

A Mixed Methods Approach to Understanding
the Target Selection Criteria of Burglars
within Leeds

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Submitted in accordance with the requirements for the degree
of Doctor of Philosophy

The University of Leeds

School of Geography

School of Law

January 2017

The candidate confirms that the work submitted is his own and that appropriate credit has been given where reference has been made to the work of others.

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Acknowledgements

There are a number of people I would like to thank for their support during the course of this project; for without whom, this project would not have been possible. Firstly, a big thank you must go to my supervisors; Andy, Nick and Susanne. What a team! Not only have you provided me the opportunity to complete this PhD through awarding me the 'Innovations in Quantitative Methods' scholarship, but your knowledge, expertise and endless support has been invaluable throughout the project and I can't thank you enough.

I would also like to thank Safer Leeds Partnership for their support during the project, and particularly David Jackson as part of my Research Support Group; your insight, expertise and enthusiasm for the project has been brilliant. To West Yorkshire Police and particularly to David Oldroyd, Ian Newsome, Simon Brooksbank and Jonny Wainwright; thank you for supporting this work from the outset and throughout. It has been a pleasure to work with you all. Also to all of the staff and prisoners at HMP Leeds that supported this project, a huge thank you for making this work possible. To the prisoners involved in this research, thank you for sharing your insights and experiences of burglary, and special thanks in particular to Angela Palmer and Mark Cockram in the Offender Management unit, whose support throughout this work has been second to none.

To the staff and students in the School of Geography and School of Law at Leeds, it has been a pleasure to return to academia and a big part of that has been the people I have had the pleasure to work alongside. Thank you! A special thank you too to Graham Clarke in the School of Geography, as part of my Research Support Group. Your advice, ideas and knowledge has been invaluable, and the project has been infinitely enriched by your support. I would also like to thank a number of my colleagues at Sheffield Hallam, with a special mention to James Banks, for the support you have given me in the final stages of this thesis.

To my Mum and Dad, thank you so much for all of your support throughout (particularly in humouring my need to return to education at the ripe old age of 27!). It has meant the world to me. Mum - I'm so, so sorry that you can't be with us anymore and that I can't see you and tell you in person that it's finished, but I really hope you're looking down from up there, and I hope I've made you proud.

Finally, to my wife, Ali, what can I say! Thank you so much for being my absolute rock (lobster), and for your support throughout all of this - I hope you know just how much it means to me. I couldn't have done it without you.

Abstract

Over the last decade, levels of domestic burglary in Leeds have been amongst the highest in the UK. This has led to substantial investment into reducing burglary in the city; for example, with the implementation of the Burglary Reduction Programme in 2011. Though burglary levels in Leeds have subsequently fallen, reducing property crime (particularly burglary) and enhancing community safety remain key priorities for the city. This is particularly pertinent in the existing climate of policing cuts and austerity measures, which have contributed to a clear focus towards more accurately targeted resources and an evidence-based approach. This project takes a localised approach to exploring the nature of burglary and burglars. The aims are to understand the nuances and patterns of target selection amongst burglars, which will help support targeted operational policing, and enable the provision of targeted crime prevention advice. To achieve these aims, a mixed-methods approach has been used; namely, the analysis of burglary offence data collected by the police, as well as interviews undertaken with a sample of incarcerated offenders who have current or previous convictions for burglary. The analysis of offence data helped to derive *offence-based MOs*; these centred around features such as opportunism, ‘sneak-in’ offences, the use of force, and the age of offenders. This revealed five offence-based MO groupings; “*Sneak Offences*”; “*Smash and Grab*”; “*Local Youthful Opportunism*”; “*Confident Opportunism*” and “*Local Juvenile Poverty Predation.*” *Offender-based MOs* were subsequently derived through the interviews undertaken; these resulted in the identification of ‘professional’, ‘opportunist’, and ‘sneak-in’ offender-based MOs. Offence and offender-based MOs are contrasted and compared in the discussion. The nature, value and extent to which offenders and offences were characterised by these groupings is subsequently discussed. This project also revealed a number of findings with clear utility in supporting crime prevention and operational policing efforts. These include the importance of cover in target selection, understanding the ‘mindset’ of a property’s residents, the nature of journeys to and from crime, the process of ‘offloading’ stolen goods, the ability of offenders to ‘blend in’ to their surroundings, serial targets, and the importance of police-linked alarms as a deterrent. The research concludes by highlighting potential avenues for future work in this field.

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List of Abbreviations

AIC	Akaike Information Criterion
BCa	Bias-corrected and accelerated
BIC	Bayesian Information Criterion
BLRT	Bootstrap Likelihood Ratio Test
CCTV	Closed-Circuit Television
CI	Confidence Interval
CID	Criminal Investigation Department
CPTED	Crime Prevention Through Environmental Design
DOSPRT	Domain-Specific Risk-Taking
ECA	Ethnographic Content Analysis
ICT	Information and Communications Technology
IEP	Incentives and Earned Privileges
LCA	Latent Class Analysis
LOOCV	Leave-One-Out Cross-Validation
MO	Modus Operandi
NOMS	National Offender Management Service
NPS	New Psychoactive Substances
OA	Output Area
OAs	Output Areas
OAC	Output Area Classification
P-NOMIS	Prison National Offender Management Information System
PCSOs	Police Community Support Officers
SBD	Secured by Design
SE	Standard Error
SI	International System of Units (Metric)
UPVC	Unplasticized Polyvinyl Chloride

Chapter 1: Introduction

1.1. Burglary within Leeds: setting the scene

According to the 1968 Theft Act for England and Wales, the offence of burglary is defined as follows;

“(1) A person is guilty of burglary if–

(a) he enters any building or part of a building as a trespasser and with intent to commit any such offence as is mentioned in subsection (2) below; or

(b) having entered any building or part of a building as a trespasser he steals or attempts to steal anything in the building or that part of it or inflicts or attempts to inflict on any person therein any grievous bodily harm.

(2) The offences referred to in subsection (1)(a) above are offences of stealing anything in the building or part of a building in question, of inflicting on any person therein any grievous bodily harm... therein, and of doing unlawful damage to the building or anything therein.”

(Theft Act, 1968).

However, the above section of the Theft Act 1968 does not distinguish between burglary offences against a domestic or non-domestic property, which ultimately commands important distinctions in terms of subsequent sentencing (Crown Prosecution Service, 2016). Indeed, guidance provided by the Crown Prosecution Service (2016) notes that any charge or indictment should differentiate between whether a burglary offence relates to a building that is a dwelling or otherwise. However, for the purposes of this thesis, the focus shall be upon domestic, or ‘dwelling’ burglary.

Burglary and other household thefts comprise the largest group of crimes suffered within England and Wales (Office for National Statistics, 2016a). As of March 2016, the number of burglary offences for the preceding year recorded by police across England and Wales was 400,361; 193,773 being domestic burglaries and 206,588 non-domestic (Office for National Statistics, 2016b). The estimated financial cost of items lost through burglaries in dwellings in 2013/14 averaged £2,420 (Shaw *et al.*, 2015, p. 16). In addition, such figures do not quantify the considerable psychological impact on burglary victims, which can have substantial

impact on their psychological well-being, including feelings of anxiety and distress (Beaton *et al.*, 2000), nor the effect on the general population, for whom fear of burglary is second only to fear of violent crime (Office for National Statistics, 2015a). In combination, these factors provide a considerable impetus for both the police and local councils to reduce burglary.

One area where levels of burglary in recent years have been particularly problematic is the city of Leeds, West Yorkshire. During the last decade, Leeds has held the highest domestic burglary rate when compared with other similar cities, as is illustrated in Figure 1.1. For example, although the national household burglary rate was reported to have dropped by 4% between April 2007 and March 2010, in Leeds it was noted to have risen by 13% (Audit Commission, 2011). Although the reasons for Leeds' relatively poor historical performance are not certain, there appear a number of factors that increase the city's vulnerability to burglary, including a transient, mobile population, areas with poor housing stock, a high student population, and the normalisation of burglary amongst young people in the city.

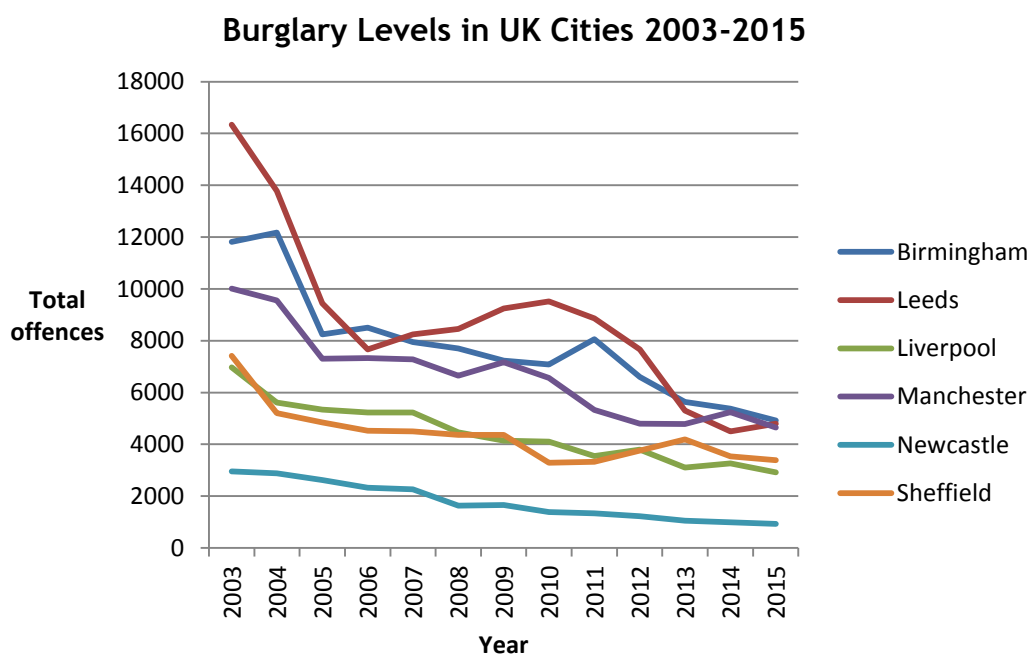


Figure 1.1. Levels of domestic burglary in comparable UK cities. Source: Office for National Statistics (2016c).

As a result of such high levels of burglary incidents, increased pressure was placed on the city to reduce burglary levels. Much of this was directed towards

the 'Safer Leeds Partnership', which was developed out of an original Crime and Disorder Reduction Partnership (Audit Commission, 2011) implemented following the 1998 Crime and Disorder Act. As a key element of planning, a programme of initiatives designed to reduce burglary in the city was commissioned by the Safer Leeds Partnership. This 'Burglary Reduction Programme' (Leeds City Council, 2012) included 'Knowledge', a student awareness campaign designed to reduce offending against the student population; 'Burglary Taskforce', a practical based initiative to reduce crime; a desistance project to target young offenders over time; and a project that targets priority high-crime wards to reduce burglary numbers (Leeds City Council, 2012). Also introduced was 'Project Optimal', a burglary reduction initiative initially introduced in the North-West of Leeds to help reduce burglary levels in the city.

The work undertaken to reduce levels of burglary in the city appears to have had a substantial positive impact, as can be seen in Figure 1.1. 2011 saw almost 9,000 recorded domestic burglaries within Leeds; the following year there were a total of 7,662 incidents, a reduction of 13.5% (Safer Leeds, 2012). In both 2014 and 2015 that number fell to below 5,000, demonstrating a sustained reduction of over 45% (Leeds City Council, 2015). This may be compared to a 2% domestic burglary fall for England and Wales as a whole (4% non-domestic fall; Office for National Statistics, 2016a). However, this should be considered in the wider context of the 'Crime Drop', a notable recent phenomenon across North America, Europe, and Australasia, whereby a number of common crimes have diminished by approximately 50% or more since the early 1990s (Farrell *et al.*, 2014). That said, the relatively large falls in burglary in Leeds, when compared to peer cities, suggest that local factors, such as Project Optimal, are likely to have had some impact.

Despite such falls in burglary levels, reducing levels of burglary and preventing victimisation from acquisitive offending remains an important priority for the Safer Leeds Executive, key, as it is, to enhancing community safety (Leeds City Council, 2015). A particular risk to the Burglary Reduction Programme currently is the substantial government-driven cuts to council and policing budgets, especially since 2010. These cuts have put pressure on the programme, Safer Leeds, and local policing, encouraging attempts to identify more specifically the elements of the programme that work best, and where. For example, the results of the Project Optimal burglary reduction initiative, introduced in Leeds in early 2012, indicated that this initiative was more effective with certain

demographics over others. These cuts have also driven a more evidence-based approach to understanding the crime system and its response to policing, and a detailed understanding of criminal behaviour is becoming key to ensuring the best techniques are intelligently adapted and applied to maximise reductions.

This thesis aims to contribute to these challenges. It will take a localised approach to exploring the burglary problem, with a particular focus on the city of Leeds. The goal of the thesis will be to enhance our understanding of the burglary problem, and identify any emerging patterns within the target selection criteria of burglars. It is anticipated that discovering nuances within offender target selection criteria will help in the provision of more targeted operational policing, as well as providing targeted crime prevention advice, along with helping to understand the potential effectiveness of crime reduction initiatives.

1.2. Methodology

The crime system requires the application of techniques that take individual level understandings and compares them with aggregate, police resourcing level statistical treatments, but also checks individual level understandings against objective individual behaviours. It is therefore clear that both qualitative and quantitative methodological and analytical approaches hold substantial benefits here. Quantitative approaches (the analysis of both aggregate and individual crime statistics) will go hand-in-hand with qualitative methodologies (interviews and questionnaires), complementing each other to establish the nature of burglary and selection of burglary targets within Leeds. Through this, the project plays to the body of literature that advocates utilising the strengths of both of these approaches, and discusses the benefits of combining these approaches within social science research (Maruna, 2010; Creswell, 2003).

1.3. Research Aims

One of the key overarching aims of this thesis is to understand how burglars select targets to burgle, and the features that may attract or deter them from targeting a specific property. Broken down, the key aims surround uncovering the *modus operandi* (MOs) underpinning burglars' selection of targets, in addition to understanding both the offence and environmental features linked to these MOs, and how these can be used for the purposes of supporting crime prevention efforts. However, first it remains important to understand the range of methods that may be used to understand more about offenders' MOs, behavioural

preferences and target selection criteria. The aims of the thesis, together with the chapters in which these aims will be addressed, are detailed in Table 1.1.

Table 1.1. Research Aims of the Thesis.

Research Aims	Chapter(s) that will address this Research Aim
Understand the range of methods available to help understand burglary MOs	Chapter 3: Methodology: Overview and Justification of Methods used
Understand the MOs of burglars within Leeds	Chapter 4: Quantitative Analysis: Part One - Focusing on the Offence Features Chapter 5: Quantitative Analysis: Part Two - Exploring the Demographic Features of Offences Chapter 6: Qualitative Analysis: Part One - Understanding Targeting Choices Chapter 7: Qualitative Analysis: Part Two - Understanding the Crime Event
Identify the features that attract / deter offenders to burglary targets	Chapter 4: Quantitative Analysis: Part One - Focusing on the Offence Features Chapter 6: Qualitative Analysis: Part One - Understanding Targeting Choices
Identify the environmental features that are linked to specific offender MOs	Chapter 5: Quantitative Analysis: Part Two - Exploring the Demographic Features of Offences Chapter 6: Qualitative Analysis: Part One - Understanding Targeting Choices
Explore how a mixed methods approach can be used to inform crime prevention advice	Chapter 4: Quantitative Analysis: Part One - Focusing on the Offence Features Chapter 5: Quantitative Analysis: Part Two - Exploring the Demographic Features of Offences Chapter 6: Qualitative Analysis: Part One - Understanding Targeting Choices Chapter 7: Qualitative Analysis: Part

1.4. Applied Nature of the Project

The research undertaken for this thesis has been conducted in collaboration with different crime prevention and criminal justice agencies within Leeds; namely, Safer Leeds Partnership, West Yorkshire Police, and HM Prison Service. It is hoped the work from this thesis can be used to help inform our understanding of the nature of burglary in Leeds and the target selection criteria of burglars in the city. In seeking to identify and understand the MOs of burglars, this work will help to identify the features associated with these MOs, thereby understanding the factors that may attract or deter burglars with regards to individual targets. It is hoped this work will subsequently be used for the purposes of supporting crime prevention efforts; for example, through informing operational policing resource allocation, exploring the impact of crime reduction initiatives, and the targeted provision of crime prevention advice.

1.5. Organisation of the Thesis

Before venturing into the main body of this thesis, Chapter 2 provides an overview of the literature, with a review into burglary and the target selection criteria of burglary targets. The chapter utilises two lenses: the environment, and the offender within that environment. The chapter begins with a brief introduction and overview of Environmental Criminology, before exploring the range of theories in Environmental Criminology that underpin burglary, and considering the body of work looking at offenders' journeys to crime. The chapter then considers the specific spatial scales featured within the tenets of Environmental Criminology, focusing in particular on the neighbourhood meso-level geography, in addition to the finer micro-level geography, at the level of the offender. Attention then turns towards the offenders themselves, considering their differing motivations, before examining the body of work on the *typologies* of offenders and exploring the concept of co-offending (i.e. with other offenders). This helps to set the context for the current research, and the chapter concludes by discussing how the thesis will build on previous work into the target selection of burglars.

Having laid the theoretical foundations, Chapter 3 goes on to provide details of the methodology employed. The chapter is split into two main sections; the first detailing the quantitative analysis undertaken and the second discussing the qualitative side. Each of these sections provides detail on the data utilised and the sampling approaches employed, as well as the different analytical methods undertaken. The discussion of methods chosen for the research is embedded in a critical review of alternative methodological approaches available (where appropriate), highlighting why the methods chosen have been selected over others.

Chapter 4 comprises the first part of the quantitative element of this thesis. The chapter consists of the analysis of burglary offence data to help understand offenders based on the distinction of their behavioural traits / features. The chapter starts with some descriptive analysis, before focusing on the journeys to crime taken by offenders. The chapter then moves on to explore distances to crime of a different nature; specifically, examining distinctions in the demographic features of areas where an offence took place, compared with the area of the offenders' home location. Here, demographic features refer to factors such as age, ethnicity, household composition, type of housing, socio-economic indicators, and type of employment. A cluster-based analysis is then undertaken to derive groups of offences based on the features of the offences and the target selection of offenders, which help to subsequently identify different 'offence-based' MOs. Furthermore, the chapter then goes on to describe the specific features of these MOs, as well as linking these with the official UK Census socio-demographic classifications derived from the 2011 UK Census.

Chapter 5 builds on the previous chapter by exploring the socio-demographic features linked with the different MOs identified. Firstly, the chapter explores the features associated with offences in each of the different MO groups. The chapter then moves on to consider the socio-demographic variables associated with *rates* of crimes in the areas that these offences took place. This chapter will also include validation of these analyses through the use of bootstrapping validation techniques.

As has been discussed in this introduction, the thesis will seek to utilise the strengths of both quantitative and qualitative data and analysis. Whilst the previous two chapters have considered the issue of burglary through a quantitative lens, Chapter 6 will comprise the first part of the qualitative analysis undertaken; in particular by utilising interviews conducted with offenders. The

chapter will focus on developing understanding of the target selection criteria of offenders. To further explore offenders' selection of potential targets, the chapter will also provide details of a property image task completed with individuals during interview, to help supplement the accounts provided by them during the interview process.

Moving on from the selection of burglary targets by offenders, the next chapter, Chapter 7, will form the second part of the qualitative analysis, and detail the themes pertinent to the *process* of burglary. It is hoped that this will help to uncover valuable information with regards to the potential MOs of offenders, and may be used to help validate the MO profiles developed in Chapter 4. Furthermore, the chapter will detail results from a risk-taking questionnaire conducted with participants. This was undertaken to help understand offenders' target selection in the context of both their propensity to take risks and the types of risks they would take.

Chapter 8 forms the discussion chapter. It reviews the key aims of the thesis and the extent to which these have been met, as well as exploring the analysis that has been undertaken, and situating the emerging results in the existing literature. The chapter then moves on to explore how the findings can be used for the purposes of crime prevention. This chapter will bring together the lessons on crime prevention learnt across the thesis, covering a range of different audiences, from the police, crime prevention agencies, safer cities partnerships, as well as members of the public, to commercial businesses and business owners. This work will also be of great benefit to the wider academic community, and in particular, to the fields of Environmental Criminology, and Geography. Not only will the work seek to re-evaluate principles on which crime prevention strategies are based (as advocated by Armitage and Joyce, 2016), but it will also explore the effectiveness of such crime prevention strategies and offer an innovative, mixed methods perspective on understanding the nuances of target selection and offender / offence-based MOs of burglars. What makes this work particularly invaluable is that as well as providing more general crime prevention advice, the results from the thesis will also allow for the targeting of specific crime prevention advice, based on the features of offenders' MOs. The chapter will then signpost where this work can be taken in future for the further advancement of this field.

The final chapter, Chapter 9, will bring this thesis to a conclusion. It will provide an overview of the areas covered by this work and the key findings, highlighting how the work advances existing knowledge in this area.

Chapter 2: Understanding the Process of Residential Burglary

2.1. Introduction

To set the context for the current project, it is important to provide a critique of the literature pertinent to both the target selection process, and behavioural preferences amongst burglars. In doing so, this chapter will introduce the concept of Environmental Criminology; focusing on the roles of the environment and the offender as part of the decision-making process. Section 2.2 will provide an overview of Environmental Criminology, charting its development over time to its current standing within the field of Criminology. The chapter will then move on to a summary of the criminological theories of offending, with Section 2.3 highlighting the wide ranging focus of current theories on crime, from the broader perspective of Routine Activity Theory and Crime Pattern Theory, to focusing on crime at the individual, micro-level, with Rational Choice Theory. The specific role of the environment on offending behaviour will then be considered within Section 2.4. In particular, this section distinguishes between the role of social factors at the meso-level, and more physical cues affecting burglary at the micro-level. Section 2.5 then offers perspective on the role of the offender on crime occurrence, touching on offender motivations, co-offending, and typologies of offenders, as based on offenders' processes of target selection. Section 2.6 will then provide a summary to the chapter.

2.2. Environmental Criminology

According to Tobler's First Law of Geography;

"...everything is related to everything else, but near things are more related than distant things" (Tobler, 1970, p. 236).

Whilst the above sentiment offers a very basic description of a spatial relationship, it captures the essence of most spatial systems within the social and natural sciences. In the context of crime, there exists a large body of literature that indicates crime is predominantly non-random, and clusters within space and time (Ratcliffe and Rengert, 2008; Johnson and Bowers, 2004a). This is particularly important within the field of crime prevention, as it is anticipated

that previous offending patterns may help identify areas at risk of future offending, therefore supporting crime prediction / detection efforts (Chainey and Ratcliffe, 2005).

Brantingham and Brantingham (1993) highlight the central role of the offender in the emergence of crime. They state that the likelihood of a crime occurrence is likely to vary with an offender's motivation, the target location, and the 'environmental backcloth' (Brantingham and Brantingham, 1993). The 'environmental backcloth' is defined by Brantingham and Brantingham (1993) as the assortment of factors that; "... surround and are part of an individual and that may be influenced or influence his or her criminal behaviour" (Brantingham and Brantingham, 1993, p. 6). Lundrigan *et al.* (2009) note that the environmental backcloth is heavily associated with the opportunity for an offence, and is comprised of a 'myriad' of factors that may impact on potential crime opportunities. Lundrigan *et al.* (2009, p. 19) further note that offenders "...will interpret the backcloth according to his or her own needs, experiences, and background in order to find a suitable target in a suitable time and place."

This helps to convey some of the complexities of the crime system, and the challenges in understanding the spatial behaviour of offenders and the emergence of crime in time and space. This sets the context for the study of 'Environmental Criminology', a field that is associated with the emergence of crime through the convergence of offenders, victims and the environment, across temporal and spatial contexts (Bottoms and Wiles, 2002).

Bottoms and Wiles (2002) note how Environmental Criminology holds a mutual dependence with the analysis and mapping of crime, with each informing the other. Some of the earliest published work on crime mapping took place in the early 1800s, with Guerry (1833) and Quetelet (1831) mapping crime in sub-regions of France. In addition to exploring spatial variation across regions, they also linked this variation with demographic factors such as social groupings (Guerry, 1833; Quetelet, 1831).

Spatial analysis of the environment and its relationship with crime was then the subject of work by a number of sociologists in the early-mid 1900s at the University of Chicago, developing what came to be known as the 'Chicago School'. Such work focused heavily on the role of social disorganisation within a neighbourhood on crime. For example, early work by Burgess (1925) introduced the 'Concentric Zone' Theory, which looked at physical and socio-economic factors across different zonal areas within Chicago. This work was subsequently

developed by Shaw and McKay (1942), who explored the relationship with these different zonal areas and the presence of criminal behaviour. This pioneering work acted as a catalyst for further work that explored the impact of the environment on crime. For example, subsequent work by Oscar Newman and C. Ray Jeffery built on these areas, through work which focused on adapting properties' architectural environment to try and reduce crime. These ideas were illustrated through the concepts of 'Defensible Space' (Newman, 1972) and 'Crime Prevention Through Environmental Design' (termed 'CPTED'; Jeffery, 1971).

The work described here into the spatial analysis of crime has been complemented through the emergence of spatial theories of offending behaviour at different space scales (Zahm, 2007); most notably Routine Activity Theory (Cohen and Felson, 1979), Rational Choice Theory (Clarke and Cornish, 1985), and Crime Pattern Theory (Brantingham and Brantingham, 1993). Whilst this section has provided a brief introduction to the components and beginnings of Environmental Criminology, the chapter will now move on to provide a detailed overview of these spatial theories of offending.

2.3. Criminological Theories of Offending

As noted earlier, Environmental Criminology comprises a range of theories designed to explain and account for the convergence of crime across space and time. Central to this field, these theories differ with respect to the level of focus they provide on the crime system, from looking at broader social trends and a neighbourhood-view of crime, towards a more granular focus on crime, looking specifically at the offender(s) and the decision-making process. It is important to critique these theories here, as they will be used to build the core theoretical perspective from which the remaining analysis is based.

2.3.1. Routine Activity Theory

Based on the work of Cohen and Felson (1979), Routine Activity Theory views crime occurrences as 'opportunities' that arise within time and space. The theory dictates that three components of a crime system must be present for crime to occur; namely, a *motivated offender* and a *suitable target*, who have to, "...come together in time and place" (Clarke and Eck, 2005, p. 14), in the absence of a '*capable guardian*' (Cohen and Felson, 1979). From its development, this theory has evolved to include an additional layer of 'controllers' for each of the above elements that impact on the potential emergence of crime (Clarke and

Eck, 2005). This is illustrated within Figure 2.1. With respect to potential targets, controllers refer to ‘guardians’, who may be formal guardians such as the police, or informal guardians such as neighbours, or friends. ‘Handlers’ for offenders refer to someone familiar with an offender and may subsequently impact upon their behaviour, i.e. family members, partners. For a place, the controller is likely to be the manager or owner of an establishment, such as the landlord of a public house (Clarke and Eck, 2005).

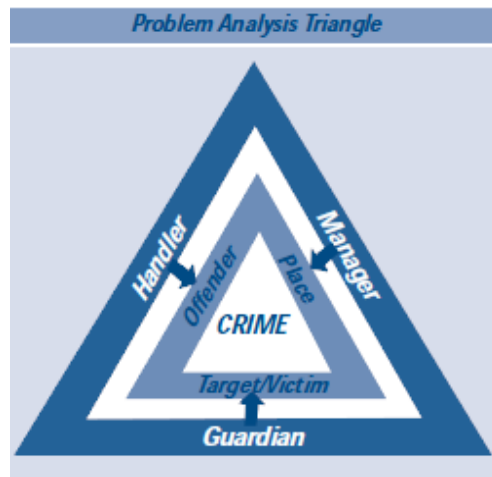


Figure 2.1. The Problem Analysis Triangle highlighting the Routine Activity Theory and its development. Source: Clarke and Eck (2005, p. 14).

This theory of offending is supported by the extant literature on burglary. For example, Andresen (2006) explored spatial patterns of crime within Vancouver, Canada and their link with both Social Disorganisation Theory and Routine Activity Theory. Implementing a spatial regression approach, Andresen (2006) found a particularly strong association between the crime patterns observed and the routine activity spaces of offenders. Although relatively simple in its approach, Routine Activity Theory has been used to successfully explain crime occurrence, as illustrated through previous research. Specifically, patterns of offending by burglars have been linked to periods of absence in suitable occupants, thereby taking out the element of a capable guardian. This was found, for example, by Robinson (1997), who identified how student apartments were targeted by burglars during weekdays whilst students were attending lectures, or overnight on weekends when students may be out socialising. Moreover, burglaries have also been identified as being linked to times when parents are taking their

children to / from school, either in the morning or mid-afternoon (Rengert and Wasilchick, 1985).

Critics of Routine Activity Theory claim that it overlooks the role of sociological causes of crime; e.g. levels of deprivation and social ties with the community, as well as overlooking the nature of the offender themselves, focusing more on potential victims (McLaughlin, 2013). Nevertheless, Routine Activity Theory demonstrates clear strengths in explaining crime, and has been used to help shape crime prevention policy; for example, through the development of 'Situational Crime Prevention' (see Clarke, 1997).

2.3.2. Crime Pattern Theory

Whilst Routine Activity Theory allows for the "framework of opportunities for crime" (Brantingham and Brantingham, 1993, p. 263), Crime Pattern Theory helps to govern the specific *locations* of potential offences through an offender's known environment. This is achieved through offenders' navigation of a range of 'nodes' that locate the social spaces important to them. This may include an offender's home, place of work; or locations known for the purposes of socialising, for example friends, or public houses. Navigation between these nodes enables offenders to develop their personal awareness and activity spaces (Brantingham and Brantingham, 1993). Crime Pattern Theory posits that when selecting a property, burglars will search for a target in one of these known areas, either surrounding one of their 'nodes', or during the journey between 'nodes' (Rengert and Wasilchick, 1985; Brantingham and Brantingham, 1981), thus drawing on these awareness spaces. Brantingham and Brantingham (1993) make the important acknowledgement that some 'nodes' can have substantial restrictions on an offender's current activity space at a given time or over a given period, such as a school, or work location (see also Ratcliffe, 2006).

2.3.3. Rational Choice Theory

Rational Choice Theory is based on the premise that when faced with an opportunity to commit crime, an offender will weigh up the potential benefits for committing the offence (i.e. financial reward) against the potential risks for the offence (namely, being detected for the offence; Clarke and Cornish, 1985). De Haan and Vos (2003) describe how the Rational Choice perspective therefore focuses on a specific intention to commit an offence at a given opportunity, rather than a more general decision to engage in crime. Indeed, the elements of

the Rational Choice Theory underpin a number of current crime prevention techniques applied across the UK. Such techniques include minimising the perceived rewards from offending, increasing the risk of detection, or increasing the work involved for an offender to commit an offence (Clarke, 1997).

Some critics, however, have argued that any work which explores the decision-making process with offenders following an offence may include the post-rationalisation of their behaviour, and therefore not reflect, for example, if their behaviour leading up to the offence was more opportunistic in nature (Cromwell *et al.*, 1991a). De Haan and Vos (2003) also argue that the Rational Choice viewpoint sees offenders as highly rational, reasoning individuals, and fails to account for some of the emotional processes present within offending, including shame, moral ambiguity, and impulsiveness.

2.3.4. Optimal Forager Theory

The Optimal Forager Theory of behaviour was originally based on the concept of 'Foraging Theory' in relation to animal behaviour to describe the processes involved in searching for food sources (Krebs and Davies, 1993). Within the context of offending behaviour, the theory suggests that an offender will seek to maximise potential reward through their offending, whilst minimising both the effort and time involved to offend, and the potential risk of detection. This theory of behaviour has subsequently been linked to offending, and explored particularly within the context of burglar behaviour (see Johnson, 2014; Jones and Fielding, 2011; Bernasco, 2009; Johnson and Bowers, 2004a). Specifically, Johnson and Bowers (2004a) explored burglary data over a one-year period between April 1999 and March 2000 across Merseyside, to assess for the clustering of offences across time and space. Using the Mantel 'z' and Knox standardised residual statistics, they found clustering of offences within time and space; specifically they found the greatest number of offences occurred within a 1-2 month time period and between 300-400 metres from an initial burglary offence (Johnson and Bowers, 2004a). This suggests that the residual burglary risk following an offence travels *beyond* the original burgled property (Johnson and Bowers, 2004a).

This theory was notably implemented with the 'Trafford Model' of predictive policing, implemented in May 2010 in the Trafford area of Manchester, in the UK. The model sought to identify areas at increased risk of burglary based on the locations of previous offences occurring during the preceding 3 weeks. The model works on the premise that risk of burglary is increased within a 400m radius

of a burglary, during a subsequent 3 week period (Roberts and Jones, 2011). The use of different coloured buffer areas are overlaid over offence locations to signify dynamic risk over time. Jones and Fielding (2011) highlight the effectiveness of this initiative, with a 26.6% reduction in burglaries in the Trafford area between May 2010 and May 2011 compared with the preceding 12 month period.

The Trafford Model has subsequently been implemented successfully across other parts of the country; for example in Leeds, where the model is termed 'Project Optimal'. As outlined in Chapter 1, the city of Leeds has experienced a well-publicised burglary problem, and the Project Optimal initiative was initially implemented in the North-West of Leeds in March 2012 as part of the cities wider 'Burglary Reduction Programme' (Leeds City Council, 2012). When comparing the 54 weeks pre and post-implementation, there was a 40% reduction in burglary across the North-West Leeds division (Leeds City Council, 2013). For further information about the Project Optimal initiative, the reader is directed to BBC (2012).

2.3.5. Journey to Crime

Whilst other criminological theories of offender behaviour seek to explore why individuals engage in offending, as well as how they develop their awareness space of potential targets and account for the decision-making process immediately prior to offending, there also exists a large body of literature relating to the *journey* taken by offenders to commit burglary. This is particularly pertinent for the current research, as it helps to give an indication of the scope of areas that may be at risk from offenders dependent on offenders' propensity to travel to their offences. This area of the research within this thesis (Chapter 6 and Chapter 7) will also examine features related to crime journeys such as mode of transport used, and how the nature of goods stolen may impact on the journey taken following an offence. Such information can be embedded into resulting crime prevention advice generated from the project.

Canter (1994) viewed a crime's location as being a key indication of an offender's place of residence. The 'Journey to Crime' literature posits that offenders, in general, do not travel large distances from their home location to commit an offence (Rossmo, 2000; Wiles and Costello, 2000; Farrington and Lambert, 1994; Herbert and Hyde, 1985; Baldwin and Bottoms, 1976). Indeed, Farrington and Lambert (1994), in their study of differences between violent

offenders and burglars in Nottinghamshire, found that 68% of burglars lived within a mile from the targeted property, with only 8% of offenders living further than 5 miles away from the crime scene (Farrington and Lambert, 1994, p. 114).

One key limitation within this area of research, however, as raised by Wiles and Costello (2000) in their research into journeys to crime across the areas of Sheffield and North Yorkshire, is that whilst the home addresses of offenders are used for the purposes of police analysis, the home locations recorded during police interviews are based on the location the offender had resided the previous evening. This was often found to be a partner's house, which may have skewed the results found; for example, 'over-counting' relatively short journeys to crime. In addition, offenders' previous homes are also likely to impact upon their awareness spaces accessed when selecting a potential target to burgle (Bernasco, 2010a), adding a further level of complexity in determining the journeys taken to crime.

Wiles and Costello (2000) also noted how offending was more likely to occur through opportunities / the identification of targets discovered during an offender's usual '*non-criminal*' journey between their home and another location. This is supported by Wright and Decker (1994), who found that burglary risk was likely to be heightened when offenders are not inhibited by features such as temporal constraints, or demands such as employment.

Canter and Larkin (1993) proposed two styles of offender in which home location is a key factor in their choice of target selection; the 'Commuter', and the 'Marauder' offender styles. The 'Commuter' type offender may be more closely suited to burglars, and denotes that an offender will 'commute' to a location away from their home, whereas 'Marauder' offenders (deemed as being more suited to sex offenders) will look for a target in relatively close proximity to their home location (Canter and Larkin, 1993).

Whilst this chapter has so far provided a more comprehensive look into the context and theories underpinning Environmental Criminology, the following sections will detail how the environmental perspective can impact on crime from a macro to micro-level, through both physical and social cues, as well as providing an in-depth look at the distinct offender typologies identified through the literature.

2.4. Understanding Offender Behaviour - Focusing on the Environment

The field of Environmental Criminology has often been considered through a range of different academic disciplines, which has given rise to the observation of crime and the environmental perspective from different spatial scales and levels of magnification (Wortley and Mazerolle, 2008). This chapter will now outline how the environmental perspective can be viewed across different spatial scales. The purpose of this section is therefore also to consider the range of environmental (physical and social) features identified through the literature as potentially impacting on crime occurrence at different spatial scales. Brantingham and Brantingham (1991) identified three levels of analysis across the Environmental Criminology perspective; Macro, Meso and Micro-level, each of which shall now be considered in relation to the level of focus they provide on factors associated with burglary.

2.4.1. Macro-level focus

The macro-level perspective is the broadest level of focus across the environmental perspective. Specifically, the macro-level perspective focuses on crime across a large scale; for example across countries, or cities (Brantingham and Brantingham, 1991). Some of the earliest examples of macro-level focus on crime can be traced back to the 1920s, in France, where both Guerry (1833) and Quetelet (1831) explored relationships between crime and socio-demographic factors such as poverty across districts in France. However, Wortley and Mazerolle (2008) note the limited nature and use of analysing aggregated information at such a broad level. Consequently, more detailed focus shall be given to the analysis of crime at smaller spatial scales, which are likely to be more pertinent in helping to understand the nature of burglary, and in particular, the target selection criteria of offenders.

2.4.2. Meso-level focus and the social environment

Focusing at a more detailed level, the meso-level perspective considers *areas within* a city. This can range from suburbs or neighbourhoods, to individual streets or addresses. This scale is therefore highly suitable for considering *environmental* factors associated with the risk of burglary. Analysis of crime at this level tends to focus predominantly on the social characteristics of areas. There appears to be two key strands of social phenomenon explicitly linked with crime at this level; 'socio-economic status', and 'community cohesion'.

Crime and Socio-Economic Status

It is established in the literature that crime is disproportionately more likely to occur in areas with increased deprivation and lower socio-economic status (Herbert and Hyde, 1985; Evans and Oulds, 1984). Evans and Oulds (1984, p. 348) believe that the diminishing number of areas with 'owner-occupied' housing is a key contributing factor in areas of high-crime, which they state are now largely dominated by council-owned housing estates. Indeed, the idea that the presence of these estates act as a catalyst to create high-crime areas is discussed by Hope and Foster (1992), who describe such areas as having high concentrations of social and economic deprivation, a lack of social cohesion, and an increase in drug use and criminal behaviour.

However, converse to this, there is a body of literature which argues that risk of crime is also linked to affluence. For example, in research by Cromwell *et al.* (1991a) that focused on the decision-making of burglars, they found that a number of burglars offended to fund their drug use, and therefore would purposely look for signs of affluence. In light of research suggesting offenders predominantly reside in areas of lower affluence (Hirschfield and Bowers, 1998), it may be true that offenders travel purposely from their home location to a specific affluent area in which to commit burglary (Wiles and Costello, 2000). Furthermore, Johnson and Bowers (2004b) suggest that particular types of property (i.e. detached; Kershaw *et al.*, 2000) may be at greater risk of burglary, as are houses in areas with increased deprivation. When taken together, these findings would suggest that affluent houses in deprived areas would be particularly susceptible to the risk of burglary (Johnson and Bowers, 2004b). Indeed, Bowers *et al.* (2005) explored the dynamic between housing type and the area in which a property is located on burglary risk. They found that detached properties in deprived areas were at higher risk of both victimisation and repeat victimisation; over three times more likely to be burgled than terraced properties, and over seven times more likely to be targeted than detached properties in more affluent locations (Bowers *et al.*, 2005). This suggests that a 'one-size fits all' approach may likely be ineffective for crime prevention policy.

Links between the impact of levels of affluence and deprivation on burglary risk are also considered when looking at the influence of neighbouring areas on the subsequent risk of crime. For example, Bowers and Hirschfield (1999) analysed 45 locations in Merseyside where affluent areas were directly bordered

by neighbourhoods with increased deprivation. They found that these affluent areas had greater rates of burglary and assault than affluent areas in general. Furthermore, they found that affluent areas which bordered similarly affluent areas experienced lower levels of crime when compared with affluent areas bordered by areas with greater deprivation. As such, Bowers and Hirschfield (1999) found that affluent areas acted as a protective 'buffer' to areas that already had a lower risk of crime.

In support of this, Hirschfield *et al.* (2014) explored the influence of surrounding areas on burglary rates in Leeds, using area socio-demographics as based on the UK Census Output Area Classifications (Vickers *et al.*, 2005). They found that areas typified by 'Multicultural' and 'City Living' OAC groupings that had combinations of these as either 'core' or 'periphery' areas resulted in the highest burglary rates than any other combinations of OAC groupings. Both of these OAC groups were representative of relatively disadvantaged areas with heterogeneous populations. As such, the research found there were significant intra-area effects based on the socio-demographic groupings allocated to core and periphery areas, and that certain types of areas on the periphery had greatest bearing on the subsequent burglary rate (Hirschfield *et al.*, 2014).

Crime and Community Cohesion

Various authors have previously discussed the impact of social cohesion on crime. Most notably was the work from a group of researchers at the University of Chicago into community cohesion and social disorganisation in the early-mid 1900s. For example, Burgess (1925) theorised that the city could be divided into five distinct concentric 'zones'. The central zone was classed as the 'business district', housing the majority of the cities' industry. In the next zone followed residences in the most deprived areas in the city, with increasingly greater affluence found in zones towards the edge of the city. Shaw and McKay (1942) built on this work, making links between the neighbourhoods within these zones, and the occurrence of criminal behaviour. They found that delinquency was greatest within the second zone, the 'zone of transition' or 'transitional zone', which was characterised by high levels of deprivation, low-cost inner city housing, and transient populations, where neighbourhoods were characterised by weak social bonds (Shaw and McKay, 1942). This increased the sense of social disorganisation (Shaw and McKay, 1942) in these areas, thus providing greater opportunities for criminal activity. Shaw and McKay (1942) also noted that as

residents move towards outer zones of the city, 'delinquency' does not appear to travel with them, suggesting that this is a feature associated with the neighbourhood rather than the individuals that make it up. The impact of social disorganisation and poor social cohesion on burglary risk is supported by Hope and Foster (1992), who describe how these factors act as a 'catalyst' for high crime areas; creating 'fragmented' neighbourhoods, epitomised by social and economic deprivation, and high levels of crime and drug use. Jacobs (1961) argued that policies designed to address such community issues should aim to integrate residents and help them develop a collective sense of the community, believing that crime takes place when people feel isolated, with little claim in their own neighbourhood.

It was the beginning of the 1970s in which work took place that offered a 'fresh' perspective on crime prevention; specifically in terms of how crime could be reduced by adapting the surrounding environment (Newman, 1972; Jeffery, 1971). C. Ray Jeffery (1971) introduced the concept of 'CPTED' (Crime Prevention Through Environmental Design), which looks at the *opportunities* for crime offered by the conditions of the environment, and seeks to reduce these through three main techniques;

- 'Controlling access' to ensure a clear distinction between 'private' / 'public' space; this may involve the assembly of gates or fences.
- 'Increasing opportunities for surveillance'; both from within and outside of a property. This may involve increasing the flow of traffic, or ensuring vegetation around a property is well-kept.
- Encouraging the 'reinforcement of territory and ownership' of a property; this may include ensuring a property is well-maintained to suggest a clear sense of ownership, or publicising the presence of security devices at entry points.

(Jeffery, 1971).

Zahm (2007) makes an important observation that whilst the 'CPTED' *concept* was a relatively new approach, the foundations on which it is based, i.e. the use of spatial design to support public safety, is not. This is illustrated with the example of the implementation of street lighting resulting from the need to distinguish between 'non-criminal travellers' and 'criminal escapees' (Zahm, 2007). The tenets of CPTED, together with details of its application can be found

in Armitage (2014) and Armitage *et al.* (2011). However, Armitage and Joyce (2016) make an important recent contribution to our understanding of CPTED, in terms of re-evaluating key CPTED principles from the perspective of the offender. Using a series of property images in which offenders were asked to identify the features that would both attract and deter them from properties, their research cast doubt on some of the principles of CPTED and Secured by Design (SBD) housing. These included the use of private roads, dwelling boundaries, and security (particularly the use of alarms), which were identified as not necessarily deterring offenders (contrary to CPTED principles), but also the notion of poorly maintained properties, which in fact may deter offenders from a property (thereby opposing the notion of the 'Broken Windows' Theory as described below). This may therefore bear substantial impact on the future of work in this area, but it also emphasises the importance of work to re-evaluate the principles on which crime prevention work is based.

The theories and research discussed in this section are central to the work of this thesis, because they are based on features identified from the literature as being attractive to burglars, and thus they help to form the underlying principles on which modern crime prevention strategies are based. The current research will explore the extent to which the features identified are illustrated through both offenders and offences, and, in doing so, identify appropriate crime prevention measures that will help to mitigate and / or prevent burglary risk, based on the emerging findings. It may be the case that subsequent crime prevention measures identified through this research either mirror, complement or build on existing crime prevention policies.

Almost simultaneous to the work of Jeffery (1971), architect Oscar Newman developed the notion of 'Defensible Space', which also built upon the work of Jacobs (1961), and emphasised the importance of residents taking responsibility for their neighbourhoods and crime within it (Newman, 1972). Newman (1972) describes two different methods in which defensible space may be created. Firstly, he suggests that this may be created through increasing the opportunities for surveillance to observe offenders, i.e. through traffic flow. Newman (1972) also suggests that this may be created through increasing residents' sense of ownership, through the utilisation of clear territorial boundaries such as physical boundaries like gates, or the use of other indicators that an area is well maintained and cared for. This is in direct support of the 'Broken Windows' Theory relating to social disorganisation (Wilson and Kelling,

1982). The 'Broken Windows' Theory is based on the premise that just as a broken window in a property that is left may be perceived as a sign that no-one cares (and subsequently leaving other windows similarly vulnerable to damage), disorder within a community may indicate a degree of apathy amongst a neighbourhood. In turn, this may lead to further fear of crime, a breakdown in community jurisdiction, and increased crime levels (Wilson and Kelling, 1982).

Focusing on levels of social cohesion in a community may therefore help to address neighbourhood crime levels. Previous work has found that areas with high community cohesion may be more likely to report suspicious behaviour and engage in neighbourhood watch schemes (Goudriaan *et al.*, 2006; Bennett, 1989). Similarly, burglars may be less inclined to target properties if they observe indicators of community cohesion due to an increased perception of (detection) risk (Sampson *et al.*, 1997; Brown and Bentley, 1993). Sampson and Raudenbush (1999) highlight the importance of 'Collective Efficacy' in a community, which they describe as the ability of neighbourhoods to identify common collective values and maintain levels of informal social order within a neighbourhood. Sampson and Raudenbush (1999) believe this to be a greater predictive factor of crime levels over actual disorder.

Aside from research exploring the impact of social phenomenon at the meso-level on burglary risk, there is also an important developing field in which the physical features of the environment at the meso-level are studied with respect to their potential impact on burglary risk. Notably, this work centres on the study of road networks / structures and the impact on the subsequent guardianship offered to properties.

Focusing on Street Networks: Guardianship and Connectivity

Johnson and Bowers (2013) sought to explain guardianship as a 'dynamic process' that may change over time and across street segments. For example, they found that local (through) roads were used more by both residents and non-residents (which could include offenders) when compared with street segments such as cul-de-sacs and private roads. Such road types were therefore more likely to feature in offenders' awareness spaces and were at greater risk of burglary. They proposed that for such street segments, the risk of burglary would be higher overnight than during the day, because of limited guardianship overnight, lack of people for natural surveillance, and the fact that people (offenders) walking through these street segments at night would not be overly peculiar to raise

suspicion. This suggested the presence of a 'positive guardianship effect' for such segments during daylight hours (Johnson and Bowers, 2013).

Johnson and Bowers (2010) also conducted research to explore the impact of street networks, connectivity and permeability on burglary risk. They found that the level of street connectedness and permeability increased burglary risk, and that this effect was above and beyond the impact of socio-demographic factors. Johnson and Bowers (2010) therefore advocated cul-de-sacs to be an advantageous design feature in terms of burglary risk, and suggested that the use of these should be encouraged.

Davies and Johnson (2015) built on this work, through exploring the dynamic between risk of burglary, road structure and connectivity, to examine whether risk of burglary is greater on street segments where usage is predicted to be greater through 'shortest-distance' paths in a network. As anticipated by theory, the level of street segment 'betweenness' was found to be a highly-significant predictor of burglary victimization. Furthermore, they found that more linear streets were at lower risk of victimisation, which may be due to the fact that more sinuous street segments afforded greater cover for offenders, with more linear streets providing greater potential guardianship of properties (Davies and Johnson, 2015).

2.4.3. Micro-level focus and the physical environment

Understanding the theoretical mechanisms by which burglars choose particular properties is essential for the design of the interviews (Chapter 6 and Chapter 7) and the validation of the offence-based classes (Chapter 4 and Chapter 5). The Micro-level perspective focuses on the physical aspects of the environment and in particular, the specific elements of a property that may make it vulnerable to burglary. Such aspects include the security of a property, the type of property, in addition to the impact of those residing within a property. This level of perspective is also associated with the design features of a property and its environment, thus linking with the work of Newman (1972) and Jeffery (1971) on 'Defensible Space' and CPTED (respectively).

Cromwell *et al.* (1991a) identified three distinct physical factors that were key to understanding the physical cues indicative of burglary risk for a property:

- Visibility
- Occupancy

➤ Accessibility

These three features are useful as a means for categorising the following discussion, which will draw out the key factors that influence the decision to burgle.

