cases, extreme acts and sexual homicide have become associated. Unusual acts are extreme acts that stand out as particularly unusual, even in sexual homicide cases, namely cannibalism, carving on the victim, evisceration (ie. The removal of internal organs), vampirism, and skinning. The researchers reported that unusual sexual homicide offenders showed significant differences compared to non-unusual sexual homicide offenders in their crime-commission processes.

However, the article exhibits a number of issues. The terms 'extreme' and 'unusual' are not clearly defined by the researchers. The above explanations were constructed through careful reading and inference of the article for the present critique. Other terms, such as a variable for "place needs to gain entry" (Sun et al., 2023, p. 186), are also not clearly defined, allowing for ambiguity and potential misinterpretation.

Additionally, while using a large sample of 762 sexual homicide cases from 1948-2018, and 50 independent dichotomous variables covering areas such as victim selection, sexual and non-sexual behaviours, and other crime scene behaviours, the findings and impact of the analysis are limited, as the article examines crime scene behaviours separate from their associations to other areas, such as offender characteristics or previous convictions. While the results may be useful for linking a past sexual homicide offender who exhibited such behaviours to a modern case, or for suggesting that an extreme offender may evolve into an unusual offender, they present very little practical use outside of this. The findings offer little assistance to the investigation of a first time offender, or a past offender who has not exhibited

such behaviours, and cannot be used to lower the number of potential suspects in a case. Additionally, some findings, such as victims being more likely to have suffered unusual acts if they had been bodily dismembered, appear unhelpful and/or unnecessary, as the presence of unusual acts would be obvious to an investigator or coroner.

It is possible that the results are intended to be interpreted with models of OP consistent with the FBI approach, such as the Organised/Disorganised Typology of Serial Killers (Ressler et al., 1988). However, some of these models present numerous substantial flaws, namely not being based on empirical research and having little to no supporting evidence of their effectiveness, and have been heavily criticised in past OP research (Vettor et al., 2014; Canter & Wentink, 2004).

Lastly, while Sun et al. (2023) report odds ratios, a Nagelkerke<sup>2</sup>, and a Hosmer-Lemeshow test for the significant associations, these are not directly stated to indicate effect size, and their means of interpretation are not explained. Future research into the associations between unusual crime scene behaviours and offender characteristics or previous convictions is required.

## **Comparison of UK and Spanish Stranger Sexual Offenders (Almond et al., 2023)**

Almond et al. (2023) conducted a study on UK and Spanish stranger sexual offenders, comparing their crime scene behaviours (CSB) and previous convictions (PC) to investigate the potential differences between offenders committing in different cultures. Previous research suggested that similar offenders committing in different cultures exhibit differences in their characteristics and CSB (Almond et al., 2021). The researchers reported significant differences between the samples when comparing their CSB and PC, including UK offenders having greater PC than Spanish offenders, and the 'making reference to the police' CSB and 'criminal damage' PC being the only significant association shared between both samples.

The article presents a number of strengths. It uses a very large sample, consisting of 474 UK sexual offence cases and 418 Spanish sexual offence cases. It examines the similarities and differences between samples for CSB, PC, and the significant associations between CSB and PC. Analysis was conducted using two sets of variables: One for CSB, which grouped its variables into eight main themes, including precautionary behaviours, sexual behaviours, violence, etc.; And one for PC, including variables for theft, criminal damage, drug-related offences, etc. It is important to note that neither the total number of variables nor a list of all variables used in the article is provided. However, a list of the seventeen significant variables is provided, with ten CSB variables and seven PC variables. Additionally, the researchers used odds ratio to measure the effect size of all significant variables and significant associations, reporting a total of 35-37 effect sizes, consisting of eight-to-ten small effect sizes, twenty four medium effect sizes, and three large effect sizes. This gives credibility to the findings, and suggests that similar offenders committing in different cultures may exhibit very different CSB and PC. Further research may determine if these findings are generalisable to non-sexual offenders in different cultures.