Visibility

Existing literature suggests that the increased visibility / surveillance of a property raises the potential risk of detection for offenders, and therefore reduces the perceived risk and vulnerability of a property being targeted for burglary (Weisel, 2002; Painter and Farrington, 1999). This is supported through Newman's 'Defensible Space' concept (Newman, 1972), which denotes that increased surveillance / visibility of a property reduces its burglary risk.

Painter and Farrington (1999) considered the impact of street lighting on crime, identifying three ways in which this resource helped to reduce crime and increase the offender's perception of risk. They identified that the implementation of street lighting helped to enhance visibility, increase natural surveillance through the additional flow of individuals as part of their 'routine activities', and increase informal surveillance, which emerges out of increased visibility and natural surveillance (Painter and Farrington, 1999).

MacDonald and Gifford (1989) distinguished between two different types of surveillability; external surveillability, such as viewing a property from the road / a neighbouring house, and internal surveillability; which is the extent to which a resident(s) can observe individuals advancing towards their property. Newman (1972) notes how visibility can be obstructed by natural vegetation such as hedges, which provide further cover for offenders and subsequently increase a property's vulnerability to burglary. Maguire and Bennett (1982) found that properties were at increased risk of burglary where they provided sufficient cover for offenders; for example, through the use of hedges or fences. Lee and Lee (2008) subsequently discovered that the clearing of vegetation to increase the visibility of houses in the USA was an important deterrence factor across offenders.

The application of visibility to burglary risk is also considered by Hillier (2004), who looked at street layout and street segments in relation to potential risk and vulnerability of being targeted. One of the areas looked at by Hillier (2004) was the concept of cul-de-sac street segments. Specifically, he found that

whilst properties in cul-de-sacs were at higher risk of victimisation than those that were not, more linear and well-connected segments which offered greater levels of visibility to potential capable guardians, were of lesser risk than those which were more 'sinuous' and secluded (Hillier, 2004). However, when looking at the impact of cul-de-sacs on crime, there is an important distinction to be drawn out, in that cul-de-sacs may either be 'leaky' (with pedestrian access through a cul-de-sac) or 'closed' (with no such access). Previous research has found that 'leaky' cul-de-sacs are of greater risk of burglary than closed off cul-de-sacs as a result of the permeability of such roads (Armitage, 2006; Hillier, 2004); however, it is important to note that any research which does not make this distinction may "dilute" any positive conclusions reached (Armitage, 2011, p. 3).

Occupancy

The occupancy status of a property appears from the literature to be an important factor on an offender's decision of whether to commit a burglary. In particular, there is a substantial body of literature which suggests that offenders will actively target properties that are unoccupied; this is supported through research both within the UK (Coupe and Blake, 2006; Nee and Meenaghan, 2006), and the USA (Moreto, 2010; Wright *et al.*, 1995). Consequently, burglary reduction advice to residents has made use of this finding, requesting that residents ensure they create 'signs of occupancy' over periods when they are absent from a property; this may involve enlisting the help of a neighbour. Such strategies include taking newspapers from letterboxes, collecting milk from the doorstep, and taking household rubbish out (Bennett *et al.*, 2006; Brown and Altman, 1981).

However, there is also a body of work which suggests that offenders may in fact target properties that are occupied, and that occupancy does not necessarily act as a deterrent. For example, Bennett and Wright (1984) found that occupancy only appeared to be a 'conditional' deterrent, and Clare (2011) found that more professional or 'expert' burglars were less deterred by target hardening techniques such as using signs of occupancy. As such this would appear to suggest that occupancy may indeed not act as a precluding factor to those who are more proficient during the commissioning of their burglary offences.

Accessibility

The concept of accessibility relates to an offender's ability to enter a property. Cromwell *et al.* (1991a) noted that offenders were more likely to burgle a

property that was easier to access. Previous research has highlighted the variation in risk amongst different properties, based on their features and ease of access. For example, Johnson and Bowers (2004b) observe that burglary risk can vary with the type of property, and that particular types of property are therefore at greater risk of burglary. In particular, detached properties have been found by the literature as being at increased risk of burglary (Kershaw *et al.*, 2000; Taylor and Nee, 1988). Taylor and Nee (1988) describe how the number of access points and potential cover from detached properties may help to increase their attractiveness to potential offenders.

Nee and Taylor (1988, p. 112) note how access points of burglars were typically through the ground floor, with 80% of offenders entering a property through a ground floor door or window. Similarly, in his study of student accommodation in Tallahassee, Florida, Robinson (1997) found that burgled properties were predominantly on building corners on the 'first floor'¹. This resonates with the physical elements of the Defensible Space approach (Newman, 1972), and indicates the need and importance of 'Physical Guardianship' in preventing burglary (Wilcox *et al.*, 2007). Physical Guardianship has been implemented through a range of strategies implemented to try and heighten the physical security of properties; this is also termed 'Target Hardening' (Wilcox *et al.*, 2007; Winchester and Jackson, 1982).

'Target Hardening' refers to a collective set of methods that aim to secure properties for residents. It does this through two main strands; firstly through providing advice to residents about security precautions, and ensuring that possible points of entry / vulnerable 'weak spots' are carefully secured (Winchester and Jackson, 1982). The other method in which this approach increases property security is through 'security upgrading'; this involves the fitting of security devices, such as burglar alarms or secure doors or windows (Newton *et al.*, 2008). This approach is supported through the Home Office and police forces nationwide, and has been implemented across the country as part of localised 'Safer Cities' schemes, with a body of work outlining the effectiveness of these schemes (Hamilton-Smith and Kent, 2005; Tilley and Webb, 1994). However, Hirschfield *et al.* (2010) found that a high number of residences, which had been repeatedly burgled previously, had not been subject to target hardening measures, although a number of houses which had not been burgled, but were in high crime areas, had. They therefore proposed that the target hardening

¹ The Ground Floor is termed the 'First Floor' in the USA.

approach is aimed at the individual property level, and that decisions about target hardening measures should consider not only the risk posed by the immediate environment, but also the historical risk for that individual property (Hirschfield *et al.*, 2010).

The impact of so-called 'security upgrading' through the provision of security devices was explored by Tseloni *et al.* (2014), who undertook research to examine the effect of burglary security devices. They found that the implementation of individual security devices conveyed up to three times greater protection against burglary than those without any security measures. Furthermore, they found that combinations of security measures can provide up to 50 times the level of protection than those without security. However, they discovered that the level of protection offered against burglary was not relative to the number of security devices used. Furthermore, one finding of note was that a burglary alarm, or dummy alarm, when used in the absence of any other device, actually enhanced the likelihood of burglary than properties that offered no protection (Tseloni *et al.*, 2014). Although the rationale behind this finding remains unclear, this may have important implications for security design and home safety / crime prevention, therefore warranting further investigation. The interviews with burglars, as discussed in Chapter 6, will attempt to clarify the impacts of alarms in Leeds at least.

In addition to physical guardianship, another type of guardianship that can be used to prevent burglary risk is 'Social Guardianship' (Wilcox *et al.*, 2007). This may be used to describe neighbour surveillance of a property (Wilcox *et al.*, 2007), or may refer to surveillance and occupation from a resident inside a property themselves, again linking partly with Defensible Space Theory (Newman 1972). For example, Robinson (1997) found that burglaries amongst students appeared to take place largely where they were absent from the property, for example attending lectures, or shopping. These ideas are supportive of research that notes the importance of both surveillance (Weisel, 2002; Painter and Farrington, 1999) and occupancy (Coupe and Blake, 2006; Nee and Meenaghan, 2006) on crime prevention. Furthermore, D'alessio *et al.* (2012) examined whether levels of unemployment impacted on weekday residential burglary. They found a relationship between unemployment and the weekday residential burglary rate, with higher levels of unemployment associated with a fall in weekday residential burglary because of a surge in guardianship levels. However, they found that unemployment had little impact on either weeknight or weekend

residential burglary rate. Moreover, D'alessio *et al.* (2012) found that because only a small proportion of properties were directly protected by those who were unemployed, there was a 'diffusion of guardianship' effect. This consequently protects not only the properties of those who are unemployed but also those of neighbouring properties (D'alessio *et al.*, 2012).

Access to a property may also be considered in terms of a wider frame of focus; for example in terms of access routes to a property. For example, Maguire and Bennett (1982) found that burglaries tended to cluster in expensive properties, in close proximity to major roads on a town / cities' outskirts. Furthermore, they found that burglary risk was increased with properties closer to road junctions, in addition to properties that provided cover, or access, to offenders (Maguire and Bennett, 1982). This suggests access to a property may also be considered in terms of ease of access through an offender's journey to crime and a property's proximity to main roads. Whilst such factors may be balanced against preferences to offend in 'known' neighbourhoods due to reduced arousal of suspicion and familiarity of infrastructure (Bernasco and Luykx, 2003), this highlights the importance of factors (such as cover) that can help facilitate access to a property without the risk of surveillance. This has substantial implications for crime prevention, as is discussed by Winchester and Jackson (1982). Specifically, they note how targeted properties may be distinguished from non-targeted properties by the level of surveillance, access, occupancy and reward, ahead of specific security features (Winchester and Jackson, 1982). Because such factors suggest an offender may be able to enter a house without surveillance, the specific security features of a property may become less significant for offenders to address, because through a lack of surveillance they are 'afforded' the time and opportunity to do so (Winchester and Jackson, 1982). This highlights the importance of advanced security devices in areas where surveillance opportunities may be lower.

In summary, the current literature suggests a number of physical and social features pertinent to burglary risk that may increase the vulnerability of a property to burglary. The target selection of properties by offenders may be determined by a myriad of cue combinations, which make different properties more attractive for different types of offender (Nee and Taylor, 1988). This means that any subsequent crime prevention efforts are likely to be far from straightforward. As highlighted by Winchester and Jackson (1982), it is particularly important for burglary prevention policies to ensure a 'broad'

perspective is utilised, recognising that different approaches will be effective for different properties and areas. A holistic approach to crime prevention should be taken, not just incorporating target hardening, but other factors such as increasing social awareness, and developing a sense of social guardianship amongst residents (Winchester and Jackson, 1982). Research also highlights the need to ensure crime prevention approaches are targeted at the right spatial level, whether this focuses on work at the local neighbourhood level (Winchester and Jackson, 1982), or on individual properties, as crime preventative measures only remain effective on the basis that they are utilised effectively (Hirschfield *et al.*, 2010). In identifying features at the property-level that may make it vulnerable to burglary, this section has highlighted how such factors should be taken into consideration in subsequent crime prevention efforts. The extent to which these elements feature in offenders' target selection will be explored in the current research, to help verify their importance, as well as the bearing this may have on crime prevention recommendations put forward.

2.4.4. Repeat / Near-Repeat Victimization

Whilst focusing upon burglary and the subsequent risk of burglary at the individual property level, it is important to acknowledge the fact that crime clusters, and the chance of victimisation is not equal across the population. Indeed, Hindelang *et al.* (1978) outline how the majority of crime is concentrated on only a small number of victims. This leads on to the idea of 'repeat victimisation', whereby an individual (or property) is targeted on more than one occasion.

Within the context of burglary, repeat victimisation refers to the targeting of a property on more than one occasion within a specified timeframe. Farrell (2005) argues how prior victimisation is the greatest predictor of future (repeat) victimisation. Repeat victimisation has been found to be particularly high in areas with high crime (Trickett *et al.*, 1992), as well as in areas characterised by features such as deprivation (Johnson *et al.*, 1997). As has been discussed in this chapter, there is a large volume of work which suggests that offenders will select suitable targets based on the cues provided to them; i.e. poor security, unoccupied properties, and limited visibility (and guardianship) of properties. Repeat victimisation may occur as a result of two particular mechanisms; the features that 'flag' a property as suitable to target may remain stable over time, and the knowledge gleaned by offenders of particular targets during burglary offences may 'boost' the suitability of the property to be targeted again in the

future (Tseloni and Pease, 2003). The factors identified above may also lead to the occurrence of near-repeat burglaries, where burglaries may occur within a certain proximity of an original offence, because of the ‘boost’ of vulnerability given to nearby properties by the initial offence (Townshley *et al.*, 2003; Tseloni and Pease, 2003). This phenomenon has been explored and demonstrated through previous research, for example that of Johnson and Bowers (2004a) in the context of Merseyside, as detailed earlier in this chapter. This has clear implications for potential crime prevention strategies and target hardening responses.

2.4.5. Applying the theory to the environment

So far this chapter has discussed various physical and social cues associated with burglary and how they may impact on risk / vulnerability to burglary. However, in real-life a crime problem does not exist based on individual, non-interacting factors. The purpose of this section therefore is to focus on a specific population who have experienced a high prevalence of burglary, and link this group with the physical and social cues identified as pertinent to burglary risk. In particular, it is hoped this will help illustrate how a number of the factors discussed in this review may culminate in a ‘crime-rich’ environment. This section will focus specifically on the student population. This is particularly pertinent for the context of burglary within Leeds, and hence on the factors that drive the behaviour of Leeds’ burglars, given that a large proportion of burglary within Leeds takes place in student areas in the North-West of Leeds. Indeed, in the 18 months leading up to March 2011, 23% of burglary victims in North-West Leeds were students, compared with 13% across the rest of the city (Audit Commission, 2011).

The problem of burglary against large student populations has been widely discussed in the literature (for example, see Nicholas *et al.*, 2007; Hamilton-Smith and Kent, 2005; Tilley *et al.*, 1999). Common themes relating to the vulnerability of students to burglary include poor housing stock and poor levels of security (Hamilton-Smith and Kent, 2005). These features are particularly pertinent in the city of Leeds, where students may reside in poorer quality housing with poor levels of security, thereby presenting themselves as an ‘accessible’ target for offenders (Audit Commission, 2011). This may also be compounded by complacency amongst students, or increased levels of naivety; for example, through leaving doors unlocked, (Fisher *et al.*, 1997), again increasing the accessibility for potential offenders.

Reduced levels of occupancy in student residences; for example during the day when students are at lectures, or whilst socialising in the evening, may create substantial opportunities for burglars. This was demonstrated by Robinson (1997), who found that approximately half of the burglaries of student apartments during the week took place between the hours of 8am and 5pm, whilst students were attending lectures, and that over three-quarters of burglaries on weekends occurred between 6pm and 7am, when students may have been out socialising. Furthermore, the influx of high-value technology products possessed by a number of students will be attractive rewards for potential offenders, which are easy to dispose of. In addition, due to lower levels of community cohesion in student areas, there may be lesser social controls (and thus lesser neighbourhood surveillance for neighbouring properties; Audit Commission, 2011). Furthermore, it is likely that offenders observed in student neighbourhoods may be able to avoid arousing suspicion; firstly because of the lower levels of social cohesion and thus lower social controls, but also because an unknown individual in a neighbourhood where people are predominantly unfamiliar with one another would not appear out of place.

The factors raised here may therefore contribute towards the targeting of crime prevention / reduction initiatives in areas rich with students. This is illustrated through the 'Knowledge' student awareness campaign, designed to prevent students becoming victims of crime through raising security awareness, and the 'Project Optimal' burglary reduction initiative, which has been implemented in the North-West of Leeds (home to approximately 60,000 students; Audit Commission, 2011) to reduce levels of burglary.

Section 2.4 has considered the role of different environmental features (both physical and social) at different spatial scales and their impact on the occurrence of crime. Before continuing, it is important to highlight some methodological concerns. In looking at both the social and physical cues linked with crime, whilst some of the research is based in the UK, a number of studies are overseas-based, therefore questioning the extent to which data can be easily generalised to areas within the UK, and, more specifically, Leeds. One example in which this may be illustrated is the difference between UK and USA road systems. In the USA, cities are often built on grid-like block structures, and travelling outside of your home 'block' (even as short as two blocks away) may substantially increase fear of victimisation (as illustrated by Moore and Trojanowicz, 1988). This may lead to the avoidance of certain areas / blocks to prevent being

victimised on the street. Whilst this is not a physical factor as such, this illustrates how fear may affect an individual's perception of the environment around them in terms of their *vulnerability* to crime, and therefore terms such as territorial space may conjure up very distinct definitions or considerations of what these represent. Thus, when considering issues raised in research in America associated with burglary risk, careful consideration will need to be given as to how this may translate to the UK.

2.5. Understanding Offender Behaviour - Focusing on the Offender within the Environment

So far this chapter has considered the role of the environment in the occurrence of crime events, and the individual factors within an area that may give rise to crime opportunities. However, one of the central elements in a crime event is the offender themselves; therefore, to truly understand a crime event it is important to try and understand the offender(s) in as much detail as possible.

Various authors have discussed the complexities in understanding criminal behaviour (see Israel and Ebstein, 2010). Moreover, Bernasco (2010b) points out how there are a number of areas surrounding crime that can only be gleaned directly from offenders themselves. One such area is the decision-making processes of offenders, which in itself is invaluable, as understanding the psychology of offenders can help to shape subsequent crime prevention efforts. This individual-level focus on the offender and offender decision-making led to a wave of new research into offenders and their decision-making in the USA in the 1970s, and the UK in the 1980s (Nee, 2003). In the specific context of burglary, studies in the USA (Repetto, 1974; Shover, 1973) sought to understand offenders' lifestyles, behaviours, and the processes taken by offenders during the course of their offending. This was subsequently followed up by similar work in the UK by Maguire and Bennett (1982), who sought to understand burglary through both the offenders' as well as victims' perspectives. This work was followed by a number of subsequent studies into burglary and decision-making processes, as well as the target selection criteria of offenders (Cromwell *et al.*, 1991a; Nee and Taylor, 1988; Taylor and Nee, 1988; Bennett and Wright, 1984). This has helped to reveal valuable information on the selection criteria and behavioural processes of offenders, which in turn has shed light on offenders' MOs and their offending 'typologies'. In light of this, this section will now provide the reader with an overview of current literature on the specific drivers and motivations that

underpin burglar behaviour, whilst also discussing the current derived typologies of burglars identified within the literature, as well as the nature and extent of co-offending amongst offenders.

2.5.1. Motivation to Offend

In reviewing the current literature into burglar behaviour, it is important to differentiate the specific motivating factors for burglary, as this may impact on the behaviours and traits of different styles of burglar. There exists a wealth of literature on the motivations that underpin burglary; a large proportion of these identify 'financial-based' incentives as a key driving factor. This is supported by Nee and Meenaghan (2006), who found the chief motivation for offending to be for financial gain. The need for financial gain may be driven by a need to finance drug use, as found by Schneider (2005a), who found that over half of the sample involved in burglary and shoplifting offended in order to finance a drug habit. Decker (2005, p. 8) notes that residential burglars demonstrate a number of motives for offending, most of which can be linked to their desire to participate in a lifestyle that centres upon; "...partying and keeping up appearances."

It is important to acknowledge at this point the possible variation in drug use amongst offenders; for example, between those who use drugs as a result of physical addiction, and those who use drugs recreationally. However, it is also important to consider whether there have been shifts in trends of drug use amongst burglars over time, which may have subsequently impacted on their offending practices. Looking at earlier work exploring drug use amongst burglars, research by both Cromwell *et al.* (1991b) and Wright and Decker (1994) found largely similar results. Cromwell *et al.* (1991b) found that Heroin was the main drug of choice amongst users (40% of offenders), followed by Cocaine (37% of offenders), Marijuana (11%), Methamphetamine (6%), and alcohol (3%). Similar results were found by Wright and Decker (1994), who revealed that Crack Cocaine was the main drug of choice of burglars, followed by Heroin, Marijuana, and alcohol (the latter mentioned as being used largely with the use of other illicit drugs).

However, in more recent work into this area, the findings of Kuhns *et al.* (2017) largely mirror those found by both Cromwell *et al.* (1991b), and Wright and Decker (1994). Their survey of 422 inmates in correctional facilities across Kentucky, North Carolina, and Ohio found that the most popular substances used during burglary offences were Crack / Powdered Cocaine, and Heroin, which were

often used in conjunction with other substances, such as Marijuana and alcohol (Kuhns *et al.*, 2017). However, Kuhns *et al.* (2017) also asked participants to describe their substance use in the six months preceding their incarceration. Of the participants questioned, 79% reported using Marijuana, 55% Cocaine, 47% Crack Cocaine, 30% stimulants, 32% Heroin, 26% Methamphetamines, 31% barbiturates, as well as a range of other substances, including tranquilisers (17%), hallucinogens (24%), and inhalants (11%). As such, the findings here demonstrate how the types of substances used by offenders (burglars) have remained largely consistent over time. However, what the research by Kuhns *et al.* (2017) also illustrates is the range of recreational substances used by offenders. This mirrors the recent rise in the use of new psychoactive substances (Global Drug Survey, 2016); in particular, by the offender population (Public Health England, 2014), illustrating a shift in the nature of recreational substances used by offenders over time.

Nee (2003) makes the important observation that burglary is not solely committed for the purposes of theft, but may also be associated with other crimes such as assault and sexual assault. For example, through Vaughn *et al.*'s (2008) analysis of burglar types emerged a 'sexual predator' typology of burglar. Repetto (1974) also discovered that beyond financial motive, offenders were driven by a need for excitement, or revenge, which was coupled with the enjoyment of risk encountered through committing offences. However, it appears that whilst there is some support for motivations *outside* of monetary gain; the financial reward offered by burglary appears to be a key driving factor for a majority of offenders as illustrated within the extant literature.

2.5.2. Typologies of Burglar

Within the current literature, there exists some discussion on the different styles and types of offender. The process of classifying 'types' or 'typologies' of offenders enables researchers and practitioners to understand the variation amongst offenders; for example, the distinct behaviours, motivations and characteristics exhibited by different offenders (Robertiello and Terry, 2007). Robertiello and Terry (2007) note that developing knowledge of these traits will help support approaches to reducing offending; for example through adapting intervention approaches for different 'types' of offender to increase the effectiveness of such work (Gibbons, 1975). It is of note that some researchers argue how attitudes and offending patterns cannot be neatly grouped into

categories (Gibbons, 1975), with Bouhana *et al.* (2016) finding that patterns of offending were not consistent across specific MOs. Nevertheless, the use of typologies within the current research relates to the identification of behavioural traits *purely* to help understand offenders' selection criteria and processes followed, rather than for the purposes of identifying distinct personality typologies in their own right. Further discussion of the use of typologies in the context of the current research can be found in Section 2.5.4 of this chapter.

Upon review of the existing literature, five typologies of burglar have been identified. Whilst these typologies will not form the basis of the current project, they have been presented here to illustrate the current understanding of burglar typologies within the literature. These typologies are detailed below, and are illustrated with examples from the literature.

Professional

Whilst there is often a perception that offenders may behave in a chaotic manner, there is a wide body of literature that depicts one type of burglar as being professional, planned offenders. For example, in their analysis of burglaries in the UK, through examining burglary locations and the circumstances (as reported by victims), one of the offender typologies derived by Maguire and Bennett (1982) was the 'high level professional'. This type of offender is likely to demonstrate a substantial degree of planning in their offending (Cromwell *et al.*, 1991a; Nee and Taylor, 1988; Bennett and Wright, 1984; Maguire and Bennett, 1982; Shover, 1973). In addition, previous authors have discussed the level of procedural and perceptual expertise during the decision-making process (Nee, 2015; Clare, 2011; Wright *et al.*, 1995), suggesting elements of a professional, and high-functioning burglar.

Nee and Meenaghan (2006) explored the decision-making process in a sample of 50 experienced domestic burglars, sourced from two UK prisons. They classified a small subtype of this group as being 'planners'. This group had some prior knowledge of the target and the occupants, usually for a number of days, although for two offenders this was over the course of a number of weeks (Nee and Meenaghan, 2006). This highlights the degree of variability in terms of the extent of planning even within a typology.

Within their research classifying typologies of burglar, Fox and Farrington (2012) identified one category of burglar as being organised, highly professional offenders that accounted for approximately 27% of the offences examined in their

study. This group was characterised by care and forethought in planning an offence, to maximise rewards whilst minimising any risks involved. The majority of this group brought a tool with them for the purposes of the offence, stealing largely high-value goods (Fox and Farrington, 2012). Crime scenes were predominantly left in a 'tidy' manner, with no signs of forensic evidence left at the scene. This type of burglary occurred most often at unoccupied residential dwellings during daylight hours, and offenders were successful for approximately three quarters of the offences attempted (Fox and Farrington, 2012).

Interpersonal

Whilst a large body of the literature suggests that burglary is committed solely for acquisitive purposes, some research studies have suggested an 'Interpersonal' type of offender. This typology can be defined by two main strands of offender; one who offends out of sexual motivation, and one who offends for the purposes of revenge / personal issues. It is important to note that for the purposes of this review, these two strands of offenders have been clustered within this typology to represent an *interpersonal* type burglar. However, the issues and risk posed by these offenders in relation to each other, and to acquisitive offenders, may be very distinct and therefore should always be acknowledged as such.

In their study of 456 adult career criminals in America, Vaughn *et al.* (2008) used latent profile analysis to derive typologies of burglar offender. One of the typologies derived was termed a 'sexual predator' burglar. Whilst this typology accounted for only 6% of all offenders within the sample, they were disproportionately involved in the highest number of serious, violent offences, and had been involved in a number of sexually deviant offences such as rape (Vaughn *et al.*, 2008). Pedneault *et al.* (2012) explored the concept of sexually deviant burglars, stating how there has yet to be derived specific typologies detailing the traits and characteristics of burglars who are driven by sexual motives. In their work they identified three distinct typologies of sexual burglar; 'Fetishistic', 'Versatile', and 'Sexually Oriented' burglars (Pedneault *et al.*, 2012). For further details of these types the reader is directed to Pedneault *et al.* (2012).

The remaining type of interpersonal burglar emerging from the literature was an offender who offended for purposes of vengeance, or emotive motivations. In the work by Fox and Farrington (2012), they identified a fourth class of burglar as exerting an 'interpersonal' motivation. Although accounting for only 12% of the offender sample, this type of offender was predominantly driven by anger or a

conflict that had taken place, and offended whilst the property was predominantly occupied. This would create further conflict with the victim. Similarly, Durand *et al.* (2012) interviewed a sample of male and female offenders arrested for burglary in an area in the state of New York, and found interpersonal motives underpinning 42% and 19% of offences for females and male offenders (respectively). They found that female burglars offended to exact revenge, or due to custody issues, and male burglars offended for purposes of harassment or revenge (Durand *et al.*, 2012).

Opportunistic

Within the literature exists research that also points to the presence of burglars with an opportunistic offending style. For example, in their research into expert decision-making amongst burglars, Nee and Meenaghan (2006) identified one subsample of offenders as being drug users who had only decided to offend at the scene of a crime, suggesting an opportunistic element to their behaviour. The 'Opportunistic' style of offender was also identified by Fox and Farrington (2012) in their analysis of solved burglaries between 2008 and 2009 in Florida. They described this type of offender as exerting caution and care whilst committing the offence, particularly more so than that of a disorganised, or 'chaotic' offender; for example in not leaving evidence, and leaving crime scenes in a relatively 'tidy' state (Fox and Farrington, 2012). However, they found that this type of offender did not necessarily plan offences, but was motivated to act upon a 'suitably presented' target. For example, Fox and Farrington (2012) found approximately half of the offences committed by this style of offender did not involve forced entry, and that this typology did not generally bring tools with them. In addition, offences committed by this group were largely on unoccupied residences at night, which further suggested the opportunistic nature of these offences (Fox and Farrington, 2012). This offence style accounted for nearly half (48%) of the offences studied (Fox and Farrington, 2012).

Disorganised Amateur

In reviewing the literature, there appeared to be a range of research into burglary that highlighted the presence of 'disorganised' type offenders. However, on further inspection it became apparent that the nature of disorganised offenders was particularly broad in scope. Therefore, the author concluded that the factors that underpin disorganised offenders could be distinguished into two strands:

'Amateur' and 'Chaotic'. Whilst both typologies are disorganised in their style, they represent two very different types of offender and therefore it was deemed appropriate to represent them as such.

Unlike the 'Disorganised Chaotic' offender, the 'Disorganised Amateur' offender type may be disorganised and lack sophistication due to their age and early infancy in terms of being in the earlier stages of their criminal career. This type of offender has been replicated within work by Maguire and Bennett (1982), who identified a number of offenders as belonging to 'low-level amateur' offender types. However, this typology may be most accurately defined by Vaughn *et al.* (2008) in their study of burglars in America. One of the typologies identified by Vaughn *et al.* (2008) was termed 'young versatile' burglars. These offenders were defined as being relatively young, with convictions for a range of offence types, highlighting their early position in their criminal careers and who were yet to develop a criminal specialism.

Disorganised Chaotic

'Disorganised Chaotic' offenders are characterised as demonstrating little or no preparation prior to offending. Fox and Farrington (2012) noted that the crime scenes of those characterised with a 'disorganised' offence style were often left in a state of disarray, and leaving forensic evidence. Accounting for 14% of the burglaries examined in the work by Fox and Farrington (2012), this offender group was most likely to use force to enter unoccupied properties, with offences predominantly taking place during the day, therefore increasing the risk of detection. Vaughn *et al.* (2008), in their study of American burglars, identified one offender sub-group as being 'vagrant' offenders. Typified by a history of offences due to their transient living status, this group appeared to fit the 'Disorganised Chaotic' typology, committing burglaries as and when was required (Vaughn *et al.*, 2008). Vaughn *et al.* (2008) also noted that 'vagrant' burglars may be at increased risk of experiencing mental health problems; this may subsequently inhibit them from effectively planning their offences.

When considering burglary, Bernasco (2006) highlights a universal assumption within crime spatial theories that offenders work alone. However, previous literature highlights the practice of co-offending (Andresen and Felson, 2010; van Mastrigt and Farrington, 2009; Nee and Meenaghan, 2006), where burglars may work with one or more associates for the commissioning of an offence. Consequently, this is also an important area of focus in considering

offender's behavioural practices, and therefore is discussed in greater detail in the below section.

2.5.3. Co-offending

In their study of burglar decision-making, Nee and Meenaghan (2006) found that two-thirds of offenders interviewed worked alone to maximise reward and minimise detection, with the remaining third of offenders interviewed offending with one or two associates to assist them. The concept of co-offending will be explored in this thesis to examine not only the prevalence and nature of co-offending present, but also the potential impact this may have on target selection, or the process of burglary itself, and the implications of this for crime prevention strategy.

Reiss and Farrington (1991) found that co-offending was dependent on a range of factors; including age, gender, stage of criminal career and crime type. However, the majority of research into this area suggests co-offending to be linked with age and stage in criminal career (Hodgson and Costello, 2006; Decker, 2005). Andresen and Felson (2010) found that incidence of co-offending was particularly high during teenage years, although diminished into adulthood. Van Mastrigt and Farrington (2009) also found that co-offending was most common for offences of burglary and robbery. Of particular note was the finding by Andresen and Felson (2010), who found there to be substantial variation in co-offending amongst teenage offenders; they therefore discouraged the notion of an individual 'co-offending rate'.

The impact of co-offending on criminal careers was explored by Hodgson and Costello (2006), using 4,521 cleared-up offences of residential burglaries in South Yorkshire. They found that for the majority of offenders with an established criminal career, offences were committed both alone and with others, as supported by Reiss and Farrington (1991), who noted that it was rare for offenders to be 'exclusive' to one group. Hodgson and Costello (2006) found that 'novice' offenders who offended with other similarly inexperienced offenders were less likely to have an extensive burglary career. Conversely, those offenders who first committed burglary alone, or with more experienced offenders, were more likely to pursue a longer burglary career. However, Hodgson and Costello (2006) noted that the true picture of co-offending is likely to remain unknown due to offenders' unwillingness to disclose details of their criminal partners, whether this may be due to loyalty, fear of retaliation, or other factors. Despite this problem,

when establishing more *general* details regarding co-offending, less sensitive information may be gathered from offenders regarding this concept. For example, information may be gleaned on the number of co-offenders individuals are involved with, and their association structures with other offenders, without the need to ask individuals to betray their criminal associates.

Bernasco (2006) explored the potential implications of co-offending for the purposes of crime prevention within the Netherlands, and specifically whether lone offenders chose different targets to their co-offending counterparts. However, they found no differences between the two groups in terms of their target selection, with proximity, accessibility and house type all considered as being key indicators of burglary vulnerability (Bernasco, 2006).

2.5.4. Overview of Offender Typologies and Context for Current Research

In summary, this section has reviewed the range of burglar typologies currently within the literature, from the more planned, organised behaviours of the 'Professional' typology, to the more chaotic, unplanned behaviours typical of the 'Disorganised Chaotic' typology. It is, however, important to understand the caveats that need consideration with regards to this approach. For example, Gibbons (1975) notes how typologies may often be based upon a 'snapshot' of time, failing to account for offenders' behaviour over time and across criminal contexts. As highlighted earlier in this section, Gibbons (1975) also notes that offenders may possess a range of attitudes and offending patterns which cannot be neatly grouped into such categories. Moreover, whilst individuals may 'flirt' with criminality, their involvement in crime may only be temporary and not a fundamental component of their functioning (Wikström *et al.*, 2012; Gibbons, 1975).

Nevertheless, despite the caveats raised, the identification of more *nuanced* offender MO types holds many advantages. As noted above, this can be used to support work to reduce re-offending; for example, in tailoring work around different types of offender (Robertiello and Terry, 2007; Gibbons, 1975). Furthermore, it can have substantial value in informing crime prevention strategy (Vaughn *et al.*, 2008). The current research will therefore seek to build on the foundations laid down so far by this body of work. Recent work into the typologies of burglar offenders has been based predominantly on the quantitative analysis of offences and / or offenders, rather than interviews or ethnographic-based research undertaken with offenders (Fox and Farrington, 2012; Pedneault *et al.*,

2012; Vaughn *et al.*, 2008). Conversely, previous qualitative work into burglars' selection criteria has also been used to identify typologies or MOs of offenders (Nee 2015; Nee and Meenaghan, 2006; Bennett and Wright, 1984; Maguire and Bennett, 1982). However, such work has predominantly been based on interviews and / or ethnographic research, and not the quantitative analysis of offence data. The main exception to this is the work of Maguire and Bennett (1982), who conducted interviews with 40 burglars, as well as conducting interviews with victims, and analysed approximately 6,500 burglaries from the Thames Valley area over a three year period to identify environmental cues used by burglars.

The current work will therefore seek to build on previous research, through drawing on both the analysis of burglary offence data, as well as interviews undertaken with offenders, to help develop a greater understanding of offenders' target selection, and subsequently derive offence- and offender-based MOs. Moreover, the research will focus on burglars and burglary at the city level, therefore utilising a more detailed level of geography than, for example, considering this at the county level (e.g. Fox and Farrington, 2012). This will therefore give greater localised application for crime prevention purposes.

In addition to using both quantitative and qualitative research perspectives, the work will also make use of additional methods to gather data on offenders' selection criteria, through a property image task and risk-taking questionnaire specifically. This will help to validate information on offenders' target selection as well as their propensity for risk-taking during the course of their offending. It should be noted that the offenders interviewed will not be linked to the police data of burglary offences (though it may be that some of the offences committed by those interviewed are included in the dataset). The purpose of these interviews is to help in terms of the validation process; specifically to identify whether themes emerging from offender interviews can be used to help validate the themes identified through the analysis of the burglary offence data.

As has been found through this chapter, the decision-making and selection criteria of burglars are based not only on the features of the offender, but also of the environment in which an offence takes place. Consequently, in seeking to derive offender / offence-based MOs through this research, these will be based *both* upon the specific selection criteria and nature of offenders themselves, as well as an exploration of the environmental features that may help support offenders' decisions to target particular properties.

Applying the use of offender typologies to sex offenders, Robertiello and Terry (2007) note how such typologies should be seen as a 'continuum' of behaviour, rather than as discrete, unique categories, thereby avoiding the use of singular labels and the associated disadvantages with this approach (Burgess *et al.*, 2007). This is therefore the approach that will be taken for the current research, in that whilst offender-based MOs will be gleaned from this work, the emphasis will not be placed on seeing people as belonging to distinct categories, but more about the associated behaviours and features of offenders, and how these may be used for crime prevention / reducing reoffending purposes.

As outlined, distinctions between offenders that emerge from the current research will be based on both offender interviews, and the analysis of burglary offence data, with the identification of traits / characteristics / motivations that emerge through these approaches rather than 'pre-existing' typologies as defined within the literature. The features and characteristics identified across offenders within this research therefore may or may not be comparable with the typologies discussed here. For example, this research may identify more subtle traits and characteristics than those currently identified within existing typologies in the literature. However, it is important to note that any terms used to refer to emerging typologies will be used solely to help identify the distinctions between the different characteristics and target selection criteria of offenders that may emerge, rather than viewing an offender as 'typical' of that typology or label.

2.6. Summary

This chapter has provided an overview of literature that focuses on offending behaviour and the decision-making of offenders during the target selection process. Section 2.2 provided an introduction to Environmental Criminology and its place within crime analysis, focusing on the emergence of crime across spatial and temporal contexts. Section 2.3 then discussed existing theories of offending behaviour within a spatial context, highlighting how different theories account for offending behaviour across different spatial scales. Section 2.4 then looked in detail at the specific environmental factors that are important to consider as part of the target selection process. The section focused on pertinent factors across macro, meso and micro-levels, distinguishing in particular between the presence of social cues at the neighbourhood meso-level perspective, and the presence of physical cues at the smaller, micro-level perspective, which focused in at the individual-property level. The subsequent section, Section 2.5, then provided

readers with a detailed understanding of offenders, including existing typologies of burglars within the literature, coupled with an overview of their motivations, and the nature and extent of co-offending. In addition, this section set the context for the current research, outlining how the work in this thesis will be used to help build on existing knowledge regarding target selection criteria, offender typologies, and understanding of offender and offence-based MOs beyond what is currently discussed in the literature.

Chapter 3: Methodology

3.1. Introduction

As has been outlined in Chapter 1 of the thesis, this research will seek to develop understanding of the nature of burglars' target selection, the MOs of burglars, and the features that would attract or deter offenders from potential burglary targets. The current chapter will detail the methods that will be used to help achieve these aims. As has been established, this thesis utilises a mixed methods approach, drawing on both quantitative and qualitative research methods and analysis techniques. The subsequent results chapters have therefore been divided as such. With this in mind, the current chapter takes a similar approach, in that it has been divided between both quantitative and qualitative research perspectives, to detail the methodological approaches used in both of these contexts. However, before each of these perspectives is discussed further, the nature of mixed methods work shall be discussed.

3.2. Mixed Methods Research

There is an eclectic discourse on the use of mixed methods approaches in the social sciences. Maruna (2010) notes how mixed methods research has been largely under-utilised in modern criminological study, though has been used considerably more within the broader social sciences. One of the key benefits of mixed methods research involving the use of both qualitative and quantitative data is that the strengths of one method can be used to help address shortcomings in another. For example, Brent and Kraska (2010) note how qualitative information such as a narrative can add a 'richness' of depth to quantitative data. Conversely, the use of quantitative data can help to add a precision to such qualitative data (Brent and Kraska, 2010). Moreover, Greene *et al.* (1989, p. 259) identify five key features of mixed-methods research:

(a) Triangulation: seeks convergence, corroboration, correspondence of results from the different methods;

(b) Complementarity: seeks elaboration, enhancement, illustration, clarification of the results from one method with the results from the other method;

(c) Development: seeks to use the results from one method to help develop or inform the other method, where development is broadly

construed to include sampling and implementation, as well as measurement decisions;

(d) Initiation: seeks the discovery of paradox and contradiction, new perspectives of frameworks, the recasting of questions or results from one method with questions or results from the other method

(e) Expansion: seeks to extend the breadth and range of inquiry by using different methods for different inquiry components.

Such uses of mixed methods approaches highlight their clear value. However, there are some researchers who argue that specific research perspectives are used for purposes of status, or financial reward. For example, Hanson (2008, p. 103) posits that qualitative research has had to ‘act’ similar to quantitative practices; “...for status within the discipline and the attraction of research funding”, and that the qualitative perspective has had to take a defensive stance in order to help gain credibility in the research community. A mixed methods approach could be seen to play to this narrative; however, the benefits of mixed methods research are clear above and beyond academic politics. Of key interest here, for example, is Brent and Kraska’s (2010) highlighting that a mixed methods approach can help enhance validity and reliability, whilst also triangulating research methods to provide enhanced knowledge and insight into a specific topic.

Furthermore, the differing scales at which both qualitative and quantitative research methods add value are a clear advantage of this approach. For example, Kelle (2006) notes how quantitative approaches provide a broad account of a specific area and give focus at the aggregate level, whereas research that is qualitative in nature can seek to explore patterns at the individual or local level. Because of the key elements of mixed-methods research identified by Greene *et al.* (1989) above, Trahan and Stewart (2013) argue that applied researchers have ‘most to gain’ from combining qualitative and quantitative research methods (particularly over those working in the theoretical fields). This is particularly pertinent in the context of the current research, whereby the findings drawn out from both of these perspectives may be used to help support crime prevention efforts.

3.3. Quantitative Research Methods

The quantitative perspective of this thesis is based upon offence data of recorded burglaries that took place within Leeds over a two year period. Details of the data

used are given below. The benefit of using these types of data is that the analysis of burglary incidents over a certain period provides the opportunity to identify particular patterns or commonalities amongst offences in the sample, thereby helping to establish particular 'themes' relating to the nature and targeting of burglary offences. The subsequent methods used to achieve this (as well as discussions regarding the suitability of such methods over others) have been outlined in this chapter.

Access to the data was agreed following a number of discussions with staff from West Yorkshire Police. These discussions were the result of previous working relationships between West Yorkshire Police and the researcher's supervisors. This subsequently resulted in a number of discussions regarding the type of data that may be useful for the research, whilst additionally being of value to the police, tying the project into networks of practice.

3.3.1. Data

The data were provided by West Yorkshire Police, and took the form of password-protected Microsoft Excel files. The data were comprised of two data sets. The first contained all reported burglary offences that took place in Leeds between March 2011 and February 2013. This dataset shall be referred to as the '2011-2013' dataset. In addition, for each of the offenders identified within the '2011-2013' dataset, all known recorded offences for these individuals were provided; this shall be referred to as the 'all offences' dataset. However, it is acknowledged that this latter dataset would not incorporate all offenders who have targeted houses in the Leeds area; because inclusion in this dataset was purely based on the inclusion in the initial dataset through committing an offence during the 2011-2013 period. Nevertheless, these data sets are extremely valuable in allowing us to explore a range of features related to these offences that will help to enhance our understanding of burglary within Leeds.

Both datasets included the postcode centroids of the offenders' home locations and the locations of offences. However, the '2011-2013' dataset also contained additional information on the details of each offence, which the 'all offences' dataset did not. Specifically, when a police officer records a burglary offence onto the police system, they are given the option to select from a number of keywords to help describe the offence. These keywords cover a wealth of different offence features, from whether there were multiple offenders present, to whether offences were attempted or actual burglaries, the extent of force

used, and the types of goods taken. In conjunction to this keyword section was a 'notes' section, where police recording an offence were also able to make additional notes detailing the circumstances of this offence.

Cleaning the data

It should be noted that to allow for the analysis of journeys to crime within the dataset, only offences where the perpetrator(s) were known and had been recorded by the police as 'known offences' were selected for use in the '2011-2013' dataset. This reduced the total number of offences in the dataset from 13,304, to 2,075. Prior to undertaking analysis, the data were then reviewed and 'cleaned'. This process of cleaning the data involved two distinct stages; adding geographical information, and excluding unsuitable entries. With regards to the former, there were instances of some cases in the dataset where either postcodes or coordinates were missing. These were identified from present data and added to ensure that individual offences could be located and mapped. Secondly, upon reviewing the data, it became apparent that some home locations of offenders were unsuitable for inclusion within the analysis, such as 'no fixed abode', prison addresses, or the addresses of bail / probation hostels. These were excluded from the dataset so as not to skew the results. Indeed, this may be an area for future exploration, in terms of assessing the journeys to crimes of offenders from probation or bail hostels, although this is currently outside the remit of the present research. This process of data cleaning resulted in a total of 1,599 offences in the '2011-2013' dataset, and 6,801 offences for the 'all offences' dataset.

3.3.2. Analysis of Quantitative Data

3.3.2.1. Initial Descriptive Statistics

In order to provide an initial overview of the data, descriptive statistics were developed for both offence datasets. Primarily this involved exploring the total number of offences committed by offenders across both the '2011-2013' and 'all offences' datasets. The analysis then sought to examine the distances travelled by offenders to crimes (detailed below and reported in Chapter 4).

3.3.2.2. Distances to crimes

The data provided comprised both the coordinates for the locations of offences, as well as the home locations of offenders; this allowed for the exploration of

Euclidean distances travelled by offenders to their offences. Distances in miles were used over standard SI units of kilometres to enable simpler comparisons with the literature.

3.3.2.3. Distances between crimes

In addition to exploring distances travelled to offences, the datasets were also of value in allowing for the exploration of distances travelled by offenders *between* subsequent offences; this can be used not only for the exploration of criminological theory, but also in supporting the provision of crime prevention advice. Plainly, such distances could only be calculated for those offenders who had committed two or more offences. The sample size of offenders with two or more offences in the '2011-2013' dataset was relatively small compared to that of the 'all offences' dataset; therefore just the distances between consecutive offences for the 'all offences' dataset were calculated.

3.3.2.4. Demographic distances to crime

While physical distances are important, there are other forms of distance that are spatially located and important in the crime system. For example, it is clear that the demographic features of an area relate to burglary risk (Hirschfield *et al.*, 2014). Given that the datasets include both the location of the victim, and the home address of the offender, the distance between offender and victim in socio-demographic space can be explored.

Prior to exploring the demographic variation between offenders' home locations and the locations of offences, it is important to consider the variables that will be used to help inform this analysis. Fortunately, the 2011 UK Census Output Area Classification (OAC) was derived to help understand the socio-demographics of areas across the UK. The variables used to derive the OAC groupings were subsequently used to explore demographic distance between offender and victim locations (a copy of these variables is provided in Appendix A). This analysis was carried out for both the '2011-2013' and the 'all offences' datasets.

In order to carry out this analysis, the standardised value for each output area in Leeds for each of the 60 OAC variables was identified. These values were subject to processes of data transformation (to minimise skewness), and standardisation (to account for differing scales amongst variables), as detailed within Office for National Statistics (2015b). It is of note that this resulted in

values that were relatively low. For each offence, the value for each of the 60 variables in the offenders' home location was subtracted from the value of each of the corresponding 60 variables in the victims' location. This resulted in a 'difference' figure for each of the 60 OAC variables for every offence case in both the '2011-2013' and 'all offences' datasets. These figures were then averaged across all of the cases, which resulted in an average distance value for each of the 60 variables, for each dataset. These values were then represented through a radar graph to help illustrate the differences identified.

A value of 0 indicates where there is no relative difference of a variable in the offence (destination) area compared with the home (origin) area. Any values over 0 thereby indicate where the presence of a variable is greater in the offence (destination) location than the offender's home (origin) location. Such variables may be viewed as 'attractor' variables, that attract an offender to a particular target location. Conversely, values below 0 indicate where on average there is lesser incidence of a variable in the destination (offence) location compared with that of the origin (offender's home) location. As such, this type of analysis will help develop understanding of the features that may attract offenders to an area and increase the likelihood that a property may be targeted, whilst also illustrating the areas (and associated features) where offences may be less likely to occur.

Following these descriptive statistics, Chapter 4 moves on to use some of the rich, qualitative data contained within the dataset. This helps to establish some of the subtleties regarding offenders' selection criteria. In turn, this helps to reveal information on offenders' MOs and behavioural preferences, which can be used to help support crime prevention efforts. In particular, this work will focus primarily on the 'keywords' field within the dataset. As discussed earlier in this chapter, the keywords field of the dataset allowed for reporting officers to select features that were characteristic of individual offences reported. This included features such as whether force was used, the type of goods taken, the type of property targeted, and whether a property was occupied. This part of the analysis also drew on other columns in the dataset, to help establish features such as co-offending, offender age, and distance travelled.

3.3.2.5. Offender Classification

As discussed in Chapter 2, there are ongoing debates regarding the use of classification approaches to categorise offenders / offences based on their

characteristics and individual features. In addition to the various discussions surrounding the use of such classifications, there is also much scope with regards the methodological approaches that may be used for such categorisation. Three methodological approaches that may be used to categorise offenders based on the features of their offences as identified in the literature are: content analysis of media reports; cluster analysis such as k-means or hierarchical cluster analysis; and latent class modelling approaches.

Content Analysis of Media Reports

This type of approach relates to the reviewing of documents to help identify features related to individuals' offending and MO characteristics. This was an approach employed by Burgess *et al.* (2007), who used information gleaned through press releases on those convicted of elderly sexual abuse to classify offenders by level of severity and motivation. This was also supported through subsequent interviews with approximately a third of the sample.

Cluster Analysis (i.e. k-means or hierarchical cluster analysis)

Cluster analysis refers to a method that classifies groups of objects (or cases) on the basis of a set of predefined variables into a number of different groups, whereby those that are similar are placed in the same groups (Cornish, 2007). A number of methods may be used to perform a cluster analysis. One such example is that of 'Hierarchical' approaches such as 'Agglomerative' methods, whereby each case will start with its own cluster. The two most similar (or closest) clusters will then combine, and this will continue until all of the cases are in one cluster. The optimum number of clusters is then selected over all of the cluster results (Cornish, 2007). One of the other methods by which cluster analysis may be conducted is that of 'Non-hierarchical' methods (such as k-means clustering). Under this approach, the number of clusters is determined in advance, and specific criteria are used to establish which cases belong in which clusters (i.e. under k-means clustering, cases belong to clusters with the nearest mean). Non-hierarchical clustering methods are often used with larger datasets, where hierarchical methods are slow, and are used over other methods because of the freedom they allow in enabling cases to move between clusters, which remains a shortfall of hierarchical clustering approaches (Cornish, 2007).

Latent Class Models

Latent Class models take a 'person-centred' approach, and are used to identify classes in a set of individuals, based on a range of indicator variables (Fox and Farrington, 2012). These approaches group individuals into categories that are similar to one another, but qualitatively distinct from those in other groups, focusing on 'person-based' probability; specifically, the probability that an individual (or case) belongs to each individual class. Within LCA, an individual (or case) is assigned to the class for which their probability of membership is highest. LCA approaches also use maximum likelihood estimation over measures of distance to establish classes (Pedneault *et al.*, 2012). There are two main types of Latent Class Modelling; Latent Profile Analysis and Latent Class Analysis. The main distinction between these is that whilst Latent Profile Analysis uses continuous indicator variables, Latent Class Analysis utilises categorical indicator variables.

The Latent Class Analysis approach has been used successfully in research deriving typologies of offenders, and specifically burglars. For example, Fox and Farrington (2012) derived typologies of burglars for solved burglary offences in Florida, USA. The use of this methodological approach has gained much momentum within a number of academic disciplines because of its ability to detect hidden, or 'latent' groups in the data (see Vaughn *et al.*, 2008). Its approach in focusing on 'person-based' probabilities rather than measures of distance in establishing cases is a great strength of Latent Class Models over other statistical techniques such as factor or k-means analysis. Furthermore, the Latent Class approach does not rely on common assumptions which may be readily violated in this type of work, such as normality in the data (Fox and Farrington, 2012). However, it remains important to acknowledge the caveats with this approach. One such limitation relates to the subjective nature of model solutions, and the fact there is no commonly accepted practice on deciding the number of classes to use for the analysis. This is discussed in depth by Nylund *et al.* (2007), who explored the effectiveness of different tests on predicting model classes. A number of the criteria used to assess model fit are also used to determine *relative* model fit, rather than the overall fit of a model. Consequently, the LCA approach may be viewed more as an *exploratory* rather than an *absolute* type of analysis.

Justification of Classification Approach

Despite the caveats raised, the LCA approach commands strong advantages over the other approaches outlined and has therefore been chosen to use for the

purposes of analysis in this work. Whilst the content analysis of documentation relating to offenders demonstrates clear benefits in terms of the ease of application, such data were not available. Furthermore, this approach lacks statistical rigour in its analysis, negating, to an extent, the advantages of the quantitative analysis. Similar to cluster-based analysis, solutions derived using Latent Class models depend solely upon the variables included within the analysis (Vaughn *et al.*, 2008). However, Latent models hold substantial advantages over clustering methods. Specifically, within LCA, results are model-based, using person-based probability rather than ad-hoc measures of distance. Latent Class models also bear strength over cluster analysis techniques because not only do they analyse clusters of cases, but they also assign probabilities of class membership to each individual case, as well as providing probable class membership to variables used in the analysis (Pedneault *et al.*, 2012). Here, 'probable class membership', refers to the proportionate membership of each variable in each different class, or, to put it another way, the extent to which each of the variables feature within each class. For example, variables may have absolute membership within one class (where a class is fully epitomised by the presence of this variable across all of the cases in that class, resulting in a score of 1), but relatively less membership in another (for example, only featuring in half of the cases within a particular class).

Consequently, the Latent Class approach has been chosen for use in the current project to explore the groupings of offence features present in the dataset. Furthermore, Latent Class Analysis has been selected over Latent Profile Analysis because of the use of categorical rather than continuous indicator variables in the data.

Latent Class Analysis

As detailed above, LCA was selected to help derive typologies based on the offences in the dataset. The LCA was undertaken using a binary function, which assessed for the presence or absence of certain predefined variables; for example the type of property, or the type of goods taken. However, because this level of information was only contained in the '2011-2013' dataset, the LCA was conducted solely using the '2011-2013' data. Using the Excel spreadsheet provided by West Yorkshire Police for the '2011-2013' dataset, an equation was developed to test for the presence of specific keywords, which would help to establish the reported presence of certain features for each burglary offence.

Examples of such features included property type, goods taken, occupancy status of the property, and whether force was used (among many others). Details of the equation used to test for the presence of these variables (and the variables tested for) are provided in Appendices B and C (respectively). Based on the equation used, a value of '1' was returned where a feature was present, with a value of '0' returned when a feature was not present.

The 'poLCA' LCA package in the 'R' software platform was used to conduct the LCA. The poLCA package uses both Expectation-Maximization and Newton-Raphson algorithms to establish maximum likelihood estimates for model parameters (Linzer and Lewis, 2009). Resulting LCA models are assessed using a range of goodness of fit criteria produced through the poLCA package, which are used to establish the most closely-fitting models to the data (see below). With LCA models where a number of different variables are included in a model, these criteria can be used for *relative* comparison between model solutions. Generally speaking, when considering the goodness-of-fit criteria across model solutions, the lower the value of each criterion, the closer fitting a model is to the data.

Selection of variables for model inclusion

The process of selecting variables for model inclusion followed an iterative process. The number of variables started initially at 52. These variables were taken from both the 'keywords' field, as well as other fields in the Excel spreadsheet. A large number of models were developed to explore the influence of different variables, starting with no variables in the model and then building upwards, as well as having many variables in the model and then working downwards. At each step, the impact of including specific variables was assessed using goodness of fit criteria (detailed below) to determine the impact the variable had on the model fit. As noted above, the goodness of fit criteria were used to test for the relative goodness of fit between models rather than in an absolute sense. The variables included in the final model are detailed in Table 3.1 (the initial list of variables tested for is provided in Appendix C). The model variables chosen were also supported by literature in this field to help validate their inclusion in the model (detailed in Table 3.1).

Table 3.1. Variables included in the final model.

Property Feature	Supporting Evidence
<i>Semi-detached</i>	Nee and Taylor, 1988.
<i>Insecure</i>	Montoya <i>et al.</i> , 2014; West Yorkshire Police, 2013.
<i>Occupied</i>	Moreto, 2010; Wright <i>et al.</i> , 1995.
<i>Unoccupied</i>	Coupe and Blake, 2006; Nee and Meenaghan, 2006.
<i>Euro-profile locks</i>	Brooke, 2013.
<i>Tools used</i>	Tonkin <i>et al.</i> , 2012.
<i>Part of property smashed</i>	Palmer <i>et al.</i> , 2002.
<i>Under two miles travelled</i>	Snook, 2004; Wiles and Costello, 2000.
<i>Offender(s) aged 15-19</i>	Snook, 2004.
<i>Offender(s) aged 20-29</i>	Snook, 2004.
<i>Rear Door Exit</i>	Palmer <i>et al.</i> , 2002.
<i>Rear Door Entry</i>	Palmer <i>et al.</i> , 2002.
<i>Terraced</i>	Bernasco, 2006, Taylor and Nee, 1988.
<i>Under a mile travelled</i>	Snook, 2004; Wiles and Costello, 2000.
<i>Offender(s) aged 30+</i>	Snook, 2004.
<i>Computer(s) taken</i>	Wellsmith and Burrell, 2005.
<i>Front Door Exit</i>	Palmer <i>et al.</i> , 2002.
<i>Front Door Entry</i>	Palmer <i>et al.</i> , 2002.
<i>Multiple offenders</i>	Bernasco, 2006.

Goodness of Fit Statistics

Akaike Information Criterion

The Akaike Information Criterion (AIC) is used to measure the relative quality and goodness-of-fit of statistical models compared with other models, taking into consideration the number of model parameters. When fitting models, it is possible to increase the likelihood function by the addition of extra variables, however this may risk overfitting of the model to the data. The AIC applies a penalty associated with the number of parameters included within the model. The AIC does not provide any information about a model's quality in an absolute sense, but only relative to each of the models tested, allowing model selection (Hirschfield *et al.*, 2014). AIC is based upon the principles of Information Theory, providing an approximation to the degree of information lost in the production of such a model, balancing a model's goodness of fit, and its complexity (Mazerolle, 2004).

Bayesian Information Criterion

The Bayesian Information Criterion (BIC), similar to the AIC, measures the relative goodness of fit considering both the number of model parameters and the number of model observations. With the BIC, the penalty for the number of parameters is amplified in comparison to the AIC. This may likely account for the fact that BIC has been identified as superior over other information criterion when assessing model fit and class number with Latent Class models (Nylund *et al.*, 2007).

Maximum log-likelihood

The maximum log-likelihood forms the basis for the Information Criterion produced from a model. Specifically, information criterion (such as AIC and BIC), subsequently apply different penalties for the size of the sample, or the number of model parameters included (or both). This statistic is used to illustrate the amount of unexplained variation within a model.

Chi-squared goodness of fit

The Pearson Chi-squared goodness of fit statistic provides a measure of model fit; namely, the patterns of response variables from the observed data compared with the expected outcomes from the model data. Specifically, this statistic is a measure of the difference between the predictive model with one or more predictors, and the observed data (or 'null' model).

Likelihood ratio/deviance statistic

The likelihood ratio statistic is a variation of the Chi-squared test, again using both expected and observed data for each model. This statistic indicates the effect that removing each of the predictive variables from the model would have on the overall model fit.

Establishing the number of classes for model inclusion

There exists a lack of common agreement in academia on the process for establishing the number of classes to be used within LCA models. The two main approaches used to determine this are likelihood-based tests, and the commonly used information criterion (as described above). Likelihood-based tests seek to compare the goodness of fit between models, through the use of a log-likelihood function (Tekle *et al.*, 2013). One example of such likelihood-based tests is that of the Bootstrap Likelihood Ratio Test (BLRT), which draws on 'bootstrap' samples

(resamples from the original dataset) to estimate the distribution of the log-likelihood statistic (Nylund *et al.*, 2007).

Nylund *et al.* (2007) explored the performance of both likelihood-based tests and information criterion in relation to Latent Class Analysis models. They found that the BLRT was a better indicator of classes within the LCA, but that the BIC was the most effective of the information criteria in establishing model classes (Nylund *et al.*, 2007).

However, Nylund *et al.* (2007) note the increased computing time taken for the BLRT method (between 5 to 35 times greater). Consequently, in their recommendations for practice, they suggested that the BLRT may not be appropriate initially for model development, and that something such as the BIC should instead be used. Indeed, Nylund *et al.* (2007) note that the BLRT has not been commonly implemented in LCA applications. Therefore, the information criteria previously described in this section shall be used for the purposes of class number selection. Because the aim of the analysis here is not to identify specific, standalone categories of offenders, but rather to understand the different combinations of behavioural features present in the offence data, it was decided that the use of information criterion here was sufficient for the process of model selection.

Presenting MO Classes

The features characteristic of offences in each MO class are discussed and illustrated in Chapter 4 using radar graphs to help demonstrate the profile of features for each of these offence groupings. Offences within each MO class are also mapped to help illustrate their positioning across Leeds. Furthermore, initial exploratory analysis is conducted to identify the OAC groupings (and associated features) in which offences in each MO fall.

Exploration of Environmental Features associated with individual MOs

The first major component of the quantitative analysis will seek to reveal offence-based MOs of burglary within Leeds (Chapter 4), identifying the types of reported features associated with offences across the different MO classes. This chapter will also begin to explore the socio-demographic variables associated with offences in these MO classes, through exploring the OAC groupings in which offences from each of these MO classes fell. Chapter 5 will then seek to build on this analysis, through identifying the socio-demographic variables associated with

offences in each of the five offence MOs. The first part of this analysis will seek to further understand the socio-demographic context in which these offences took place, to explore the relative association between socio-demographic variables and offences in each MO class, and to explore how this differed across offences in different MO categories. A Multinomial Logistic Regression was used for this part of the analysis, because this type of analysis allows for the exploration of relationships between a number of independent variables on a categorical dependent variable with more than two possible outcomes (here, the five MO classes).

The second part of this analysis then sought to build on this work, through exploring the relationships between socio-demographic variables and actual rates of crimes for the different MOs. Consequently, a Multiple Linear Regression analysis was applied here, because this type of analysis allows for the exploration of relationships between a number of independent variables on a continuous dependent variable (here, crime rate). Details pertaining to each of these modelling approaches are outlined below.

3.3.2.6. Understanding Environmental Features associated with individual MOs: Multinomial Logistic Regression

A Multinomial Logistic Regression was completed across offences in all MOs, with the MO class number as the dependent variable, to help understand the socio-demographic features associated with offences in individual MOs. This regression analysis was based upon variables taken from the 2011 UK Census. The associated 2011 Output Area Classifications, which are derived from the 2011 UK Census, profile the demographics of areas across the country at the 'Output Area' (OA) level. Output Areas, or 'OAs', are areas that were developed purely for the output of census population estimates. England consists of a total of 171,372 OAs as of the 2011 UK Census, with an average population of 309 per OA (Office for National Statistics, 2016d). The OAC groupings provide invaluable information on the demographic nature of areas at the OA level. The 2011 UK Census variables on which these classifications were based, represent the most comprehensive set of socio-demographic variables / indicators at such a detailed level of geography. However, prior to undertaking this analysis, a 'stepwise' procedure was used to identify the variables to include within the regression analysis.

Establishing the variables to use for the model: Stepwise Multinomial Logistic Regression

Stepwise regression is a variate of multiple regression that utilises an automated, stepwise approach, where the 'stepwise' addition or removal of each variable is tested as to the effect it has on the overall 'fit' of the model. There are three variations of this type of analysis; 'Forward selection', 'Backward elimination' and 'Bidirectional elimination'.

Forward selection

Stepwise regression using this process starts from the point of having no variables in the model, and then testing for the addition of each variable on the overall fit of the model, repeating this process until the addition of no further variables improve the fit of the model.

Backward elimination

Stepwise regression using the backward elimination process begins from the point of including all of the variables within the model, and then testing for the impact of the subtraction of each variable on the fit of the model, repeating this process until the deletion of no further variables has any further impact on the overall fit of the model.

Bidirectional elimination

Stepwise regression using this process will incorporate both of the above processes, testing for the impact of the addition and deletion of variables at each stage on the overall fit of the model (Chatterjee *et al.*, 2000).

Stepwise regression techniques are not without controversy: researchers have claimed that they take a number of decisions outside of the researcher's hands, and may 'inflate' effects of variation found (Field, 2005). However, Berk *et al.* (2010) justify the use of stepwise methods, arguing that 'informal data exploration' experience similar difficulties as a set of often automated procedures, emphasising how 'judgement-based' model selection is comparable with stepwise methods (Berk *et al.*, 2010). Furthermore, there is a very clear rationale justifying the use of such stepwise methods for the current research. This is outlined in the following points below:

- *Using stepwise regression models here means that the methods used for identifying variables are more consistent than using human judgement when carrying out the same regression analysis across offence MOs (this is particularly pertinent for the Multiple Linear Regression analysis detailed later in this chapter);*
- *Because the nature of this work was to ‘explore’ socio-demographic variables associated with crime rate / MO group, the researcher was aware that he did not want to ‘impart’ potential variables on the model, but rather identify these using an automated stepwise program;*
- *Critics argue that model variables should be chosen and tested based on available supporting literature (where there is a sound literature base; Field, 2005). However, a number of the variables used for the 2011 OAC classification are very specific, and thus whilst there are some variables that are supported with literature related to offending, there are a number that aren’t (not to say that such relationships don’t exist). Thus, it is simply not possible to establish the nature of these relationships, and identify linked variables with confidence on this basis (nevertheless, where there is a strong agreement or disagreement with the literature, this will be identified for validation purposes);*
- *These methods are only one approach in which associated socio-demographic variables are identified in relation to offences in particular MO groups. Therefore, the results found here may be validated against other methodological approaches used in this work.*

A stepwise Multinomial Logistic Regression model was run across the full offence dataset for all five MO classes, to identify the variables that will be used in the final model. Backward stepwise regression was selected over forward methods, because this does not suffer from ‘suppressor’ effects, whereby a predictor is found to have a significant effect but only where another variable is retained in the model (Field, 2005).

Multinomial Logistic Regression requires a reference category, and therefore MO class 1 was used as the initial reference category for the analysis. The use of reference categories in this analysis allow for comparisons *between* values in one group and those of another. However, the choice of one reference category over another does not impact on the variables selected from the resulting stepwise model, because these were based upon all of the offences in the dataset (it simply impacted the nature of resulting values based on the reference category specified). To confirm this, four subsequent stepwise Multinomial Logistic Regression models were also conducted with each of the remaining MO classes as the reference category. Each model resulted in the identification of the same variables selected. Specifically, these analyses resulted

in the selection of nine variables to take forward to the Multinomial Logistic Regression (detailed in Chapter 5 of the thesis). The variables used with the models were the 60 OAC variables used to derive the 2011 OAC groupings (as detailed in Appendix A), as well as measures of population density, and a diversity index (used to establish the ethnic diversity of an area). The variables are per-Output Area socio-demographic variables, and therefore the resulting models are very much within the traditions of Environmental Criminology, seeking to tie criminal acts to the socio-demographic environment they occur within. Once identified, the rates of raw variable figures by population were then standardised to account for variables on different scales carrying different weight.

Multinomial Logistic Regression

The stepwise Multinomial Logistic Regression conducted identified the combination of OAC variables to take forward to the subsequent regression model. As discussed, Multinomial Logistic Regression requires a reference category, which allows for the comparison of values in one category compared with those of another. Different iterations of the models were subsequently conducted to observe each individual MO as the reference category (because offence MO was used as the dependent variable). The analysis identifies the values of each variable in each MO category relative to a single MO group as the 'reference' category. Whilst the results do not provide an indication of the extent of specific variables in an absolute sense; rather, it gives the values *relative* to offences in other MO groupings.

Process of Model Validation

Before creating the 'MO-Environment' model, the most appropriate method for determining standard errors in the model must also be determined. There are a range of approaches used for this purpose; these often involve re-sampling of the initial dataset (Molinaro *et al.*, 2005) to assess the internal validity of a model. Three key such approaches are as follows:

- Split-half Validation
- Cross-validation
- Bootstrapping

Split-half Validation

'Split-half Validation' involves 50% of the data being taken and used as the 'training' sample for model development (as used in Bennell and Canter, 2002). The remaining 50% of the data are then used to test the model developed. However, this has been highlighted by Bennell *et al.* (2014) as an inefficient method of validation, because only half of the data are used to build and subsequently test a model. Furthermore, the results may vary substantially dependent on the way in which the data are split, and the specific observations included in the training, and validation sets. This approach, in using a subset of the data for the production of training sets, may result in the overestimation of test error statistics for the fit of the model across the full data set (Molinaro *et al.*, 2005).

Cross-validation

An alternative validation approach is known as 'Cross-validation', which involves extracting 10% (for example) of the sample, building a model based on the remaining 90% of the sample, evaluating the model against the extracted 10%, repeating this ten times with different 10% extractions, and then taking the average. One such validation approach is known as 'Leave One Out Cross Validation' ('LOOCV'), which is advocated by Bennell *et al.* (2014) as a more efficient form of case validation. In this approach, all but one cases are included in the development of a number of models, and then all of the models are subsequently tested on all of the cases within the sample.

Bootstrapping

The 'Bootstrapping' approach as a technique of model validation has been advocated because it does not require part of the data sample to be retained. This approach enables users to gather new datasets through 'resampling' observations from the current dataset. Each of these new 'bootstrap data sets' is derived through resampling 'with replacement', whereby samples are taken at random from the original dataset, until the same-sized sample is reached as the original dataset. Thus, cases may be selected once, more than once, or not at all.

Justification of Validation Techniques Selected

In considering potential validation approaches, one of the key limitations with 'Split-half Validation' is that the results from this may vary substantially

dependent on how the data are split, as well as the specific cases included in the training and validation datasets. Furthermore, whilst approaches such as LOOCV may be considered as building on these limitations, it can also be argued that the LOOCV approach does not ‘mix up’ the data sufficiently for this to be a rigorous method of validity testing. Moreover, because the bootstrapping approach does not require part of the data to be held back, as well as the fact that validation is not dependent on the way in which training and validation datasets are split, the bootstrapping approach was highlighted as commanding advantages over these alternative techniques, and thus was chosen for the purposes of model validation.

Model Validation: The Bootstrapping Approach

To carry out the bootstrapping technique, a total of 1,000 bootstrapping ‘replication’ samples were conducted for both the Logistic and Linear Regression models (detailed later in this chapter), once the variables to include in each analysis had been established through the stepwise procedures employed. The bootstrapping resampling ‘with replacement’ approach involves drawing a specified number of resamples from the dataset (as detailed above). Subsequent Logistic (or Linear) Regression models are then conducted based on these resamples. Based on these subsequent models, bootstrap estimates of confidence intervals for the initial models are derived. Consequently, two significance levels are reported in the results tables; one for the model itself, and one based on the bootstrap confidence intervals from 1,000 bootstrap samples. The bootstrap approach was used here to generate confidence intervals given to the observed log odds from the Multinomial Logistic Regression models. Details of the model statistics produced by the Multinomial Logistic Regression modelling process are outlined in Table 3.2, below.

Table 3.2. Details of Multinomial Logistic Regression Statistics Used.

Regression Statistic	Details of Statistic
Odds Ratios	In the context of Logistic Regression, odds ratios tell us the extent to which the odds of an outcome occurring increase or decrease with a unit change in the associated independent variable(s). In the context here, this relates to the extent an offence for a specific MO is more or less likely compared with another MO class when there is a unit change in the explanatory variable (Peng <i>et al.</i> , 2002). However, the use of odds ratios within modelling can be problematic because they can be

	disproportionate; for example, an odds ratio of 8.0 could encapsulate the same relationship as 0.125, depending on the direction of calculation.
Log Odds	The log odds are a 'log' of the odds ratio. This makes odds ratio values symmetric around zero, and therefore it is easier to use this as a basis for building Logistic Regression models.
Chi-squared goodness of fit (Model X^2)	The Chi-squared goodness of fit statistic ('Model X^2 ') is a measure of the difference between the predictive model comprising one or more predictors, and the observed data (or 'null' model).
Log-likelihood	The log-likelihood is used to define a measure of error, or unexplained variation within a subsequent model. This is based on a calculation where a user sums the probabilities associated with both predicted and observed outcomes. This statistic can be used to indicate the extent of unexplained information after a model has been fitted (Hosmer and Lemeshow, 1989).
X^2 Likelihood-ratio goodness of fit (for each variable)	The X^2 in the table relates to the Likelihood-ratio goodness-of-fit criteria, and indicates the effect that removing each one of the predictive variables from the model would have.

3.3.2.7. Understanding Crime Rates across individual MOs: Multiple Linear Regression

Whilst the Multinomial Logistic Regression analysis was used to identify socio-demographic variables associated with offences across each of the MO classes, a Multiple Linear Regression analysis was also undertaken to explore the combinations of socio-demographic variables associated with higher crime rates at the OA level for each MO. This approach was selected because it can be used to help identify associations between a number of demographic variables on a specific outcome; specifically the crime rate per OA.

Establishing the variables for Model Inclusion: Stepwise Multiple Linear Regression

As with the Multinomial Logistic Regression, a stepwise version of the Multiple Linear Regression was also undertaken to establish the variables to include within the regression model. However, unlike the Multinomial Logistic Regression conducted, this regression analysis was conducted for each MO category

separately, to establish the specific socio-demographic variables associated with higher crime rates for each specific MO category. Consequently, for each MO category, a stepwise Multiple Linear Regression analysis was first employed to identify the variables to take forward for model inclusion. Again, a backwards stepwise regression analysis was chosen, to prevent the risk of suppressor effects as identified earlier in this chapter.

The variables included within this initial stepwise analysis were the demographic variables used in the Multinomial Logistic Regression discussed earlier in this chapter, as derived from the 2011 UK Census. The model was then re-run with the variables identified through the stepwise procedure, with the use of bootstrapping approaches employed (as is detailed below). A Multiple Linear Regression analysis was conducted initially for all MOs collectively, to help understand the socio-demographic features associated with higher crime rates across *all* offences, which could then be compared with the features linked with higher crime rates for each specific MO. Subsequently, the Multiple Linear Regression analysis was conducted for each MO individually. Details of the resulting statistics produced by the Multiple Linear Regression modelling process are outlined in Table 3.3, below.

Table 3.3. Details of Multiple Linear Regression Statistics Used.

Regression Statistic	Details of Statistic
Adjusted R ² value	This gives an indication of the variance in the outcome variable that would be accounted for if the derived model was developed from the population on which the sample was taken (Field, 2005).
Unstandardised Coefficient ('B')	The unstandardised coefficient gives the value that the outcome variable will increase (or decrease) by a one-unit increase in the predictor variable.
Standardised Coefficient (Beta)	The standard coefficient details the number of standard deviations the outcome variable will change from a change of one standard deviation in the predictor variable.

Validation of MO Crime Rates Models

As noted above, similar to the Multinomial Logistic Regression analysis conducted, the Multiple Linear Regression models conducted for offences in each MO also

used a bootstrapping approach to help validate the models derived. Thus, in addition to reporting the variables associated with higher crime rates across individual MOs, these models also reported the bootstrap confidence intervals for crime rates across individual MOs. In particular, these included the bootstrapped 95% percentile confidence intervals, and the bias-corrected and accelerated confidence intervals ('BCa'), which adjust for skewness and bias within the distribution of the bootstrap (Haukoos and Lewis, 2005). These have therefore been used to help establish the 'robustness' of the derived models.

3.4. Qualitative Research Methods

3.4.1. Introduction

The previous half of this chapter discussed the methods used for the quantitative perspective of this research; specifically the analysis of burglary offence data, to explore the prevalence and patterns emerging across a broad sample of offences. The current section will now detail the qualitative approaches used to explore offenders' target selection criteria and behavioural preferences with respect to targeting an appropriate property.

3.4.2. Selection of Appropriate Research Methods

There are two main qualitative research approaches that may be used to explore the target selection criteria of offenders, ethnographic-based research, and the use of interviews. Ethnographic-based research involves a researcher 'immersing' themselves in a particular social setting, and may include the use of both interviews and conversations as well as observations of those in that setting (Bryman, 2015). Indeed, previous work into burglars' selection criteria has been based upon ethnographic approaches. For example, Cromwell *et al.*'s (1991a) research involved interviews and visiting crime sites with a sample of burglars in Texas. Furthermore, Wright and Decker (1994) conducted interviews with 105 'active' burglars on the street in St. Louis, Missouri.

The other main qualitative approach used to explore offenders' target selection is that of offender interviews, often with prison-based samples. Previous research has noted the value of qualitative interviews in helping to understand offender (and in particular, burglar) behaviour using prison-based samples (Bennett and Wright, 1984; Maguire and Bennett, 1982). The work of both Maguire and Bennett (1982) and Bennett and Wright (1984) evolved to prison interviews

because of the problems ethically and practically in conducting research with active burglars on the street (Nee and Taylor, 2000). Nevertheless, their findings were very similar to those found in the aforementioned ethnographic studies in the US, despite criticisms from the authors of the US studies about prison-based samples lacking validity (Nee and Taylor, 2000). As well as its operational difficulties, ethnographic-based research may make it more difficult to generalise emerging findings. For example, Nee (2000) highlights how the earlier ethnographic work by Wright and Decker (1994) was based initially on a small sample of individuals from a very deprived area of St. Louis; thus the findings may be more difficult to generalise than those from a prison population, where there is likely to be greater (spatial, and therefore micro-cultural) variation amongst the nature of offenders sampled.

There are a number of further strengths demonstrated by interviews over ethnographic methods. For example, there are a number of areas that are possible to explore in relation to offending during interview that are simply not possible using observation methods. Furthermore, the use of interviews is, on the whole, less intrusive into individual's lives than methods used within ethnographic research (Bryman, 2015).

Interviews were therefore chosen as the methodology to use to help understand the behavioural preferences of burglars in Leeds. In addition, it was established that additional methods used to gather information on offending practices may help to validate and verify the target preferences of offenders that emerge during interview (Nee, 2010). For example, Bennett and Wright (1984) used additional methods beyond interviews with offenders, using the analysis of photographs and videos comprising different cues to help establish the selection criteria used by burglars. Such an approach was also taken by Taylor and Nee (1988), to help explore the selection criteria and decision-making of offenders. Taylor and Nee (1988) used a simulated residential environment with numerous photos of four terraced townhouses and a detached house, to explore offenders' target selection and preferences.

Nee and Taylor (2000) describe the use of varying methods in establishing burglars' selection criteria as hugely beneficial and a form of 'methodological triangulation'. Indeed, the use of alternative methods can be seen as a highly valuable means of verifying results (Nee, 2010). For example, Bennett and Wright (1984), who conducted interviews as well as the analysis of photos and analysis of videos, found results that were largely similar to those of Maguire and Bennett

(1982), who conducted interviews with 40 burglars, as well as burglary victims, and analysed approximately 6,500 burglaries to identify environmental cues used by offenders. Specifically, they found that cues used by burglars centred on points of occupancy, security, accessibility, and visibility. Therefore, for this work, the interview process comprised of three separate elements:

- Semi-structured interview;
- Property image task;
- Risk-taking questionnaire.

3.4.3. Method

3.4.3.1. Participants Approached

From the outset of this research, it was hoped that participants could be drawn from both community and prison samples, to speak to people with current or previous involvement in burglary in Leeds, both within and outside of prison walls. To this end, the researcher worked closely with the support of West Yorkshire Police to identify potential participants to approach. Potential participants in this research were individuals in the community or within prison with previous or current convictions for, or involvement in, burglary within the Leeds area. Potential participants in the community were initially contacted via post, through Police randomly selecting individuals from the database of burglars with previous convictions for burglary within Leeds. Individuals were offered up to £20 in gift vouchers to compensate them for their time. Unfortunately, no individuals responded to these invitations to participate in the research, and therefore the interviews were based solely upon a sample of adult male offenders at HMP Leeds, with current or previous convictions or ties with burglary in the Leeds area. Details of the approaches used to recruit and subsequently interview offenders are outlined below.

3.4.3.2. Sampling and Recruitment of Prison Interviewees

Potential participants in the prison were initially identified through a convenience sampling approach. Specifically, these individuals were identified either by staff working in the prison's Offender Management Unit, or from those identified through a search of the Prison's online record management system; 'P-NOMIS'. This identified a number of individuals currently held at HMP Leeds with current or previous convictions for burglary. This resulted in the generation of a list of

potential participants the researcher might be able to speak to. The researcher, together with a Senior Officer from the Offender Management Unit, then went onto the prison wings to speak to potential participants to introduce himself, introduce the project, and establish whether they may be willing to participate in the research. Specifically, the researcher wanted to speak to people who had committed burglaries within Leeds, and thus this was checked with participants during discussions on the wing. In this context, it may be helpful to note that the author was a prison psychologist (elsewhere) prior to undertaking this research project, and is, therefore, relatively at-ease in this environment.

Due to the nature of HMP Leeds being a local prison, there was a high turnover of prisoners, and thus it was found that the original list of prisoners was ever-changing and on occasion, a prisoner identified on the original list was not contactable because they had already been released. In addition, some individuals simply did not wish to participate, and some agreed to participate but subsequently changed their minds and did not turn up for interview (detailed below). Staff from the prison's Offender Management Unit were also particularly helpful in proactively identifying potential willing participants to recruit. Specifically, during the course of regular contact staff had with individuals at the prison, they would inform them about the research, and enquire as to whether they may be interested in taking part in the research (if identified as suitable in terms of having previous burglary offences). In addition, one of the earlier participants in the research had been in the prison on a number of occasions and was familiar with a number of the prisoners residing there. He helpfully promoted the project, generating, to a degree, a snowball sample amongst those inmates. The reasons for prisoners engaging with the survey are likely to be wide: from being attracted to something different; to wanting to appear productive to prison authorities; to genuinely wanting to help lower crime. Given this complexity, as far as could be ascertained, the sampling methods used did not unusually bias for any particular character traits or MOs (essentially biasing *for* everyone).

3.4.3.3. Prison Sample

A total of 23 prisoners from HMP Leeds were interviewed for the purposes of this research. The average age of participants was 34 years of age. Offenders interviewed had received (on average), a total of 17 convictions for burglary, for approximately 73 burglary offences (that were known and recorded). It is of note

that a number of offenders stated that they had committed 100's more burglary offences for which they had never been caught (and which were not recorded).

3.4.3.4. Organisation of Interviews

Offender interviews were co-ordinated through close liaison with the prison's Offender Management Unit and the prison's legal visits system. Initial interviews were booked through legal visits, where the researcher booked the interview in advance and subsequently attended the prison to conduct the interview. However, this proved to be an inefficient approach, because although interviews were booked with prisoners, on a number of occasions they did not turn up for these interviews. The reasons given for this were that they had forgotten who was seeing them, had gone to work / the gym, had changed their mind, or believed that it was in fact the police who had come to see them. Following subsequent consultation with prison staff, it was decided that a different approach should be explored to improve the efficiency of this process. It was agreed that a Senior Officer from the Offender Management Unit would help to support this process, through making prior contact with potential interviewees to establish their potential motivation to participate, before then returning to the wing with the researcher to check they were available to partake in the interview. These interviews were predominantly conducted within the legal visits unit; however, two of the interviews were conducted in alternative locations, one of which was a wing office, and the other was an office on the health care unit, where the individual was employed as a cleaner. The Senior Officer was able to escort both the researcher and interviewees to these locations, and he ensured that he (or another officer) was in close proximity at all times.

The time spent with offenders ranged from shortly over one hour, to two and a half hours. On meeting with potential participants, the researcher discussed the nature of the research and what would be involved. With the agreement of the appropriate University Research Ethics Committee, individuals were not required to provide written consent to participate in the interview; it was made clear to individuals that verbal consent would be sufficient in confirming participants understood what was being asked of them and were happy to proceed on this basis. This further meant that individuals did not have to assign their name to anything, and would be able to maintain anonymity. Individuals were also given the option to be assigned a pseudonym for the duration of the interview.

3.4.3.5. Interviews

Interviews were developed through close consultation with research supervisors, and staff from Safer Leeds Partnership. In particular, feedback provided by the Safer Leeds Partnership was particularly useful in highlighting potential avenues for exploration, based upon their local knowledge of crime in the area. The interview schedule was carefully constructed so as to ensure that the features considered important to explore were fully covered, whilst ensuring the schedule was not overly long so as to deter engagement with the research. An earlier version of the interview was piloted with a former burglar whom the researcher had met through a previous conference event held at the University of Leeds. This process of piloting the interview was extremely useful in highlighting questions that may be sensitive for participants to answer, or where questions may need to be clarified / rephrased. Based on feedback from research supervisors, Safer Leeds Partnership, and the pilot interview, some of the language used in the original interview schedule was adapted to ensure that participants understood the questions asked of them. The interview covered a number of different areas, including the types of property / area they would target, the nature of attractive / deterrent features, the impact of police, how offenders got rid of goods, methods of transport to and from offences, and whether they offended with others (among many others). A copy of the interview schedule can be found in Appendix D.

The interview also comprised of questions on offenders' drug / alcohol use. These were purposely broad in nature, to allow the researcher the opportunity to explore the role of substance use on individuals' offending, as well as the role that this played in their wider lifestyle. As is highlighted earlier in the thesis, there is a distinction to be made between those offenders who use drugs recreationally (or as part of a wider lifestyle), and those with physical addictions. For example, for those who use drugs recreationally, or as part of a wider lifestyle, their need for drugs may not be so 'immediate', which may be reflected in their offending practice. However, for those with physical addictions, the need to finance their drug use may be more critical, which may subsequently impact on the nature of their offending. It is hoped that the broad nature of the interviews will help to uncover some of these dynamics.

Interviews were semi-structured so as to ensure that key areas were explored to help understand offenders' target selection, whilst providing sufficient flexibility to explore areas raised during interview. This method has

proved popular in exploring burglars' target selection in previous research (Taylor, 2014; Nee and Taylor, 1988). Depending on what individuals were able and / or willing to discuss, interviews varied in time taken to complete, ranging from shortly over an hour, to approximately two hours.

3.4.3.6. Verification of Offenders' Accounts

Before commencing interviews with offenders (and during the planning stages), it was important to acknowledge and understand the potential for offenders to falsify or present favourably during interview. One of the key concerns was that because the research seeks to understand the decision-making process of offenders, offenders may be driven to falsify or misrepresent information regarding their offending and target selection criteria. Indeed, this may be underpinned by a desire to present one's self in a more favourable light, through detaching themselves from acts that may be viewed as immoral; conversely, this may also be driven by a need to 'brag' or overstate one's role in previous criminal behaviours (Elffers, 2010), or feed out false information to confuse policing processes.

Consequently, careful consideration was given as to whether some type of verification should be applied to check the validity and accuracy of offenders' accounts. However, after considerable deliberation it was concluded that further verification would not be carried out on the interviews undertaken. There were two main reasons for this. The first was due to logistical factors; to verify each offender's account in relation to their previous offending would have involved substantial time and resources to achieve. As an outside researcher to the prison, it would not have been possible to directly access individuals' prison records, and this would have required considerable support (and placed substantial demands) upon prison staff. The other reason why this course of action was discounted was due to the impact this may have had on establishing rapport with individuals. If it became known that the researcher was checking individuals' accounts with file documentation to verify their accuracy, this could have had serious implications on the subsequent relationship with the individual during interview. Furthermore, it was emphasised to participants throughout that the research did not require details of specific individual offences, but was more interested in the general rules / schemas followed by offenders during the course of their offending. The author's experience in dealing with, and assessing, prisoners as a prison psychologist helped to mitigate against any possible false information presented.

Moreover, the triangulation approach of methods used also helped to validate the findings that emerged (Zetinigg and Gaderer, 2010).

3.4.4. Ethical Considerations

Due to the nature of the project and participants sampled in the research, there were a number of ethical issues pertinent to this research, which were considered in line with the British Society of Criminology's ethical principles set out in their statement of ethics (British Society of Criminology, 2015). An overview of the key issues identified has been provided here. Prior to the research taking place, ethical approval to conduct the research also had to be established; details of this are provided below.

3.4.4.1. Ethical Approval

Ethical approval was sought and received from the appropriate University of Leeds Research Ethics Committee with respect to interviews with individuals within both the community and within prison. Furthermore, ethical approval was sought from the National Offender Management Service (NOMS) in order to conduct research within HMP Leeds. The process of gaining ethical approval to secure access to HMP Leeds in order to conduct the interviews took approximately nine months, which placed a delay on the commencement of the interviews. For the purposes of ethical approval with both the University ethical committee and NOMS, all of the interview materials to be used within the research were submitted to the ethics boards for approval. This included the interview schedule, materials for the property image task, and materials for the risk-taking questionnaire.

3.4.4.2. Incentives Offered

During the planning stages of this research, considerable thought had to be given as to an appropriate form of incentive to use within the research. For interviews proposed to take place within the community, a £20 gift voucher reimbursement was to be offered to participants for their time taken in the research. A gift voucher over direct cash was to be used so as to ensure that this could be used towards something from a specific store, rather than having direct cash, which could (potentially) be used towards the purchase of illegal goods.

Payment could not be offered to participants within prison due to restrictions in place by NOMS. However, for those individuals that did participate in the research, the interview offered them the opportunity to break from their

routine for approximately two hours, as well as to contribute to work that will help understand burglary processes. Furthermore, the researcher was able to provide a positive comment that could be entered onto the individual's online wing record, to acknowledge the individual's engagement and motivation demonstrated during the course of the research.

3.4.4.3. Limits of Confidentiality

From the outset, participants were made aware of the limits of confidentiality offered during the research process. It was made clear to participants that generally speaking, nothing they discussed would be shared outside of the research team (the researcher and his research supervisors). It was discussed with participants how some quotes may be used to help illustrate themes found in the research, but that no individuals or quotes would be identifiable from the research, and that participants would be referred to purely by participant number. In particular, during interview the researcher reiterated to participants that he did not wish to hear about any breaches of prison rules, nor any details of specific past offences; emphasising that he was more interested in general schemes / patterns followed during the course of their offending.

However, it was made clear to participants that the usual limits of prison confidentiality would apply, whereby the researcher had a duty of care to report something disclosed beyond the research team in the following instances:

- Any major breaches in prison rules;
- The participant disclosed information pertaining to the previous or future harm to themselves, any other person, or any child under the Children's Act 1989.

3.4.4.4. Safety of Researcher and Participants

One of the key ethical issues in this research relates to ensuring the safety of both the researcher as well as participants during the course of the project. With regards to ensuring the safety of the researcher, care was taken to ensure that he was always accompanied with a prison officer when on a prison wing, and that when interviewing prisoners, he was always positioned closest to the exit, whilst being fully aware of the locations of the closest alarm bells, and ensuring that a staff member was always in close proximity if required.

With regards to ensuring the safety of participants, the main potential threat related to whether other prisoners believed they may be talking to the

police, or an official body, and potentially 'grassing' on other inmates. When speaking to prisoners and potential participants on the wing, it was made clear that the researcher was from the University of Leeds, purely in a research capacity with no formal affiliation with the police or other criminal justice agencies. In addition, the interviews were not conducted in visible offices on the wing. For the majority of interviews, these took place in the legal visits rooms in the visits department of the prison. A further two interviews were conducted outside of this location; one was in an office on the wing, however the positioning of this meant that the people in the office were not overly visible to others on the wing. The other interview took place in an office in the prison's health care unit, where the prisoner interviewed worked as a wing cleaner, and no other offenders were able to observe these interviews taking place.

3.4.4.5. Property Images Used

With regards to the property images used, these were taken from public highways / footpaths. They were taken by the researcher to collate images of a range of different properties that comprised different features which could be used to help establish the features that would attract offenders to (or deter them from) individual properties. Participants were informed that the properties were taken from a city that was not Leeds (the city was not disclosed to participants) and thus it was deemed unlikely that any of the individual properties would be familiar to them. As such, it was unlikely that these properties were put at specific risk of being targeted as a result of the research. It was also anticipated that this work would not motivate offenders to target specific types of property, but if so, that any incentive to do so would subside by the time of their release from custody.

3.4.4.6. Informing Participants of the Research Aims

One of the main issues arising in the research related specifically to the potential applied implications for crime prevention from this project, and the extent to which participants were made aware of this. Specifically, the issue concerned whether participants would be willing to engage in the research if they were made fully aware of how it may be used; i.e. to support crime prevention efforts. For this reason, whilst participants were informed of the broader themes of the research, they were not necessarily informed of specific details of exactly how it may be used. In particular, participants were informed that the aim of the

research was to develop our understanding of people's experiences of burglary and specifically the nature of burglary within Leeds. In instances where further details were asked of the researcher, participants were informed that this work may be used to help inform crime prevention strategies in the future. Because the majority of participants either wanted to 'give something back' or had 'had enough' of a criminal lifestyle, they were largely happy to engage in research that worked to address these aims.

3.4.5. Analysis of Interviews

With regards to the analysis of interviews undertaken, there are two main methods of qualitative analysis identified as appropriate; 'thematic analysis', and 'content analysis'. Thematic analysis refers to the identification of codes within data, which are then used to generate broader themes / categories that relate to specific research questions, and help to generate a theoretical understanding of the data in relation to the particular area of focus (Bryman, 2015). Content analysis, on the other hand, refers to an approach whereby documents and texts are analysed through quantifying content based on pre-determined categories in a systematic manner (Bryman, 2015).

Because the researcher had an idea of the types of areas that he would like to analyse and the key categories / themes he would like to explore (based on the topics covered during interview), it was anticipated that the analysis would not be fully 'organic' as such, and thus the researcher chose to use content analysis over thematic analysis. However, traditional content analysis takes a heavily quantitative focus, in seeking to quantify qualitative data into pre-determined, fixed, categories. However, this approach did not fully meet the needs of the current project. Indeed, whilst the researcher had identified broader themes that he would want to consider through the analysis, these were very much open to revision and refinement, depending on the nature of results found. With this in mind, a 'qualitative content analysis' approach was instead adopted.

Similar to the more traditional forms of content analysis, qualitative content analysis also seeks out the presence of pre-determined themes within the documents being analysed. However, the main difference between qualitative content analysis and regular content analysis is the flexibility afforded by the former. Altheide and Schneider (2013) devised an approach to qualitative content analysis they refer to as 'Ethnographic Content Analysis' (ECA). The key difference identified with this type of analysis over more traditional quantitative-

based content analysis is that under the former, the researcher is continually able to amend and revise the themes through the analysis of documents under consideration. Whilst ECA utilises some initial categorisation, there is then much greater opportunity for the revision / refinement of those categories and the development of new categories. As such, this approach provides much greater opportunity to move between processes of conceptualisation, data collection, analysis and interpretation than that of quantitative content analysis (Altheide and Schneider, 2013). Consequently, for the purposes of analysis for the current research, qualitative content analysis (or ECA), was employed.

3.4.6. Property Image Task

As noted above, the Property Image Task was used to help verify the features that would attract or deter offenders in establishing a suitable target to burgle. As discussed previously, the use of additional methodological approaches is particularly useful in helping to 'triangulate' emerging findings.

Ten different property images were used for this task. These images were taken by the researcher from public pathways / highways in a city in the North of England. The properties selected for use within the task were selected because they comprised a combination of different features that have been identified within the literature as impacting on the risk of burglary. The features represented by each property are highlighted within Table 3.4. Of the features represented, the majority of these were self-evident. However, some of these features are more subjective; specifically, whether the property featured an expensive car, or whether the property was located in an affluent area or deprived area. The affluence or deprivation of the areas in which individual properties were located was established using the 2011 OAC groupings. It was found that the ten property images fell into one of four OAC groupings. For purposes of ease, a summary of these four OAC groupings has been given in Table 3.5, as has been informed by the Office for National Statistics (2015c, pp. 2-3).

Offenders were shown each property image separately, and were asked a number of questions for each image. Offenders had to rate on a Likert scale of 1 to 10: the attractiveness, accessibility, and level of cover of the property, together with the perceived occupancy of the property (assessed by asking participants whether they believed a property to be occupied, not occupied, or they weren't sure). The attractiveness, accessibility, and cover of the property were all 'positively scored', which suggested that a score of 10 for each of these

features meant that a property was extremely attractive, extremely accessible, and extremely covered (respectively), and that a score of '0' for each of these elements meant that a property was extremely unattractive, inaccessible, or fully visible (respectively). Participants were also asked to identify the features that led to their assessment of each property across each of these scales. An example of some of the property images used for the task has been given in Figure 3.1, however the full range of images shown to participants for the purposes of this task can be found in Figure 6.2. The question sheet used in the task has been provided in Appendix E.



Figure 3.1. Example property images used in the Property Image Task.

Table 3.4. Property features for each house in the Property Image Task.

Feature	Property Number										
	1	2	3	4	5	6	7	8	9	10	
Side gate				X	X						X
Visible side entrance			X		X						
House Alarm		X	X			X	X				X
Expensive Car											X
Ramp/ rails					X						
Affluent Area		X	X		X	X	X		X	X	X
Deprived Area	X			X		X		X			
Dog Sign											X
Alleyway	X										
Long drive					X						
Lesser Visibility	X	X				X		X			
On corner	X	X									
On busy road		X				X					
Detached		X									X
Semi			X					X			
Terraced	X			X		X	X				
Flat											X
Townhouse											
Bungalow		X				X					
Neighbourhood Watch/ Police Initiative	X			X							
Garage on side		X	X		X						X
Near grassland	X										X
No car	X	X	X	X	X	X		X			
Cul-de-sac		X			X	X	X		X	X	X
Constrained City Dwellers	X			X				X			
Multicultural Metropolitanans						X					
Urbanites							X				
Suburbanites		X	X	X	X	X					X

Table 3.5. Details of OAC Groupings in which properties used in the Property Image Task fell.

OAC Grouping	Description
Constrained City Dwellers	<ul style="list-style-type: none"> ➤ Lower proportion of people aged 5 to 14. ➤ Higher level aged 65 and over compared with nationally. ➤ More densely populated than UK average. ➤ People more likely to be single or divorced. ➤ Lower representation of all the non-White ethnic groups and of people born in other EU countries. ➤ Lower proportion of households with no children. ➤ Households more likely to live in flats and in social rented accommodation, with a higher prevalence of overcrowding. ➤ Higher proportion of people whose day-to-day activities are limited, and lower qualification levels than nationally. ➤ Higher level of unemployment in the supergroup. ➤ Some industries such as information and communication, and the education sector are underrepresented.
Multicultural Metropolitans	<ul style="list-style-type: none"> ➤ Largely concentrated in larger urban conurbations in transitional areas between urban centres and suburbia. ➤ Likely to live in rented terraced housing - both private and social. ➤ High ethnic mix, but below average number of UK and Irish born residents. ➤ Residents are likely to be below retirement age. ➤ Likely to be an above average number of families with children who attend school or college, or who are currently too young to do so. ➤ Rates of marriage and divorce broadly comparable with national average. ➤ Level of qualifications just under the national average with rates of unemployment above the national average. ➤ Employed residents more likely to work in the transport and administrative related industries. ➤ Public transport is the most likely method for individuals to get to and from work; households less likely to have multiple motor vehicles available to them.
Suburbanites	<ul style="list-style-type: none"> ➤ Most likely to be located on the outskirts of urban areas. ➤ More likely to own their own home and to live in semi-detached or detached properties. ➤ Population is generally a mixture of those above retirement age and middle-aged parents with school age children.

	<ul style="list-style-type: none"> ➤ Number of residents who are married or in civil-partnerships is above the national average. ➤ Individuals likely to have higher-level qualifications than the national average, with the levels of unemployment in these areas below the national average. ➤ All non-White ethnic groups have a lower representation when compared with the UK and the proportion of people born in the UK or Ireland is slightly higher. ➤ People more likely to work in the information and communication, financial, public administration, and education sectors, and use private transport to get to work.
Urbanites	<ul style="list-style-type: none"> ➤ Located in large urban areas in the UK. ➤ More likely to live in either flats or terraces, and privately rent their home. ➤ Has an average ethnic mix, with an above average number of residents from other EU countries. A result of this is households are less likely to speak English or Welsh as their main language. ➤ Those in employment more likely to work in the information and communication, financial, public administration and education sectors. ➤ Compared with the UK, unemployment is lower.

Source: Office for National Statistics (2015c).

3.4.6.1. Analysis of Property Image Task

The analysis of the property image task was first carried out by calculating the average ratings for each property with respect to the perceived level of attractiveness, accessibility, and cover. The average rating of whether each property was believed to be occupied, unoccupied, or not sure was also calculated (a score of 1 was given to the response selected by participants; this resulted in an average score between 0 and 1 for each of the three responses for each property). A Pearson correlation analysis was then conducted between the perceived attractiveness, accessibility, and cover of each property, to explore whether any associations were present between each of these features. An eyeball observation was also carried out to identify the three most and three least popular properties, with the key features identified from these being drawn out. The findings were then compared with those emerging through interview.