However, while this article is well constructed and researched, there are a number of minor issues present, specifically in the results section. There

are some discrepancies between results reported in the tables compared to results reported in the text. For example, Table 3, which illustrates the significant previous conviction variables, reports an odds ratio of 2.91 for burglary, while the text lists 4.62 for burglary. Additionally, Table 4, which illustrates the significant associations between crime scene behaviours and previous convictions for UK and Spanish offenders, reports that the 'Darkness' variable is significantly associated with the 'Violence' variable for Spanish offenders twice: First with an odds ratio of 0.35; And then with an odds ratio of 0.48. It is for this reason that the total number of effect sizes is listed as 35-37 in the present critique. Contact with the authors has been attempted to reconcile these issues.

## Strengths and Limitations

The present study shows a number of strengths and limitations. As an RSLR, it required less resources than a systematic review covering the same topic, and was completed in a shorter time span. It acted as an effective insight into the current state and trajectory of OP research, and serves as a useful foundation for future research.

However, the scope of an RSLR is limited compared to that of a systematic review or meta-analysis, and important nuances and small details may be overlooked due to time constraints (Moons et al., 2021). It is also important to note that the present study included a small number of articles, and excluded non-journal article publications and non-peer-reviewed publications, which included books, book chapters, trade articles, thesis papers, conference papers, and unpublished documents. While the findings may be accurate to current peer-reviewed journal articles covering OP, they may not be wholly accurate to or representative of the whole of current OP research.

Additionally, the researchers may have been limited by scope of the project and the learning curve involved in an RSLR.

The present study examined the reported effect sizes of each reviewed article, which was used to assess the implications of their findings. This builds from the research by Fox and Farrington (2018), which noted a lack of effect sizes in profile development articles. However, the present study also makes use of a modified coding scheme, and is not a perfect one-to-one replication of the meta-analysis by Fox and Farrington (2018).

Lastly, while they could not be included in the present study, it is a positive indication of the direction and changes of current OP research that the review was required to be limited from articles published between 01/01/2017 and 31/12/2023 to only articles published between January 2023 and December 2023, as the number of peer-reviewed articles with abstracts which met the inclusion criteria was so large that the present study would fall outside the scope of a rapid structured review.

## Theoretical and Practical Implications

The present study gives insight into the direction and changes to OP research after Fox and Farrington (2018), illustrating some improvements in the field. It also critically analyses each paper in the review, noting their strengths, limitations, and means by which future research may improve upon them.

A wide range of effect sizes were reported for significant findings and associations by a number of articles in the present study (Janosch et al., 2023; Silva et al., 2023; Wüllenweber & Burrell, 2023; Almond et al., 2023), with a medium effect size being the most commonly reported. While each article exhibits their own issues, the importance of reporting effect sizes cannot be overstated, as it demonstrates the strength/magnitude of an article's findings, and suggests where separate topics may be similar or different (Coe, 2002). While large effect sizes may appear preferable, small effect sizes are equally important, as they can illustrate either potential issues with the sample used in a study, or that two samples are more similar than previously thought (Wüllenweber & Burrell, 2023). It is paramount that future research be conducted with this in mind.

One article in this review, by Almond et al. (2023), focused on investigating the presence of differences in the crime scene behaviours and previous convictions of offenders committing similar offences in different cultures. Another article by Janosch et al. (2023), which focused on creating a profile of Spanish stranger sexual assault offenders, noted that a justification for their article was new research suggesting that similar offenders committing in different cultures exhibit differences in their characteristics and CSB, citing a paper by Almond et al. (2021). This could indicate a potential future trend in OP research, where researchers further investigate differences in areas such as offender characteristics, crime scene behaviours, and previous convictions across different cultures, and develop and assess potential frameworks to more easily create offender profiles which could be unique to each culture.