3.4.7. Risk-taking questionnaire

The risk-taking questionnaire employed focused upon exploring individuals' propensity for risk-taking, and the types of risks that people may take. The psychometric questionnaire used for this was adapted from the 'Domain-Specific Risk-Taking' (DOSPERT) Scale (Blais and Weber, 2006). The original DOSPERT Scale is a psychometric questionnaire used to explore an individual's propensity to engage in risk-oriented behaviours across different lifestyle domains. The original questionnaire consists of a total of 40 items across five lifestyle domains; namely: financial decisions (separately for investing versus gambling), health / safety, recreational, ethical, and social decisions. The questionnaire was subsequently revised to create a shorter version of this scale that could be interpreted by a wider range of participants across different contexts and cultures. Consequently, the 40 items from the original scale (Weber *et al.*, 2002) were shortened to 30 items (Blais and Weber, 2006). For each statement, the questionnaire asks participants:

- a) How likely it would be that they would engage in that activity;
- b) How risky they perceived that activity to be;
- c) The perceived benefit they would expect as a result of that activity.

In establishing the suitability of questionnaires to use to assess risk-taking propensity, the DOSPERT scale appeared an appropriate psychometric tool. However, the revised scale comprised of 30 different statements, each of which asked three questions. The resulting questionnaire was therefore rather long, and thus it was unclear whether participants would be able to engage with this, either because of questionnaire fatigue or personal timetables. Therefore, the potential to reduce the scale to make this more manageable for participants was explored. This provided two options: to reduce the number of scales used, or to reduce the number of questions asked. Although the former was considered, through further exploration it was concluded that each of the three scales (one for each of the questions above) was particularly useful for exploring risk propensity. Therefore, the option to modify the questionnaire was explored; specifically, to reduce the number of questions asked. Although the questionnaire consisted of five domains, on greater focus, some domains appeared more appropriate than others in terms of informing us about risk related to offending; namely, the 'Recreational' and 'Health and Safety' domains. Therefore, questions for these domains only were

used, resulting in a new revised version of the DOSPERT scale for the research here. This consisted of 12 statements, across two lifestyle domains. These domains were chosen specifically because the researcher sought to tap into individuals' risk-taking during the course of their offending, and therefore chose questions from the 'recreational' scale to help establish their propensity of risk-taking within everyday / leisure activities. Questions from the 'health and safety' domain were also chosen because this explored the extent to which they would put themselves in danger during a particular course of action. The other scales, 'Ethical', 'Financial' and 'Social', despite their titles, appeared more hypothetical in nature and of less value in establishing propensity to take risks within an offending lifestyle, and therefore were not selected for use in the revised questionnaire.

Immediately following interview, participants were provided with a copy of the risk-taking questionnaire as described above. The researcher ran through each of the scenarios detailed in the questionnaire, for which questions were then asked of participants across each of the three scales used. A copy of the risk-taking questionnaire can be found in Appendix F.

3.4.7.1. Analysis of risk-taking questionnaire

The questionnaire was analysed through exploring the presence of any associations between the perceived likelihood of offenders engaging in each activity, the perceived risk of engaging in that activity, and the perceived benefit of engaging in that activity. These associations were measured using a Pearson correlation coefficient. These were calculated first for all of the domains together, followed by separate analyses of questions in the 'recreational', and 'health and safety' domains.

3.5. Summary

This chapter has detailed the methodological approaches taken in this thesis. The research and analysis methods chosen have been carefully selected with the research aims in mind, with a clear rationale underpinning the methodological decisions taken. In detailing the methods used, this chapter has helped to illustrate the merits of both quantitative and qualitative perspectives in gathering further information to explore the nature of burglars' target selection. In doing so, this chapter has helped to set the context, and, more specifically, the

methodological foundations, from which the research aims will be answered in the subsequent chapters of this thesis.

Chapter 4: Understanding Burglary within Leeds

4.1. Introduction

This thesis utilises a mixed methods approach to understanding the target selection criteria of burglars within Leeds. Two distinct methodological perspectives will be used; quantitative and qualitative, which will help to understand and develop knowledge about the selection of burglary targets. The first of these perspectives; the quantitative analysis, will focus on the analysis of burglary offence data provided by West Yorkshire Police, with a view to determining any emerging patterns in the data, through the use of existing knowledge about previous burglary offences. Qualitative analysis will then build on this work, through the analysis of interviews with a sample of incarcerated offenders on their target selection of properties, as well as the process in which they commit these burglary offences. This analysis will span two chapters, beginning with Chapter 6.

The quantitative analysis spans the following two chapters. The first shall explore information relating to the specific targets of offences (which will include some information relating to the offender). This will help to identify any emerging patterns in relation to what makes an attractive burglary target, and, in turn, help to explore offenders' potential *modus operandi* (MO) in terms of their target selection. The second section of this analysis, Chapter 5, will then explore the broader features of the neighbourhoods in which these offences take place, with a view to identifying the socio-demographic features that may impact on burglary offences. This chapter will focus on the first part of this quantitative analysis by exploring features of offences and offence targets to help identify emerging themes; that is, the presence of any consistent features of offences or offence targets that may help to understand the specific preferences of offenders, as well as identifying any distinctions between groups of offences. To begin with, Section 4.2 provides a brief recap about the data used for the analysis in this chapter.

4.2. Recap about the Data Used

The data used were provided by West Yorkshire Police in the form of two data sets. The first contained all burglary offences in Leeds that were reported to the police between March 2011 and February 2013. This dataset shall be referred to

as the '2011-2013' dataset. In addition, for each of the offenders identified within the '2011-2013' dataset, all known recorded offences for these individuals were provided (for during, before, and after this time period); this shall be referred to as the 'all offences' dataset. The '2011-2013' dataset spans from 1st March 2011 to 28th February 2013, and the 'all offences' dataset spans from 22nd December 1989 to 13th April 2014. The datasets were received in April 2014, and were finalised for the purposes of analysis in July 2014.

Both the 'all offences' and '2011-2013' datasets included the postcode centroids of the offenders' home locations at the time that the offence was committed, as well as the locations of offences (address of the victim). The '2011-2013' dataset also contained information about each offence, including: whether there were multiple offenders present; whether offences were attempted or actual burglaries; the extent of force that was used; and the types of goods taken. Further details of this are provided in Chapter 3.

Prior to undertaking analysis, the data were reviewed and cleaned, as detailed in Chapter 3 of the thesis. This process comprised of two distinct stages; adding geographical information, and excluding unsuitable entries. This resulted in a total of 1,599 offences in the '2011-2013' dataset, and 6,801 offences for the 'all offences' dataset.

4.3. Analysis

To assist with familiarisation and the process of exploring the data, some initial descriptive analysis was conducted. Initially this involved exploring the total numbers of offences across both datasets.

4.3.1. Total offences committed

Figure 4.1 illustrates the total burglaries committed by offenders in the '2011-2013' dataset during this specific period using a logarithmic scale. There is a strong and significant negative relationship between the frequency of offenders and the total number of offences each committed in the time period, supported by the Pearson correlational coefficient ($r = -.881$, $p < .001$). In other words, it is more common for offenders to commit a relatively low number of offences.

Figure 4.2 illustrates the total number of burglary offences committed by offenders in the 'all offences' dataset on a logarithmic scale. Again, there was a strong and significant negative relationship between the frequency of offenders and the total number of offences each committed, supported by the Pearson

correlational coefficient ($r = -.921$, $p < .001$). As such, the findings from Figure 4.1 and Figure 4.2 suggest that it is more common for offenders to commit a relatively low number of offences. Indeed, this finding mirrors that of previous work into this area. For example, Owen and Cooper (2013) looked at re-offending over a 9-year period in a sample of first-time offenders convicted for either robbery, vehicle theft or burglary as their first offence. They found that the majority of individuals went on to commit very few further offences (if any).

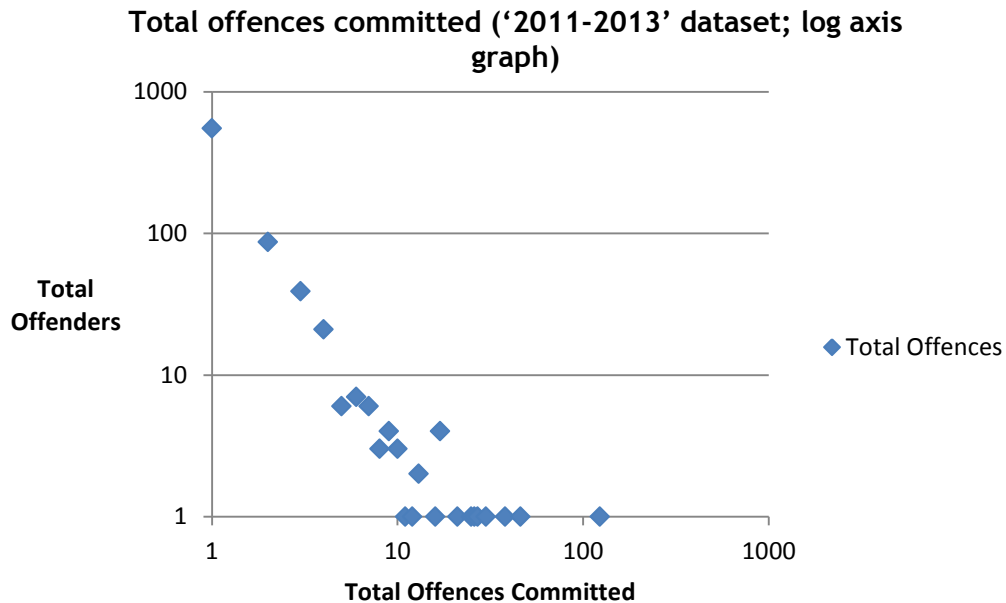


Figure 4.1. Total offences committed across the '2011-2013' dataset (log-log scale). Total offences = 1,599.

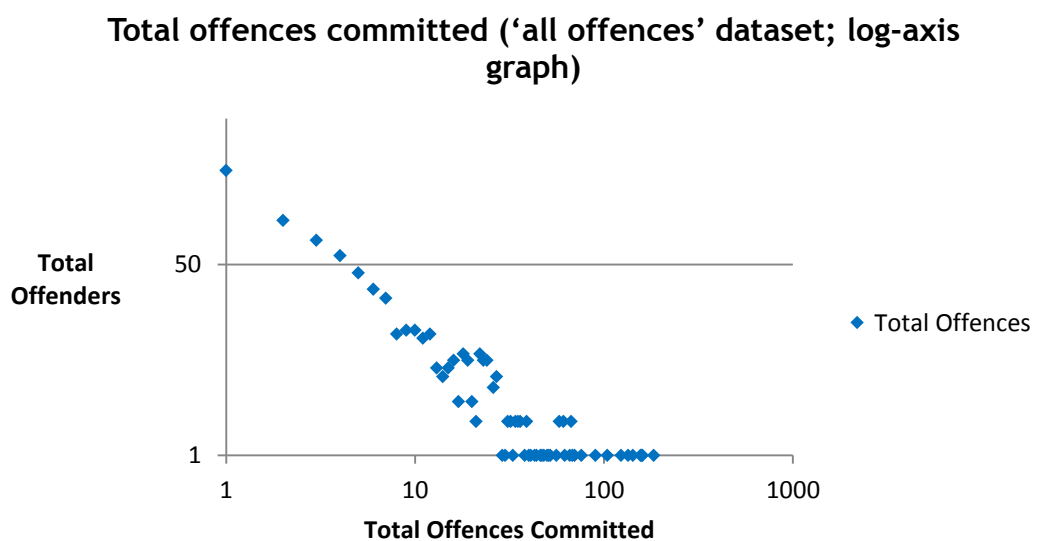


Figure 4.2. Total offences committed across the 'all offences' sample (log-log scale). Total offences = 6,801.

Moving beyond total offences committed across both datasets, the chapter will now focus on the journeys to crime taken by offenders. This is an important area within the burglary literature (for example, see Wiles and Costello, 2000). This body of work is invaluable both in terms of understanding the forms of travel taken to / from offences, as well as the identification of potential targets by offenders during their engagement in non-criminal activities. This type of information may subsequently be used to help crime prevention / public awareness efforts, and, when taken with other information about what makes an attractive target, may be used to identify areas at particular risk of burglary, therefore potentially highlighting where to target crime prevention resources most effectively.

4.3.2. Distances to crime

The provision in the dataset of coordinates for the locations of offences and of offenders' home locations has enabled the exploration of Euclidean distances travelled by offenders to their offences, which, as detailed in Chapter 2, has had considerable attention in the literature.

Figure 4.3 indicates the distance to crime for offences in both the '2011-2013' and 'all offences' datasets. The '2011-2013' dataset gives a snapshot of travel distances completed within a specific time sample, while the 'all offences' dataset gives a better idea of the distances travelled by a sample of offenders. Distances in miles were used over standard SI units of kilometres to enable simpler comparisons with the literature. The results across both datasets indicated that there was a clear distance decay effect, with 0-1 miles being the most popular distance travelled across both the '2011-2013' and 'all offences' datasets. Indeed, both 0-1 and 1-2 miles accounted for 61% of all offences across both datasets, indicating that the majority of journeys made to offences were relatively short. This mirrors the findings of Wiles and Costello (2000), who found that 61% of offenders travelled less than 2 miles to burgle in Sheffield. Note, however, that there is a slight rise back up to the 10-15 mile bin, possibly representing professional burglars picking rural targets in advance, and / or using public transport to leave the city. However, it should be acknowledged that this may not necessarily represent a genuine rise, because the 10-15 mile marker represents a wider bin than the previous categories, and thus in actual fact may represent a gradual decline as identified in the previous categories.

Journeys to crime across offences ('2011-2013' and 'all offences' datasets)

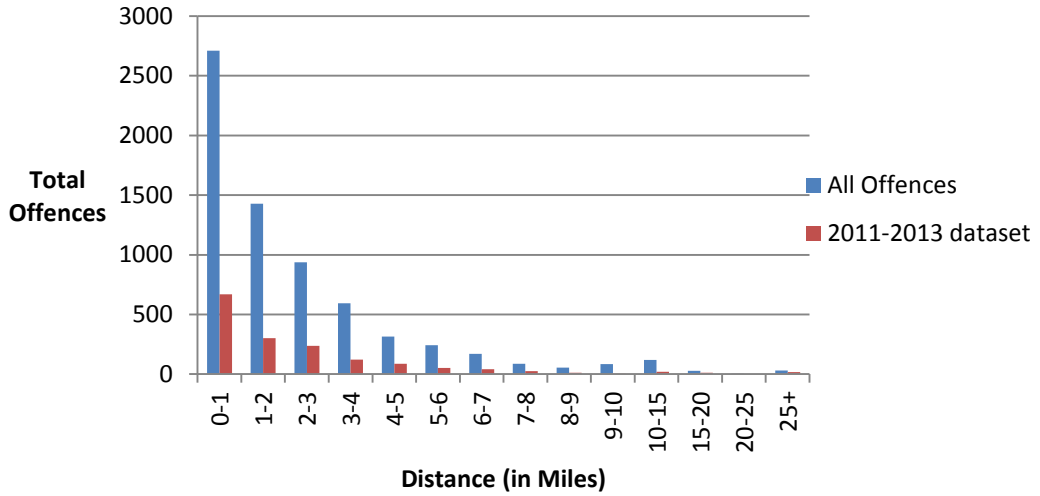


Figure 4.3. Distance travelled to crime across all offences in the '2011-2013' and 'all offences' datasets.

It is also informative to quantify the *average* distance to crime travelled by each offender across both datasets, as illustrated by Figure 4.4. Again the strong distance decay relationship is clear; the 0-1 mile distance is the most frequently chosen (average) distance by offenders.

Average journeys to crime across offenders ('2011-2013' and 'all offences' datasets)

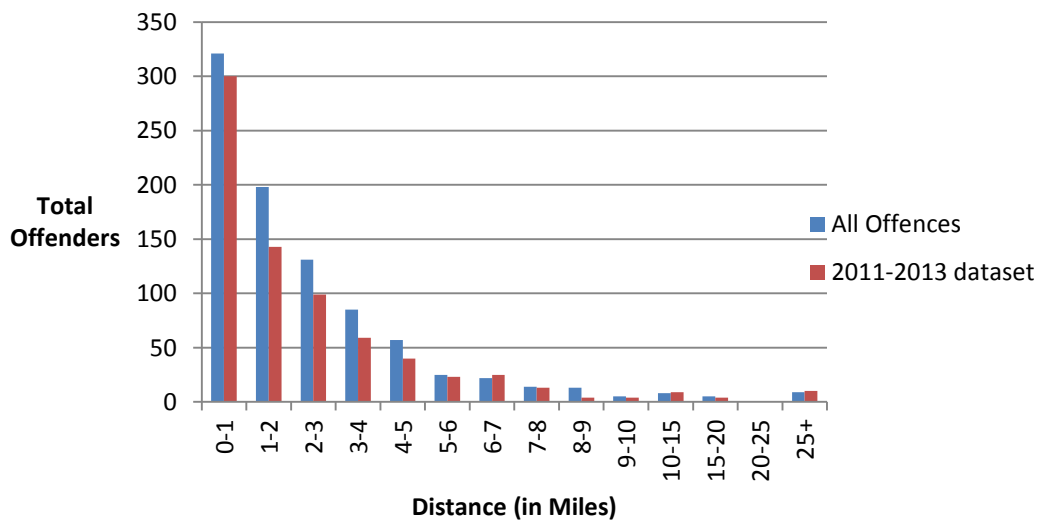


Figure 4.4. Distance travelled to crime across all offenders in the '2011-2013' and 'all offences' datasets.

It is likely that the distance offenders will travel is related to factors such as age (Snook, 2004; Costello and Wiles, 2001; Baldwin and Bottoms, 1976). This is an important relationship to understand as this may well impact on other related factors such as the general *modus operandi* and the choice of target. This also explains the slightly different figures for the ‘all offences’ data in Figure 4.4 (any nonlinearity in this relationship will be picked up as this difference in the ‘all offences’ data include a larger total amount of burglary experience across a broader age span for any given offender). With regards to the impact of expertise, Figure 4.5 plots the average distance travelled against the total number of offences per offender (a proxy for their experience and / or typology). However, there appears to be no significant linear relationship between the total offences committed and the average distance travelled to offences. This is supported by the Pearson correlational coefficient ($r = -0.030$, $p = .364$), which suggests no correlation to be present. As such, this supports the work of Snook (2004), who found that prior criminal experience did not appear to impact on the distance travelled to offences.

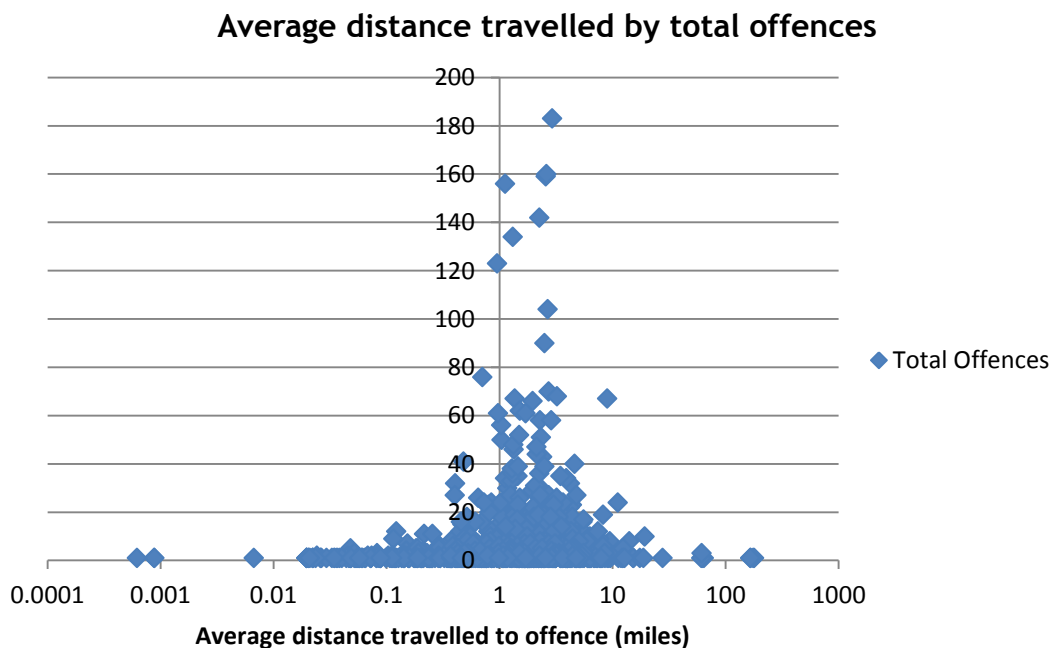


Figure 4.5. Average distance travelled by total offences committed.

4.3.3. Distances between crimes

In addition to exploring the distances travelled by offenders to offence locations, the data were also particularly valuable in enabling the exploration of average distances travelled by offenders *between* offences. This will help to aid the exploration of pertinent criminological theory (for example, ‘Optimal Forager’

Theory, in which offenders forage in an area for a possible target over a certain period, before moving on to a different area to continue their search; as detailed in Section 2.3.4). This will also help to support the provision of crime prevention advice for nearby residents once an offence has taken place at a property. The distances between subsequent offences for offenders who had committed two or more offences were calculated and are displayed below. The sample size for offences in the '2011-2013' dataset ($n = 1,599$) is very small relative to that of the 'all offences' dataset (particularly when considering the number of offenders with two or more offences), and therefore just the distances between consecutive offences for the 'all offences' dataset were calculated.

As can be seen in Figure 4.6, there appears to be a clear negative skew with regards to the average distance between crimes, with a larger number of offenders travelling relatively short distances between offences, and a small number of offenders travelling much further distances between offences. Again, this would appear to suggest that offenders largely tend to commit offences in close proximity to previous offences, and that these tend to cluster together, thereby supporting previous literature into this area (Johnson and Bowers, 2004a).

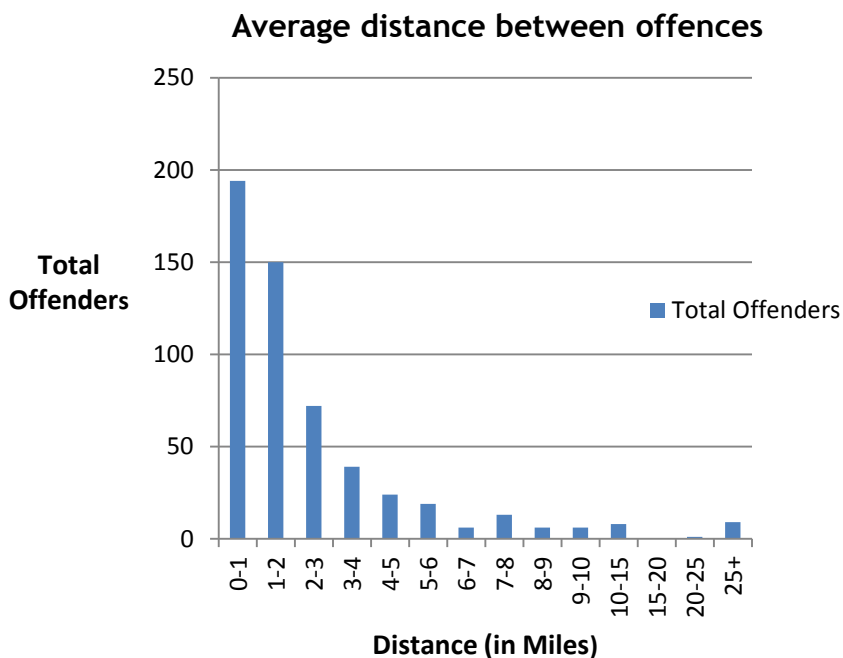


Figure 4.6. Average distance travelled between consecutive offences.

Figure 4.7 (below) goes on to explore whether there is a relationship between the total number of offences committed by an offender and the average distance *between* subsequent offences. As can be seen in Figure 4.7, there

appears to be no significant linear relationship, which is supported by the Pearson correlation coefficient ($r = -0.073$, $p = .220$).

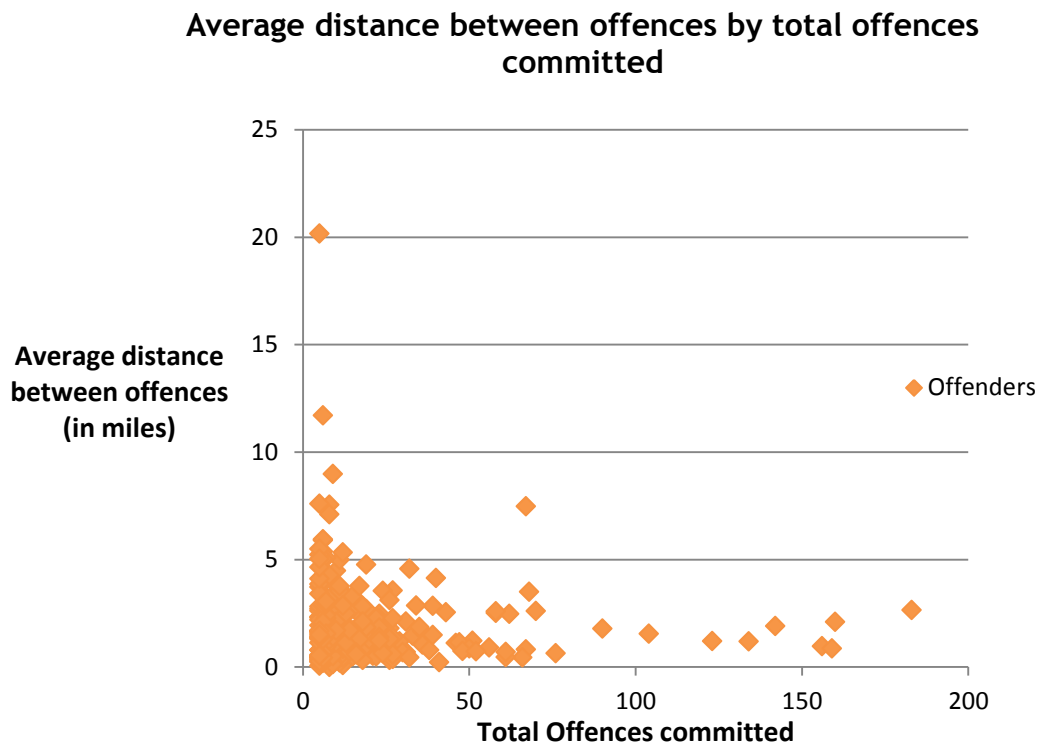


Figure 4.7. Average distance travelled between consecutive offences against total offences committed.

In addition to distances travelled to / between crimes, there is also considerable previous literature that highlights the influence of demographic features on the risk of burglary (see Hirschfield *et al.*, 2014). This will be an important feature to consider for the current research because it provides detail not only on the nature of victim populations, but also of the areas from which offenders have travelled. This helps to build on the analysis so far because this considers the notion of *relative* features between an offender's and victim's home locality.

4.3.4. Demographic distances to crime

To explore demographic variations in the offenders' home and offence locations, it is first necessary to decide on the set of variables that are able to distinguish different types of neighbourhood. Fortunately, the 2011 UK Census Output Area Classification (OAC) was developed precisely for this purpose. Therefore, the

variables that are used to define the OAC groupings were used here to determine the demographic distances between offender home and offence locations. The following radar graph (Figure 4.8) illustrates the distance in variable values between the demographic features of home and offence locations, for both the '2011-2013' and 'all offences' datasets.

The values shown are the average of the differences in variable space for each crime. It is of note that these figures are low because the values used for each of the 60 variables in the OAC classification were subject to methods of data transformation (to minimise skewness in the data), and data standardisation (to help account for differing scales amongst variables). Further details of these processes can be found in Office for National Statistics (2015b). A value of 0 represents where there is no difference with respect to the presence of a specific variable in the offence (destination) area than there is in the home (origin) area. Therefore, any values above 0 represent instances where, on average, there is greater presence of a variable in the offence (destination) location compared with that of the home (origin) location. As such, those variables with values above 0 may be considered relative 'attractor' variables; that is, variables that attract an offender to a target location. Conversely, values below 0 depict a situation whereby, on average, there is lesser presence of a variable in the offence (destination) area than that of the home (origin) area. This may help to develop understanding as to the types of features that may enhance the likelihood of a property to be burgled, but, similarly, illustrate where such offences may be less likely to take place. Figure 4.8 is also supported by Table 4.1 and Table 4.2, which highlight the five highest attractor and absent variables for both datasets.

Table 4.1. Top 5 Attractor and Absent variables for the '2011-2013' dataset.

Top 5 Attractor Variables	Top 5 Absent Variables
65 to 89	Terraced/ end-terrace
Flat	Born new EU
Public transport to work	Mixed ethnicity
90+	Black/African/ Caribbean/Black British
White	Social renting

Demographic distances between offence and home locations across '2011-2013' and 'all offences' datasets

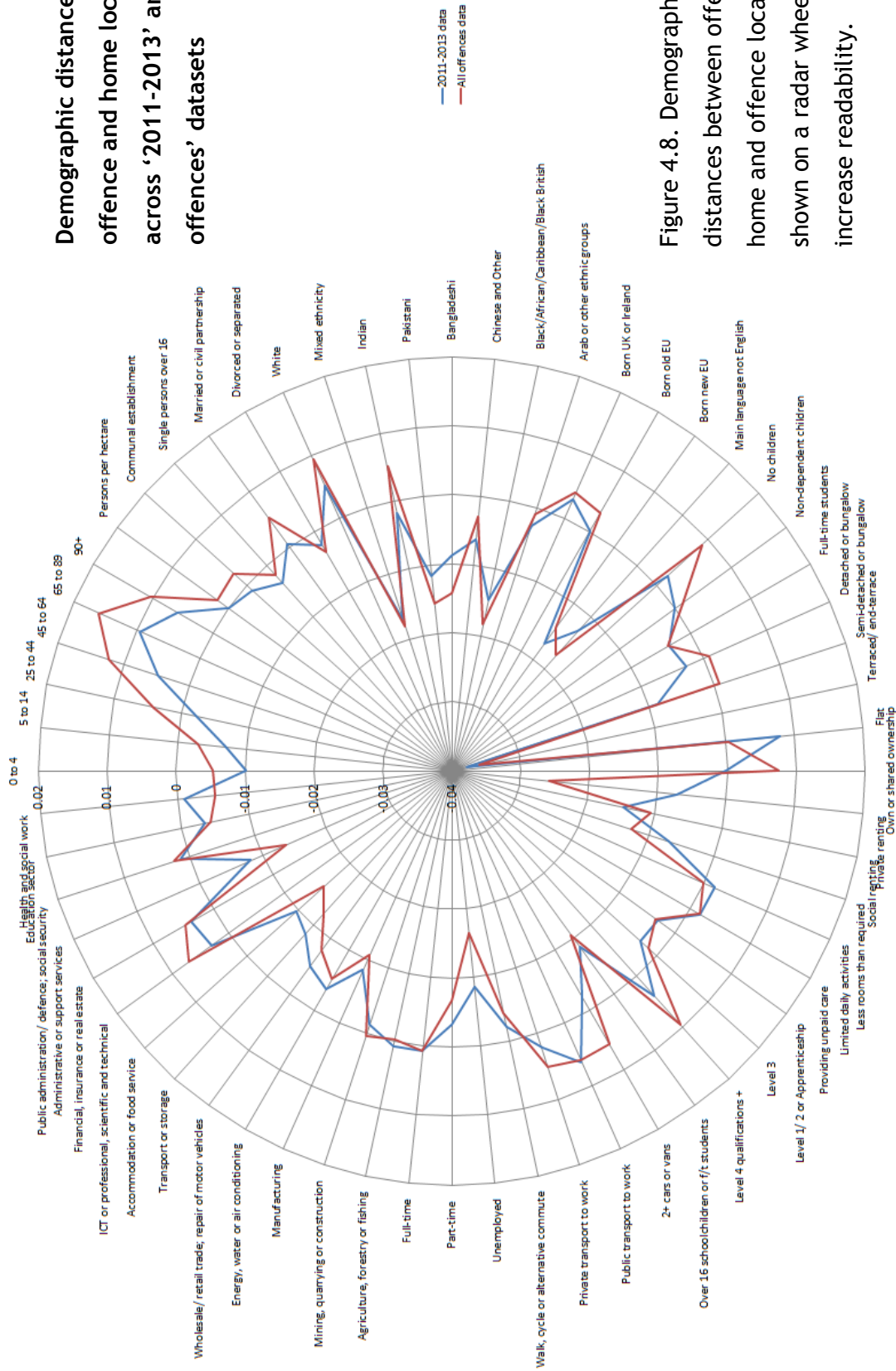


Figure 4.8. Demographic distances between offenders' home and offence locations, shown on a radar wheel to increase readability.

With regards to the ‘2011-2013’ dataset, what is immediately apparent is that there are a number of demographic variables above 0, which suggests that these features of areas may act as relative ‘attractor’ variables for offenders. In particular, these included variables of age (45-64; 65-89; 90+), people of white ethnicity, those who were UK born, those with no children, those residing in flats, those in full-time employment; particularly in the ‘finance, insurance or real-estate’, ‘ICT or professional, scientific and technical’, or ‘agriculture, forestry or fishing’ industries. Figure 4.8 also suggests that offenders may be drawn to areas where individuals hold level 4 qualifications (Diploma; Certificate of Higher Education) and above. Finally, individuals who only have limited daily activities, and those who provide unpaid care, also appear to be more prominent in locations targeted by offenders compared within the home areas of offenders. Based on these results, it may be argued that offenders are drawn to areas with a degree of affluence (relative to their home areas); this is of course based on the premise of features such as education level or occupation type being used as proxies for wealth. However, the presence of such factors in isolation may not necessarily make it clear *how* these attract offenders. However, these variables should be considered in a ‘relative’ sense; that is, these variables demonstrate *relative* values, in that they represent areas where levels of such variables are in greater abundance than the areas that offenders have travelled from. This will be further explored in Chapter 5, which will consider the demographic features associated with offences across the MO classes identified later in this chapter.

Table 4.2. Top 5 Attractor and Absent variables for the ‘All offences’ dataset.

Top 5 Attractor Variables	Top 5 Absent Variables
65 to 89	Terraced/ end-terrace
45 to 64	Private renting
90+	Black/African/ Caribbean/Black British
Level 4 qualifications +	Mixed ethnicity
White	Main language not English

Figure 4.8 illustrates that the features that are prominent in offence locations across the ‘all offences’ dataset appear to largely mirror those in the

'2011-2013' dataset, albeit with some noticeable differences. One such difference is that the demographic distances between home and offence locations appear to be slightly higher for the 'all offences' dataset compared with the '2011-2013' data across a number of variables. One argument why this may be the case is that offences within the 'all offences' dataset reflect offences committed by individuals during a broader span of their life-course, thus potentially reflecting greater changes in their target selection over the course of their criminal career. A further notable difference from the '2011-2013' dataset is that the 25-44 age group appears more prominent in offence rather than home locations, in addition to those who are married, those of Indian ethnicity, and those who are homeowners.

Conversely, one of the key negatively valued variables in Figure 4.8 is terraced house properties, which would suggest that offenders may begin their journeys from locations where the abundance of terraced properties is greater than that of the offence locations themselves. Furthermore, Figure 4.8 indicated that offenders travelled from areas with a greater proportion of individuals of mixed and of Pakistani, Bangladeshi and Black ethnicities. Offenders also travelled from areas where a greater proportion of the working age population were unemployed, in addition to a greater proportion of both terraced and social and privately rented properties. Such features may be used as proxies for measures of deprivation, which raises the broader concept of wealth and its potential influence on crime; this is further discussed below.

The obvious question that emerges from this analysis is what this tells us in practice in terms of the differences between offenders' home and target locations. Initial analysis of the demographic distinctions between offender and target locations demonstrates that in target locations, there is a greater proportion of those of white ethnicity, of older age, employed across a range of 'professional' occupations. This may suggest a degree of affluence in these areas, which by their virtue may attract offenders (Johnson and Bowers, 2004b; Wiles and Costello, 2000). This will be explored further in Chapter 5, which will consider the demographic features associated with the offences within each individual MO class. However, what remains unknown is whether offenders travel to these areas because of the features of these areas alone, or because these areas are within a certain threshold distance from their home locations. This is something that will be explored within Chapter 6, where offenders are interviewed about their selection of suitable areas to target.

4.4. Latent Class Analysis

Having considered the offence totals, distances to and between crimes, and the demographic features of offenders' home and offence locations, the next stage in the research is to use some of the rich data gathered from the individual offences to help enhance our understanding of the potential selection criteria of offenders in the sample. Using offence data in this way can help us to draw out some of the subtler distinctions in the target selection criteria of burglars, and elicit potential information relating to offenders' MOs, which could be used to support crime prevention efforts in the future. Specifically, the work will draw on the 'keywords' field, as well as other features of the dataset. However, because this level of detail was only available with the '2011-2013' dataset, this analysis was conducted solely with the '2011-2013' data. This would also ensure that any knowledge gleaned of the selection criteria of offenders as based on this dataset is collected over a two-year 'snapshot', rather than over an extended period of time (as would be with the 'all offences' dataset), which would likely make it difficult to establish the nature of burglary and target selection by burglars at any particular point in time.

Using the 'keywords' section of the '2011-2013' dataset, as well as other dataset features will help to glean information on features such as co-offending, offender age, goods taken, means of means of entry, type of property and occupancy status of the property (among others) for each offence. The analysis began by establishing the presence (or not) of such features for each individual offence. A cluster-based analysis was then undertaken with the data to explore whether there were commonalities between the combinations of features identified. It was hoped that this would help to uncover detail regarding offenders' distinctions in target selection or target 'MO'.

To perform the cluster analysis, Latent Class Analysis (LCA) was used. LCA was chosen because it has been used successfully in research on deriving typologies of offenders and specifically burglars (Fox and Farrington, 2012). It was introduced in Chapters 2 and 3 of the thesis. This chapter will now discuss in further detail the LCA approach, before outlining the subsequent findings.

4.4.1. Method

The LCA was performed through a binary function, which tested for the presence or absence of specific predefined variables; for example, the type of goods taken

or type of property targeted. An equation was developed in the Excel spreadsheet for the '2011-2013' dataset that was provided by West Yorkshire Police, to test for the presence of specific individual keywords which would help determine the reported presence (or not) of specific elements for each burglary offence. Examples of such elements included means of entry, age of offender, distance travelled, and occupancy status of the property. Details of this process (including the factors that were tested for) are detailed in Chapter 3 of the thesis, in Section 3.3.2.5. Where a feature was present a value of '1' was returned, with a value of '0' returned where this feature was not present. The specific code used to test for the presence of these features within the Excel spreadsheet has been outlined in Appendix B.

The LCA was conducted using the 'poLCA' LCA package in the 'R' software platform. The poLCA package uses both Expectation-Maximization and Newton-Raphson algorithms to determine maximum likelihood estimates for model parameters (Linzer and Lewis, 2009). Resulting models from this type of analysis are assessed through a range of goodness of fit criteria produced using the poLCA package. These can be used to identify the most closely-fitting model to the data. With models that make use of a number of different variables, these criteria can be used for *relative* comparison between models. An overview of the criteria used for the purposes of establishing goodness of fit is provided in Chapter 3. Following the arguments set out in Section 3.3.2.5, an Information Criteria approach has been adopted for the purposes of developing this model. The selection of variables for model inclusion, together with the associated 'goodness of fit' criteria, are discussed below.

4.4.1.1. Selection of variables for model inclusion

Due to the nature of the dataset used here, there is much greater focus on the nature of the target (property) itself, and about what offenders took and the specific details of the offence, rather than the details leading up to the offence, or more details on the offender themselves. This will be an area of knowledge that will be enhanced through the qualitative side of this research; namely, the interviews with offenders on the *process* of selecting a property to burgle.

In establishing the number of variables for model inclusion, a trade-off was to be achieved; using a lesser number of observed variables would result in a more closely-fitting model, with lower (more desirable) criterion values, thereby increasing the risk of 'over-fitting'. However, such models, when used to inform

crime prevention practice, would be less illustrative about offenders' behaviour / offence targets and therefore potentially of lesser value in informing / supporting crime prevention efforts. Thus, the final model strived to achieve a balance between these two elements.

Table 4.3 outlines the goodness-of-fit values for the criteria used to indicate the *relative* goodness of fit between model solutions. When considering the goodness-of-fit criteria across model solutions, the lower the value of each criterion, the closer fitting a model is to the data. As can be seen from the table, the goodness of fit criterion largely decrease as the number of classes is increased. The exception to this is for the Chi-squared value, which increased following the transition from 2 to 3 classes, 3 to 4 classes, and 5 to 6 classes. The 5-class model solution was chosen as the final model solution over other class solutions. When moving towards a 6-class model solution, it was found that the decreases in criterion values were only slight, particularly when compared with the changes between other class solutions; furthermore, the Chi-squared goodness of fit increased substantially for the 6-class solution. Furthermore, increasing the number of classes from this point appeared to dilute any apparent distinction across classes, and was associated with a potential loss of class identity. Thus, for these reasons, as well as in the interests of parsimony, a 5-class model solution was chosen.

Table 4.3. Goodness of fit criteria for offences across model solutions.

<i># class solution</i>	<i>df</i>	<i>Max. log-likelih'd.</i>	<i>Akaike Info. Criterion</i>	<i>Bayesian Info. Criterion</i>	<i>Likelihood ratio / deviance statistic</i>	<i>Chi-square goodness of fit</i>
1-class	1,068	-11,070.5	22,178.99	22,273.82	7,812.893	585,359.9
2-class	1,048	-10,659.31	21,396.61	21,591.27	6,990.515	338,327.3
3-class	1,028	-10,459.67	21,037.33	21,331.81	6,591.236	363,028.2
4-class	1,008	-10,296.39	20,750.77	21,145.07	6,264.674	906,788.7
5-class	988	-10,140.02	20,478.05	20,972.17	5,951.95	493,044.2
6-class	968	-10,014.55	20,267.09	20,861.04	5,700.996	877,354.6

The variables included in the final model are detailed in Table 4.4. As noted previously, an Information Criterion approach was used for the purposes of developing this model, and the specific methods used to establish the selection of variables for inclusion in the model are detailed in Chapter 3. The model variables chosen were also supported by literature in this field to help validate their inclusion in the model (as detailed in Table 4.4).

Table 4.4. Model variables included in the final model.

<i>Model Variable</i>	<i>Supporting Evidence</i>
<i>Semi-detached</i>	Nee and Taylor, 1988.
<i>Insecure</i>	Montoya <i>et al.</i> , 2014; West Yorkshire Police, 2013.
<i>Occupied</i>	Moreto, 2010; Wright <i>et al.</i> , 1995.
<i>Unoccupied</i>	Coupe and Blake, 2006; Nee and Meenaghan, 2006.
<i>Euro-profile locks</i>	Brooke, 2013.
<i>Tools used</i>	Tonkin <i>et al.</i> , 2012.
<i>Part of property smashed</i>	Palmer <i>et al.</i> , 2002.
<i>Under two miles travelled</i>	Snook, 2004; Wiles and Costello, 2000.
<i>Offender(s) aged 15-19</i>	Snook, 2004.
<i>Offender(s) aged 20-29</i>	Snook, 2004.
<i>Rear Door Exit</i>	Palmer <i>et al.</i> , 2002.
<i>Rear Door Entry</i>	Palmer <i>et al.</i> , 2002.
<i>Terraced</i>	Bernasco, 2006; Taylor and Nee, 1988.
<i>Under a mile travelled</i>	Snook, 2004; Wiles and Costello, 2000.
<i>Offender(s) aged 30+</i>	Snook, 2004.
<i>Computer(s) taken</i>	Wellsmith and Burrell, 2005.
<i>Front Door Exit</i>	Palmer <i>et al.</i> , 2002.
<i>Front Door Entry</i>	Palmer <i>et al.</i> , 2002.
<i>Multiple offenders</i>	Bernasco, 2006.

4.4.2. Latent Class Analysis Results: Understanding Model Classes

Details of the variable memberships across each of the five classes are provided in Table 4.5. This table illustrates the proportionate membership of each variable in each of the different classes; that is, the extent to which each of the variables featured within each class. As can be seen, some variables have absolute membership / exclusion within a class (a score of 1), however for the majority of variables, their level of membership tended to fluctuate, dependent on their class grouping. Note that the values given for each variable are not split across classes; rather, they indicate the extent of each variable (based on probabilistic

membership) to each class. Therefore, the value of a given variable within a specific class is not necessarily related to the value of the same variable in a different class; therefore, it may be the case that some of these variables have substantial (or lesser) presence in more than one class. As can be observed in Table 4.5, there appear to be clear differences in levels of membership for different variables across classes, demonstrating clear distinctions in the nature of offences falling within each class. This is discussed in further detail within the following section.

Table 4.5. Details of 5-class model solution: Probabilistic Variable Membership.

Model Variable	Class 1	Class 2	Class 3	Class 4	Class 5
<i>Semi-detached</i>	0.374	0.495	0.2685	0.1684	0.3637
<i>Insecure</i>	0.2585	0.0853	0.2897	0.3668	0.1864
<i>Occupied</i>	0.6533	0.0051	0.4066	0.695	0.4264
<i>Unoccupied</i>	0.0158	1	0.2529	0.1747	0.3401
<i>Euro-profile locks</i>	0.2529	0.171	0.0466	0.1064	0.2502
<i>Tools used</i>	0.2229	0.2133	0.1116	0.0824	0.1814
<i>Part of property smashed</i>	0.146	0.4321	0.1862	0.0642	0.1971
<i>Under two miles travelled</i>	0	0.0543	1	0.3877	1
<i>Offender(s) aged 15-19</i>	0.2387	0.1764	0	0.3262	1
<i>Offender(s) aged 20-29</i>	0.1485	0.1226	0.6557	0.1943	0
<i>Rear Door Exit</i>	0.2676	0.4396	0.1638	0	0.3022
<i>Rear Door Entry</i>	0.3657	0.4975	0.2382	0	0.3704
<i>Terraced</i>	0.1068	0.2251	0.2676	0.3458	0.219
<i>Under a mile travelled</i>	0	0	0.3409	0.0749	0.26
<i>Offender(s) aged 30+</i>	0.0462	0.0542	0.2771	0.1303	0
<i>Computer(s) taken</i>	0.3705	0.4782	0.2441	0.3674	0.3422
<i>Front Door Exit</i>	0.0223	0.0488	0.0372	0.8253	0.0247
<i>Front Door Entry</i>	0.0417	0.0505	0.1041	0.8344	0.061
<i>Multiple offenders</i>	0.2038	0.2237	0.4686	0.2196	0.3458

4.4.2.1. Understanding the features and locations of offences across the five-classes

This chapter will now focus on the features of and locations of offences within each of these classes. This analysis will be used to help inform our understanding

of the features characteristic of offences within these classes, thereby enhancing our knowledge of the ways in which burglary offences may differ. This will be achieved through two main approaches. The first of which will be to profile the extent of features within each of the different classes, to help provide an overall snapshot of offences within a particular class. The features of each MO class were also identified and represented through radar graphs, as initially presented in Figure 4.10 (individual classes will be analysed shortly). Radar graphs were chosen to illustrate each class profile because these allow for the clear visualisation of features across classes. As can be observed, there appears to be a similarity between the classes across a number of variables; e.g. occupied property, rear door entry / exit. However, there were also some more apparent distinctions; for example, in terms of unoccupied properties, offender ages, and means of entry and exit. Each of the devised classes will be explored further in turn, focusing specifically on the features and offence locations for each class. The second approach will be to utilise the 2011 UK Census Output Area Classifications (OAC) to help give some context as to the nature of areas in which offences in each class fall. For purposes of reference, Figure 4.9 illustrates the OAC supergroups across the city of Leeds. To show that there is a concentration of offence types within specific OAC, Table 4.6 illustrates the number and proportion of offences in each class that were committed within each of the eight OAC supergroup areas. In the table, the top two OAC classes for each MO class have been highlighted. While the dominant OAC class for most MOs is Multicultural Metropolitans, there is considerable discrimination in the second preferred target, which still represent considerable percentages of offences. Class 1 MOs go as far as targeting Urbanities above and beyond Multicultural Metropolitans. Given this, investigation of the environmental drivers connected with each MO seems justified.

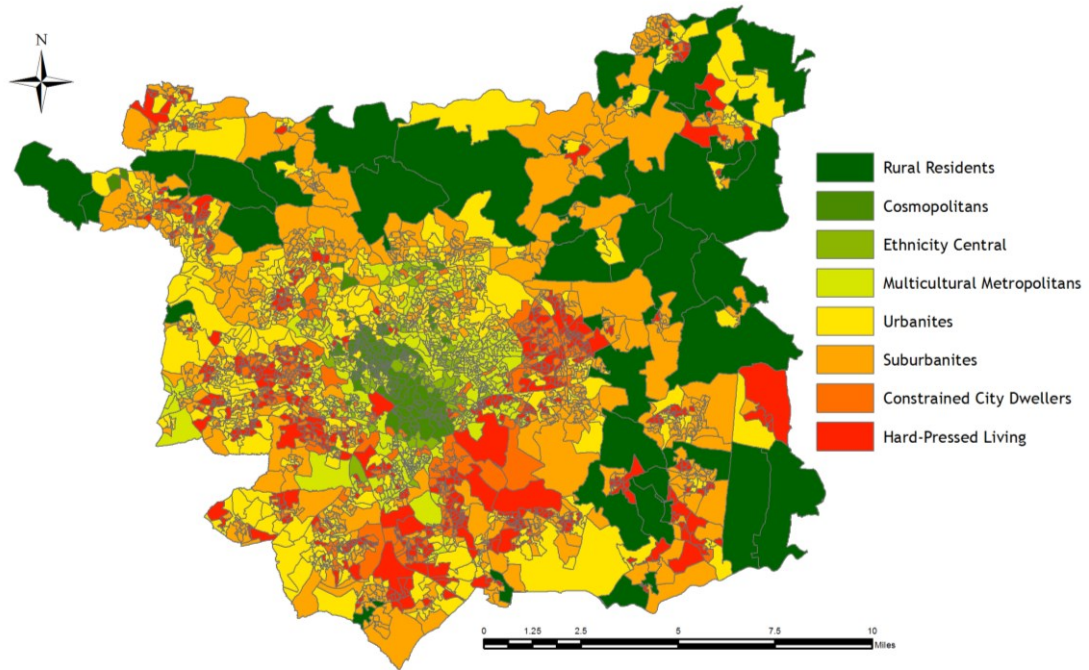


Figure 4.9. 2011 Output Area Classifications for Leeds.

Table 4.6. Membership of class solutions by 2011 Output Area Classifications. As shall be seen, Class 1 is denominated “Sneak Offences”; Class 2 “Smash and Grab”; Class 3 “Local Youthful Opportunism”; Class 4 “Confident Opportunism”; and Class 5 “Local Juvenile Poverty Predation.” Bold, un-italicised text are the two top OAC classes for each offence class.

	% of Class 1 Offences (n)	% of Class 2 Offences (n)	% of Class 3 Offences (n)	% of Class 4 Offences (n)	% of Class 5 Offences (n)	Total (% of all offences)
<i>Rural Residents</i>	0.5% (2)	0	0	0.50% (1)	0	3 (0.28%)
<i>Cosmopolitans</i>	10.17% (41)	14.97% (22)	10.53% (14)	20.10% (40)	7.35% (15)	132 (12.15%)
<i>Ethnicity Central</i>	3.23% (13)	4.76% (7)	6.02% (8)	5.53% (11)	7.35% (15)	54 (4.97%)
<i>Multicultural Metropolitan</i>	19.60% (79)	23.13% (34)	42.11% (56)	30.15% (60)	31.37% (64)	293 (26.98%)
<i>Urbanites</i>	20.60% (83)	19.73% (29)	12.03% (16)	17.09% (34)	11.27% (23)	185 (17.03%)

<i>Suburbanites</i>	22.83% (92)	12.24% (18)	7.52% (10)	7.04% (14)	9.80% (20)	154 (14.18)
<i>Constrained City Dwellers</i>	8.93% (36)	10.89% (16)	12.03% (16)	10.55% (21)	15.20% (31)	120 (11.05%)
<i>Hard-Pressed Living</i>	14.14% (57)	14.29% (21)	9.77% (13)	9.05% (18)	17.65% (36)	145 (13.35%)
<i>Total (% of all offences)</i>	403 (37.11%)	147 (13.54%)	133 (12.25%)	199 (18.32%)	204 (18.78%)	1086

The concentration of crimes within Multicultural Metropolitans labelled areas (a quarter of the total offences in the sample) maps to indicators that are likely to be associated with low social cohesion and therefore low guardianship. According to the 2011 Output Area Classification ‘pen portraits’, individuals residing in these areas tended to live in the transitional areas between urban zones and suburban residential housing (Office for National Statistics, 2015c). This resonates all the way back to the Concentric Zone Theory put forward by sociologist Ernest Burgess in 1925, where increased immigration and emigration led to a lack of a stable community, facilitating a lack of social controls and thereby providing greater opportunities for crime (Burgess, 1925). According to the Office for National Statistics (2015c) pen portrait, individuals living in these areas are likely to live in both private and social rented housing, with a high ethnic diversity, both of which may result in a potential lack of cohesion within communities. This may subsequently create a weaker sense of guardianship within such neighbourhoods, leaving them more vulnerable to burglary offences (Wedlock, 2006). Maps of the distributions of offences within each MO class are given below in the discussion for each MO class.

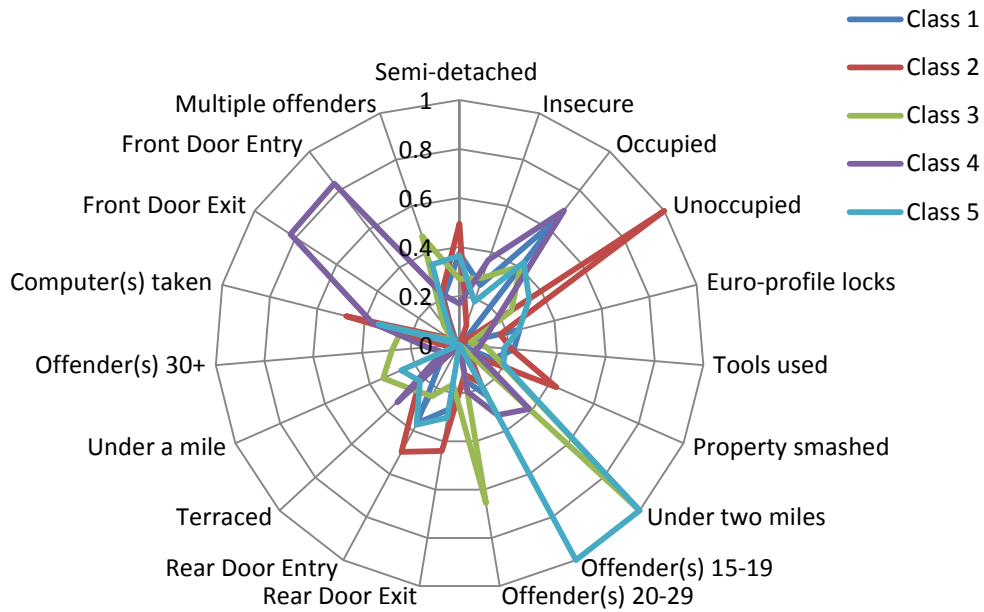


Figure 4.10. Profiles of 5-class LCA Model solution.

Figure 4.11 illustrates the features for offences in class 1. Two thirds of the offences that fell into this category were committed in houses that were occupied, with a third being insecure, suggesting potential ‘sneak-in’ offences. This is supported by the fact that approximately 40% of offences in this category were accessed and exited through the rear. Computers were stolen in approximately 40% of offences in this category, with approximately 40% of houses targeted being semi-detached. Given these features, offences within this class will be referred to as “Sneak Offences.” As is illustrated in Figure 4.12, offences in this class took place across the city, particularly in central, western and southern areas. Table 4.6 indicates that these offences were largely concentrated in the ‘Suburbanites’ (23%), ‘Urbanites’ (21%) and ‘Multicultural Metropolitans’ (20%) areas, indicating that offences in this class were largely concentrated in suburban and urban areas, in addition to transitional urban areas. Note that this is the only class where Multicultural Metropolitans do not lead the OACs targeted.

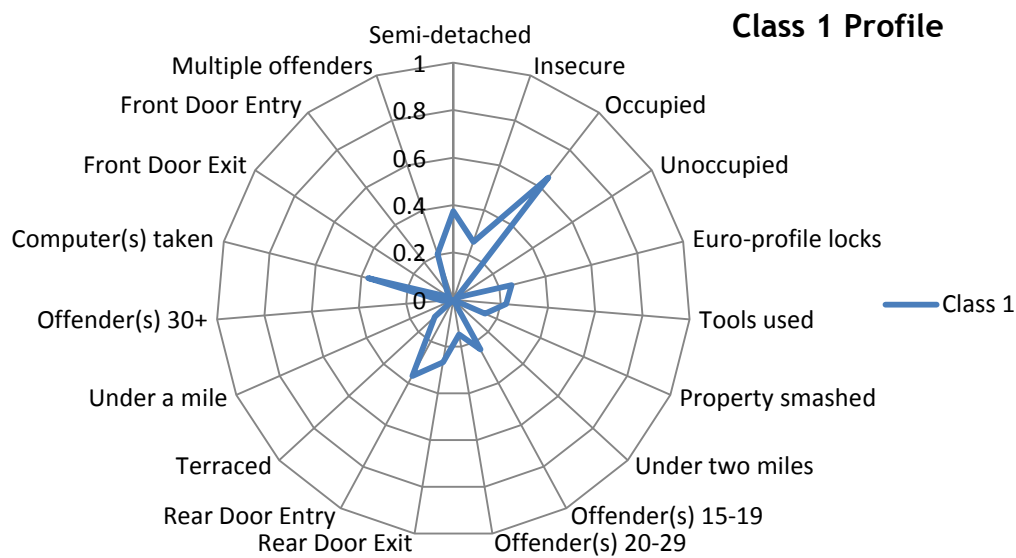


Figure 4.11. Profile of the Class 1 classification.

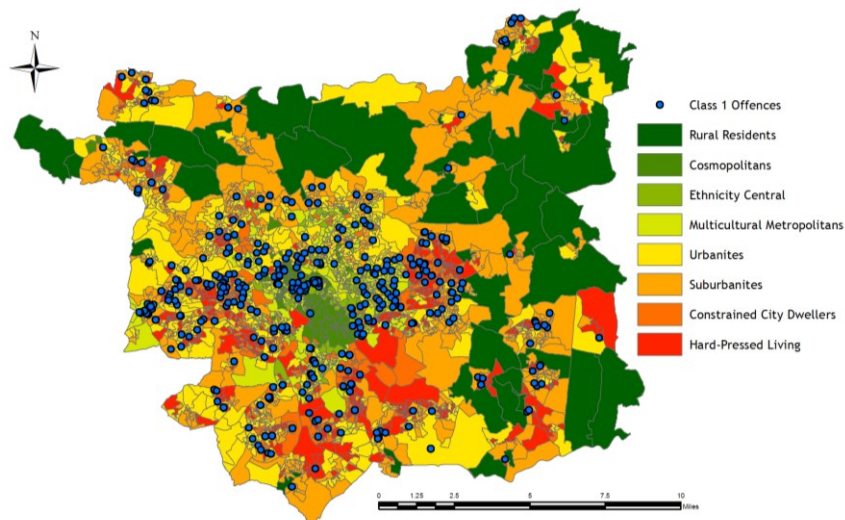


Figure 4.12. Class 1 offences against the 2011 Leeds OAC.

Turning to the features of offences in the Class 2 grouping, approximately half of the offences that fell within this category targeted semi-detached properties, and involved entry and exit through the rear of the property. Properties targeted in this group were predominantly unoccupied. Force was used as a means of securing access to the property in nearly half of offences in this group, and computers were taken in approximately half of the offences for this grouping. The initial profile of offences in this class suggest a ‘smash and grab’

type MO (and will be hereonin referred to as “Smash and Grab” offences), at the rear of unoccupied properties, where offenders may use force without fear of observation from neighbouring properties.

Table 4.6 indicates that offences in this class were largely targeted in the ‘Multicultural Metropolitans’ (23%), ‘Urbanites’ (20%) and ‘Cosmopolitans’ (15%) areas. As can be seen in Figure 4.14, offences appeared to be targeted in both central and outer areas of Leeds.

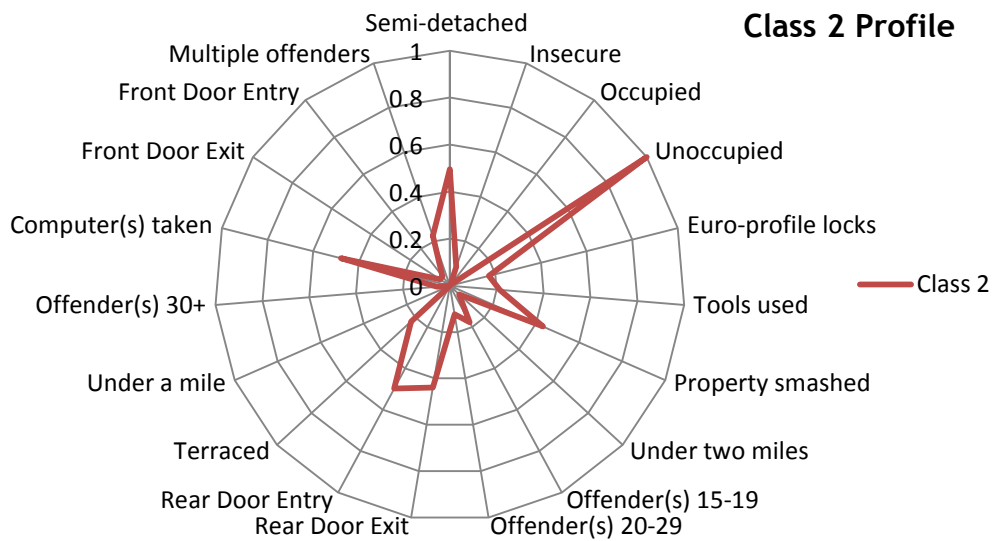


Figure 4.13. Profile of the Class 2 classification.

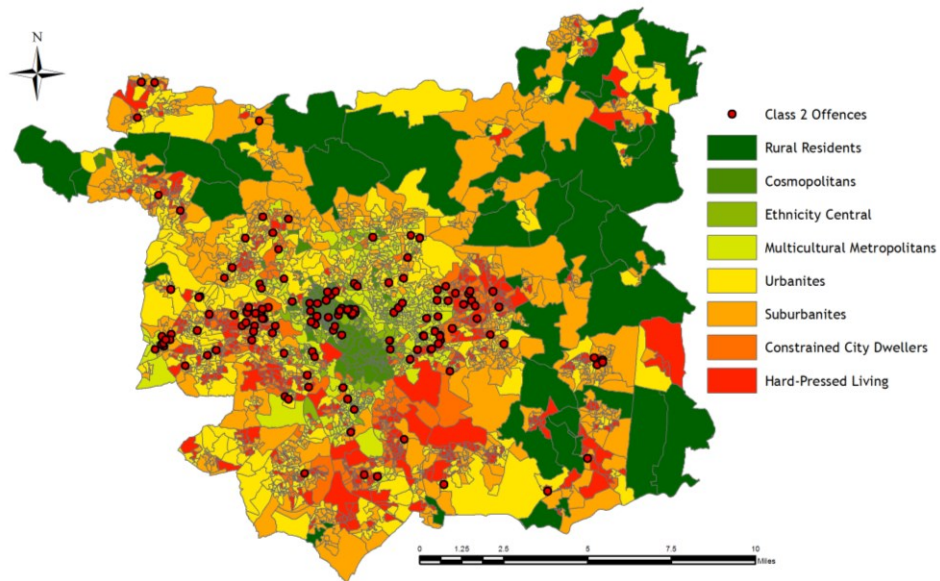


Figure 4.14. Class 2 offences against the 2011 Leeds OAC.

Figure 4.15 illustrates the profile of offences in the Class 3 grouping. Offences that fell into this category were predominantly committed by offenders in their 20's, who were relatively local to targeted properties, travelling 2 miles or less to their offences. Half of offences within this category were committed by more than one perpetrator, with approximately 40% of properties being occupied at the time of the offence, with a third of properties in this category being 'insecure'. This again suggests a potential element of 'sneak-in' offences in this category. Offences falling within this class have been identified as; "Local Youthful Opportunism." With regards to the OAC classifications, 42% of offences in this category took place in the 'Multicultural Metropolitans' supergroup area. As can be seen in Figure 4.16, these offences appear largely to occur outside the centre of Leeds, moving towards residential areas. This is supported by the OAC pen portraits (Office for National Statistics, 2015c), which indicate that individuals in this category were more likely to reside in terraced housing in transitional areas between suburbia and urban centres.

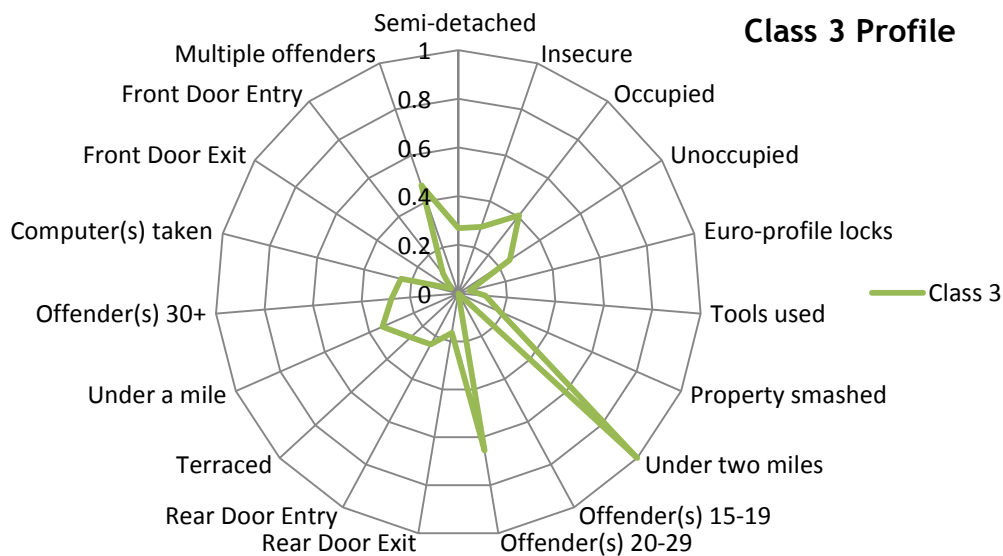


Figure 4.15. Profile of the Class 3 classification.

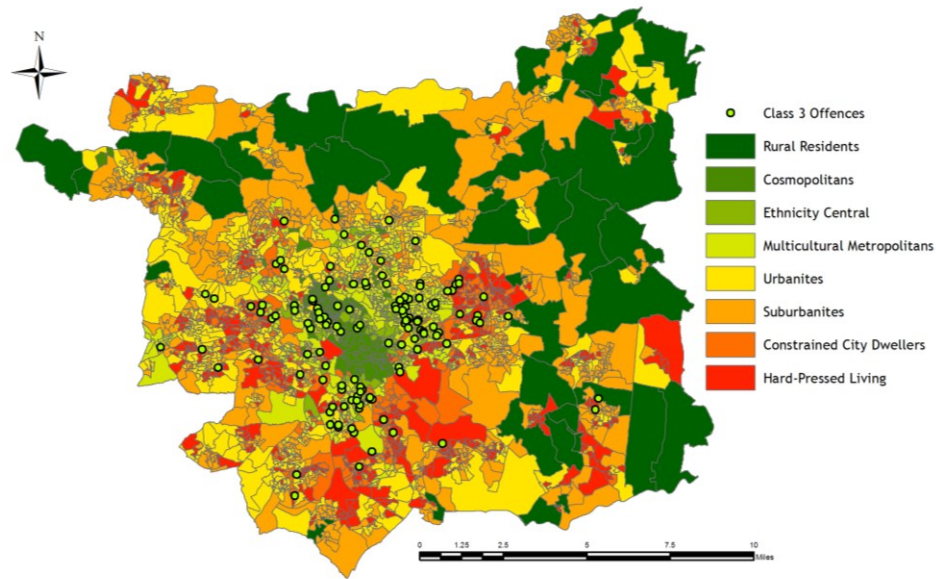


Figure 4.16. Class 3 offences against the 2011 Leeds OAC.

Figure 4.17 illustrates the profile of offences in Class 4. Offences that took place in this category were predominantly accessed and exited through the front door, with over two thirds of properties in this group occupied. Offenders travelled less than 2 miles to offences in this category for approximately 40% of offences, and similarly properties were insecure, and computers were taken in 40% of offences in this grouping. Again this may suggest the presence of ‘sneak-in’ offences. Offences within this class have been identified as “Confident Opportunism.”

When considering Table 4.6, offences in this class predominantly targeted the supergroups ‘Multicultural Metropolitans’ (30% of offences) and ‘Cosmopolitans’ (20% of offences). This may suggest that offences in this category targeted student populations; as illustrated in Figure 4.18 a number of offences in this class occurred in student areas. Furthermore, the feature of computers being taken and properties being insecure in 40% of offences may suggest the targeting of student properties; for example, with previous research highlighting the naivety and subsequently vulnerability of students to burglary (Nicholas *et al.*, 2007; Tilley *et al.*, 1999; Fisher *et al.*, 1997).

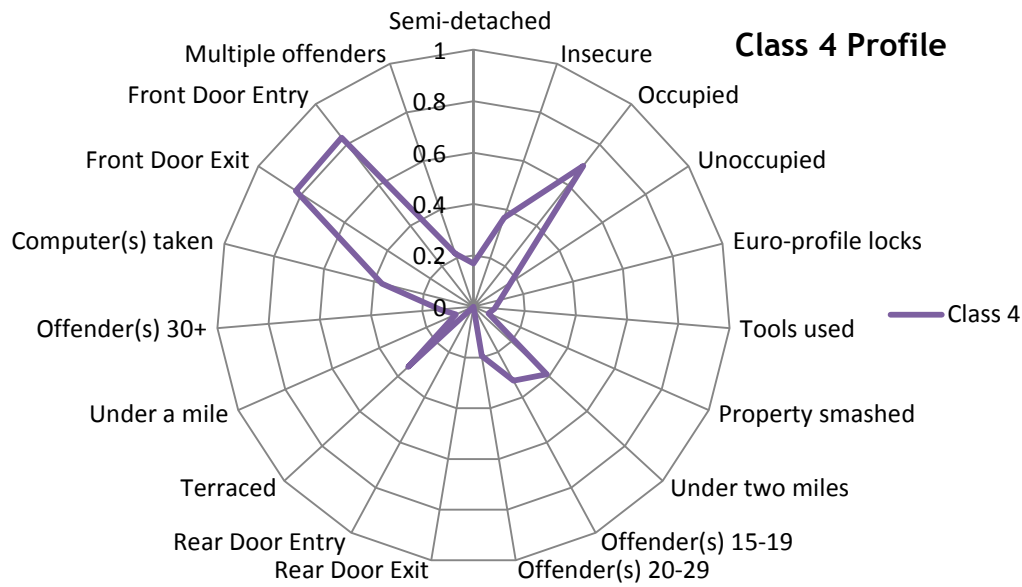


Figure 4.17. Profile of the Class 4 classification.

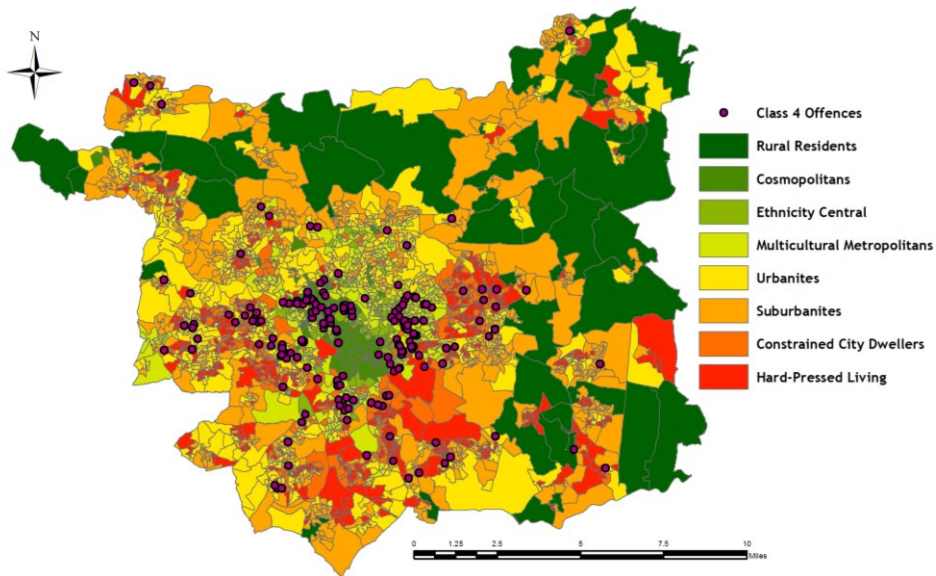


Figure 4.18. Class 4 offences against the 2011 Leeds OAC.

Finally, Figure 4.19 illustrates the features of offences falling within Class 5. Offences that fell within this classification were predominantly committed by offenders between the ages of 15-19, with a third of these offences committed by more than one offender. Offenders committing offences in this category appeared to be local offenders, travelling no further than 2 miles to their offences. Offences falling within this class have been identified as; “Local Juvenile Poverty

Predation.” Approximately 40% of offences in this category targeted properties that were occupied, with a third of properties unoccupied. As can be seen from Table 4.6, offences in this category were largely targeted in the ‘Multicultural Metropolitans’ supergroup area (31% of offences), in addition to ‘Constrained City Dwellers’ (15% of offences) and ‘Hard-Pressed Living’ (18% of offences). This suggests that such offences were targeted in areas with greater levels of deprivation and (potentially) lesser levels of security over more affluent areas (Audit Commission, 2011).

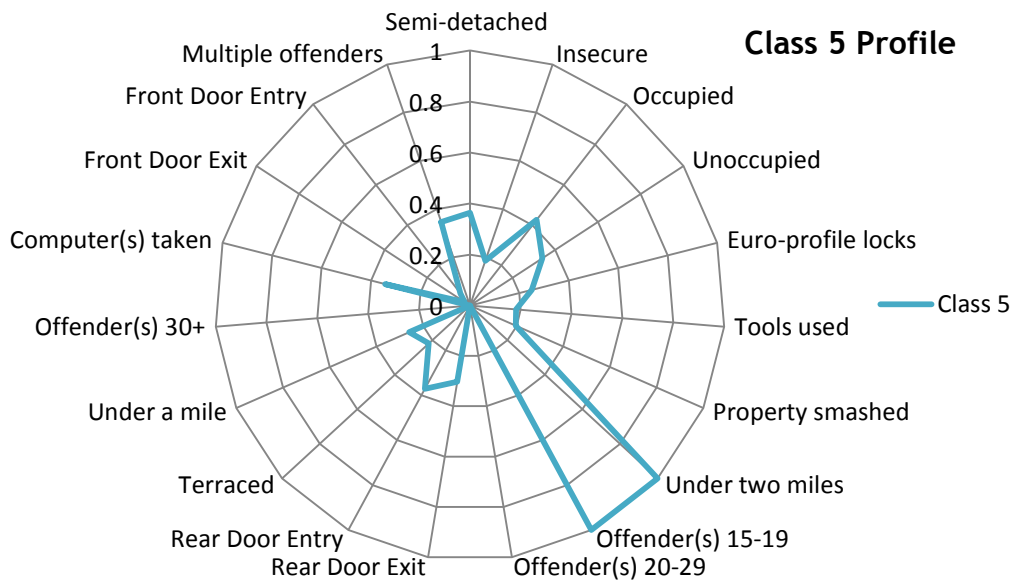


Figure 4.19. Profile of the Class 5 classification.

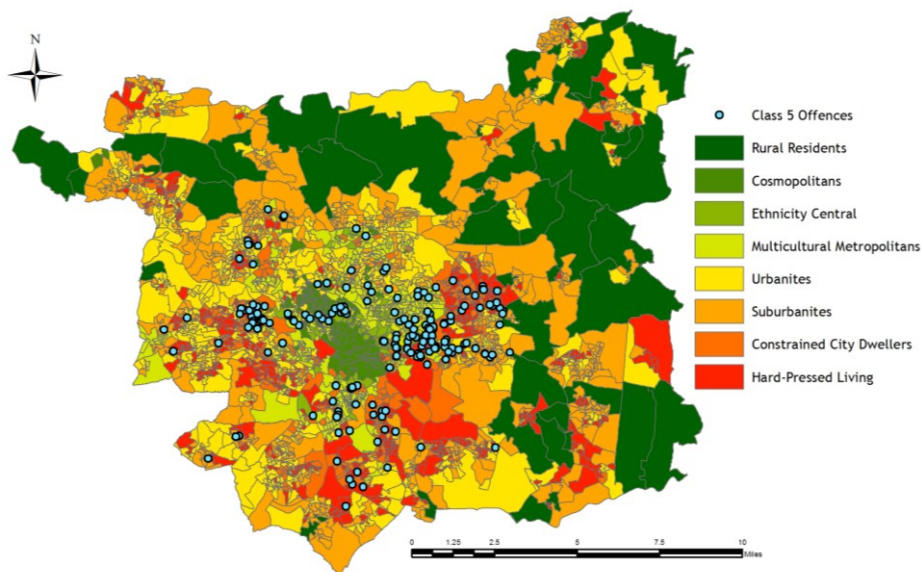


Figure 4.20. Class 5 offences against the 2011 Leeds OAC.

As has been seen, each class may display characteristics / variables which can be found in multiple classes, and, indeed, looking at individual offences, they may fall into specific categories only by some degree with regards to these variables. Nevertheless, there are some clear distinctions between groupings; for example, in terms of the age-range of offenders, distance travelled to offences, and the occupancy status of targeted properties. Furthermore, although these profiles included some information on offenders; for example, with regards to their age-banding and distance travelled, the majority of information used to form these categories was based upon offence-related data. Therefore, the categories drawn from the data were largely offence- rather than offender-oriented. This is an area that will benefit from specific exploration, and will be the focus of Chapters 6 and 7.

4.4.2.2. Summary of the Model Classes

The classes identified by the LCA method appear to be diverse. It appears that the algorithm has been able to identify different classes for the offences in the sample (as can be observed in Table 4.5, which details the membership of each of the variables across the different classes of offences). This is extremely valuable in helping to determine patterns in target selection features chosen and how these may differ across offences. Table 4.7 summarises the main features of offences within each MO class.

Table 4.7. Main features of offences within the five MO classes.

MO Class	Main Class Features
Class 1: “Sneak Offences”	<ul style="list-style-type: none"> ➤ Two-thirds of offences in occupied properties. ➤ A third of properties insecure. ➤ ~40% of offences accessed / exited through the rear. ➤ Computers stolen in ~40% of offences. ➤ ~40% of houses targeted were semi-detached. ➤ Offences largely concentrated in the ‘Suburbanites’ (23%), ‘Urbanites’ (21%) and ‘Multicultural Metropolitans’ (20%) areas.
Class 2: “Smash and Grab”	<ul style="list-style-type: none"> ➤ ~Half of offences targeted semi-detached properties, with entry / exit through the rear. ➤ Properties predominantly unoccupied.

	<ul style="list-style-type: none"> ➤ Force used as means of access in ~50% of offences. ➤ Computers taken in ~50% of offences. ➤ Offences largely targeted 'Multicultural Metropolitans' (23%), 'Urbanites' (20%) and 'Cosmopolitans' (15%) areas.
<p>Class 3: "Local Youthful Opportunism"</p>	<ul style="list-style-type: none"> ➤ Committed by offenders in their 20's. ➤ Offenders travelled 2 miles or less to their offences. ➤ Half of offences committed by more than one offender. ➤ ~40% of properties occupied at time of offence. ➤ A third of properties were insecure. ➤ 42% of offences in this category concentrated in the 'Multicultural Metropolitans' area.
<p>Class 4: "Confident Opportunism"</p>	<ul style="list-style-type: none"> ➤ Predominantly accessed / exited through the front door. ➤ Over two thirds of properties occupied. ➤ Offenders travelled < 2 miles in ~40% of offences ➤ Properties insecure, and computers taken in ~40% of offences. ➤ Offences predominantly targeted 'Multicultural Metropolitan' (30%) and 'Cosmopolitan' (20%) areas.
<p>Class 5: "Local Juvenile Poverty Predation"</p>	<ul style="list-style-type: none"> ➤ Predominantly committed by offenders aged 15-19. ➤ Local offenders, travelling no further than 2 miles to their offences. ➤ ~40% of offences targeted occupied properties; a third unoccupied properties. ➤ Third of offences committed by more than one offender. ➤ Largely targeted 'Multicultural Metropolitans' (31%), 'Constrained City Dwellers' (15%), and 'Hard-Pressed Living' (18%) areas.

4.5. Chapter Summary

This chapter has set out to develop understanding of the nature of burglary targets within Leeds, to help identify the features of properties that may attract offenders, as well as helping to uncover information relating to offenders' MOs. Through this analysis a number of findings have emerged that have helped to

uncover some of the broader themes across burglary offences within Leeds. For example, in considering journeys to crime taken, there appears to be a clear distance decay effect, with a greater number of offenders committing offences over shorter distances, with a decline over greater distances. The average distance between offenders' offences also followed a distance decay effect, with the greatest number of offenders travelling on average less than a mile between offences. The findings here are broadly in line with prior theory and empirical evidence that suggested offenders tended to travel shorter distances to crime (Wiles and Costello, 2000). As touched on earlier in this chapter, this will be particularly important in terms of supporting crime prevention efforts by identifying areas that may be at increased risk of burglary (given an assumption of knowledge about an offender's home location). This information may also be used to help support the disruption of criminal activity, in addition to interventions such as enhancing public awareness on property security.

The analysis of the demographic distances between home and offence locations found that areas targeted by offenders contained a greater proportion of individuals in full-time, 'professional' occupations, as well as a greater proportion of people who were middle-aged, UK-born, and white, with level 4 and above qualifications. Furthermore, this analysis indicated that offenders travelled to offences from areas where there was a greater proportion of individuals of mixed ethnicity, and of Pakistani, Bangladeshi and Black ethnicities. Offenders also came from areas with a greater proportion of those who were unemployed, in addition to those in terraced and both social and privately rented properties.

These findings are of importance in helping to enhance our understanding of distinctions between offender and victim home areas. Broadly speaking, the results touch on the concepts of affluence and deprivation, and begin to highlight possible differences in the relative wealth / deprivation between offender and victim home areas. These findings will be explored further in the following chapter, which will seek to develop a greater understanding of the demographic features of areas targeted by offenders, along with the qualitative chapters, where these issues will be explored with offenders. Chapter 8 will then outline the most significant insights that the combined use of the quantitative and qualitative analysis has uncovered.

The results of the Latent Class Analysis demonstrated some variable homogeneity across emergent groups, which comprised of largely offence- rather than offender-oriented variables. There were also important distinctions found

between groups across certain variables, including occupancy status, distance travelled to offence, the age of offenders and the means of access to properties. Based on the combination of features identified, some initial inferences and assumptions can be made about these offence groupings, for example; some clearly indicating 'smash and grab' or 'sneak-in' type offences. These have been inferred from the data to try and understand more about the behavioural patterns and target selection MO of offenders. The classes, and their spatial distribution, can be used to help support crime prevention efforts, disrupt criminal activity, and predict areas / property types at particular risk of being targeted by different types of MO.

This thesis will now seek to build on the results thus far, to further explore the prevalence and nature of socio-demographic features for the areas in which these offence groupings take place, thereby helping to understand the socio-demographic variables associated with these offence categories.

Chapter 5: Understanding the Environment of Burglary

5.1. Introduction

Chapter 4 involved the development of a Latent Class model to draw out the major categories of *modus operandi* (MO) present in the police offence data. The model identified five offence MO categories: Class 1 “Sneak Offences”; Class 2 “Smash and Grab”; Class 3 “Local Youthful Opportunism”; Class 4 “Confident Opportunism”; and Class 5 “Local Juvenile Poverty Predation.” An exploratory piece of analysis, aimed at better understanding whether certain socio-demographic groups are associated with specific MOs, examined the 2011 UK Census Output Area Classification (OAC) group for each offence and compared this with the offence’s MO group. It emerged through the results that there was some variation with regards to the OAC groupings in which these offences fell across different MO categories. This may have been as a result of the *nature* of offences within the MO categories. The most popular OAC area in which offences fell was ‘Multicultural Metropolitans’, which accounted for over a quarter of the total offences in the sample. This suggests that features such as low social cohesion and low guardianship (as allocated to this OAC grouping) enhanced the risk of offending. This exploratory analysis highlighted the need for a much more comprehensive examination of the socio-demographic contextual environment in which burglaries take place. Therefore, this chapter will begin to identify the *specific socio-demographic variables* associated with each of the five offence MOs. Specifically, the chapter makes two valuable modelling contributions:

- A model that identifies the strength of association between census variables and MO categories (for understanding the socio-demographic features associated with individual MOs);
- A model that explores the relationships between the underlying socio-demographic variables and the actual *rates* of crimes (as opposed to the balance of different MOs).

Combined, these two modelling perspectives will be used specifically to support the development of the derived MO profiles from the previous chapter, and for the purposes of developing targeted crime prevention advice.

5.2. Model Development

As has been outlined, the premise of this chapter is to develop a greater understanding of the socio-demographic context in which burglary offences take place. To achieve this requires the completion of two specific modelling approaches.

The first of these is a Multinomial Logistic Regression, completed across all offence MOs, with class number as the dependent variable, to help understand the socio-demographic features associated with individual MOs and how the balance of different MOs is associated with different socio-demographic features. Whilst the justification for the use of this method in this context and details of the methods used have been provided in Chapter 3, for purposes of clarity a brief overview of these areas will be given here. This analysis was derived based on variables taken from the 2011 UK Census (see Chapter 3). However, prior to undertaking this analysis, a 'stepwise' procedure was employed to establish the specific variables to use within the Multinomial Logistic Regression analysis. Following the stepwise procedure run for both the Multinomial Logistic Regression and Multiple Linear Regression analyses, both analyses were then re-run using the variables identified through the stepwise procedure, to allow for bootstrapping (internal validation) of these models. This is discussed in further detail later in the chapter.

The second modelling procedure is Multiple Linear Regression, used in the second half of this chapter to examine the relationship between socio-demographic variables and the *rates* of the specific MO offence types (rather than their balance). Throughout, it is important to note that *environmental* socio-demographic variables are used – that is, following the tradition of Environmental Criminology, the values are associated with the areas where the crimes are committed, rather than the offenders, or even the victims, as such.

5.2.1. Establishing the variables to use for the model: Stepwise Multinomial Logistic Regression

Prior to undertaking a Multinomial Logistic Regression, it is important to establish the variables that will be used within the analysis. Consequently, a stepwise

Multinomial Logistic Regression model was run across the offence data for all five MO classes, to identify the combination of variables to use in the final model. Because Multinomial Logistic Regression requires a reference category; that is, one to take as a baseline against which other values are relative, MO Class 1 was used as the initial reference category for this analysis. The use of reference categories in Multinomial Logistic Regression allow for the comparison *between* values in one category over those of another. However, the choice of one reference category over another did not impact on the variables selected in the resulting stepwise model, because these were based upon the *full* offence dataset (it simply shaped the nature of values shown according to the reference categories specified). To verify this, four subsequent stepwise Multinomial Logistic Regression models were also conducted with each of the other remaining MO classes as the reference category. Each of these models resulted in the same findings and the same variables selected. Specifically, these analyses resulted in the selection of nine variables to take forward to the Multinomial Logistic Regression (detailed in the subsequent tables).

5.2.2. Understanding Environmental Features associated with individual MOs

The results of the stepwise Multinomial Logistic Regression above identified the combination of OAC variables to take forward to the subsequent regression model. As outlined, Multinomial Logistic Regression requires a reference category, which allows for the comparison between values in one category compared with those of another. Different iterations of these models were subsequently conducted to observe each individual MO as the reference category (with offence MO used as the dependent variable). The analysis and following model tables identify the values of each variable within each MO category relative to a single MO group as the 'reference' category. An important point of note is that the results don't provide an indication of the true extent of specific variables in an absolute sense; rather, it gives the values *relative* to offences in other MO groupings.

5.2.3. Process of Model Validation

Before creating the 'MO-Environment' model, the most appropriate approach to estimate standard errors in the model must also be selected. One of the key means of achieving this is through the re-sampling of the original dataset (Molinaro *et al.*, 2005), as a means of internal validation. The range of approaches used for the purposes of such validation have been discussed in Chapter 3

(methodology). It was decided that, for the purpose of both the Multinomial Logistic Regression and Multiple Linear Regression (see second half of chapter) models, the bootstrapping approach commanded a substantial advantage over alternative techniques. A total of 1,000 bootstrapping replication samples were carried out for both regression approaches. Note that these bootstrap samples were applied solely to the final Multinomial Logistic Regression and Multiple Linear Regression Models, rather than any initial stepwise models used to derive the variables selected for model inclusion.

The bootstrap approach was used in order to generate confidence intervals assigned to the observed log odds from this Multinomial Logistic Regression model. The bootstrapping approach involves drawing a specified number of 'resamples' from the dataset (therefore, cases may be selected once, more than once, or not at all), and then Multinomial Logistic Regression models are developed based on these resamples. Based on these subsequent models, bootstrap estimates of confidence intervals for the initial models are derived. Consequently, two significance levels are reported in the following results tables (see Table 1, below, as an example). One (denoted by '**') is for the model itself and another (denoted by '†') to illustrate whether the variable was significant under bootstrap sampling. These are based on the bootstrap confidence intervals from 1,000 bootstrap samples.

Within the main body of the tables are 'Odds ratios' and 'Log odds'. In the context of Logistic Regression, odds ratios tell us the extent to which the odds of an outcome occurring increase or decrease with a unit change in the associated independent variable(s). In the context here, this relates to the extent an offence for a specific MO is more or less likely compared with another MO class when there is a unit change in the explanatory variable. However, the use of odds ratios within modelling can be problematic because they can be disproportionate; for example, the relationship between two variables can be portrayed as either an odds ratio of 8.0 or a ratio of 0.125 (1/8) dependent on the direction taken; influencing model behaviour depending on which is utilised. One means of addressing this is to take a 'Log' of the odds ratio (known as 'log odds'). This function makes odds ratio values symmetric around zero, and therefore it is easier to use this as a basis for building Logistic Regression models.

The log odds of variables within the models derived here predominantly remained significant based on the bootstrap confidence intervals produced, indicating the robustness of the model. The tabulated results are also colour

coded: green means that the proportion of that variable is greater in the reference class (in Table 5.1, MO 1) compared with the other MO groups; red means that the proportion of that variable is lower in the reference class (here, MO 1), compared with the other MO groupings.

The tables below also comprise a number of ‘goodness of fit’ statistics. The chi-squared goodness of fit statistic (‘Model X^2 ’) is a measure of the difference between the predictive model comprising one or more predictors, and the observed data (or ‘null’ model). The log-likelihood is a measure of error, or unexplained variation within a subsequent model. This is based on a calculation where a user sums the probabilities associated with both predicted and observed outcomes. This statistic can be used to indicate the extent of unexplained information after a model has been fitted. The X^2 in the table relate to the Likelihood-ratio goodness-of-fit criteria, and indicates the effect that removing each one of the predictive variables from the model would have.

5.2.4. Resulting Models

Understanding Modus Operandi 1

The Log odds and Odds ratios for the resulting model variables for MO 1 relative to the other MO groupings are documented in Table 5.1.

Table 5.1. The features of MO 1 relative to the other MOs.

Independent Variable	X^2	Class 1 vs Class 2 Log odds (Odds ratio)	Class 1 vs Class 3 Log odds (Odds ratio)	Class 1 vs Class 4 Log odds (Odds ratio)	Class 1 vs Class 5 Log odds (Odds ratio)
Intercept	13.117*	.150	2.245**	.836	.862
Aged 25-44	15.710**	-2.849* (.058)	-4.333**†† (.013)	-.152 (.859)	1.212 (3.360)
Pakistani	10.651*	1.586 (4.882)	-2.726*† (.065)	-1.623 (.197)	.896 (2.450)
Arab or other Ethnic Groups	12.184*	-.355 (.701)	3.075 (21.646)	-1.181 (.307)	-12.301**†† (4.546E-6)
Semi-detached or bungalow	21.186**	-1.629 (.196)	-1.294 (.274)	3.435**†† (31.046)	1.209 (3.349)
Social renting	19.166**	1.144 (3.138)	-1.876 (.153)	-4.288**†† (.014)	1.704 (5.498)
Level 1 or 2 /	11.864*	4.718*†	-3.272	-1.501	-1.992

Apprenticeship		(111.952)	(.038)	(.223)	(.136)
2 plus cars or vans	75.871**	4.144*† (63.049)	10.216**†† (27326.776)	10.066**†† (23539.907)	13.645**†† (842852.335)
Mining quarry construction	15.365**	1.459 (4.303)	25.132**† (8.217E+10)	-9.259 (9.521E-5)	-10.372 (3.129E-5)
Health or Social Work	21.647**	3.732 (41.748)	-3.606 (.027)	-5.566 (.004)	-17.436**†† (2.678E-8)
-2 log likelihood	2655.431				
Model X ²	256.678				
df	36				

* $p < .05$ ** $p < .01$ (significance level)

† $p < .05$ †† $p < .01$ (significance under bootstrap sampling)

X² Likelihood ratio Chi-squared statistics = used as a measure of goodness of fit; indicates the extent removing the selected variable would have on the overall fit of the model.

Log-likelihood relates to the amount of variation that is unexplained in a model (the difference between the predicted and observed outcomes).

Model X² - The chi-squared goodness of fit statistic is a measure of the difference between the predictive model and observed data (or 'null' model).

Because the same model was run (comparing the same variables) but with each MO as the reference category in turn, the following tables display the model through a different 'lense', in each representing the different MOs as a comparative measure. As can be seen from Table 5.1, offences in MO 1 ("Sneak Offences") tended to occur in areas with a greater number of properties with two or more cars / vans than areas in which other MO offences took place. This appears to be the key feature in the table, suggesting a relative level of affluence for areas in which these MO offences took place over areas for other MO offences.

Looking to the table above and the Model X² value, this suggests that the overall model does not *fully* account for the variance observed in offences across MOs, and that other factors would need to be considered in order to explain and account for such variance. Notwithstanding this, as can be observed from the tables, there appear significant drops in model fit (X²) if any of the included variables were to be omitted from the model, indicating the importance of their inclusion within the model. The 'X²', 'Model X²' and '-2 log likelihood' values remained the same across the subsequent tables because (essentially) the same model was used.

Understanding Modus Operandi 2

The Log odds and Odds ratios for the resulting model variables for MO 2 relative to the other MO groupings are documented in Table 5.2.

Table 5.2. The features of MO 2 relative to the other MOs.

Independent Variable	X ²	Class 2 vs Class 1 Log odds (Odds ratio)	Class 2 vs Class 3 Log odds (Odds ratio)	Class 2 vs Class 4 Log odds (Odds ratio)	Class 2 vs Class 5 Log odds (Odds ratio)
Intercept	13.117*	-.150	2.095**	.686	.712
Aged 25-44	15.710**	2.849* (17.272)	-1.484 (.227)	2.698 (14.843)	4.061* [†] (58.026)
Pakistani	10.651*	-1.586 (.205)	-4.312* [†] (.013)	-3.209 (.040)	-.689 (.502)
Arab or other Ethnic Groups	12.184*	.355 (1.427)	3.430 (30.882)	-.825 (.438)	-11.946* [†] (6.486E-6)
Semi-detached or bungalow	21.186**	1.629 (5.098)	.334 (1.397)	5.064** ^{††} (158.278)	2.837* [†] (17.073)
Social renting	19.166**	-1.144 (.319)	-3.019 (.049)	-5.431** ^{††} (.004)	.561 (1.752)
Level 1 or 2 / Apprenticeship	11.864*	-4.718* [†] (.009)	-7.990** ^{††} (.000)	-6.219** ^{††} (.002)	-6.710** ^{††} (.001)
2 plus cars or vans	75.871**	-4.144* [†] (.016)	6.072* [†] (433.418)	5.923* [†] (373.356)	9.501** ^{††} (13368.110)
Mining quarry construction	15.365**	-1.459 (.232)	23.673* [†] (1.910E+10)	-10.719 (2.213E-5)	-11.832 (7.272E-6)
Health or Social Work	21.647**	-3.732 (.024)	-7.338 (.001)	-9.298 (9.163E-5)	-21.167** ^{††} (6.415E-10)
-2 log likelihood	2655.431				
Model X ²	256.678				
df	36				

* $p < .05$ ** $p < .01$ (significance level)

[†] $p < .05$ ^{††} $p < .01$ (significance under bootstrap sampling)

Offences in this MO (“Smash and Grab”) were more likely to be targeted in areas with higher rates of semi-detached properties compared with offences for MOs 4 and 5, and higher rates of those aged 25-44 compared with offences for MOs 1 and 5. Furthermore, offences in this MO were more likely to be targeted at areas with 2 plus cars or vans than in MO areas 3, 4 and 5, again suggesting a degree of relative affluence over areas in which other MO offences took place.

Understanding Modus Operandi 3

The Log odds and Odds ratios for the resulting model variables for MO 3 relative to the other MO groupings are documented in Table 5.3.

Table 5.3. The features of MO 3 relative to the other MOs.

Independent Variable	χ^2	Class 3 vs Class 1 Log odds (Odds ratio)	Class 3 vs Class 2 Log odds (Odds ratio)	Class 3 vs Class 4 Log odds (Odds ratio)	Class 3 vs Class 5 Log odds (Odds ratio)
Intercept	13.117*	-2.245**	-2.095**	-1.409*	-1.383
Aged 25-44	15.710**	4.333**†† (76.190)	1.484 (4.411)	4.182**† (65.478)	5.545**†† (255.967)
Pakistani	10.651*	2.726*† (15.279)	4.312*† (74.596)	1.104 (3.015)	3.623*† (37.440)
Arab or other Ethnic Groups	12.184*	-3.075 (.046)	-3.430 (.032)	-4.256 (.014)	-15.376**† (2.100E-7)
Semi-detached or bungalow	21.186**	1.294 (3.649)	-.334 (.716)	4.730**†† (113.282)	2.503 (12.219)
Social renting	19.166**	1.876 (6.525)	3.019 (20.475)	-2.412 (.090)	3.580* (35.873)
Level 1 or 2 / Apprenticeship	11.864*	3.272 (26.364)	7.990**†† (2951.474)	1.771 (5.875)	1.280 (3.598)
2 plus cars or vans	75.871**	-10.216**†† (3.659E-5)	-6.072*† (.002)	-.149 (.861)	3.429 (30.843)
Mining quarry construction	15.365**	-25.132**† (1.217E-11)	-23.673*† (5.236E-11)	-34.391**†† (1.159E-15)	-35.504**†† (3.808E-16)
Health or Social Work	21.647**	3.606 (36.829)	7.338 (1537.532)	-1.960 (.141)	-13.829*† (9.863E-7)
-2 log likelihood	2655.431				
Model χ^2	256.678				
df	36				

* $p < .05$ ** $p < .01$ (significance level)

† $p < .05$ †† $p < .01$ (significance under bootstrap sampling)

Table 5.3 illustrates that offences in this MO (“Local Youthful Opportunism”) tended to occur in areas with a greater proportion of those aged 25-44 relative to offences for MOs 1, 4 and 5. Furthermore, the areas in which MO 3 offences occurred comprised a larger proportion of those with Pakistani heritage than offences in MO categories 1, 2 and 5. Offences within this MO were also less

likely to occur in areas with greater proportions of those employed in the construction industry than for offences across the other MOs.

Understanding Modus Operandi 4

The Log odds and Odds ratios for the resulting model variables for MO 4 relative to the other MO groupings are documented in Table 5.4.

Table 5.4. The features of MO 4 relative to the other MOs.