## **Future Research**

Potential avenues for future research are noted in the critiques of the literature. It is paramount for future research focused on OP and profile development to calculate and measure effect sizes, so the magnitude of significant findings can be assessed, and that the field as whole may improve. It is recommended to obtain large sample sizes in collaboration with facilities which engage with offenders, such as law enforcement and prison services, and to maintain equal distribution between groups when using multiple samples.

Additionally, a larger systematic review or meta-analysis on OP research, analysing a more diverse range of publications and publication types from 2017 to present would improve on the findings of the present study, and may reveal a more accurate picture of the research and its future trajectory. A meta-analysis may allow for an improved or less modified coding scheme, to act as a more accurate replication of Fox and Farrington (2018).

## **Conclusion**

In conclusion, a number of changes have appeared in OP research when examining academic journal articles with respect to Fox and Farrington (2018). While there have been some positive changes, such as the increased use of advanced inferential statistics, research on this topic also needs further improvements in other areas, such as with effect size reporting. The present study has noted some directions in which future research may go, and assessed and detailed a number of strengths and critiques present in each article, and offered suggestions on how OP research may improve in the future.



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## Appendix A

### List and Description of Data Synthesis Measures and Categories

Topic refers to the purpose or subject matter of the publication. Topics are grouped into the following categories: General Discussion Piece, which explains the history, methods, approaches, or applications of OP; Legal/Theoretical Publication, which examines the applications, implications, or validity or reliability of theoretical foundations of OP, and of the use of OP in a legal environment; Autobiography, which details the author's personal experiences or cases related to OP; Case Study, which examines in-depth the development or application of a profile(s) using a very small sample size (Less than five); Profile Development Article, which creates a "profile" of offenders or offences; Comparison of Methods Article, which compares the results and accuracy of different OP approaches, or of a profiler compared to a non-profiler; And Evaluation, which assess the accuracy and/or utility of OP.

Affiliation refers to the self-identified professional affiliation of the author at time of publication among the following: Psychologist; Criminologist; Forensic Psychologist/Psychiatrist; FBI Special Agent; Law Enforcement; Student; And Another Field.

Department/agency refers to the place of employment of the author at time of publication. For analysis, each department/agency was coded using basic descriptors (ie. 'Trinity College Dublin' would be coded as 'University', 'An Garda Síochána' as 'Law Enforcement', etc.).

Sample size was coded as ' $\leq 100$ ', ' $\leq 500$ ', ' $\leq 1000$ ', and ' $> 1000$ '.

Sampling technique refers to the organisation, facility, or database from which data was collected, and was coded using basic descriptors (eg. 'Law Enforcement', 'Historic Case Data', etc.).

Data collection location refers to the country from which data was collected. Each country was coded under their English name. Publications using data from multiple countries were coded as 'Multiple Locations'.

Crime type refers to the main type of crime studied in each article. Crimes were coded into generalised groups where possible (ie. Serial homicide and sexual homicide would both be coded as 'Homicide', burglary and robbery as 'Theft', etc. Arson would be coded as 'Arson', etc.).

Use of statistics refers to the sophistication of the statistics used in each publication, coded into the following categories: No Statistics; Basic Descriptive Statistics; and Advanced Inferential Statistics (eg. Logistic regressions, scaling, etc.).

Number of variables refers to the total number of variables used for analysis in each publication, and was coded as ' $\leq 10$ ', ' $\leq 20$ ', and ' $> 20$ '.

Results were coded into the following categories, based on the proportion of supported and unsupported hypotheses reported in each publication: 'Fully Supported', 'Majority Supported', 'Half Supported', 'Majority Unsupported', and 'Fully Unsupported'.

Effect size(s) was coded into the following categories, based on the proportion of small, medium, and large effect sizes reported in each publication: 'Majority Large', 'Medium, Leaning Large', 'Majority Medium', 'Medium, Leaning Small', 'Majority Small', and 'Not Reported'. Differing labels/terminologies for effect size (eg. Weak, moderate, strong, etc.) are categorised as small, medium, and large accordingly.