Independent Variable	X ²	Class 4 vs Class 1 Log odds (Odds ratio)	Class 4 vs Class 2 Log odds (Odds ratio)	Class 4 vs Class 3 Log odds (Odds ratio)	Class 4 vs Class 5 Log odds (Odds ratio)
Intercept	13.117*	-.836	-.686	1.409*	.026
Aged 25-44	15.710**	.152 (1.164)	-2.698 (.067)	-4.182**† (.015)	1.363 (3.909)
Pakistani	10.651*	1.623 (5.068)	3.209 (24.743)	-1.104 (.332)	2.519 (12.418)
Arab or other Ethnic Groups	12.184*	1.181 (3.257)	.825 (2.283)	4.256 (70.502)	-11.120*† (1.481E-5)
Semi-detached or bungalow	21.186**	-3.435**†† (.032)	-5.064**†† (.006)	-4.730**†† (.009)	-2.227 (.108)
Social renting	19.166**	4.288**†† (72.795)	5.431**†† (228.417)	2.412 (11.156)	5.992**†† (400.202)
Level 1 or 2 / Apprenticeship	11.864*	1.501 (4.487)	6.219**†† (502.352)	-1.771 (.170)	-.490 (.612)
2 plus cars or vans	75.871**	-10.066**†† (4.248E-5)	-5.923*† (.003)	.149 (1.161)	3.578 (35.805)
Mining quarry construction	15.365**	9.259 (10502.628)	10.719 (45193.112)	34.391**†† (8.630E+14)	-1.113 (.329)
Health or Social Work	21.647**	5.566 (261.411)	9.298 (10913.393)	1.960 (7.098)	-11.870*† (7.000E-6)
-2 log likelihood	2655.431				
Model X ²	256.678				
df	36				

* $p < .05$ ** $p < .01$ (significance level)

† $p < .05$ †† $p < .01$ (significance under bootstrap sampling)

Offences for this MO (“Confident Opportunism”) tended to occur in locations with potentially greater levels of relative deprivation; for example, there appeared to be a greater proportion of those in social renting in this MO

than in areas for offence MOs 1, 2 and 5. Moreover, there appeared to be a lesser proportion of offences that took place in areas with 2 or plus cars than in the areas where MO 1 and 2 offences took place. There also appeared to be a lower proportion of offences in areas with semi-detached properties than in areas for offence MOs 1, 2 and 3.

Understanding Modus Operandi 5

The Log odds and Odds ratios for the resulting model variables for MO 5 relative to the other MO groupings are documented in Table 5.5.

Table 5.5. The features of MO 5 relative to the other MOs.

Independent Variable	X ²	Class 5 vs Class 1 Log odds (Odds ratio)	Class 5 vs Class 2 Log odds (Odds ratio)	Class 5 vs Class 3 Log odds (Odds ratio)	Class 5 vs Class 4 Log odds (Odds ratio)
Intercept	13.117*	-.862	-.712	1.383	-.026
Aged 25-44	15.710**	-1.212 (.298)	-4.061*† (.017)	-5.545**†† (.004)	-1.363 (.256)
Pakistani	10.651*	-.896 (.408)	.689 (1.992)	-3.623*† (.027)	-2.519 (.081)
Arab or other Ethnic Groups	12.184*	12.301**† (219961.424)	11.946*† (154175.691)	15.376**† (4761290.505)	11.120*† (67534.047)
Semi-detached or bungalow	21.186**	-1.209 (.299)	-2.837*† (.059)	-2.503*† (.082)	2.227 (9.271)
Social renting	19.166**	-1.704 (.182)	-.561 (.571)	-3.580* (.028)	-5.992**†† (.002)
Level 1 or 2 / Apprenticeship	11.864*	1.992 (7.327)	6.710**†† (820.228)	-1.280 (.278)	.490 (1.633)
2 plus cars or vans	75.871**	-13.645**†† (1.186E-6)	-9.501**†† (7.480E-5)	-3.429 (.032)	-3.578 (.028)
Mining quarry construction	15.365**	10.372 (31958.496)	11.832 (137518.330)	35.504**†† (2.626E+15)	1.113 (3.043)
Health or Social Work	21.647**	17.436**†† (37342284.59)	21.167**†† (1558967740)	13.829*† (1013941.395)	11.870*† (142849.041)
-2 log likelihood	2655.431				
Model X ²	256.678				
df	36				

* $p < .05$ ** $p < .01$ (significance level)

† $p < .05$ †† $p < .01$ (significance under bootstrap sampling)

Offences in this MO (“Local Juvenile Poverty Predation”) tended to occur in areas with a greater proportion of those from Arab or other ethnic backgrounds than for other MO offences, as well as taking place in areas with a greater proportion of those employed in health or social work than all other MOs. However, offences in this MO tended to occur in areas with a lower proportion of those with 2 plus cars than those of offences in MOs 1 and 2. Furthermore, offences for this MO also appeared to take place in areas with lower proportions of those in social renting compared with offences in MOs 3 and 4, as well as lower proportions of those aged 25-44, and semi-detached or bungalow properties than offences in MOs 2 and 3.

This chapter has so far set out to further understand the environmental features across the MOs identified in Chapter 4. In particular, the chapter has established significant associations between each MO and individual environmental features; a number of which complement the original descriptions for each MO. The model developed has also helped to identify the extent of environmental features in specific MOs over others. These findings will be used to enhance our understanding of the socio-demographic features associated with offences falling in each of the different MOs, which in turn can be used for the purposes of informing more targeted crime prevention efforts.

5.3. Understanding Crime Rates across individual MOs

So far this chapter has sought to identify the socio-demographic environmental features associated with different *modus operandi* (MO) across offences, and build on the MO descriptors identified in Chapter 4. However, the analysis has yet to uncover the relationships between the underlying socio-demographic variables and the actual *rates* of crimes (as opposed to the balance of different MOs). Therefore, the remainder of this chapter will seek to identify the combinations of socio-demographic environmental variables that, when coexistent in a neighbourhood, are associated with large numbers of offences in the same MO category.

To explore the combinations of environmental variables associated with higher crime rates across each MO, a Multiple Linear Regression analysis was undertaken. Models derived using this approach allow for the identification of associations between a number of variables on a dependent outcome; here the crime rate per OA.

5.3.1. Establishing the variables for model inclusion

In the following, Multiple Linear Regression models will be used to identify the variables associated with higher crime rates for offences in particular MO categories. The variables included in the analyses were taken from the 2011 UK OAC census classifications. However, to establish the variables to include within the final analysis, a 'stepwise' version of the regression was initially undertaken. The model was then re-run with the variables identified through the stepwise analysis, to allow for bootstrapping approaches to be employed (as discussed earlier in this chapter and in Chapter 3 of the thesis). The regression analysis was first conducted for all MOs collectively (i.e. across all offence data, regardless of MO). The aim of this was to help understand the socio-demographic features associated with higher crime rates across *all* offences, which could then be compared with the features linked with higher crime rates for offences in each specific MO. Subsequently, the regression analysis was conducted for each MO individually. Table 5.6 outlines the regression model developed across all MOs. The adjusted R^2 value suggests that the model accounts for just over a quarter of variance within the data. This degree of variance accounted for by the model is comparable to other Linear Regression models in the field of Criminology; for example, Dunaway *et al.* (2000), who explored the impact of social class measures on the prevalence of crime incidents. Moreover, Weisburd and Piquero (2008) explored the extent to which studies in criminology are able to statistically model crime. Indeed, the adjusted R^2 value found for this model was substantially higher than the average found by Weisburd and Piquero (2008) on studies of crime incidents.

The following tables contain both the unstandardised coefficients, 'B', and the standardised coefficients, 'Beta', as well as associated significance levels. For the purposes of comparison, the standardised coefficients have been considered, because these do not depend on the unit of measurement for the variables, and instead detail the number of standard deviations the outcome will change from a change of one standard deviation in the prediction variable.

As can be seen in Table 5.7, ethnicity and occupation fields appear to have greatest impact on crime rates across all MOs. In particular, based on the standardised coefficients, full-time students, areas with a higher diversity index, and those with limited daily activities appeared to be variables associated with higher crime rates. The variable with the greatest apparent impact on crime rates was full-time students, (Beta = .714). Indeed, the current literature supports the

importance of students as potential victims as they are widely seen as an attractive burglary target (Nicholas *et al.*, 2007; Robinson, 1997). The strongest negative association with crime rate across all MOs was found for those with level 3 qualifications, indicating that areas with a high proportion of those with such qualifications may be associated with a reduced crime rate. Whilst these variables do not provide a clear picture of a specific ‘theme’ of variables that impact on crime rates per se, it is to be remembered that this model was run across all of the MOs, and thus it remains valuable to explore the nature of these tests for individual MO classifications. With this in mind, the variables associated with each of the different MOs are explored in the subsequent tables.

Table 5.6. Summary of Crime Rate Model for all MOs.

MO Model	R	R ²	Adjusted R ²	SE
All	.521	.271	.258	.2132

Table 5.7. Crime Rate Variables for all MOs.

Model Variable	Product of Coefficients		Std. Coefficients	Bootstrapping			
				Percentile 95% CI		BCa Percentile 95%	
	B	SE	Beta	Lower	Upper	Lower	Upper
(Constant)	-.215	.142		-.416	-.031	-.406	-.021
Diversity Index	.456**	.117	.395	.250	.681	.262	.647
Financial/ insurance/ real estate	1.241**	.469	.086	.381	2.160	.398	2.185
Transport/ storage	-1.541*	.670	-.074	-2.864	-.283	-2.916	-.201
Mining/ quarrying/ construction	1.780**	.511	.133	.914	2.708	.935	2.657
Full time	5.243**	.656	.714	2.886	7.48	2.875	7.597

students	1						
Flat	-.247**	.081	-.116	-.392	-.081	-.407	-.084
Level 3 qualification	-.806**	.151	-.458	-1.293	-.330	-1.301	-.369
White	.413**	.133	.300	.245	.588	.259	.562
Chinese and Other	-1.077**	.328	-.125	-1.645	-.499	-1.666	-.426
Black/ African/ Caribbean/ Black British	.382*	.161	.100	.081	.671	.080	.692
Divorced/ separated	-.703*	.288	-.112	-1.267	-.132	-1.274	-.146
Agriculture/ forestry/ fishing	10.776* *	3.69 5	.078	1.161	21.3 51	1.667	19.51 7
Limited daily activities	.600**	.061	.421	.449	.761	.457	.749
Manufac- turing	1.896**	.439	.154	1.042	2.74 4	1.081	2.721
Arab/ other ethnic groups	1.057**	.373	.092	.399	1.79 7	.371	1.832
Energy/ water/ air- conditioning	3.265**	1.27 2	.071	.481	5.95 4	.656	5.800
Persons per hectare	.109**	.038	.095	-.016	.226	-.011	.221
Aged 90+	-2.626**	.797	-.099	-3.961	1.39 2	-3.857	-1.362
Non dependent children	-1.715**	.514	-.124	-2.642	-.783	-2.623	-.783

* $p < .05$. ** $p < .01$.

B Unstandardised coefficients.

Percentile 95% CI are 95% confidence intervals based on 1,000 bootstrap estimates.

BCa Percentile 95% are 95% confidence intervals based on 1,000 bootstrap estimates using the Bias-corrected approach.

5.3.2. Validation of MO Crime Rates Models

The forthcoming tables report the variables strongly associated with crime rates across individual MOs. These tables also report the bootstrap confidence intervals for crime rates across individual MOs. Specifically, these are the bootstrapped 95% percentile confidence intervals, as well as the Bias-corrected and accelerated confidence intervals, which adjust for skewness and bias within the distribution of the bootstrap. The confidence intervals reported in these tables indicate that the models developed are relatively robust, and confirm the significance of each of these variables in the model at the $p < .05$ level. Details of the variables strongly associated with crime rates across individual MOs are provided in the following tables.

5.3.3. Resulting Models

Modus Operandi 1: Understanding MO Crime Rates

Turning to MO 1 (“Sneak Offences”), Table 5.8 indicates the results of the stepwise Multiple Linear Regression model undertaken. As can be seen, the model derived accounts for just short of a third of variance in the data. Table 5.9 illustrates the variables loaded on this model.

Table 5.8. Summary of Crime Rate Model for MO 1.

MO Model	R	R ²	Adjusted R ²	SE
1	.575 ^a	.330	.313	.2319

Table 5.9. Crime Rate Variables for MO 1.

Model Variable	Product of Coefficients		Std. Coefficients	Bootstrapping			
				Percentile 95% CI		BCa Percentile 95%	
	B	SE	Beta	Lower	Upper	Lower	Upper
(Constant)	.265**	.067		.133	.431	.106	.458
Arab/ other ethnic groups	2.098*	.703	.129	-.126	3.546	-.143	3.466

Limited daily activities	.650**	.089	.398	.430	.883	.431	.892
Born old EU	4.475*	1.192	.173	.193	7.392	.652	7.209
Divorced/separated	-1.670**	.448	-.220	-2.661	-.674	2.598	-.791
Non dependent children	-2.949**	.858	-.183	-4.638	-1.464	4.500	1.563
Energy/water/ air-conditioning	4.628*	2.231	.090	-.027	8.601	.668	8.321
Manufacturing	3.759**	.679	.281	2.285	5.167	2.456	5.140
Public admin/defence/ social security	-2.122*	1.031	-.096	-3.835	-.193	4.142	-.189
Accommodation/ food service	2.741**	.573	.255	1.009	3.951	.977	3.791
Communal establishment	-.813**	.240	-.142	-1.452	-.472	1.320	-.553

* $p < .05$. ** $p < .01$.

As can be seen in Table 5.9, increases in crime rate for this MO are associated with increases in those who experience limited daily activities, in addition to those employed in manufacturing and accommodation / food service industries, those born in the old EU (that is, those countries joining the EU prior to 2004; Office for National Statistics, 2015b), and those of Arab or other ethnic backgrounds. Table 5.9 also indicates that those with non-dependent children were associated with a reduction in crime rates for offences in this MO.

Modus Operandi 2: Understanding MO Crime Rates

Table 5.10 details the results of the Multiple Linear Regression for MO 2 (“Smash and Grab”). The adjusted R^2 value is .259, indicating that the model accounts for a quarter of variance in the model.

Table 5.10. Summary of Crime Rate Model for MO 2.

MO Model	R	R^2	Adjusted R^2	SE
2	.524	.274	.259	.1595

Table 5.11. Crime Rate Variables for MO 2.

Model Variable	Product of Coefficients		Std. Coefficients	Bootstrapping			
				Percentile 95% CI		BCa Percentile 95%	
	B	SE	Beta	Lower	Upper	Lower	Upper
(Constant)	.411**	.032		.340	.472	.340	.486
Persons per hectare	.409**	.067	.435	.191	.663	.184	.657
Education sector	-1.506**	.471	-.229	-2.245	-.737	-2.282	-.774
Bangladeshi	-.835**	.277	-.217	-2.421	.189	-2.856	.199

* $p < .05$. ** $p < .01$.

The findings detailed in Table 5.11 indicate that higher crime rates for this MO (“Smash and Grab”) are associated with population density, but that decreases in crime rates are associated with individuals of Bangladeshi origin, as well as those employed in the education sector.

Modus Operandi 3: Understanding MO Crime Rates

Table 5.12 illustrates the variance accounted for by the Multiple Linear Regression performed for MO 3 (“Local Youthful Opportunism”). The model derived can be seen to account for over a quarter of the variance within the data.

Table 5.12. Summary of Crime Rate Model for MO 3.

MO Model	R	R ²	Adjusted R ²	SE
3	.533	.284	.262	.1241

Table 5.13. Crime Rate Variables for MO 3.

Model Variable	Product of Coefficients		Std. Coefficients	Bootstrapping			
				Percentile 95% CI		BCa Percentile 95%	
	B	SE	Beta	Lower	Upper	Lower	Upper
(Constant)	-.095	.081		-.322	.125	-.353	.152
Population by dwellings	.945**	.146	.641	.594	1.358	.649	1.304
ICT/ professional/ scientific/ technical	-1.186**	.330	-.276	-2.070	-.571	2.071	-.603
Flat	-.291**	.099	-.275	-.520	-.087	-.495	-.111
Part time	.953**	.290	.290	-.086	1.749	-.101	1.682

* $p < .05$. ** $p < .01$.

Table 5.13 indicates that increases in the population by dwellings, as well as those in part-time employment, are associated with increases in crime rates for the areas in which these MO (“Local Youthful Opportunism”) offences took place. However, reductions in crime rates were associated with increases in those in ICT / professional / scientific roles, as well as those residing in flats.

Modus Operandi 4: Understanding MO Crime Rates

The results of the regression model for MO 4 (“Confident Opportunism”) are displayed in Table 5.14. It can be seen that the model derived accounts for half of the variance within the data sample.

Table 5.14. Summary of Crime Rate Model for MO 4.

MO Model	R	R ²	Adjusted R ²	SE
4	.725	.525	.500	.2194

Table 5.15. Crime Rate Variables for MO 4.

Model Variable	Product of Coefficients		Std. Coefficients	Bootstrapping			
				Percentile 95% CI		BCa Percentile 95%	
	B	SE		Lower	Upper	Lower	Upper
(Constant)	-.023	.118		-.199	.153	-.235	.182
Aged 25-44	1.589**	.250	.471	1.156	2.090	1.183	1.965
Born old EU	-6.229**	1.862	-.207	-9.243	-2.998	9.455	3.460
Level 3 qualification	-1.008**	.347	-.543	-1.913	-.008	1.834	-.162
Agriculture/forestry/fishing	44.090**	9.042	.260	20.405	88.488	18.662	93.519
Accomm. / food service	-2.840**	.976	-.253	-5.292	-.870	5.404	-.733
Limited daily activities	.552**	.124	.302	.391	.741	.386	.727
Education sector	-1.698**	.632	-.151	-2.821	-.583	2.819	-.574
Flat	-.339*	.141	-.147	-.597	-.118	-.626	-.106
Full time students	10.692**	1.253	1.463	6.056	15.069	5.863	15.089
Communal establishment	.906**	.296	.191	.054	1.463	.246	1.282

* $p < .05$. ** $p < .01$.

Table 5.15 illustrates that increases in full-time students, those aged 25-44, those with limited daily activities, and those within agricultural / forestry / fishing vocations, were all associated with increases in crime rates for MO 4 in the areas where these offences took place. Conversely, those individuals born in the old EU, those with level 3 qualifications, or those in the accommodation /

food service were particularly associated with a reduction in the crime rate for the areas in which MO 4 offences took place.

Modus Operandi 5: Understanding MO Crime Rates

The results of the regression performed for MO 5 (“Local Juvenile Poverty Predation”) offences are displayed in Table 5.16 and Table 5.17. Table 5.16 demonstrates that the regression model accounts for just short of half of the variance within the data.

Table 5.16. Summary of Crime Rate Model for MO 5.

MO Model	R	R ²	Adjusted R ²	SE
5	.711	.506	.483	.148

Table 5.17 indicates that the key variables associated with increased crime rates for this MO were increases in full-time students, followed by those who are married or in a civil partnership. However, reductions in crime rates for this MO were associated with an increase in schoolchildren over the age of 16, those with Level 3 qualifications, those in the accommodation / food service industries, and those providing unpaid care.

Table 5.17. Crime Rate Variables for MO 5.

Model Variable	Product of Coefficients		Std. Coefficients	Bootstrapping			
				Percentile 95% CI		BCa Percentile 95%	
	B	SE		Lower	Upper	Lower	Upper
(Constant)	.304**	.094		.081	.490	.112	.480
Married/ Civil Partnership	.654**	.165	.374	.335	1.003	.374	.944
16+ school- children	-1.948**	.435	-1.394	2.727	1.057	-2.765	-.905
Public	1.256**	.392	.197	.345	2.20	.474	2.08

transport to work					0		6
Full time students	17.537**	1.612	2.402	11.406	20.133	11.765	20.155
Level 3 qualification	-.957*	.418	-.533	1.786	-.036	-1.793	-.101
Black/African/Caribbean/Black British	.602**	.207	.202	.234	1.011	.266	.966
Limited daily activities	.258**	.071	.223	.133	.417	.142	.382
Providing unpaid care	-1.254*	.501	-.193	2.054	-.395	-2.058	-.301
Accomm./ food service	-2.772**	.806	-.240	4.505	1.002	-4.605	-.828

* $p < .05$. ** $p < .01$.

5.3.4. Summary of MO Crime Rate Models - Predictive Ability

This last section of the chapter has sought to understand the variables associated with crime rates across offences for the different MOs. Table 5.18, below, provides a summary of the adjusted R^2 values for each MO, together with the variables linked with higher crime rates for offences in these MOs.

Table 5.18. Crime Rate Influences across Offence MOs.

MO	Adjusted R^2 Value	Proportion of Total Offences	Variables associated with higher crime rates
1: Sneak Offences	.313	37%	Those with limited daily activities, individuals born in the old EU, those of Arab or other ethnic backgrounds, those employed in manufacturing and in the accommodation / food service industry
2: Smash and Grab	.259	14%	Persons per hectare
3: Local Youthful Opportunism	.262	12%	Population by dwellings, and those in part-time work

4: Confident Opportunism	.500	18%	Full time students, those aged 25-44, those with limited daily activities
5: Local Juvenile Poverty Predation	.483	19%	Full-time students, those who are married / in a civil partnership, those with limited daily activities, and those of Black / African / Caribbean / Black British heritage

Based on the findings in Table 5.18, it can be observed that there appear two main drivers / themes underpinning higher crime rates for offences across MOs; the presence of full-time students, and population density. For offences that fall into MOs 4 (“Confident Opportunism”) and 5 (“Local Juvenile Poverty Predation”), the models account for approximately half of the variance in these MOs, and collectively these MOs account for over a third of the total sample of offences, indicating the importance of students on crime rates across these categories. This suggests a relative degree of predictability amongst these two MO classes, with the highly loading variables of those aged 25-44, and those who are married / in a civil partnership being used to differentiate between the MO classes 4 and 5, with the other key loading variable here across both of these models; full-time students.

Similarly, albeit not to the same extent, offences in MOs 2 (“Smash and Grab”) and 3 (“Local Youthful Opportunism”), which together account for over a quarter of total offences in the sample, appear to have crime rates driven by population density (with their respective models accounting for approximately a quarter of the variance across these offences). In considering the relative importance of these adjusted R^2 values, it should be noted that these are comparable with other studies in criminology (Dunaway *et al.*, 2000), with the adjusted R^2 values for MOs 4 and 5 approximately three times higher than the average for models based on total incidents alone (Weisburd and Piquero, 2008). This suggests a degree of predictability across these offences, particularly for MOs 4 and 5. This could well be utilised in helping support targeted crime prevention efforts. However, the mix of variables associated with higher crime rates for MO 1 suggest this may be more difficult to predict accurately offences for this MO, due to the heterogeneous nature of variables loading on this MO for crime rate.

What these figures do not give is a perfect predictive model of crime rates across MOs; however, what they do give is a more defined picture of what is

happening across offences in these MO classes. It is clear that offences falling within these MOs do not all categorically target students or densely populated areas, however these are the types of demographics that appear to attract higher crime rates within these MOs. This is extremely helpful for informing crime prevention practices, specifically targeted towards certain areas / populations; for example, those areas with higher numbers of students, as well as those in more densely populated areas. This will be explored further during Chapter 6 and Chapter 7, which will detail the results of the interviews with offenders on their particular target selection practices. This will also be discussed further in Chapter 8, the discussion chapter, where the implications for crime prevention practices will be considered.

5.4. Summary

This chapter has sought to build on the nuances of offender target selection identified in Chapter 4, through understanding the environmental socio-demographic features associated with each specific MO. The first part of the chapter sought to reveal the features that were associated with each of the MOs, as well as the extent of features in some MOs over others. The chapter then moved on to consider the crime rates for each MO, and the features associated with higher crime rates for each MO in those areas. In considering both of these elements, the chapter has produced a clearer picture with regards to the nature of demographic features that may make a particular area more vulnerable / prone to offences from specific MO categories. To help provide a summary of this picture the key findings so far for individual MOs have been summarised in Table 5.19, below.

Table 5.19. Building on the analysis of Offender MOs; Class 1 is denominated “Sneak Offences”; Class 2 “Smash and Grab”; Class 3 “Local Youthful Opportunism”; Class 4 “Confident Opportunism”; and Class 5 “Local Juvenile Poverty Predation.”

MO	Original features identified through Latent Class Analysis	Features supported through Logistic Regression	Features related to Crime Rates for each MO
1	2/3 of offences in occupied properties, 1/3 insecure, suggesting 'sneak-in' offences. ~40% of offences accessed/	Greater proportion of areas with 2+ cars/ vans than other MOs, suggesting the potential notion of	Increases in crime rates for this MO associated with increases in those with limited daily activities, those

	<p>exited through rear. Computers stolen in ~40% of offences, approximately 40% of houses semi-detached. Offences largely concentrated in 'Suburbanites' (23%), 'Urbanites' (21%) and 'Multicultural Metropolitans' (20%) areas.</p>	<p>relative affluence.</p>	<p>employed in manufacturing and in the accommodation/ food service industry, those born in the old EU, and those of Arab or other ethnic backgrounds.</p>
2	<p>~half offences targeted semi-detached, entry/ exit through rear of property. Properties predominantly unoccupied. Part of property smashed as means of access in ~half of offences, and computers taken in ~half of offences. Suggests a 'smash and grab' type MO. Offences largely targeted in 'Multicultural Metropolitans' (23%), 'Urbanites' (20%) and 'Cosmopolitans' (15%) areas.</p>	<p>Greater proportion of areas with semi-detached properties, and those aged 25-44, than areas for 2 other MOs.</p> <p>Greater proportion of areas with 2+ cars or vans than in areas of 3 other MOs, suggesting a potential degree of affluence for areas in which these MO offences took place.</p>	<p>Higher crime rates associated with population density (persons per hectare), but negatively associated with those of Bangladeshi origin, and those employed in the education sector.</p>
3	<p>Offences predominantly committed by offenders in their 20's, travelling 2 miles or less to offences. Half of offences committed by >1 perpetrator, approximately 40% of properties occupied at the time of the offence, a 1/3 of properties insecure. 42% of offences took place in the 'Multicultural Metropolitans' areas, where individuals more likely to reside in terraced housing in transitional areas between suburbia and urban centres.</p>	<p>Greater proportion of 25-44 year olds than offences in 3 other MOs.</p> <p>Greater proportion of those with Pakistani heritage than 3 other MOs, supporting notion of offences occurring in 'Multicultural Metropolitans' areas.</p> <p>Lower proportion of those involved in construction roles than for MOs 1, 2, 4 and 5.</p>	<p>Increases in the population by dwellings, as well as those in part-time employment were associated with increases in crime rates for the areas in which these MO offences took place. Those residing in flats, and those in ICT/ professional/ scientific roles were associated with reductions in crime rates across this MO.</p>

4	<p>Offences predominantly accessed/ exited through front door, > 2/3 properties occupied. Properties insecure, and computers taken in 40% of offences. Offences targeted 'Multicultural Metropolitans' (30% of offences) and 'Cosmopolitans' (20% of offences). This may suggest offences in this category targeted student populations.</p>	<p>Greater proportion of offences in areas with higher social renting than across other MOs.</p> <p>Lesser proportion of areas with 2 plus cars than 2 other MOs.</p>	<p>Higher crime rates associated with increase in full-time students, those aged 25-44, those with limited daily activities, and those in agriculture/ forestry/ fishing occupations. Reductions in crime rates for this MO were associated with those born in the old EU, those with Level 3 qualifications, and those in the accommodation/ food industry.</p>
5	<p>Offences predominantly committed by offenders aged 15-19, 1/3 offences committed by more than one offender. Offenders appeared to be local, travelling <2 miles to offences. Approximately 40% of offences targeted occupied properties, 1/3 of properties unoccupied. Offences largely targeted the 'Multicultural Metropolitans' (31% of offences), 'Constrained City Dwellers' (15% of offences) and 'Hard-Pressed Living' (18% of offences) areas.</p>	<p>Greater proportion of those from Arab or other ethnic backgrounds than other MOs.</p> <p>Higher proportion of those in health/ social work employment fields than those in other MOs.</p> <p>Lower proportion of those with 2 plus cars/ vans than 2 other MOs - suggesting a possible lack of affluence/ possible deprivation <i>relative</i> to areas for other MOs.</p>	<p>Increases in full-time students were associated with increased crime rates for this MOs' offences. Conversely, increases in schoolchildren 16+ were associated with reductions in crime rates for this MO.</p>

5.5. Implications for Crime Prevention

In calculating various statistics for each MO, this chapter has identified different features associated with specific MOs and the features linked to higher crime rates per MO in the areas where they took place. However, how can these data be used for the purposes of crime prevention? For the variables associated with individual MOs, these often relate to areas with greater proportions of those of different ethnicities, as well as areas with indicators of affluence (i.e. 2 plus cars

or vans), or greater proportions of those in social renting. This suggests that areas with greater multiculturalism, or those with greater levels of affluence or deprivation, may hold particular features that make properties in these areas attractive to burglars. Examples of these elements may include high-value goods, a lack of community cohesion, or poor security. These aspects could therefore feature within subsequent targeted crime prevention advice to these areas.

With respect to factors associated with higher crime rates across these MOs, these include ethnicity, occupation type, as well as population density. This tells us that the variables associated with MO offences are also associated with higher crime rates for MO in their respective areas; for example, in terms of areas of greater multiculturalism. Again, these features could be the focus for targeted crime prevention efforts in these areas. The conclusions for crime prevention for both models will be discussed in more detail in Chapter 8 (the discussion chapter).

So far this thesis has employed quantitative data and related analysis to understand the target selection criteria of burglars and their specific MOs. However, there is much to be valued from the use of qualitative data to help inform our understanding of the target selection criteria of burglars, and therefore this shall take the focus in the following chapter.

Chapter 6: Understanding Burglary through Burglars' eyes: Target Selection of Properties

6.1. Introduction

The previous two chapters, Chapters 4 and 5, explored the target selection of offences through the quantitative analysis of police offence data. Such analysis was predominantly offence- rather than offender-oriented, and thus heavily focused on the nature of offence targets and whether this information could be used to help establish patterns in offenders' target selection criteria. However, there remain two key limitations with the use of such quantitative data in this way:

- Because the data were largely offence-oriented, the MOs that were derived were predominantly offence- rather than offender-based, and so may not comprise as much detail with regards to behavioural preferences on target selection as offender-based MOs.
- Secondly, the data used were not collected for the purpose of this research *per se*, and therefore was limited in terms of the detail it could provide.

This helps to set the context for the current chapter. The current chapter will detail interviews undertaken with offenders at HMP Leeds; specifically concentrating on their target selection criteria. This further develops our understanding of the target selection process amongst burglars.

Previous research has noted the value of qualitative interviews in helping to understand offender (and, in particular, burglar) behaviour (Nee and Meenaghan, 2006; Wright and Decker, 1994). Interviews were therefore chosen to help understand the behavioural preferences of burglars in Leeds. In addition to offender interviews, it was determined that alternative approaches used to gather information on offenders' target selection beyond interviews alone would be beneficial in helping develop understanding of this area (see Nee and Taylor, 2000). Therefore, in order to further explore offenders' selection of potential burglary targets, this research also utilised a property image task. In this task,

offenders were shown a number of different types of property and asked to rate their perceived attractiveness, as well as giving ratings of accessibility, cover, and likely occupancy.

6.2. Analysis

It emerged during the interview process that there was a clear process / set of criteria used by offenders to establish a suitable burglary target. This has been illustrated below in Figure 6.1. As can be observed, this process begins with the consideration of suitable areas, through to establishing the degree of occupancy, accessibility and visibility for individual properties, to establish the suitability of a property to target. This chapter will now provide detail of the target selection process, as discussed by offenders, as well as detailing the themes pertinent to each of the different stages identified in Figure 6.1.

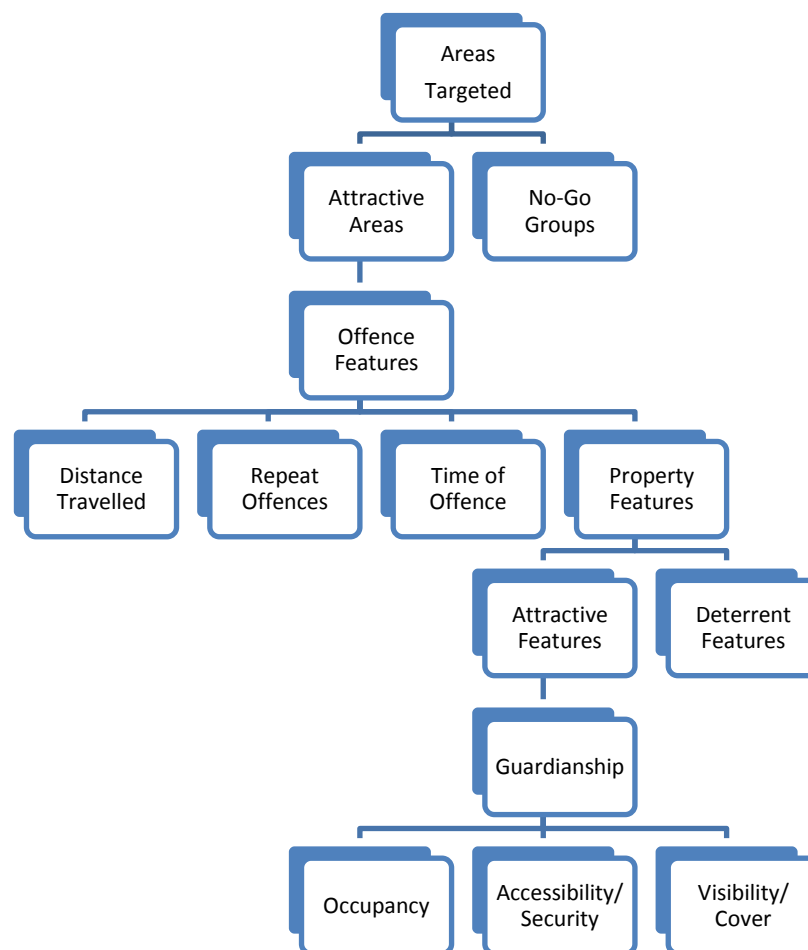


Figure 6.1. Process of Burglary Target Selection: The decision making process generally cascades from top to bottom.

6.2.1. Areas Targeted

6.2.1.1. Attractive Areas

During interviews, offenders were questioned with regards to the areas they were most attracted to. The two most targeted areas were more affluent or so-called 'posh' areas, and areas close to offenders' homes or familiar to offenders (and thus part of their awareness space). An overwhelming majority (70%) of those questioned stated that they would target more affluent, or 'posher' areas:

"Posh estate - lot of goods. Prefer to burgle them. Posh side - not as hard as you'd think it would be [to burgle]" (Participant 3).

"Go for posher estates. Avoid council houses. Go to Roundhay, Keighley - go to nicer areas. Would target - expensive houses, nice cars, BMW, Mercedes, 50 inch TV's" (Participant 1).

(Note that dialogue is given in note form, because of the difficulties associated with recording on tape in prisons).

It also emerged that amongst those targeting more affluent areas, individuals would be prepared to travel beyond Leeds to target such areas;

"[Areas?] Harrogate - popular. Generally bit posher areas" (Participant 8).

"Would target nice areas, Harrogate, York, Leeds, Weetwood, Pudsey, all over. Drive about and see. People try doors. Check 20, 1 will be [unlocked]" (Participant 6).

Indeed, the above quotes challenge the notion that properties in more deprived areas are at greater risk of burglary than those with higher levels of affluence (Kershaw *et al.*, 2000), and suggest that the targeting of deprived properties is likely to be a distance decay and familiarity effect rather than a risk-reduction effect (see below). However, Ratcliffe and McCullagh (1999), in their study of burglary locations in South Nottinghamshire, found that properties in deprived areas are more likely to face repeat offences than those in affluent areas. This was supported by the work of Chamberlain and Boggess (2016), who found that burglars tended to target neighbourhoods that they perceived as similar to their own, as well as those in closer geographical proximity. They also found that for offenders who targeted areas that were different to their own, they would tend to

target neighbourhoods with greater levels of deprivation in relation to their home area (Chamberlain and Boggess, 2016).

Indeed, over a third (35%) of offenders described how they would target areas generally close to their current or previous home areas, emphasising the importance of their level of knowledge / awareness space within these areas, in terms of potentially suitable targets, as well as possible escape routes:

“Usually don’t travel too far. Stay within [the] Leeds area. Get to know it, grown up there, know escape routes. Drive round and know areas [awareness spaces], [friends] drop us off in different places. Stay around the local area” (Participant 11).

“Old addresses [I] knew everywhere. Know ins and outs etc.” (Participant 4).

Offenders also discussed, however, how living in certain areas would help them to establish unsuitable targets or areas. In particular, offenders often described how they would not commit offences in their own areas, and how it would be beneficial to turn their attention to different areas:

“Always go out of area - because not in own areas. Know whose paths not to cross. Lived in most areas, get to know areas and who not to rob. If caught - sent to jail” (Participant 11).

“Lived in Gipton, Moortown. If [living] in an area, don’t do that area [estates]. Moortown - best - full of people with money, rich etc. Upper classes, people with class. Lived in Moortown, Harehills, Chapelton, Gipton, Seacroft - not do all of these areas when [I’ve] lived there” (Participant 3).

The most popular socio-demographic group targeted for burglary was that of students, with 35% of offenders explicitly describing that they would target student areas:

“Students - Headingley, Hyde Park. Any kind of house. Students - pissed up, and door / window open or shut, but not locked. Quite a lot. Most of burglaries I’ve done, I’ve not had to break in, because doors are open for me already” (Participant 19).

“Headingley - full of new people every year, lazy, students - don’t care re: money, easy pickings, like throwing bread for birds, throwing laptops for criminals” (Participant 4).

As well as students within Leeds, it also transpired that offenders targeted student areas *outside* of Leeds:

“Usually go for student houses. Lot of gear, laptop in every room. Huddersfield - big student areas, different student areas - mainly do student areas” (Participant 10).

The second most popular socio-demographic group targeted for burglary were those of Asian ethnicity, with just under a third of offenders (30%) specifying this as a population they were drawn to. However, it should be noted that such preference appeared to be driven by a clear sense of pragmatism amongst offenders, rather than being underpinned by any evidence of racial discrimination. For example, one factor driving this preference was the perception that those of Asian ethnicity did not believe in keeping money in banks. In addition to Leeds, Bradford was named as a popular area to target with a high Asian population:

“Lot of Asians - don’t believe in banks - Asian gold / jewellery - Bradford - well known. Paper chasing [money], large amounts of gold. Take everything from them” (Participant 4).

“Would travel about 10 / 15 miles tops, to Heaton, Manningham. High Asian population all over. Anywhere in Bradford, always something going on in Bradford” (Participant 7).

Some offenders also described how they would travel much further afield to target Asian populations, describing how the nature and value of rewards would warrant travelling such further distances. For example, Participant 21 described how he targeted areas with high Asian populations all over the country;

“From Bradford, offend in Bradford, but done all over the country. Lot of Asians - masterminds. Sunday morning - Muslims and Sikhs at church - prayer times. Muslims - greedy, don’t like banks. Found soft 22/24 carat before. Go for money, jewellery, cars, black shiny TVs etc” (Participant 21).

This same offender also described how he was able to take advantage of this target population, not only by targeting Asian communities to burgle, but also using such communities to offload stolen goods:

“Asians - buy them off us” (Participant 21).

Furthermore, the same offender described how he would be able to determine the ethnicity of individuals at a property;

“I would go through bins, to check ethnicity etc., if Asian etc. Could go for jewellery” (Participant 21).

In addition to the areas specified, there was also a high proportion of offenders (39%) who would target areas opportunistically around the country, whether they had travelled purposely to commit a burglary, or were returning from elsewhere in the country:

“Alton Towers - on way back, see people come out [of their house] and do it [burgle]. [Could be] Blackpool, anywhere” (Participant 13).

“Mainly [travel by] cars. Go all over, taxis, burners, mates, own car - ‘making plates’, as far as Blackpool, Scarborough, and see what comes out etc.” (Participant 18).

This demonstrates the level of commitment by offenders during the process of their offending, to integrate and embed burglary within their daily lives, including that of their pro-social activities.

6.2.1.2. No-Go Groups

In addition to the areas targeted, offenders also described the types of populations that they would *not* target during burglary offences. The majority of offenders questioned reported that there were certain populations they would not burgle from. What emerged amongst offenders was a sense of moral hierarchy that determined who offenders would actively avoid, supporting previous work into this area (Taylor, 2014). Two distinct groups were identified as being actively avoided by offenders: the elderly, and properties with children. For example, 61% of offenders stated that they would not target elderly victims. For some, this

appeared to be out of a sense of morality due to the vulnerable nature of this group:

“Old people - wouldn’t do it. Just wouldn’t. Can’t defend themselves - same as disabled people” (Participant 5).

For some participants, this preference appeared to be out of a sense of respect for that group:

“...not old people, worked all life” (Participant 14).

“And not old people. They’ve done war etc. for us” (Participant 1).

A sense of stigma also appeared to be the driving force underpinning this preference:

“Knowingly, old people, lot of stigma with it” (Participant 11).

However, this last quote called into question whether the offender in this instance may have targeted such a demographic if it was not for the stigma associated with it.

Those interviewed also avoided targeting elderly victims due to the risk of potential consequences that may occur and their desire not to confront elderly residents:

“[Not] elderly - because could give heart attack” (Participant 19).

“...if they came back, if you burgle it, would they have a heart attack or something?” (Participant 11).

“Wouldn’t target old people. Can smell them. If caught then I’m caught, not gonna attack....but people may have bad health etc, wouldn’t do it” (Participant 6).

In this last quote, the offender describes how he could ‘smell’ whether elderly people were resident in a property. It emerged during interviews that offenders used various cues to establish whether elderly residents were present at a property, including smell and furnishings:

"[Anyone that you wouldn't burgle from?] Old people, you can smell it" (Participant 8).

"Look at curtains - if old type, old people" (Participant 3).

"[People wouldn't burgle from?] Old people. Normally could tell" (Participant 9).

The next most avoided target was children, who 35% of offenders reported that they would actively avoid. For some, this appeared to be simply a matter of the 'right thing to do':

"Don't do [burgle] kids / old people, quite selective, put thought into it, do the right thing" (Participant 3).

Often, this desire to avoid properties with children was associated with not offending around the Christmas period, based upon offenders' own experiences. Again, this indicates a sense of 'seasonality' to burglars' offending, in that their target selection may be influenced by the time of year and specific events taking place at a given time:

"Wouldn't do it around Christmas time. Never [take] presents - I've got kids. Just wouldn't do it, stealing off kids" (Participant 8).

Equally, though, it may be that pre-school children suggest potential occupancy in a property. Again, offenders relied on visual cues about a property to alert them to whether children lived in a property:

"If kids toys - no" (Participant 3).

"If children, lot of toys around. Don't go there" (Participant 1).

A small number of those interviewed stated that they would not target those known to them; for example friends or family:

*"[Anyone you wouldn't target?] People I know, or people in the area - not sh*t on my own doorstep" (Participant 21).*

"Family and friends - don't burgle family do you, or neighbours" (Participant 13).

A small proportion of those interviewed also stated that they wouldn't burgle from those whom could potentially hurt them in return:

"[Anyone you wouldn't burgle from?] Powerful people, certain people - no go areas / zones etc. People you know that could hurt you / find out. Could cause some problems/hassle. Someone connected on the streets" (Participant 7).

Of particular interest was the admittance of those who would target anyone. For example, when asked whether there were any groups they would not burgle from, Participant 18 responded;

"No - [I] don't discriminate" (Participant 18).

6.2.2. Offence Features

6.2.2.1. Repeat / Near Repeat Offences

The presence of 'repeat' (same property) or 'near-repeat' (offences in the same area) burglary offences has been an important area of consideration in the literature (Townsend *et al.*, 2003; Farrell and Pease, 1993). During interviews with offenders, two key findings emerged. Firstly, the majority of offenders questioned (91%) reported that they have offended in the same areas that they have targeted previously:

"[I] have gone back to the same area - about a couple of months later, like Middleton, between Middleton and Beeston" (Participant 12).

In terms of the factors driving this, rather than the nature of security of similar / nearby properties as suggested in the literature, this appeared to be driven by the *type of goods* that may be taken from these offences:

"Didn't burgle the same house. Probably nearby properties. Nice houses. If nice stuff in one, chances are - others are half decent" (Participant 9).

"Didn't target same property again, but nearby - yes. Certain estates / streets - good hits from each. If good hits - know of them and what they did [professions] and financially what they were like. Always target people that knew had something. Maybe more

affluent properties / estates - tell by type of cars / business people, look of garden. If [I'm] gonna rob one, rob one that is well dressed etc." (Participant 7).

This quote also raised the idea that certain estates were preferable over others in terms of the goods that individuals could access:

"Would target - expensive houses, nice cars, BMW, Mercedes, 50-inch TV's" (Participant 1).

The second key finding was that approximately half of offenders (48%) interviewed stated they would burgle the same property on more than one occasion. It emerged that offenders would tend to leave a certain timeframe before returning to target individual properties:

"Same places? Yes, only when 6 / 12 months has passed" (Participant 2).

"Yes - not more than twice. Headingley / Hyde park - when new people move in. July / August - [students] gone home, [I'm] not busy [burgling student properties]" (Participant 19).

This again highlighted the concept of a seasonal element in relation to burglary targets, in that certain times of the year may be more attractive to burglars than others (Coupe and Blake, 2006). This raises the clear ethical and crime prevention question of whether students entering a new student residence in the new student year should be notified of the burglary history of the property.

For some, the question of whether they would commit a repeat offence against an individual property stemmed from the level of reward they would receive from the property:

"Did 1 or 2 [burglaries] in the street, then left [it] a year or so, depends how well I did out of them in terms of rewards etc" (Participant 5).

Some offenders who discussed repeat offences also described how they would wait a period of time for the residents to replace their goods:

"Repeats? Some properties - are easy. Leave it for a month, they'll replace it, do a 2nd, and 3rd time" (Participant 11).

This last quote introduced the notion of ‘serial targets’, whereby a property was targeted by the same burglar(s) on a number of occasions. This concept emerged a number of times during interviews, and despite the general reward-centred drivers, there was also some evidence that security played a role in repeat offences:

“[Burgle same properties?] More than once. 5-6 times off. Always have decent stuff in. Sometimes they have a key I take, then take it back there and use it. Normal [non-student] house, if I used keys - after 2nd burglary, when found that [there was] no forced entry, they would change the locks. Student houses - they wouldn’t bother changing the locks. Could do this 5-6 times over” (Participant 10).

“[Burgle same property?] Once or twice, ’cos easy. Took them 2-3 times to get a burglar alarm” (Participant 14).

This concept of a ‘serial target’ has substantial implications for crime prevention. Within this chapter, focus has predominantly been placed on a property itself, and the features of that property that make it an attractive target for burglars. However, if burglars find a so-called ‘weak spot’ within certain properties, their repeated use and targeting of that property and associated weak-spot(s) transcends the targeting of just that property alone. Rather, it appears to exploit a sense of complacency or ‘laissez-faire’ attitude of a property’s residents towards security. This has huge implications for both crime prevention, as well as raising the importance of enhancing awareness about security and crime prevention to local communities. It also links to a sense of offenders’ understanding and exploiting the ‘persona’ or lifestyles of residents themselves, as is touched on later in this chapter.

For those individuals who reported not committing repeat offences against the same properties, there were two main reasons reported that drove this decision. The first was epitomised by the sentiments of Participant 18;

“Not done [repeat offences] - no - don’t like doing on doorstep. Not repeats - won’t put ’em through it again. [It] could be anyone. Don’t discriminate like that” (Participant 18).

The second main reason was to evade detection, as articulated by Participant 15;

“Repeats? No, would get caught” (Participant 15).

6.2.2.2. Journeys to Crime

In addition to exploring whether repeat or near-repeat offences were a feature of individuals' offending, the journeys to crime / distances travelled to offences was also explored with offenders. Broadly speaking, there appeared to be a distance decay effect, in that whilst all offenders travelled shorter distances to their offences (up to 2 miles), a small number also travelled substantial distances to their offences. Furthermore, all but one offender (96%) stated that they travelled up to 5 miles during the course of their offences. Moreover, 78% of offenders stated that they would travel up to 10 miles during the commissioning of their offences; this was usually within the city:

“Just a few miles - normally around Leeds” (Participant 19).

“Normally not travel that far, sometimes about 10 miles. If a shorter distance, less chance of being picked up by the police” (Participant 9).

Approximately half of offenders (48%) travelled over 10 miles to their offences; often this involved travelling to areas across the city or in neighbouring cities:

“[I have] burgled all over, Morley, Beeston, Millionaire mile; few miles” (Participant 18).

“[I] would travel about 10 / 15 miles tops, to Heaton, Manningham. High Asian population all over. Anywhere in Bradford, always summat going on in Bradford” (Participant 7).

A small proportion of offenders (9%) also reported that they would potentially travel anywhere in the country during the course of their offending:

“Have been to Scotland and Cornwall. Go up in stolen car, back in different car. If had to, could go anywhere” (Participant 23).

“[I would travel] everywhere. If on way back from Alton Towers - [I would burgle] then” (Participant 13).

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One of the key factors that determined when people would offend was how this would be beneficial in terms of when properties may be unoccupied:

“Offend always during day. 11am - 3pm. If someone’s at work, they’ll be at work then; avoids the school runs” (Participant 10).

“Weekday - morning, only on morning. 9am-12am, know they’re out - schoolrun etc.” (Participant 15).

“Weekends - am and pm. People out shopping, walking dogs, go for a walk” (Participant 13).

“...through the week, and weekend - when lot of police in town, and people have glass of wine etc., more lapse re: security” (Participant 21).

As such, the time of offences preferred by individuals appeared to be associated with a perception of least risk, particularly when properties may be unoccupied. One further temporal element that emerged as important was the seasonality of burglary offences; particularly in that winter months were preferred because they provided lesser daylight hours:

“Offences - any day. During day. Not night, because people in bed. Winter is best, provide cover, lights all off” (Participant 7).

“Prefer it [to burgle] on winter evenings - dark” (Participant 12).

6.2.3. Property Features

6.2.3.1. Attractive features

Offenders identified a number of features that would attract them to potential targets. The most popular feature attracting offenders to properties was the perception of a 'nice' or 'wealthy' property in a similarly perceived 'nice' area, with three quarters of offenders (74%) describing this as important:

"Didn't 'opt for a specific type of house, just one that looked nice" (Participant 9).

"[What kind of property did you target?] Normal, semi-detached - nice area. Mostly estates and nice areas" (Participant 22).

"What [the] house were like, big house, if looked like had money" (Participant 18).

Participants also discussed the types of wealthy properties they would target:

"All over West Yorkshire. Wealthy houses, big mansions, builders, Asians, more money in those properties. Houses - set back" (Participant 13).

This last quote gave a sense that offenders had a clear idea of the types of features that may alert them to 'wealth' within a property, and thus their attractiveness as a potential target. One of the proxies for establishing a nice property was established as the type of car. For example, Participant 9 reflected;

"Cars - go for nice ones. BMWs, Mercedes. Wasn't a given of a nice house, but it helped" (Participant 9).

A further proxy for wealth was the state of the garden of a property:

"[How could you tell if they had money?] If garden looks nice. House - ornaments, tidy etc." (Participant 22).

"If garden tidy - clean and respectable, clean and nice house" (Participant 9).

"Look at garden, if well kept, house itself looks clean" (Participant 20).

Assessing the state of a garden as a proxy for the potential wealth of a property demonstrated a degree of sophistication in offenders' judgement about potentially suitable targets. This level of sophistication and ingenuity was further emphasised by the sentiments of Participant 20;

"Inclined to have a look. Cars - have a look. When put together, get a sense of how many people living there and ages. Look in bin and see what wrappers gone in, see brands in them" (Participant 20).

The furnishings of properties were also raised as a means of establishing the wealth / affluence of a property:

"Houses - village houses. Well done up, nicely decorated. House in town. Small house, with posh furnishings; i.e. antique vase - things you can see from the outside [indicate that the person / people living there is] not someone struggling" (Participant 5).

"Nice garden; make of TV, ornaments / goods. Just normally, go for money. If had nice car - wouldn't necessarily target it." (Participant 22).

When asked what would attract them to properties, two-fifths (39%) of offenders stated that luxury / high-performance cars would attract them to a property:

"Look at cars and see if alright. £20k [cars] I'd look at; BMW, Mercedes, Vauxhall, Audis. Nicer cars may attract me, but normal cars don't put me off [a property]" (Participant 12).

"Car would be an added bonus. Lot of drug dealers want cars etc. Pass them on, cut them up etc" (Participant 1).

Furthermore, Participant 21 described how he would target nice cars as part of a 'steal to order' operation;

"Sometimes steal to order, other times get cars, Passat Golf, VW, Mercedes. Audis, BMW, high performance cars, M5 - BMW - travellers would buy these off me...When steal to order - performance cars, Audis, BMWs, R32 - 2/3 K, BMW - M5, Audi - RS5, Mazda, Golfs" (Participant 21).

The location of properties in specific areas was also deemed an attractive feature to individuals. For example, just over a third of offenders (35%) stated that they would be particularly attracted to student areas:

“Easiest - no alarms [in] student areas” (Participant 6).

Properties in Asian areas were also viewed as attractive for just under a third (30%) of offenders:

“[I would target] Asian individuals and open windows / doors” (Participant 17).

One of the participants described a rather strategic approach to checking whether individuals in a property were of Asian ethnicity:

“I would go through bins, to check ethnicity etc, if Asian etc., could go for jewellery. Lot of Asians - masterminds” (Participant 21).

As such, this demonstrates a rather simple yet shrewd method of checking the ethnicity and potential demography of a property’s residents, indicating a sense of sophistication amongst offenders.

Insecure properties were also explicitly reported as an attractive feature for a fifth (22%) of offenders. This suggests a degree of opportunism across offenders, in that they would act to burgle as and when a situation may present itself:

“[What would attract you to a property?] Door / window open” (Participant 14).

“Lot of people - lazy. Will leave stuff open. Burgled shop beneath me; checking what time cashing stuff in. Burgled property when opportunity came up” (Participant 4).

“No specific type of property [they were attracted to]. If window open and can fit through, will do it” (Participant 3).

During interview a number of offenders also reported that properties which afforded them substantial cover were perceived as attractive targets:

“[Factors that stand out?] High hedges, enclosed back gardens” (Participant 11).

“With hedges and trees, away view, detached or semi-detached properties - not as close, not as visible. Council [houses] - harder - closer together, more visible” (Participant 13).

This last quote raised the concept of particular property types, and this was raised by approximately a fifth of offenders (22%; n=5) as influencing whether they were attracted to a target. Of those individuals, three stated that semi-detached properties would appeal to them, one stated that ‘corner houses’ were preferred, and a further three stated that they would specifically target detached properties. Of particular note were those offenders who preferred detached properties; not only due to the nature and size of properties, but also in helping them to evade detection:

“Detached, set back and a bit of land. Targets because big holdings / garage / shed” (Participant 11).

“Detached, because no-one could hear you next door” (Participant 14).

It appears that there is often not one standalone feature that may cause a property to stand out and attract offenders; rather, a combination of different features will likely impact on offenders’ perceptions of attractiveness and determine whether a property may be targeted. In addition to features such as the state of a property’s gardens, or cars in the drive, offenders also seem to take further steps to understanding those residing in the property. For example, through searching residents’ bins, or trying to understand their persona by assessing their views towards security. This will be important to consider in applying this for the purposes of crime prevention:

“If people bothered about putting alarm on, things won’t be on their [the burglar’s] side, get to know their [the residents’] persona” (Participant 21).

Also of particular interest was a point raised by Participant 12, who described how excessive forms of security would in fact attract him to a property;

“[What would attract me?] Bars on windows - why stopping me? Why bars on? And sheds with biggest padlock etc. See it as a challenge!” (Participant 12).

Whilst the above quote illustrates an instance where property features designed to deter offenders in fact attracted them (potentially due to the ‘flag’ hypothesis; Tseloni and Pease, 2003), a number of features were also identified in interviews as *successfully* deterring offenders from potential targets. These shall be discussed in the following section of this chapter.

6.2.3.2. Deterrence factors

It was found through interviews that there was substantial variation with regards to the factors that may deter offenders from targeting properties to burgle. The average number of features that would deter offenders was between two and three. Almost a quarter of offenders (22%) identified at least five or more security devices that would actively deter them from a property; this could be starkly contrasted with the views of two offenders, who stated that ‘nothing’ would deter them from targeting a property.

The most popular reported deterrent was the presence of dogs at a property; described as a deterrent for almost half (48%) of offenders. For some offenders, it was the associated fear that would inhibit the offender from targeting a property:

“[What would deter you?] Dogs. Scared of dogs. Only thing that would ever stop me” (Participant 4).

In addition to fear, the resulting noise from dogs present in a property was raised as a possible deterrent for offenders:

“[Anything that would deter you?] Dogs - any that are noisy” (Participant 21).

“Dog. Big dog - noisy” (Participant 16).

One participant also raised the concern that this may lead to trace evidence being left at a scene;

“[What would deter you?] No dogs, big dogs. Blood - evidence” (Participant 6).

One point of note was the process by which offenders established the presence of features that may deter them from a property. For example, in relation to dogs, this was estimated by looking out for:

“...dog bowls / signs / barking” (Participant 12).

The same strategy was employed when establishing whether children were resident at a property. Whilst the presence of children was only identified as a specific deterrent amongst 13% of offenders (despite the fact that 35% of offenders stated they would actively try to avoid targeting properties with young children), establishing whether children’s toys were visible appeared a popular strategy amongst those who did;

“If children, lot of toys around. Don’t go there” (Participant 1).

“If kids toys - no” (Participant 3).

Following dogs as the most popular deterrent, one of the next most reported deterrents to burglary targets were ADT (or police-linked) alarms, reported by over a third (35%) of offenders. The broader concept of property alarms as a form of deterrent is discussed in Section 6.2.4.3. of this chapter and thus shall not be replicated here. However, the notion of being seen / visible in an open area was also reported by just over a third (35%) of offenders, who reported that this may deter them completely from a property:

“If open area in neighbourhood - wouldn’t touch” (Participant 10).

“[What would deter you?] If neighbours could see you clearly. Some burglars - would have to wait a year before could burgle - would check every day, then do it” (Participant 13).

“If someone looking out of a window, or having cigarette out of window, look at you - put me off” (Participant 3).

Furthermore, the presence of CCTV / cameras was also identified as a potential deterrent amongst a third (30%) of offenders questioned:

“Cameras - put [me] off. Alarms - not put [me] off” (Participant 14).

“[What would deter you?] Cameras - every house has got alarms” (Participant 7).

This last quote appears to suggest that whilst a high number of properties have alarms, these may be insufficient as a deterrent; whether these are not utilised, not responded to, or simply viewed as ineffective. Conversely, there was a sense that cameras and CCTV acted as a much more effective deterrent, and that if a camera was installed at a property, this was much more likely to be utilised; thereby increasing the risk of detection for offenders.

One particular point of interest that emerged during interviews is that it is not just the *volume* of security devices that deter offenders. In fact, in some instances, offenders perceived that a number of security features served as an attractive challenge for them, or made them believe that there was something in the property worth stealing:

“[What would attract me?] Bars on windows - why stopping me? Why bars on? And sheds with biggest padlock etc; see it as a challenge!” (Participant 12).

Nevertheless, the consensus amongst offenders was that a combination of different security devices would be more likely to deter them from a property, as is consistent with the findings of Tseloni *et al.* (2014). Furthermore, one factor identified by a handful of offenders that may deter them would be the perceived effort involved in targeting a property:

“[What would put you off?] If bars on windows, pain to get in, scruffy gardens, general appearance” (Participant 8).

“If padlock - on side gate. Curtains closed. If stickers on window - no keys left on side, more cautious in general, thus not worth bothering” (Participant 21).

There appeared to be a clear emerging theme with regards to offenders' perceptions of what they viewed as a 'nice' or 'well kept' property, as measured by features such as the state of garden, for example, or being in a 'nice' area. However, whilst features such as well-kept and tidy gardens may add to the perceived attractiveness of a property, conversely; untidy and unkempt gardens

may in fact deter an offender from a property and lead an offender to question whether it would be worth targeting that particular property.

Once an offender has established an attractive property, features of guardianship at the individual-level of the property are then considered with regards to whether the property would make a suitable burglary target; specifically, these are occupancy, visibility, and accessibility, and are discussed in the following section of this chapter.

6.2.4. Guardianship

6.2.4.1. Occupancy

During the course of interviews it emerged that the occupancy status of a potential burglary target; i.e. whether a property was occupied or not, was an important factor considered by offenders when establishing a suitable burglary target. Specifically, 70% of offenders felt this was an important factor in choosing an appropriate target. For some offenders, an occupied property automatically excluded a property from being targeted:

“...never try it if it’s occupied. I would knock rigorously, find next street and ask them where that is. Make sure they [any occupants] hear me” (Participant 10).

“If someone there, [I’m] gone. Literally no confrontation” (Participant 13).

“...couldn’t do with occupied, not just getting caught, not violent, but didn’t want to take chance” (Participant 9).

Therefore, part of the driving factor behind occupancy being a precluding factor appeared as a result of fear and wanting to avoid any confrontation with a victim. However, it also emerged that for some, this view was driven by a fear of the *legal consequences* of targeting an occupied property:

“Occupancy? I wouldn’t do it when occupied. [Why?] Because of the aggravated features [of a subsequent conviction]” (Participant 6).

“Never done an occupied house - too scared. Ran in before when woman in, ran straight out. Never do occupied, sentencing too - mandatory prison sentence” (Participant 7).

What was particularly interesting was the emergence of offenders who preferred to target unoccupied properties, but who would demonstrate their flexibility and subsequently adapt their approach if required. This included offenders who reported sneaking into and around a property in order to evade detection:

“Lot easier if they’re [residents] not in. But doesn’t necessarily exclude it. [Caught?] Been beat up a few times. [What do you do?] Depends on the situation. Tried to escape a few times” (Participant 1).

“Prefer it not to be [occupied], but if it is I’d just sneak in living room, it doesn’t really matter” (Participant 23).

“Depends on situation. If [I] could sneak in without them seeing me, then yes, I’d do it” (Participant 16).

“[Occupancy important?] Not important - unless wake and moving about. Work around it. Lot of creeps [creep-ins] where been caught, like with brother in Headingley, had bottle of whisky thrown at me, nowadays just try and get away” (Participant 4).

“Depends on property and situation. If [they’re] in living room, I’ve gone to kitchen. I’ve been in bedrooms when people have been in bed. Did get a buzz / rush out of it” (Participant 22).

The sentiments offered by this last quote make an important distinction in the type of offender, as being the type of offender who received a form of ‘buzz’ from an occupied property:

“[Occupancy?] Not that important. Get a buzz out of it; for example with grabbing keys, guy on sofa” (Participant 21).

Furthermore, some of the participants described how an occupied property could be used to their advantage:

“Doesn’t matter [if occupied]. Prefer if they’re in, because car keys will be there” (Participant 18).

These quotes challenge the preconception that occupied properties may be unattractive to burglars, because they highlight how occupied properties may indeed be utilised to an offender’s advantage, whether this is to fulfil an offender’s need for a ‘buzz’, or in facilitating access to car keys. Furthermore,

these illustrate the potential MO of offender in targeting car keys through accessing car keys from a property; this will be discussed in further detail in the following chapter.

6.2.4.2. Visibility / Cover

A high majority of offenders (78%) reported that visibility / cover was an important factor when establishing a suitable burglary target:

“[Visibility?] A good thing to see around, bad because opened up” (Participant 21).

“Wouldn’t just start attacking door in full view of that neighbourhood” (Participant 7).

“I would be potentially scared, may be someone looking. Look round, if no-one there, go in” (Participant 3).

“[Visibility?] Very important. Avoid if very visible. If secluded, out of the way, 9 times out of 10 - go for that. If neighbours can see - avoid. If out in the open, wouldn’t go near it” (Participant 11).

Offenders went on to discuss strategies they would use to ensure their visibility was minimal during the course of their offences; for example, describing the time of their offending as being strategic to avoiding visibility:

“Visibility? Normally do it about 3 / 4am. 5 / 6am I’m moving [returning home]. People going to work” (Participant 4).

“Cover - important. Need more cover, in daytime only. [Offend] on a morning only. Knew they’re out, on school run etc” (Participant 15).

Some offenders also stressed the importance of a property being set back from the road / not on a main road as being an attractive target;

“Avoid cameras - sometimes hard, if lot of cars, main road, lot busy. If house on its own - good” (Participant 1).

“[Properties] Need to be covered / have long drive etc...but have done with no cover. Sometimes don’t give a toss; you get a time limit” (Participant 22).

This last quote is one of particular interest, in that it describes occasions where the offender has committed offences without significant concern to the level of cover / visibility of a property, suggesting that they have a ‘finite’ window of time / opportunity in which to commit an offence before the alarm is raised. This has substantial implications for crime prevention, in suggesting that features such as cover or occupancy may not always be as important if there is a sufficient window of opportunity for an offender to commit an offence before being caught / detected. This is particularly prevalent in the case of ‘sneak-in’ type offences.

The use of bushes and shrubbery was also raised as an important strategy in helping to enhance cover / minimise visibility of offenders:

*“Rather offend in darkness. Bushes / fences are an advantage”
(Participant 6).*

“Very important. Go for cover, bushes / trees etc.” (Participant 14).

“[Visibility?] Very important. Targeted houses; targeted with back cover; targeted houses with trees / cover etc.” (Participant 9).

One participant in particular highlighted the value of Bonfire Night as providing great cover for offenders during the commissioning of offences, again emphasising the importance of seasonality on offending:

“Bonfire Night - great cover for burglars. Rain - good for cover. Trees in people’s gardens too” (Participant 11).

6.2.4.3. Accessibility / Security

Unlike the previously discussed features of occupancy and visibility, where participants appeared to demonstrate a preference as to the perceived importance of these factors in selecting an appropriate target, notions of accessibility and security were dealt with from a different perspective. Instead of being assessed in terms of the binary decision about burgling a property, when asked about the impact of accessibility / security on the likelihood of targeting a property to burgle, individuals often spoke about how they *addressed* areas of accessibility / security in order to gain access to a property. For example, it appeared that security was just one factor that individuals had to consider within the offence process:

“[Security?] Chance you take. [Wait until] Alarm off, then I’ll go [into the property]. Silent alarm, if red light stays on - knows that” (Participant 3).

One of the key factors identified in relation to the accessibility of a property was if properties were insecure:

“Door open, student areas in Leeds. Middle of day, door wide open. Think others must have thought others were still in and would lock on way out. Took laptop, phone, and wallet” (Participant 8).

“Used to check doors, sometimes find one open, about 2am in [the] morning” (Participant 3).

“Most of burglaries I’ve done, I’ve not had to break into, because doors are open for me already” (Participant 19).

The style of door / window on a property was highlighted as an important feature impacting on individuals’ ability to access properties. In particular, the use of UPVC doors / windows was highlighted as a highly accessible feature of properties:

“[Security?] Important, UPVC, can do” (Participant 11).

“UPVC - Doors / Windows, use screwdriver. Pop ’em off with screwdriver” (Participant 8).

“Pop window - UPVC, open window. Garden window - UPVC window, patio doors, not got locked both sides, or mole grip it - don’t really batter it” (Participant 13).

These last two quotes raise the concept of using tools to gain access to properties through UPVC doors / windows; specifically, the final quote relates to the use of ‘mole grips’ to gain access to properties. The use of mole grips was indeed raised by many offenders as a means to circumvent UPVC doors that comprise of ‘Euro Cylinder’ locks:

“[Security?] Mole grips - snap UPVC” (Participant 6).

“UPVC - all easy. Mole-grip. Get rod to it. Wooden doors - hardest - safest, to get through / louder” (Participant 15).

“Last burglary can recall - house, gone on holiday. No alarm box. UPVC doors. Know they were on holiday. Easy pickings - unless got stronger bit on UPVC in lock” (Participant 11).

The use of mole grip tools to access ‘Euro Cylinder’ profile locks (often used on UPVC doors) is well known amongst both criminal justice agencies and offenders alike. This last quote, when describing a stronger element to the lock, refers to the use of ‘Anti-snap’ locks / cylinders designed to withstand attempts to snap said locks, which have been an important feature in countering this means of access amongst offenders.

Property alarms were also raised as a feature that may impact on a property’s accessibility. In particular, this feature was identified as a deterrent amongst a third (30%) of offenders:

“[Deter you?] Alarms, cameras, wouldn’t touch them” (Participant 5).

“If alarm with flashing lights - may work, may avoid it” (Participant 7).

However, participants also described how they were often able to ‘bypass’ property alarms:

“Old alarms on big houses, can beat old alarms a lot easier, crawl under sensors, go in upstairs window” (Participant 13).

“Stop the noise with alarms, fill it with expanding foam / spray with WD40. [Done it with them?] Set off alarm, wait 20 mins, if no-one comes in, do it. Then go, take sensors off, and go in and take what you want. Alarm [I] can bypass” (Participant 4).

A number of offenders made the distinction between different types of alarms with regards to the potential impact they may have on preventing access to a property. In particular, the use of ADT alarms, or other alarms linked to the police, were often seen as a sufficient deterrent over alarms not linked to the police, being identified by over a third (35%) of offenders:

“Floodlights - put me off. Door with buzzer - put me off. Certain makes of alarms too” (Participant 22).

“Security - different makes of alarms. Some put you off, can tell you if they’re dud. ADT alarms - wouldn’t touch, ’cos good. Know people tripped up with them. Line to the Police” (Participant 9).

“[Security?] Not really. ADT alarms - only ones where send [police] cars out. Get a 5 min relapse” (Participant 4).

“[Alarms?] Depends on. Not if ADT - tinbell straight to the police...If no name on [the alarm], know [the alarm is] shit, not wind up to police” (Participant 15).

“Anyone with an ADT alarm - no, everyone wouldn’t. Just don’t do it” (Participant 8).

However, some participants described how they would take steps to counter such security measures:

“ADT alarms - got ones, find a way round it. Window sensors, look round the house, see where sensor is” (Participant 13).

Lighting as a security measure was also reported by offenders as impacting on their selection of potential targets; this applied both to the use of security lights and internal lighting:

“[Security?] Alarms, sensor lights - think twice, people in house and people outside... more security you have the better” (Participant 21).

“Though spotlights are bad - light up whole garden” (Participant 6).

“If light on in house, 9 times out of 10 wouldn’t approach” (Participant 8).

Furthermore, the use of CCTV / cameras was also described as impacting on the perceived accessibility of properties:

“[What would deter you from a property?] Cameras - every house has got alarms” (Participant 7).

“Cameras - put [me] off. Alarms - not put [me] off” (Participant 14).

“CCTV - always wouldn’t go near” (Participant 10).

In terms of the areas of a property targeted for access, doors were mentioned as a key point of access amongst offenders; including front, back and patio doors:

“Used to check doors, sometimes find one open. About 2am in morning” (Participant 3).

“UPVC doors - still open get access to mechanism. Can do [Using mole grip tool]. Unless got one of stronger locks. But don’t know until you try it” (Participant 5).

“Front door if think keys are downstairs” (Participant 21).

“Key left in back door. 9 panel window - smashed with brick” (Participant 9).

“Patio doors, not got locked both sides” (Participant 13).

In addition to doors, windows were also highlighted as a potential means of access:

“If window open, check front and back door - if not [open], do window” (Participant 3).

“Wooden frame windows. Easier than double glazing. Can prise them off...double glazing - scrapey type noise” (Participant 5).

“UPVC - doors / windows, use screwdriver, pop ’em off with a screwdriver” (Participant 8).

The use of brute force was also highlighted by some offenders as a means of access:

“Used to kick doors down. Sometimes, couple a day, sometimes - none... used to be wooden doors. Not too much noise. Took blanket to muffle” (Participant 9).

“[Target] wooden frame windows. Easier than double glazing. Can prise them off. [Noise?] Just a cracking noise of the wood cracking; think it’s worse / noisier than it is” (Participant 5).

“Brute force - window pops - smashes” (Participant 13).

Offenders also described during interviews the unconventional means of access they have used previously:

“Commercials - have digged walls out” (Participant 12).

“Take 1 brick out [at a time] - 10 / 20 mins, if come to it, do it that way” (Participant 4).

This last quote again suggests substantial motivation and commitment during the course of an individual’s offending, whether this may in part be due to a sense of desperation, or rather a sheer commitment to enter a particular property, which may be as a result of the known or perceived reward on offer.

Participant 3 also described a very specific means of access to a property he had found previously;

“House in Leeds - Chapeltown. Black slide [coal chute] into cellar - took laptops etc. Left via front door. Police thought [I was] not inside” (Participant 3).

In discussing the impact of accessibility / security on property selection, the use of tools emerged as a recurrent theme during the course of individuals’ offending. Though this is raised here as part of the decision making associated with target attractiveness, it will be discussed in further detail with regards to the *process* of burglary offences in the following chapter.

6.3. Property Image Task

As detailed at the outset of this chapter, a property image task was also employed as a further means to explore offenders’ perceptions of what makes an attractive burglary target. This task involved showing participants images of different types of properties, and asking them to rate the attractiveness, as well as the perceived accessibility, cover, and occupancy for each property. As discussed previously (Section 3.46), this task comprised a series of Likert-scale ratings according to attractiveness, accessibility, and cover, with each of these features being positively weighted (high values being preferential to an offender). Ratings were given out of 10, and the average scores of these were calculated across offenders. The perceived occupancy of each property was also given. The ten properties used

within this task are illustrated in Figure 6.2, below. The average ratings given have also been provided in Table 6.2, overleaf.



Figure 6.2. Images used in the Property Image Task (top row, l-r, Properties 1-3; second row, l-r, Properties 4-6; third row, l-r, Properties 7-9; bottom row, Property 10).

Table 6.2. Offender Ratings for Property Image Task.

Property #	Attractiveness	Accessibility	Cover	Occupancy		
				Yes	Maybe	No
1	6.74	7.87	6.83	0.09	0.39	0.52
2	2.83	6.65	3.57	0.04	0.26	0.70
3	4.96	4.17	2.22	0.17	0.26	0.57
4	4.83	6.17	2.65	0.13	0.35	0.52
5	2.17	5.00	2.13	0.17	0.39	0.43
6	1.70	3.57	1.65	0.04	0.26	0.70
7	1.61	2.48	1.13	0.04	0.57	0.39
8	7.52	7.61	9.57	0.04	0.74	0.22
9	1.83	2.96	1.83	0.22	0.57	0.22
10	6.48	7.83	4.87	0.96	0.04	0.00

As can be seen in Table 6.2, Properties Eight, One and Ten were rated as the most attractive amongst the ten properties; these properties are displayed in Figure 6.3, below.



Figure 6.3. Three highest-rated properties for attractiveness (l-r; Properties Eight, One, and Ten).

There was found to be a significant relationship between offenders' ratings of attractiveness, accessibility and cover. This can be observed through an eyeball observation of the results as per Table 6.2. The three most attractively-rated properties also had the three highest ratings for both accessibility and level

of cover. Conversely, the three least attractively-rated properties received the lowest ratings for both accessibility and level of cover. Indeed, significant Pearson correlations were found between attractiveness and accessibility ($r = .572$, $p < .001$), attractiveness and cover ($r = .546$, $p < .001$), and accessibility and cover ($r = .498$, $p < .05$) as illustrated in Table 6.3. The three most attractively-rated properties all comprised a certain level of cover, and Property Ten also conveyed a certain degree of affluence, both of which have been identified in the literature as making properties ‘attractive’ to burglars (Davies and Johnson, 2015; Cromwell *et al.*, 1991a; Maguire and Bennett, 1982).

Figure 6.4 illustrates the three properties with the lowest ratings of attractiveness across the offenders interviewed; Properties Seven, Six, and Nine. The main reasons given for these properties’ lack of popularity was due to their openness, visibility and proximity to the street, as well as having limited points of access, and the ‘added’ element of uncertainty as to who may be in the vicinity of the flat (for Property Nine).

Table 6.3. Exploring the dynamics between offenders’ ratings of attractiveness, accessibility and cover.

		Attractiveness	Accessibility	Cover
Attractiveness	Pearson Correlation		.572**	.546**
Accessibility	Pearson Correlation	.572**		.498**
Cover	Pearson Correlation	.546**	.498**	

* $p < .05$. ** $p < .01$.



Figure 6.4. Properties with lowest attractiveness ratings by offenders (l-r; Properties Seven, Six, and Nine).

One point of note that emerged during this task was the difficulty encountered by offenders in establishing whether or not properties were occupied. The key indicator used by offenders to try and determine whether a property was occupied or not was the presence of a vehicle. However, of particular note is the fact that the belief of occupancy did not appear to deter offenders from perceiving a property as 'attractive'. Specifically, for Property Eight, which was the most attractively-rated property, 17 out of 23 offenders (74%) believed that this property may be occupied. Furthermore, for Property Ten, which was the third most attractively-rated property, 22 out of 23 offenders (96%) believed that this property was likely to be occupied.

6.4. Comparing Results from Interviews with the Property Image Task

The results from the property image task indicated that perceptions of accessibility and cover were associated with the perceived attractiveness of individual properties. Furthermore, it was apparent that perceiving a property as occupied would not necessarily deter offenders from targeting a property (in this context, viewing such a property as an attractive target). Conversely, the properties that were rated as least attractive were rated as highly visible, which deemed them as unattractive *regardless* of their perceived occupancy or accessibility.

Table 6.4 indicates the features represented by each of the images presented to each participant. The three most and three least attractive properties to offenders have been colour coded in green and red (respectively). However, there does not appear to be a clear formula to help determine whether a property may be perceived as attractive. Rather, this appears due to the combination of features and differing weightings attached to these by offenders that may determine whether a target is perceived as attractive. Furthermore, the weighting attached to features for some properties will differ dependent on the nature of the property itself. For example, for Property Eight, which was deemed as the most attractive, increased cover was identified as being the most important feature for this property, being reported by 78% of offenders. However, whilst the presence of dogs was identified as the most effective deterrent during interviews, during the task only 43% of offenders identified a 'Beware of the dog' sticker on the front of this property as being an effective deterrent in this instance. Therefore, it is very much the combination and weighting given to

specific property features (so-called push / pull factors) that will help determine whether a property may be targeted.

When comparing these findings with those emerging from interviews, it was similarly found during interviews that although unoccupied properties were preferred, this would not necessarily deter offenders. Furthermore, property accessibility was linked to perceptions of whether a target was attractive, but discussion focused more upon how individuals would *address* issues of accessibility. Visibility / cover was also similarly deemed as highly important, with highly visible properties deterring offenders (as based on interviews and the property image task). Notwithstanding this, it appeared that it was the *combination* of features together that had the greatest impact on the perception of a target as attractive or not. For example, whilst affluent properties / affluent areas were described by offenders during interviews as important factors in considering a target, during the image task only one of the three properties in affluent areas was rated as attractive (affluent as measured using the 2011 OAC groupings in which these properties were located; the process for which is detailed in Chapter 3). In fact, the other two properties in affluent areas were rated as least attractive, as a result of the visibility and property type. This suggests the importance of taking a range of factors into account when trying to establish the perceived attractiveness of individual properties.

Table 6.4. Property features for each house in the property image task.

Feature	Property Number									
	1	2	3	4	5	6	7	8	9	10
Side gate				X	X					X
Visible side entrance			X		X					
House Alarm		X	X			X	X			X
Expensive Car										X
Ramp / rails					X					
Affluent Area		X	X		X		X		X	X
Deprived Area	X			X		X		X		
Dog Sign								X		
Alleyway	X									
Long drive					X					

Lesser Visibility	X	X				X	X		
On corner	X	X							
On busy road		X				X			
Detached		X							X
Semi			X				X		
Terraced	X		X			X	X		
Flat								X	
Townhouse									
Bungalow		X		X					
Neighbourhood Watch / Police Initiative	X		X						
Garage on side		X	X	X					X
Near grassland	X								X
No car	X	X	X	X	X		X		
Cul-de-sac		X		X		X		X	X
Constrained City Dwellers OAC	X		X				X		
Multicultural Metropolitans OAC						X			
Urbanites OAC						X		X	
Suburbanites OAC		X	X	X					X

6.5. Implications for Crime Prevention

In exploring the target selection of burglars, this chapter has identified a number of features that would both attract, and deter, offenders from targeting specific properties. As well as this, this chapter has sought to reveal the different stages / processes in which suitable targets may be established. In doing so, this chapter has uncovered some important security features as well as intervention, or ‘pinch’ points, which may help to make a property less attractive to burglars, or may disrupt / deter offenders during the commissioning of a burglary offence. For purposes of ease and clarity, the key areas and related crime prevention recommendations are detailed in Table 6.5, below. As can be observed, these recommendations are in relation to the themes of accessibility / security, occupancy, and visibility, thereby focusing on the individual-level of a property, where crime prevention advice can be readily translated into action.

Table 6.5. Crime Prevention Advice based on Target Selection interviews.

Area	Advice
Accessibility / Security	<ul style="list-style-type: none"> ➤ Ensuring that residents utilise alarms on a regular basis where these are installed. Consideration could also be given to the installation of an alarm system that is linked to the police, i.e. an ‘ADT’ alarm. ➤ If residents have been burgled previously, taking action against any ‘weak spots’ or the means of access used by the offender(s). ➤ If you have a ‘Euro Cylinder’ lock, consider having anti-snap lock cylinders installed. ➤ Shredding confidential material / post rather than simply placing this in the bin ➤ Ensuring your property is secure even when you are present in the property. ➤ Enhancing the importance of security awareness and security precautions amongst student populations, particularly in shared / student housing. ➤ Student (or private) landlords: to inform new tenants if a burglary has taken place at the property in the past 12/18 months.
Occupancy	<ul style="list-style-type: none"> ➤ Turning internal lights on if you are going out briefly (particularly at night). ➤ If you have children, make it evident from the outside; i.e. having children’s toys / books visible. ➤ If you have a dog, make it evident from the outside; i.e. visible dog bowl, dog toys.
Visibility / Cover	<ul style="list-style-type: none"> ➤ Consider installation of security / sensor lights to increase visibility and lessen cover for potential burglars. ➤ Taking care not to leave any valuables that are visible from outside of the property; i.e. keys, wallets, iPhone chargers that indicate such associated devices may likely be inside the property. ➤ Be careful not to have individual / family photos wearing expensive jewellery visible from outside of the property. ➤ Trim your shrubbery / bushes - make sure your property (and potential entry points) are visible where possible; if you can’t see the street from the property, the chances are the street can’t see a burglar at your property!

6.6. Summary

This chapter has sought to develop a greater understanding of the target selection of burglars, through the use of semi-structured interviews and a property image task. Visibility appeared to be an important factor in offender's target selection, with features such as occupancy and accessibility being things that could be 'worked around' by offenders. Wealthy properties in wealthy areas were identified as the most important attracting feature to offenders. In terms of the most popular demographic populations to target, these were Asian communities (for the perceived reward), in addition to student populations (identified for both the perceived reward but also the ease of access). A summary of results from this chapter has been provided in Table 6.6. Furthermore, Chapter 8, the discussion chapter, will provide a detailed discussion of the emerging findings from this chapter, exploring how these relate to the existing literature. This discussion will also consider how the results add to our knowledge of the dynamics of repeat offending, as well as how these can be used to enhance crime prevention efforts.

Whilst the interviews conducted sought to understand the target selection criteria of burglars, during these interviews information pertaining to the behaviours and preferences of offenders *during* the burglary process were also revealed. Consequently, the following chapter, Chapter 7, will discuss the emerging findings in relation to the broader burglary process, with a view to identifying how these findings can be applied for the purposes of crime prevention.

Table 6.6. Summary of Findings.

Feature	Key Findings
Areas Targeted	<ul style="list-style-type: none"> ➤ 70% of offenders stated they would target more affluent, or 'posher' areas. ➤ 35% of offenders reported they would target areas generally close to their current or previous home areas. ➤ The most popular group of individuals targeted were those of students, reported by over a third of offenders (35%). ➤ 30% of offenders explicitly described that they would target Asian populations during their offences.
No-Go Groups	<ul style="list-style-type: none"> ➤ Over 60% of offenders stated that they would not target elderly victims.

	<ul style="list-style-type: none"> ➤ 35% of offenders described that they would actively avoid targeting properties with children.
Distance Travelled	<ul style="list-style-type: none"> ➤ All offenders travelled shorter distances to their offences (up to 2 miles). ➤ 78% of offenders travelled up to 10 miles during offences. ➤ Half of offenders (48%) travelled over 10 miles to their offences, travelling across the city or to neighbouring cities. ➤ 9% of offenders reported that they would potentially travel anywhere in the country during the course of their offences.
Repeat / Near-Repeat Offences	<ul style="list-style-type: none"> ➤ 91% of offenders have offended in the same areas they have targeted previously. ➤ Approximately half of offenders (48%) had burgled the same property on more than one occasion.
Time of Offence	<ul style="list-style-type: none"> ➤ There appeared to be no specific pattern of time / days when offenders would / would not target properties. ➤ The times of offences specified appeared associated with the perception of least risk; particularly when properties are unoccupied. ➤ The concept of seasonality appeared prevalent, in that winter months were preferred as they provided lesser daylight (and thus greater levels of cover).
Attractive Features	<ul style="list-style-type: none"> ➤ Three quarters of offenders (74%) reported being attracted to 'nice' or 'wealthy' properties in 'nice' areas, with proxies such as cars, well-kept gardens and furnishings used to infer wealth. ➤ Two-fifths (39%) of offenders stated that luxury / high-performance cars would attract them to a property. ➤ Insecure properties were reported as an attractive feature for a fifth (22%) of offenders. ➤ 22% of offenders reported being attracted to specific property types; three offenders preferred semi-detached properties, one preferred 'corner houses', and a further three offenders preferred detached properties.
Deterrent Features	<ul style="list-style-type: none"> ➤ The average number of features that would deter offenders was between 2 and 3. ➤ Almost a quarter of offenders (22%) identified at least five or more security devices that would actively deter

	<p>them from a property.</p> <ul style="list-style-type: none"> ➤ The most popular reported deterrent was the presence of dogs, reported by almost half (48%) of offenders. ➤ The presence of children was identified as a specific deterrent amongst 13% of offenders (despite the fact that 35% of offenders stated they would actively try to avoid targeting properties with young children). ➤ A clear distinction was made between standard <i>generic</i> alarms and alarms such as ‘ADT’ alarms (or other alarms with a direct connection to the police); highlighted as a deterrent for over a third (35%) of offenders.
Occupancy	<ul style="list-style-type: none"> ➤ 70% of offenders reported that occupancy was an important factor in choosing a target. For some offenders, an occupied property automatically excluded a property from being targeted. ➤ Whilst a number of offenders preferred to target unoccupied properties, an occupied property would not necessarily deter them, and they would adapt their approach as required. ➤ Some offenders described how an occupied property could be used to their advantage.
Accessibility / Security	<ul style="list-style-type: none"> ➤ A number of offenders reported that they would target insecure properties. ➤ The style of door / window was highlighted as an important feature impacting on individuals’ ability to access properties; in particular, the use of UPVC doors, and using ‘mole grips’ to access such properties. ➤ A number of offenders made the distinction between different <i>types</i> of alarms; namely, the use of ADT alarms, or other alarms that were linked to the police, which were seen as a greater deterrent for offenders over alarms not linked to the police.
Visibility / Cover	<ul style="list-style-type: none"> ➤ The majority of offenders (78%) believed that visibility was an important factor in establishing a suitable target. ➤ Various strategies were employed to help reduce visibility, in terms of the time of offences, and targeting properties set back from the road to evade observation by others.

Chapter 7: Understanding the Burglary Process

7.1. Introduction

The previous chapter, Chapter 6, used offender interviews to determine the target selection criteria of offenders, in terms of the nature and breadth of features that attracted them to particular properties. However, as was recognised in the chapter, information pertaining to the burglary *process* also emerged during interviews that was deemed invaluable in helping identify potential opportunities for crime prevention. Thus, whilst the previous chapter explored the target selection criteria of offenders, the current chapter will build on this by detailing the themes pertinent to the process of burglary identified by offenders.

7.2. Analysis

As has been discussed within Chapter 3, the current chapter uses a content analysis approach to help understand the burglary process of offenders. During the course of such analysis, information relating to offenders' *modus operandi* (MO) was gleaned. This shall be explored shortly in this chapter, in Section 7.2.3. However, during the course of discussion on the burglary process, offenders also spoke about how they came to be involved in burglary offences. This appeared on the whole to be part of a broader process of socialisation amongst offenders, whereby they were introduced to this type of offence from an early age. As this forms the foundation for later behaviour, this process of socialisation will be outlined first.

7.2.1. Process of Socialisation

One of the key themes that emerged in offenders' accounts of how they became involved in burglary appeared to centre around a process of 'socialisation', in that a number of offenders were introduced to burglary through exposure to the crime during their formative years, often with family members:

"Growing up in estate, me and my brother, mate on estates. Seeing them doing it [burglaries] with cars. I was first in group to be remanded - something of a bravado etc." (Participant 21).

"[Easiest?] Caravan - Just out of Leeds. Walking distance to get there. With little brother. Told that key was under the plant

pot. Climbed through kitchen window, unscrewed light off. [Turn light off so couldn't be put on]. Found 9.5K in cash in a drawer" (Participant 4).

"[At what point would this cause you to offend?] Had the money, but then would still go out to offend. Because this was bred into me. Always do it - didn't want to have no money" (Participant 2).

This last quote gives a sense of how burglary becomes part of an individual's lifestyle, irrespective of whether money is required or not at any given time. This subsequently appears to develop into a way of life for many offenders, in that it forms part of their daily routine:

"Normally go to pubs with friends Thursday night [and] start arranging things for the weekend" (Participant 1).

This quote, together with a number of those above, indicates offending with others ('co-offending'), and the preferences of offenders with regards to whether they chose to offend with others.

7.2.1.1. Co-offending

During interview, three-fifths (61%) of offenders confirmed that they had offended with others, with half of these offenders (30% of the total number of offenders interviewed) describing how they committed offences both by themselves *and* with others:

"Normally by myself, also with others, about 4 of us, so long as you're not doing anything to bring yourself on top [get caught by the police], we're ok" (Participant 23).

In fact, a number of offenders described how they would commit offences with family members:

"Always commit by self, though sometimes with brothers - twins - 18 now. I'd always do the job, they could be the look out" (Participant 4).

"Mostly self. Sometimes mates and brothers - 3 years younger" (Participant 16).

During interviews, offenders went on to describe their reasoning behind committing offences with others and the benefits of this. In particular, they described the different roles that could be played by fellow co-offenders:

“Associates - 2 / 3 close friends. Friends throughout whole life. Each had specialism and each had role to play. i.e. 1 - muscle, 1 - alarms etc” (Participant 2).

“Usually by myself. When with people, have mobile with me, and stay in vicinity, act as a look out. Usually me who does the offence. If anyone else, they’ve just come along - they want to learn how to do it” (Participant 11).

A further 30% of the total number of offenders interviewed stated that they would offend with others and never by themselves, articulating the benefits of offending with others:

“Never [offend] by myself. [Why not?] Anyone with half a brain wouldn’t do. For me - it’s too much of a risk - getting caught. For me - it’s always a 2/3 man job. Each had individual roles. Driver and lookout, mole gripper and lookout, then person going in. Me? Normally mole gripper or going in. Offend with mainly same people. Group of friends. Peer group - built up over the years. People from local area etc.” (Participant 7).

“Co-d - varies, depends on who you are hanging with at the time; i.e. if with someone, then work to strengths. Novice can play the look out. Other people can be better - so work to your strengths” (Participant 11).

70% of offenders interviewed described how they had offended by themselves previously. Breaking this down, 30% of offenders interviewed described how they had offended both alone and with others, with the remaining 39% of total offenders interviewed (total of 70% is not achieved due to rounding issues) stating how they only offended alone and *not* with others. Participants similarly described the benefits of offending alone, both in terms of issues of trust, but also in the event of anything going wrong:

“Always on my own, better off on my own” (Participant 15).

“[I] Only ever worked by myself, if you can’t trust yourself, you can’t trust anyone else. I can’t trust myself, let alone anyone else” (Participant 4).

“Offend by self. Always by myself, if ’owt goes wrong, it’s just me” (Participant 10).

Some offenders described how they would offend alone in order to avoid detection:

“Offend by myself. Better than with others. Less chance of being caught” (Participant 18).

“Offend by self, not others, [they will] grass you up” (Participant 14).

A small proportion (13%) of offenders described how they currently offended by themselves, however had offended with others previously:

“Normally myself. Don’t have to split the money then. Done few with others, normally with cars etc.” (Participant 19).

“Always offend by myself; have offended with others, [aged] 15/16 - ram raids with shops” (Participant 12).

One participant described how whilst he had previously offended with others, offending by himself had meant that he was less likely to be ‘grassed up’;

“Offend by myself. Have done with others in the past, but when caught, they grass so did it by myself” (Participant 3).

Following on from the recognition of burglary as a social process, it was important to consider burglary by exploring its different behavioural elements. Through the analysis of offenders’ accounts of the burglary process, there appeared a number of distinct ‘facets’ to the burglary process, each of which were interconnected and dynamic elements of the offence process. These were identified as follows;

- Motivation
- Modus Operandi
- Journeys taken

- Risk
- Reward

The *modus operandi* appeared to be the core of these facets, subsequently impacting on the nature of the surrounding facets (as is illustrated in Figure 7.1). However, as will be discussed shortly, the MOs identified appeared to be fluid in nature, thereby meaning that the subsequent adjoining facets were also fluid and dynamic in nature. Each of these facets will now be explored in turn, commencing with the motivations of offenders.

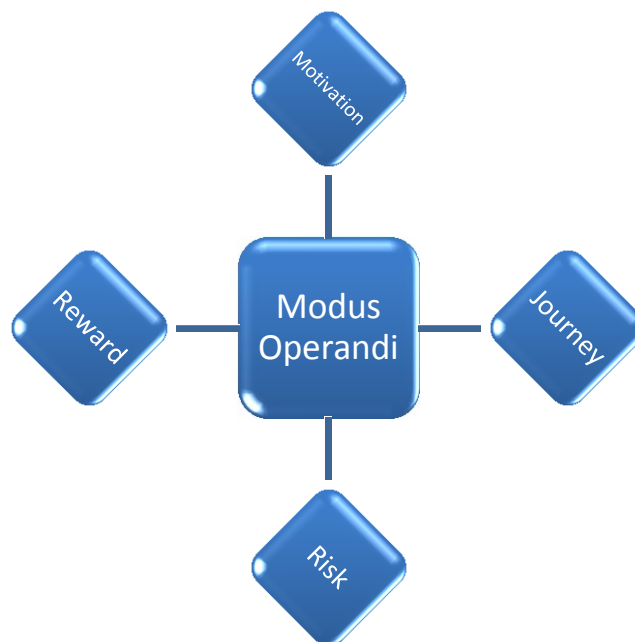


Figure 7.1. The 'Five Facet' model of the burglary process.

7.2.2. Motivation

In describing their offending and involvement in burglary offences, details regarding the driving forces that underpinned these offences were also explored with offenders, as well as considering whether these factors changed, or remained consistent, over time. The motives identified are discussed below.

7.2.2.1. Motives for offending

With respect to offenders' motivations for committing burglary offences, these were predominantly committed for acquisitive means. Indeed, all offenders questioned reported that they committed offences for financial gain. Of those, 87% reported offending specifically to fund their substance use:

“Committed burglary - opportunist, money for drugs” (Participant 8).

“Committed burglary to feed drug habit. Heroin and Crack” (Participant 9).

“Aged 24 plus, became Heroin addict. Was working - about £80 a day, but odd job here and there, then it became habit. Rather than offending 3 times a week became 3 times a day to fund” (Participant 11).

As well as funding their drug use, offenders also reported offending to fund their lifestyle. Whilst part of this lifestyle involved their substance use, this was also identified as general living costs:

“Support lifestyle, and support Cocaine use - daily, on / off about 5 / 6 years. If not using drugs - wouldn’t commit crime. Never under influence when offend” (Participant 10).

“When first started, [offended] to pay for solvents / foods / gas / glue petrol etc. Back pain and suffering. Then, got into crowd - Weed etc. So had roof etc. over my head. Used a lot of Weed, more addicted, from necessity to live, to have to pay for drugs. Had to have them” (Participant 20).

“Drug use linked to offending. Everything’s drugs linked - support lifestyle, part of which is drugs” (Participant 23).

“Fund everything. Crack and Cannabis and beer. And living generally” (Participant 16).

Thus, it can be established that burglary played a varying role in supporting offenders’ drug use; whether this was through directly funding this to support a physical addiction, or that the proceeds from burglary helped to support a lifestyle in which drugs were an important feature. However, as well as committing offences for acquisitive means, a number of offenders described offending for psychological reasons. Specifically, over a fifth (22%) of offenders described offending for the ‘buzz’ that burglary provided them:

“[Why commit that burglary?] Because I can. Get a buzz out of it. because I’m good at it. Money - is a secondary thing. Using burglary

for food etc. Getting 1 over on the police, doing it, all a buzz” (Participant 12).

“If bedroom doors open - buzz, open bedroom door, really addictive. I walked round while they’re in the living room. Signing on at 16. Just burgled ’cos of the buzz. Sometimes in the house. 18 with drugs. 24 now. Burglary - buzz / adrenaline, like quite a buzz when next to guy going through pockets, really strong, like a heart attack” (Participant 3).

“Started burgling with friend at first, taking copper. Friend introduced me to it [burglary], was chasing buzz from it, then he stopped and I carried on. I got a buzz from it” (Participant 4).

This supports the literature into burglary MOs, where the nature of psychological drivers have been highlighted as a factor driving domestic burglary offences (Fox and Farrington, 2012).

As has been highlighted in this section, one of the key factors underpinning individuals’ offending was the need to fund their substance use. However, it is important to explore the ways in which drug use is linked with a lifestyle of offending, and a lifestyle in which offenders are able to offend. Offenders discussed not only the types of substances used by them, but also the role that substances played and the relationship between their drug use and their offending.

7.2.2.2. Use of drugs

100% of offenders interviewed admitted that they were drug users, albeit to varying degrees and with different substances. A number of offenders described their use of drugs as being a fundamental component of their day, as well as requiring drugs to function and to feel like ‘normal’:

“On Heroin, sometimes Crack, just to feel normal” (Participant 22).

“Under the influence just because using [anyway]” (Participant 19).

A number of offenders described how their use of drugs enabled them to offend. Their use of drugs in such instances was heavily instrumental, in that it gave

individuals the confidence to offend, as well as helping to alleviate the guilt associated with offending:

“If not using drugs - wouldn’t commit crime. Never under influence when offend” (Participant 10).

“Drugs linked with offending. Heroin. If withdrawing, would offend more. Drugs gave me confidence. Valium - think I’m invincible” (Participant 6).

*“Always under influence [burglaries]. Couldn’t do it without drugs. [Why?] Made mistakes, f*ck it up. Without drugs, had a guilty conscience, think about being caught, and what you’re going to lose. Didn’t consider it with drugs” (Participant 4).*

*“To help guilt - wouldn’t do it, take it to feel good, Amphetamines - help take conscience away. Feel tight afterwards, at the time don’t give a f*ck” (Participant 12).*

The distinctions in these quotes demonstrate the differing roles that drugs play for individuals, as well as how they may be linked to an individual’s offending, both in terms of the underpinning drivers, but also in terms of helping in the facilitation of offences. Indeed, a number of offenders described how their use of drugs enabled them to ‘alleviate’ any feelings (guilt or otherwise) related to their offending that may inhibit them from committing such offences. In doing so, this raises the question of the extent to which burglary offences were pre-planned or thought out prior to their execution, or whether such offences were indicative of a spontaneous opportunity to acquire financial gain to fund a dependent drug habit. This can be considered in the wider framework of how offenders approach and carry out their offences; that is, their MO. This shall be explored in the following section of this chapter.

7.2.3. Offender MO

In considering the particular MOs of offenders, there appears to be a clear distinction in the extent to which the MOs identified were pervasive across an individual’s burglary offences. For example, the majority of offenders demonstrated traits of an opportunist MO, yet this was not necessarily prevalent across all of their offending, and rather was enacted as and when the situation presented itself. However, there appeared to be one exception to this: specifically, those offenders whose MO was characteristic of a professional MO

appeared to be more exclusive in their style / approach to offending, as is discussed below.

7.2.3.1. Professional

During interviews a small number of offenders appeared to describe a number of rather professional and organised features in their offending. As such, the offenders that appeared professional with regards to their offending appeared to be professional *throughout* their offending. This was starkly contrasted with the ‘Opportunists’ and ‘Sneak-in offenders’ MOs identified later in this chapter (the relationship between these and offence types from Chapter 4 will be discussed in Chapter 8), which did not appear to be pervasive behavioural patterns / MOs across the offenders that they applied to, but more that these MOs emerged as and when was required by the situation / opportunity. There appeared to be four key features characteristic of professional offenders; it appeared that the further offenders engaged with each of these features, the greater the sense of professionalism exhibited. However, these features were not necessarily exclusive to professional offenders *per se*; that is, offenders who were not professional in nature also exhibited behavioural traits in these areas. As such, this demonstrates the fluid and dynamic nature of offending practice and offender MOs. The four features of professional offenders were identified as follows:

- *Sophistication / level of expertise;*
- *Stealing to order;*
- *Blending in;*
- *Use of tools.*

Sophistication / level of expertise

During interview there were a small number of offenders who demonstrated a degree of sophistication during the course of their offending:

“Always travel in the car. Have a car between you. Meet up with people, then go to [offence]. For a hardcore burglary, bought stolen car, put legit plates on. 50/50 when hardcore job vs normal job etc. Hardcore burglary - had more solid intelligence, more planning went into it. After the offence - travelled home via car. Agree route back beforehand. Just in case pressure come back. Alibis sorted. Variety of safe locations - park up / set car alight. Knew every street / back alleys to route - places to escape if

needed. Cell sighting [phones] started to get clocked in and working round this etc.” (Participant 7).

“Offend day and night - depends on what doing. When gone far, gone down motorway. Plates - go auto trader - see 30 mile radius - see cars. Also, go onto ASKMID.COM - make sure insured cars - so don’t flag up issues etc. Got a convoy thing” (Participant 21).

“Did do car rental places - took cars. Did it near airports / train stations. Outside city centre, ANPR cameras there - Police look back at everything. Normally seen cars 4/5 days before going for them. Astra / Octavia, Audi A3, A4, Golf, BMW 3 series - not too flash. Send a girl to get a car for 2 days (to hire the car), and see where they put the keys for the cars. Sometimes put these in boots. Probably avoid putting these in same location. Could do it about once a week. Look about for a target. Larger companies are easier - bigger. Smaller companies - harder, means more to them to lose them [cars]... Also done cash machines - have a van. Steal JCB, throw cash point in back of van. Get in with steel saw. Have a van waiting, both vans stolen. To other vehicle waiting. Steal vans that day or day before. Cash machines - 4 of us. Pinching cash machines with JCBs, good few over an 18 month period. 1 every 2 weeks. Most - got 162K, least got 60K. Cash in transit vans - G4S etc, best - 150K, pot luck, every month / every 2 months. Different disguises / clothes etc. Switch between different offences” (Participant 2).

“There were teams - burglary, shoplifting, robbery teams - mix, quite a fluid thing. Would co-ordinate efforts between teams to do it. Drug dealers would co-ordinate things. They would feed you drugs and you do jobs for them. 3 or 4 people per team. Can help each other out if needed. i.e. if one team get into trouble call on others and teams will come help out. Been doing it for 10/15 years now. Always worked like that. If a job requires something less, would do it myself. But have someone there to look out for me. Jobs allocated to us by drug dealers - could be for grievances in an area. Would be co-ordinated. When move around, increase contacts with people, gives tips and tricks may want to try / where to go etc. Kingpin - don’t know who he is - just phone contact. Ring him up tried to be one of the runners, said could do it better, knew more contacts, - didn’t like how the click was going. I got a load of new phones - meant set up runners with all new phones, meant with different phones then harder for Police to trace etc.” (Participant 1).

With regards to more 'organised', or professional offenders; such offenders demonstrated a degree of sophistication with regards to how they approached their offences:

"[Burgle same / nearby property?] More than once. 5-6 times off. Always have decent stuff in. Sometimes they have a key I take, then take it back there and use it" (Participant 10).

"Always had tool bag, [I] kept it in shed 3 doors down" (Participant 4).

"Uni - got to know some of the buildings, know [security] codes etc, [I would go in at] 5-7 with cleaners, go as same time as them" (Participant 23).

A handful of offenders further demonstrated their level of sophistication during the course of their offending through acknowledging the importance of understanding the 'mind-set' of residents, to help understand them and understand what was available to assist in their offending practice:

"If people bothered about putting alarm on, things won't be on their [offenders'] side, get to know their [residents'] persona" (Participant 21).

"Look at garden, if well kept, house itself looks clean, inclined to have a look. Cars - have a look. When put together get a sense of how many people living there and ages. Look in bin and see what wrappers gone in, see brands in them" (Participant 20).

Furthermore, offenders demonstrated a degree of professionalism / sophistication in order to help evade detection for their offending:

"Go in area - commit offences, burn out car, set disturbances off, send Police to an area, then go off and commit offence elsewhere. Especially like in Headingley, because they are very dense areas" (Participant 4).

"[Chance of being caught?] If [I] wear gloves, very small. If not, get rid of trainers. Grafting clothes - dark tracksuits, Primark trainers, cost £5, get rid of" (Participant 6).

“[Aware of police movement?] Yes. Had police scanners, before they went digital. Listen for ‘XRAY99’ (helicopter) also listen out for animal section” (Participant 21).

When asked whether offenders considered themselves to be experts, the majority (83%) of offenders said they were not, believing that if they were, they would not have been in prison being interviewed by the researcher for this project. 65% of offenders questioned believed that experts were individuals who were not caught, and approximately half of offenders (48%) perceived an expert as someone who is able to readily access a property during the course of an offence.

However, a small proportion (17%) of offenders described how they saw themselves as ‘experts’ when questioned during interview. This sense of confidence was predominantly in relation to two factors; firstly, their skills in the notion of burglary as a craft:

“[Expert?] Yeah and no. I’m just somebody - learnt a craft like anybody else. If you looked at it, police may class me as a professional burglar” (Participant 20).

“[Expert?] Yes, because good at what we’ve done. Commercial, cash and carry. Know if you’re gonna do it, will do it” (Participant 21).

Secondly, those who considered themselves as ‘experts’ also believed this was demonstrated by their ability to evade detection:

“[Expert?] At points, yeah I’m a don. When caught, don’t think I am. When caught, pissed out of my head” (Participant 3).

“[Expert?] Yes; not been caught for a tenth of what I’ve done” (Participant 11).

The notion of professionalism by offenders also appeared to be epitomised by individuals who offended as part of a ‘steal-to-order’ system.

Stealing to order

Over half of offenders (65%) had stolen goods to order as part of their burglary offences. Of those, a total of five offenders had stolen cars to order. Examples of these included stealing high-performance cars:

“When steal to order - performance cars; Audis, BMWs, R32 - 2/3 K, BMW - M5, Audi - RS5, Mazda, Golfs” (Participant 21).

“Have stolen to order, i.e. Golf, £1000 / £1500 per car. At time, don’t think about specific features. Go out and phone pals - say got a buyer for a Golf - Golf, Land Rover TDI, Range Rover, tracker - take them off” (Participant 6).

As well as instances where offenders stole cars to order with a specific buyer waiting, there were also occasions where offenders were aware of cars that would generally sell and thus would target their offences accordingly. In such instances where individuals were unable to sell cars on, they described making practical use of cars in their possession;

“Always got a specific car to get. Ford Mondeos. Others as and when. Sometimes, if couldn’t sell ’em, use cars, take plates from a matching car” (Participant 19).

One of the offenders discussed a rather advanced operation where the process of stealing a car to order appeared to be a small part of a much wider operation;

“Done about 50 car hire offences. Involved watching it and planning. If someone wanted Golfs. Each day would drive by. Steal to order. Go with recovery truck with overalls. Then put it on the truck. Check for trackers. Ring up guy straightaway. Then number-plates - get sorted. Number plates - normally within couple of days. Do research for plates for type of car etc. that match up. Sometimes doesn’t go to plan. Don’t believe always goes to plan” (Participant 2).

Whilst cars were identified as the most popular type of goods to steal to order, over half of offenders interviewed (52%) admitted that they had stolen other goods to order beyond cars:

“Laptops / iPads, computers, watches, jewellers etc. Gold, good investment” (Participant 13).

“Laptops etc. Sometimes had shopping list” (Participant 14).

One offender talked about how he had different people phoning up for different goods, thereby appearing to create a steady demand for goods;

“Did steal to order; had different groups of people - they phone up to ask” (Participant 23).

Of those individuals who stated that they did not steal to order, the key reason for this was to prevent others from learning about their business, (essentially) increasing the risk of detection in the future:

“[Ever stolen to order?] No, then everyone knows your business” (Participant 15).

“[Steal to order?] Have done in past. Not normally. Don’t like letting people know what I’ve done, because it leaves a trail - drop yourself in it” (Participant 5).

One of the key methods described by offenders that emerged during interviews was the importance of ‘blending in’ to their surroundings. This raised the concept of ‘hiding in plain sight’.

Blending in

A number of offenders who demonstrated a professional approach in their offending discussed the importance of ‘blending in’ to their surroundings, to ensure they went unnoticed in a given area:

“It is all about not being out of place” (Participant 2).

“Anything to lower the risk of people giving you a second glance and noticing you” (Participant 11).

One offender mentioned one particular group of individuals they would actively try to avoid;

“Worse is people - people walking dogs, people remember you and notice you. Just make no eye contact” (Participant 6).

Some of those interviewed described how they would act or dress in a way to help them blend in to their surroundings:

“Police saw me on way back - gone [to] cousin’s house, proper buzz there. [They] can tell how you act. Acted like a student” (Participant 3).

“Wear gloves - cold years, grafting clothes, smart clothes - to blend in” (Participant 13).

“Dress up like a student, ‘pissed’, out of face, scruffy, old t shirt, jeans and pumps, carry bag with you for change of clothes” (Participant 4).

“I will try and blend in, if no-one thinks I’m out of place there, dress smart, not be shifty / suspicious” (Participant 12).

One offender also described how the need to blend in helped to determine the type of goods they would take from a property and how they could transport these;

“Take smaller stuff, if smaller bags - favourites - small, easy to conceal - blend into your surroundings” (Participant 20).

Use of Tools

A further advanced method adopted by offenders in the commissioning of their offences was the use of tools to secure access to a property. During interview a number of offenders described their use of tools in assisting them during their offences:

“Also, gone to property with mole grips ‘n’ stuff, people shouting - just gone home. Fled and I’ve gone...9 times out of 10, would have screwdriver with me, just in case summat presents itself. Gloves, mole grips, hooded jacket...had discussion on that day that they were on holiday. Picked tools up, then went. Side hedge, alleyway down side, secluded, then any with hedge, plan escape route before” (Participant 11).

“Force windows / doors open. Little crowbar / jemmy bar / thick screwdriver / claw hammer. Carry tools with me, and depends what happens. Normally exit through the backs. Walk for miles” (Participant 5).

“[How important is security?] If couldn’t get in, use crowbar. Tools with you - rucksack with me. Have been caught with [tools] by Police before” (Participant 1).

However, offenders also acknowledged the dangers of carrying tools with them / being caught with tools. This referred to the risk of being caught in possession with tools that may be used to help facilitate a burglary offence, resulting in a subsequent conviction for ‘Going equipped for stealing’ under the Theft Act 1968. Offenders subsequently described how they would often attempt to access a property without the use of tools where possible:

“[Tools?] Screwdrivers, hammers, bricks - if could get in without them, would” (Participant 22).

“[Security?] Mole grips - snap PVC. Can do it. Pop window. Bit more risky, with them all [tools]” (Participant 6).

“[Aware of police movement?] Not aware. Sometimes saw Police. Wait, and then carry on. Not use gloves. Didn’t take tools, because if caught, straightaway done with intent” (Participant 9).

As a consequence of such risks / dangers, offenders also described how they could access such tools through the gardens of properties (or nearby properties) of those they were looking to target:

“Carry a screwdriver with me, sometimes something [other tools] in the garden they can use - if not, then next door etc.” (Participant 14).

“Brickwork - shops and car washes etc., estate agents, lump hammer and chisel. Within 10 gardens, always a tool you can use” (Participant 4).

Furthermore, offenders also described how they ‘stashed’ tools in order to protect / prevent themselves from being caught with such tools:

“Patio doors - mole grips, sometimes have with me. But if [I’ve] been out for a while, I stash stuff all over - bushes etc.” (Participant 12).

Indeed, this last quote demonstrated the use of the local environment / surrounding area by offenders to assist them in the commissioning of their offences.

Whilst professionalism appeared to be characteristic of only a small number of offenders, it appeared that opportunism was a feature across a number of offenders questioned. However, it appeared that such offenders tended not to be ‘exclusively’ opportunist offenders, however would utilise this MO as and when a suitable opportunity presented itself. Moreover, during interviews there appeared to emerge a distinction between those who were more ‘professional’ and those who were more ‘opportunistic’ in nature; this was particularly apparent when considering offenders’ use of substances. Specifically, there emerged a sense that those offenders who took a more professional approach in their offending lead a lifestyle in which drug use played a part, however that their drug use was not necessarily driven by a physical addiction, and their offending was often somewhat sophisticated in nature. However, for those with a physical addiction to substances, their offending appeared to be less sophisticated but more opportunistic in nature, because they were offending to ‘score’, as such, rather than to support a specific lifestyle. This is supported by Nee and Meenaghan (2006), who identified a sub-group of offenders in their research as drug users who only decided to offend at the *scene* of a crime, suggesting an opportunistic element to their offending. However, it is of note that the current research did not identify specific traits of ‘disorganisation’ amongst offenders. This is supported by the work of Cromwell *et al.* (1991b), who challenged the notion of a ‘chaotic’ drug-using burglar as such. Specifically, they note that more experienced addicts are better able to cope with the symptoms of drug withdrawal; the more serious of which do not become apparent until three days following cessation, and that offenders will often offend in advance of this point to prevent such withdrawal from occurring, supporting the sense of immediacy identified amongst such drug users.

7.2.3.2. Opportunists

One example of offenders falling into this type of MO were those offenders who described how they often went out with the intention to burgle, but the particular target was unknown until a suitable opportunity arose:

“Offence was spur of the moment. Didn’t plan. Didn’t target people. Knew was going to burgle, but not know which. Went with mole grips, torch, screwdriver, gloves. Been done for going equipped. [Why commit that burglary?] Seen it [a property], opportunity, spur of the moment. Others - to do street, work up

and down. If good - do it. Always try doors. Sometimes left keys. Find one” (Participant 6).

“Started on shops / garages. If opportunity came up, just took it. Just screaming out to be done, so easy to be done. Never went out equipped, normally found from garden sheds. Garden hopping - always did the back streets and not main roads - because of traffic and people willing to ring police for very little things” (Participant 4).

“Opportunist - sometimes riding bike. Have planned offences - plan it out, ride about on bike - look for decent properties. Mainly an opportunist, but if had information about a property, check it out the night before... normally opportunist. Right place, right time; i.e. if see people going out” (Participant 22).

“Gone out with the intention to steal, and then burglary - when the opportunity arose” (Participant 8).

“[Did you plan the offence?] It was second nature, walking down the street. Curtains open, telly not on. Made sure people are out. Nice, tended garden” (Participant 12).

It also emerged how some offenders’ MOs had changed from a more opportunist to a more planned, and more instrumental MO over time; this demonstrated a sense of ‘displacement’ in terms of their MO:

“[Plan offences?] Yes, definitely. Some were opportunist. Lot of guys with Asian gold. Now - I’ve switched, think a lot more about things etc.” (Participant 21).

Furthermore, offenders described instances where they took opportunities to burgle during the course of other activities during their day:

“Friends lived round the corner from there and we took dogs out. Not planned offence. Never planned offences. Took dogs out, and then did it. Saw window open” (Participant 8).

“I went out on a night...saw window open, with load of goods. Transit van on a drive, took it with all the goods” (Participant 22).

Out of this notion of ‘opportunist’ offences rose a third type of MO; ‘sneak-in’ offenders. Specifically, such offenders demonstrated some overlap with

opportunistic offenders, in that they tended to offend as and when the opportunity arose. However, the key distinction with ‘sneak-in’ offenders was that offenders in this group were more likely to commit such offences if a property is *occupied* and insecure, whereas the occupied nature of a property isn’t necessarily the central concern for opportunistic offenders. Indeed, opportunistic offenders may rather be swayed by elements such as the type of property, or property features, as well as a property being insecure.

7.2.3.3. Sneak-in offenders

This notion of a ‘sneak-in’ offender appeared to bring out two particular ‘strands’ of offender:

- Sneak-in offenders targeting occupied properties for ease of access;
- Sneak-in offenders targeting occupied properties for the ‘buzz’ received.

The first of these offender groups described how ‘sneak-in’ offences were merely a method used by them to burgle occupied properties:

“Prefer it not to be [occupied], but if it is I’d just sneak in living room, it doesn’t really matter” (Participant 23).

“Depends on situation. If [I] could sneak in without them seeing me, then yes, I’d do it” (Participant 16).

“[Occupancy important?] Not important - unless wake and moving about. Work around it. Lot of creeps [creep-ins] where been caught, like with brother in Headingley, had bottle of whisky thrown at me, nowadays just try and get away” (Participant 4).

“Doesn’t matter [if occupied]. Prefer if they’re in, because car keys will be there” (Participant 18).

Indeed, this last quote highlights the particular benefit of a property being occupied, because of the likely presence of car keys at the property. However, it was apparent that these offences against occupied properties were not necessarily typical of these individuals’ offending, but merely an *approach* used by them in circumstances when properties were occupied.

The second strand of offenders who fell into this category were those who received a ‘buzz’ from targeting occupied properties:

“[Occupancy?] Not that important. Get a buzz out of it; e.g. with grabbing keys, guy on sofa. Driven by financial need but also get buzz” (Participant 21).

“[Did you do any research about a property?] No. [Just] what it looked like at the time. If gonna get money, gonna go back. Back door open / window open. Burglary, but sneak. Normally opportunist. Right place, right time; i.e. if see people going out...[How important is occupancy?] Depends on property and situation. If [they’re] in living room, I’ve gone to kitchen. I’ve been in bedrooms when people have been in bed. Did get a buzz / rush out of it” (Participant 22).

“If bedroom doors open - buzz, open bedroom door, really addictive. I walked round while they’re in the living room. Signing on at 16. Just burgled ’cos of the buzz. Sometimes in the house. 18 with drugs. 24 now. Don’t think when got drugs. If not on drugs - think about. If through window, if there sometimes go through pockets etc. Sometimes they’ve woken up. Woman - scream. Guy - goes mental. Chase me out the house. Once I’d fallen asleep...Burglary - buzz / adrenaline, like quite a buzz when next to guy going through pockets, really strong, like a heart attack. If window open, check front and back door - if not [open], do window” (Participant 3).

Again, for this group of offenders, these offences were not necessarily the only ones committed by these individuals, but rather as and when an opportunity arose. However, what they do indicate is an offender’s preferences in terms of targeting occupied properties. Indeed, this group of offender also suggest a psychological element of offending, in not being driven purely by financial means, but also as a result of the perceived buzz they may receive from committing such offences; supporting previous literature into this area (Fox and Farrington, 2012). The implications of the MOs identified here, as well as comparisons made with the MOs derived in Chapter 4 will be discussed in Chapter 8 (the discussion chapter) of this thesis.

Despite the distinctions drawn out between the different MOs of offenders, a central feature across all MOs were the journeys taken by offenders both to and from their offences; these shall be discussed below.

7.2.4. Journeys Taken

The journeys taken by offenders appeared to be characterised by two specific features: their travel to and from offences, as well as their flexibility demonstrated during the course of these journeys.

7.2.4.1. Travel to / from offences

The majority of offenders described how there was not one clear mode of travel that they would always use to and from an offence, but that the means of travel that they reported were *typical* of their journeys to or from offences. Walking to and from offences appeared to be the most popular means of transport, reported by over four-fifths (83%) of offenders:

“Normally travel about 2-3 miles to offences. Normally on foot / pushbike. Don’t like taking cars” (Participant 22).

“Take a walk. See a couple [potential properties]. Evaluate - least risk - access, to and from the property, how quick I can get away etc. Get an escape route and get out of sight of people that’ve seen you. Down alleys etc. Bus stops - good cover” (Participant 11).

“Walking about and see where ended up. Walk / bus / lift with mates. Hyde Park / Woodhouse - very security lacking no security the lot of ’em [students] - fresh pickings for everyone [every year] - not clued up on area and what it’s like - loads of people operate up those areas. People leave doors wide open / windows open - temptations” (Participant 20).

The use of cars to and from offences was also a popular mode of transport amongst the sample, being reported by over half (57%) of offenders. Indeed, offenders described how they may be driven by friends to / from offences:

“Mate driving me. Got rid of games, normally same day” (Participant 15).

“Mode of transport used - sometimes walk. Sometimes car - if thought had more stuff. Sometimes get a lift, and then would pick us up. Depends what we could carry etc. Sometimes friends’ cars, sometimes stolen, with false plates. Didn’t take cars from house” (Participant 9).

Offenders also described using stolen cars specifically for the purposes of offences:

“Always travel in the car. Have a car between you. Meet up with people, then go to [offence]. For a hardcore burglary, bought stolen car, put legit plates on. 50/50 when hardcore job vs normal job etc. Hardcore burglary - had more solid intelligence, more planning went into it. After the offence - travelled home via car. Agree route back beforehand. Just in case pressure come back. [Get] alibis sorted. Variety of safe locations - park up / set car alight. Knew every street / back alleys to route - places to escape if needed. Cell siting [phones] started to get clocked in and working round this etc.” (Participant 7).

“Go up in stolen car, back in different car” (Participant 23).

The use of taxis was also a popular mode of transport away from a property, being reported by over a third (35%) of offenders:

“If too much to carry, may ring taxi from round the corner - street, couple of streets away...Taxi? They don’t care what you’re doing, even if it looks dodgy” (Participant 10).

As well as highlighting how taxi drivers may not care whether a paying passenger may be on the way back from a burglary, this quote also raised the use of strategies by offenders to ensure this did not result in their detection for an offence. Indeed, these were raised by other offenders questioned:

“Got couple of streets away [from property targeted], then got a taxi” (Participant 11).

“On way back from offence, took TV in back of taxi. Round corner and pretended I was just coming out of the house” (Participant 8).

However, Participant 6 expressed the dangers with using taxis when returning from offences;

“Not use taxis, because of records” (Participant 6).

Just short of half (43%) of offenders reported using cars from a property on their way back from offences:

“Drive to offence - my car. If got another car, drive my car, took stolen car away - put somewhere safe. Then take my car back and walk back to stolen car. On way back, park it [stolen car] somewhere away from house. Go back next morning, drive past in my car, check still there” (Participant 19).

Sometimes, cars appeared to be targeted specifically from a property:

“Sometimes target property just for the car” (Participant 22).

For a number of offenders, however, this appeared to be largely a matter of convenience, with cases of offenders who walked to offences but then took a car for the return journey:

“If car on drive - will take that if need to take away [a number of goods]” (Participant 22).

“Walk to offences, sometimes drive away...drive home with goods, and then drop the car” (Participant 16).

“Walk to and from...if leave car keys and had bulky stuff, if not - hide nearby and come back for it in couple of hours” (Participant 14).

“Go to offences from home, friend’s houses, girlfriend’s house, then home after the offence. Walk to offence. Either drive or walk from the office. If car, any car I could get hold of. If things too heavy, took car to get what I wanted, then leave ’em. Best to burn them out straightaway” (Participant 4).

For a small minority of offenders (13%), they reported using a bicycle as a means of transport to and from offences. As with a number of the examples highlighted in this section, offenders’ choice of transport used was integrated as part of their offending MO; here in the case of being able to carry goods taken:

“Go for gold and cash, phones and laptops - and bag with. Walk or cycle to offences. Normally cycle, and then coming back the next day. If jewellery - have on bike. If not, leave bike nearby and collect. Don’t do bulky etc.” (Participant 12).

In addition to the means of travel to and from offences, the other key feature that impacted on offenders' journeys to crime was their flexibility in relation to journeys taken; this is discussed below.

7.2.4.2. Flexibility

There was a unanimous sense across offenders of flexibility in their methods during the course of their offending as required. All 23 offenders questioned confirmed that they were flexible in terms of changing their burglary plans if a situation demanded it. This helped support our understanding of the 'fluid' nature of the burglary process for offenders, and how their offending may adapt and change over time as required.

There appeared to be two main factors that determined the need to be flexible amongst offenders interviewed. The first stemmed from a need to avoid detection for their offending:

"[Flexible?] If seen in an area, and someone looked at me, I wouldn't do it" (Participant 3).

"Very flexible, 1 min to the next I could change plans, go elsewhere. If sense it's not right, just go, give it a miss" (Participant 11).

"[Flexible if needed?] I could be halfway through, if think gonna get on top [be caught by the police], if alarm going off, start panicking, then try somewhere else. Though it was pretty rare" (Participant 5).

"Flexible. Just go. If police [in an area] - go home, stop" (Participant 15).

In addition, offenders would utilise their flexibility if their offending simply wasn't going their way:

"[How flexible?] Just do what I do. If find house - yes, if not - no. Work with what I've got" (Participant 10).

It has already been discussed that if required, offenders may give up their offences and return home, though in general offenders were able to change plans, move locations, or change offence type to still meet their end goal:

“Drop of a hat. Just move to a different area. Just drop it or go to a different area etc.” (Participant 23).

“Flexible. Carry on walking, find summat - go to a different area, shop thefts, commercial, cash centres, just town centres” (Participant 14).

This section has demonstrated the unwavering flexibility and adaptability of offenders to change the course of offending, predominantly based upon the perceived risk of detection at any given point. This tapped into the idea of offenders’ perception of risk impacting on their offending practices, and the assessment of risk by offenders. This is explored further in the following section.

7.2.5. Perception of Risk

Offenders’ perception of risk comprised of four distinct features:

- Extent to which offenders experienced success / had given up;
- Awareness of police;
- Awareness of risk;
- Risk-taking.

Each of these shall now be discussed in turn, commencing with offenders’ experience of success / failure.

7.2.5.1. Success / Given Up?

During interview, offenders were questioned with respect to whether there were ever occasions when they had ‘given up’ during the course of their offending, or had returned ‘empty handed’ from a burglary / collection of burglaries. Indeed, on the whole offenders tended to report that there were occasions where they had been unsuccessful, or had given up previously, often attributing this to a ‘bad day at the office’. Specifically, 70% of offenders stated that they had previously given up, and 78% of offenders reported that they had previously returned empty handed from a burglary (or attempted burglary). A number of offenders described simply knowing when their luck was out, and how they would ‘cut their losses’ if they perceived there to be particular risk of detection / capture:

“[Come back empty handed?] Plenty of times. Alarms going off. Dogs barking, just one of them days. [How often?] Every couple of months or so” (Participant 21).

“[Gone out and come back empty handed?] Lots of times. If went out, didn’t get it, bad luck. Try another day. Not risk it” (Participant 2).

“[Have there been times where tried to burgle but given up?] Sometimes, can’t get in, get spooked off. Should’ve gone to sleep, but got no energy. [Come back empty handed?] A few, cut the losses - about 20%” (Participant 12).

“Times when tried mole gripping, it’s not happened, yes given up. Times when been chased off by vigilantes. Of course, there’s always bad days in the office. All walks of life” (Participant 7).

“Only given up if feel people are on top. Then got out of there. Never come back empty handed. Always with something. Bike, power tools. Though spotlights are bad - light up whole garden” (Participant 6).

For a small proportion of offenders, they described how whilst they have given up previously, returning empty handed was very rare, as there tended to be ‘always something’ they could target:

“[Given up?] Yeah, few times, tried to get in, but too noisy to get in. PVC windows and doors - lots of locks, make noise, lock your bedroom door. [Empty handed?] Hardly ever, normally find something, say by every 20 doors, 1 will always be open” (Participant 20).

Furthermore, a small minority of offenders reported that they had never given up or come back empty handed, describing their sheer motivation to follow through with an offence:

“[Given up?] Don’t ever give up. If [I] want to give up, breaking point. Too hard to do it. If look at, worth doing. [I’m a] Persistent offender, if I want summat, work out a way to do it” (Participant 4).

“[Ever given up?] Never. Unless someone comes. [Empty handed?] Never. Only if locked up. Always summat. [Got a] good sense for money” (Participant 13).

One of the key features determining potential success or failure was if offenders believed there to be the risk of detection or the police ‘coming on top’. The extent to which offenders were aware of police presence was also explored during interview.

7.2.5.2. Awareness of Police

With regards to offenders’ awareness about police movement / intervention / initiatives in an area, offenders reported to different extents being aware of police presence; however, regardless of this, this did not appear to have substantial impact on their offending:

“[Aware of Police movement?] Never aware. If police came past, duck, then would go back home. Wouldn’t do because know they’re around. Maybe give it 3/4 hours” (Participant 8).

“[Aware of police movement?] Not aware. Sometimes saw Police. Wait, and then carry on. Not use gloves. Didn’t take tools, because if caught, straightaway done with intent. Changed offending to shoplifting. If could get transport - could go elsewhere [change plans]” (Participant 9).

“[Aware of Police etc.?] Aware of high performance police cars and number plates. Big groups of people - if they saw high performance police cars - would phone each other to warn each other, daily. If seen them, ring others - i.e. drug dealers” (Participant 7).

This last quote demonstrates strategies used by offenders to effectively manage the presence of police, which were described by a number of individuals during interview:

“[Aware of police movement?] Yes. Had police scanners, before they went digital. Listen for ‘XRAY99’ (helicopter)” (Participant 21).

“I will try and blend in, if no-one thinks I’m out of place there, dress smart, not be shifty / suspicious. Walk- not run... Had satellite tag stopped me for about 3 weeks, then put tin foil on [to block the tag tracking signal] - may work for a bit” (Participant 12).

For the majority of offenders, upon sensing police presence, they described how they would move area, or wait for a period before returning to offending:

“[How aware?] If police present - give it a miss. If somewhere else not too far away (but not close to police) - do it, if not - leave it. Avoid nosy neighbours” (Participant 2).

“Didn’t bother me. If saw them, keep going. Police next door - not at time” (Participant 18).

“[Aware of police movement?] Sometimes walking around area. Park up and walk around. Hide car, hide away, avoid areas where police more likely to be. And then go to other area of town” (Participant 11).

“[How aware are you of police movement?] Depends on the area. Some areas - foot police, plastic officers, PCSOs [Police Community Support officers]. Wait until they’d gone. Things like neighbourhood watch - depends if had impact, not necessarily. [Did you ever consider being caught?] All the time” (Participant 22).

It also emerged during interview how some offenders were particularly ‘in tune’, or ‘savvy’ to the presence of police in a given area:

*“[I’m] Police savvy. [I can] spot undercover copper from crowd. Very rare there and then. Always picked out camera etc. Gloves on most of the time. Depends on context etc. If opportunist and seen me, I would f*ck off for a different part of town, ½ mile away from area” (Participant 23).*

“Aware of it [police presence], know of cars around, even if CID [Criminal Investigation Department], way they act. Can tell straightaway. Move out of that area - at a job, if did job in 1 estate, then go home, let it chill out, thinking go back out” (Participant 16).

It appeared that with regards to the presence of crime reduction initiatives, these appeared to have little impact on offenders, suggesting limited deterrent power on offending:

“[Crime reduction initiatives?] Aware of but doesn’t put me off! It’s sometimes like a sixth sense thing [police movement]. Sometimes if police cars - doing rounds. If seen police cars more

than once in ½ hour - more vigilant. Not have scanners etc., can feel it when on top” (Participant 12).

“Stop and search, knock on door stop. Heat on, back off every few days. Unless you’re caught red handed, could get away with it. Once it’s done - they’re [the police] gone” (Participant 7).

“Wait until they’d [the police] gone. Things like neighbourhood watch - depends if had impact, not necessarily” (Participant 22).

“Not really. Curfew - would put you off. Not really impacted. Stop and search / knock on door - wouldn’t put me off. If hear sirens, give it a bit and go back. No impact” (Participant 14).

“Crime reduction initiatives? Not bothered” (Participant 16).

It appeared that offenders’ views towards and perceptions of the police and the role this had on deterring their offending was borne out of a sense or threshold of risk, and the types of risk that offenders may take. This area was discussed further in detail with offenders during interview, as is discussed below.

7.2.5.3. Awareness of Risk

In terms of the risks associated with committing residential burglary, there appeared to be an awareness amongst offenders of the potential associated risks:

“[Risk?] Burglary, lot higher - with dwelling” (Participant 12).

“[Risks with committing a burglary?] Confrontation, fighting, jail time. [Why burglary despite these risks?] You do what you know best... I know best... people have a better life in jail” (Participant 21).

“[Risks?] [Burglary] comes with a lot of risks. Could cut arm wide open. They [residents] could catch me and beat me. People could have a heart attack. Mental problems caused to owners. When on drugs I’m stupid. If not on drugs - wouldn’t do [commit offences]. Offend every couple of days - when money was out - go for other offences. Easier to get money that way. Lowest I’ve had is £500, lasts about 2 days - for both Heroin and Crack. Then go out that night on 2nd night and start again. [Why burglary despite risks?] ’cos I don’t think when I need money etc.” (Participant 5).

“If only bit of gold that I got, may target same area again. If risk of being caught is high, just go for high payout, not for just a couple of hundred quid” (Participant 6).

Notwithstanding the acknowledgement of such risk, the need for money and ineffective use of imprisonment as a deterrent subsequently meant that offenders may be *more likely* to take risks. Offenders also spoke about the probability of detection for offences but how this could be used to help rationalise their offending:

“[Chance of being caught for burglary?] 1 out of 10, but then can’t charge you with it unless have you bang to rights. They [police] look at MO etc. Been done with 2nd strike. But always a way to find loophole with system etc.” (Participant 4).

“[Chance being caught?] 50 / 50 every time. 100’s offences done. Caught [for] half. About 152 convictions, 26 jail sentence. Lot of burglaries / thefts / robberies. Can’t really say limit on lowest level offend for. If only got £40, then go on to another. Normally get a few hundred quid” (Participant 5).

These quotes raise two points; the first was offenders’ confidence in not getting caught; in finding loopholes to get away with offences. This was further described by Participant 4 during interview;

“[How many burglaries committed] Couple of thousands. Started getting cocky with the Police. Leaving without my gloves, taking victims’ gloves by accident etc. Often, can just get out of it. Find a loophole / someway to get out if / charges for it etc. So just get done for handling stolen goods rather than full-blown burglary etc.” (Participant 4).

The second point raised was that some offenders did not have a minimum set amount that they would hope to seek to receive from a burglary:

“[Overall chance of being caught for burglary?] 5% chance caught. About 250/300 hours? About 1 in 100. Aim for burglaries is £1000s, always the same, always the best you can get. If got 7k, last me a good few months. At times, needed to burgle every day” (Participant 7).

Indeed, for a number of offenders the degree of perceived risk was also associated with a perception of probability of detection:

“Would take 4.5 K for 75% chance being caught, with 3K for 50% chance being caught. So relative” (Participant 1).

7.2.5.4. Risk-taking

Offenders’ perceptions of risk and the nature of risks they may take was also explored with offenders using a questionnaire, as earlier detailed in Chapter 3, Section 3.4.7 of this thesis. The risk-taking questionnaire looked at 12 different scenarios across two distinct domains, asking participants to answer whether they would likely engage in that scenario, the perceived risk associated with that scenario, as well as the perceived benefit associated with that scenario. The ratings given by participants for these questionnaires were correlated to establish whether there were any significant relationships present within the data. Table 7.1 illustrates the correlations across all of the scenarios provided for both the ‘recreational’ and ‘health and safety’ domains. As can be seen from the table, there was a weak positive relationship between the likelihood of an individual to engage in an act and the perceived benefit associated with that act ($r = .245$, $p < .001$). This suggests that offenders’ motivation to engage in an activity may be driven in part by the perceived benefit of engaging in that activity. Conversely, there also appeared to be a weak negative relationship between the perceived risk of an activity, and the perceived benefit of engaging in that activity ($r = -.176$, $p = .003$). This suggests that offenders believed there to be diminished benefit of engaging in an activity as the perceived risk for engagement in that activity rose.

Table 7.1. Propensity for risk-taking across the offender sample for both the ‘recreational’ and ‘health and safety’ domains.

		Likelihood	Perceived Risk	Perceived Benefit
Likelihood	Pearson Correlation		.094	.245**
Perceived Risk	Pearson Correlation	.094		-.176**
Perceived	Pearson	.245**	-.176**	

Benefit	Correlation
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* $p < .05$. ** $p < .01$.

In addition to analysis of scenarios across *both* domains, this analysis was then split as per each individual domain; specifically, the 'recreational', and 'health and safety' domains. Table 7.2, below, illustrates the analysis for the 'recreational' domain. As can be observed from Table 7.2, there appears to be a moderate positive correlation between the perceived benefit of engaging in that activity, and the likelihood of the individual engaging in that scenario ($r = .511$, $p < .001$). This suggests that across the recreational domain, offenders appear much more likely to engage in an activity if they believe there to be greater benefit associated with engaging in that activity.

Table 7.2. Propensity for risk-taking across the offender sample for the 'recreational' domain.

		Likelihood	Perceived Risk	Perceived Benefit
Likelihood	Pearson Correlation		.063	.511**
Perceived Risk	Pearson Correlation	.063		-.118
Perceived Benefit	Pearson Correlation	.511**	-.118	

* $p < .05$. ** $p < .01$.

Table 7.3 goes on to illustrate the perceived likelihood, risk and benefit of scenarios across the 'health and safety' domain in the risk-taking questionnaire. The results found here appeared to mirror those for all of the scenarios; in that there appeared a weak positive relationship between the likelihood and perceived benefit ($r = .262$, $p = .002$), and a weak negative relationship between the perceived risk and perceived benefit of individual scenarios ($r = -.200$, $p = .019$). This suggests in part that as offenders see the benefit of an activity, they may be more likely to engage in that activity / scenario; however that the perceived benefit of engaging in that activity is reduced as offenders believe there to be a greater associated risk.

Table 7.3. Propensity for risk-taking across the offender sample for the ‘health and safety’ domain.

		Likelihood	Perceived Risk	Perceived Benefit
Likelihood	Pearson Correlation		.075	.262**
Perceived Risk	Pearson Correlation	.075		-.200*
Perceived Benefit	Pearson Correlation	.262**	-.200*	

* $p < .05$. ** $p < .01$.

This raises the theme of the perceived reward, and its effect on the nature of the offence. Rewards were perceived from two different perspectives: specifically, the nature of the reward on offer, as well as the process of exchanging the goods stolen to access the primary reward – that is, the process of selling on their stolen goods.

7.2.6. Reward

7.2.6.1. Goods taken

During interview offenders reported the goods that they would take from offences. The three most popular items taken were cash, jewellery, and technology, reported by 87%, 83% and 74% of offenders (respectively):

“Headingley - good laptops, cars, cash. Main estates - odd telly. Don’t carry a lot, unless lucky finding” (Participant 4).

“Just normally, go for money. If have money, go get drugs. If had goods, and money, leave goods stashed somewhere safe. If goods - go sell. Certain buyers - buyers for things. Watches, phones etc. - get someone to take them in for me” (Participant 22).

“Cash, gold, diamonds. Asian gold - on job. TV, laptops, iPads, computers, watches, jewellery etc. Fill up with gold. Good investment - scrap weight” (Participant 13).

For a number of individuals, their preference with regards to goods targeted was heavily influenced by those goods that were easy to conceal and carry on their person:

“Gold is favourite - easy to conceal and get rid of” (Participant 1).

“TVs, laptops, jewellery, ornaments, antiques etc., computers, games, anything worth money, depends what was there and if could carry things down street. If smaller bags - favourites - small, easy to conceal - blend into your surroundings” (Participant 20).

“If jewellery - have on bike. If not, leave bike nearby and collect. Don’t do bulky etc.” (Participant 12).

“Phones easier to take. Normally a laptop bag around, or carry without. Xbox in carrier bag” (Participant 3).

However, it is of note that some offenders expressed particular preferences in terms of not taking certain technology items due to the security restrictions / capabilities of these items in terms of usage and tracking:

“[What goods do you take?] Never iPads / iPhones (tracking devices)” (Participant 21).

“Laptops - harder to sell. Can be locked up” (Participant 11).

The other main type of goods targeted by offenders was cars, reported by almost half (48%) of offenders. This largely appeared to be part of an organised, ‘steal to order’ operation targeting high performance cars, as well as using cars to transport goods taken from a property:

“Sometimes steal to order, other times get cars, Passat Golf, VW, Mercedes. Audis, BMW, high performance cars...when steal to order - performance cars, Audis, BMWs, R32 - 2/3 K, BMW - M5, Audi - RS5, Mazda, Golfs” (Participant 21).

“Always got a specific car to get. Look for a specific car. Mostly cars, TVs, laptops, PlayStations etc.... lot of car key ones” (Participant 19).

“Car keys, cars, phone, wallet, jewellery, money, antiques, whatever people ordered” (Participant 16).

“Fill cars up for all goods. Only started burglaries for car keys. Used to steal cars. But as got more advanced had to have keys, so

burgled to steal keys, but then whilst there may as well take everything else from there” (Participant 21).

7.2.6.2. Getting rid of goods

During interviews the process of getting rid of goods after a burglary offence was also explored with offenders. An overwhelming majority of offenders (91%) reported that they would offload goods to one or more buyers who were already lined up, or who they knew they could draw on to sell the goods:

“[How get rid of goods?] Had 1 guy - got all gold. Didn't pay what shops would pay. Worth it in terms of risk [being caught] reduction. Ring him, sometimes go to him, sometimes he'd come to us. Cash in hand” (Participant 7).

“Getting rid of it - within the hour. 2 buyers - they will take everything. Do jobs, on way to friends, ring buyers say I've got this, they will offer money etc., may be in a car, then meet and do deal” (Participant 11).

“Go and try and get rid of it. Had buyers lined up anyway. 10/20 different buyers - different things. Know what people would buy. Laptops etc. Sometimes had shopping list” (Participant 14).

“Jewellery - couple of hours to get rid. Lot of contacts - West Yorkshire - I'll go to them to get rid of stuff. Few buyers, drug dealers, local people buy stolen goods - depends what it is. Buyers - know the type of gold etc. Get bit of money from known people to go to. Money, jewellery - can sell very quickly” (Participant 16).

“Got a guy, Polish guy, he will get rid of everything. Takes it back to Poland money he's made. He's met me before, and picked me up in the car. Within minutes, go to him, and offload, always get rid of it. Then go to drug store via taxi. Get rid of everything, otherwise drop yourself in it. DVD players - get about £30, normally about half price of value etc.” (Participant 5).

Pawn shops were also reported by a quarter of offenders (26%) as being a means of offloading stolen goods:

“Also take goods to pawn shops and pubs. Landlords know people who will buy it, or they will buy it themselves. Keep stash elsewhere” (Participant 1).

*“Handling and selling stolen goods, Cash Converters”
(Participant 4).*

“I’ve had people take things in to Cash Converters / Jewellers - get it in. Dodgy pawn shops - me go in” (Participant 12).

Further, jewellers and public houses were reported as a means of offloading stolen goods in just short of a fifth (17%) of offenders:

“Took to jewellers / got a guy who would buy. Most times - same day” (Participant 15).

“Goods - took to pubs - landlords, and customers. Lot of buyers. Would sell on to everyone. Would steal a car and go to as many [pubs] as you can” (Participant 4).

“Also take goods to pawn shops and pubs. Landlords know people who will buy it, or they will buy it themselves” (Participant 1).

The online selling of goods was also reported by a small number (9%) of offenders:

“Big eBay account - lot of people ringing over eBay. Or word of mouth. In someone else’s name [the eBay account]. ‘Smackheads’ (Slang term for dependent Heroin user), use ’em for accounts” (Participant 4).

“Gumtree - half of it is stolen” (Participant 19).

Some offenders described how their choice of getting rid of goods was determined by the most effective / safest means of achieving this, demonstrating an evolutionary way of thinking:

*“Depends on how bad offence is depends on who I sell it to. If done [burgled] pubs, easier to do it through eBay. If TV - drug dealer buyer. Depends on cleanest way to get rid of it as possible; least likely to get in sh*t” (Participant 4).*

As well as seeking the safest / most effective method to offload their stolen goods, the speed at which goods were offloaded was also an important factor amongst participants. Specifically, 83% of offenders said that they would travel directly from an offence to get rid of their stolen goods. Three-quarters of offenders questioned (74%) reported that they would get rid of goods within the

hour after an offence, and a further 17% of offenders stated that they would get rid of goods within two hours after an offence. At times it was found that it could take much less than an hour to get rid of stolen goods:

“Gold - never any issues - hour tops [to get rid of]” (Participant 7).

“Pot luck where you used to get things from in terms of areas. Used to select buyers already, for gold, and electronics, wouldn’t go to anyone else. Straightaway from offence to where offload, would never stash anything. Used to get rid of goods within about 10 minutes” (Participant 10).

Some offenders described how the time of offence may determine the length of time it may take to pass on such items:

*“As 2/3 in the morning, can’t get rid of it then, laptop shops etc. Only if stole to order (now and again) - gold etc. Sometimes - hide it in bin liner in bin yard. Other times - not give a f*ck. Sell on, don’t keep stuff from burglary. Get rid straightaway / next day. They know only that I do it, not how I do it” (Participant 3).*

Conversely, other offenders described how the time of day had little impact on this process; this appeared to be dependent on offenders’ means of selling on stolen items:

“Always sell on. Too ‘hot’. Don’t keep ’owt from burglaries. 30 mins / half hour to get rid - hour at most. Go to people on way home. Even at 3 or 4 in the morning” (Participant 18).

7.3. Implications for Crime Prevention

In exploring the burglary process of offenders and breaking this down into its component facets, this chapter has identified some key areas for intervention; that is, areas with which crime prevention strategies may be applied to help prevent and disrupt the burglary process. What has been identified through this chapter are strategies that could be employed by the police, in addition to enhancing awareness amongst residents, and disrupting other parts of the burglary chain in an attempt to try and ‘stop’ this cycle. These points for intervention, and areas for recommendation, have been summarised in Table 7.4, below.

Table 7.4. Crime Prevention Recommendations.

Feature of the Burglary Process	Sub-feature	Application to Crime Prevention
Socialisation	Process of Socialisation	➤ Emphasises importance of the 'Troubled Families Programme' in Leeds.
Motivation	Use of Drugs	➤ Seeking opportunities to identify and disrupt the chains of drug dealers' distribution.
Modus Operandi	Opportunists	<ul style="list-style-type: none"> ➤ Ensuring residents don't provide the opportunity for burglars to target their property - make it secure. ➤ Ensuring residents don't leave tools around in the garden or insecure that could be used to access a property. ➤ Residents not to become complacent of unknown people around their home area; even if they appear to 'blend in' and look like they belong there - it doesn't necessarily mean they do.
	Professional	➤ Anonymise number plates on car sales websites such as 'Auto Trader', so that offenders are unable to identify 'legitimate' number plates for specific makes and models of stolen vehicles, that they could then use to make matching plates and assist with their offending.
Journey	Travel to / from offences	<ul style="list-style-type: none"> ➤ Installation of car trackers in high-performance vehicles. ➤ Continued use of patrol of police cars through main routes in areas with high crime rates / levels. ➤ For taxi drivers / operators to report instances of suspicious behaviour. Potential for comparison with pickup locations and burglary offences within a few streets area; automated computer programme to identify such instances. Use of on-board cameras to help in detection of potential offenders.

Risk	Police awareness	➤ Crime reduction initiatives and the presence of the police appeared to have little impact on individuals' offending.
Reward	Goods taken	➤ Activate the use of tracking technologies on smaller items of technology.
	Getting rid of goods	<ul style="list-style-type: none"> ➤ Increased regulation of pawn shops. ➤ Avoid storing large amounts of cash in the house, and to store this securely. ➤ Avoid advertising substantial jewellery visible from outside of your property. ➤ The efficiency of offenders in offloading stolen goods suggests it would be particularly difficult to catch offenders with goods in their possession.

7.4. Summary

This chapter has sought to uncover information pertaining to the burglary process amongst offenders. In doing so, it has resulted in the 'five facet' model, with five broader themes that encompass the burglary process of offenders. Though a summary of key findings has been provided below, in Table 7.5, it remains important to discuss some of the key points identified from this chapter. All offenders reported being driven by the need for financial gain; the need to fund their substance use was identified as a specific driving force amongst the majority of offenders questioned, however some offenders reported having different additional motives.

The majority of offenders acknowledged walking to and from offences, thereby supporting the literature into journeys to crime (Wiles and Costello, 2000), though other, more interesting elements of offenders' journeys were also identified (see Table 7.5). It was found that the presence of police, or of crime reduction initiatives, appeared to have little impact on offenders' movements and / or behaviour, with individuals showing a high degree of flexibility to adapt to their situation as required. Cash and jewellery were identified as the most popular items taken, with the majority of offenders having specific 'buyers' for goods, though again there are some further interesting elements that have been identified to these particular processes. Turning to offender MOs, some important issues are raised with regards to this area. Of the offender MOs identified, only that of the 'professional' offender appeared to be pervasive across an individual's

offending. The other two MOs identified, the opportunist and the ‘sneak-in’ offenders, were not pervasive MO styles as such, however could be activated by offenders as and when an opportunity arose. Because these latter two MOs were only enacted if the situation either warranted, or enabled that MO to emerge, this challenges previous literature on offender MOs; the implications for which are explored in the discussion chapter of this thesis. Whilst the key findings from this chapter have been summarised in Table 7.5, below, the implications of this chapter within the wider academic literature, as well as the overall implications for crime prevention, are discussed in the following chapter, Chapter 8, to help form the discussion for this thesis.

Table 7.5. Summary of Key Findings.

Area	Finding
Socialisation	<ul style="list-style-type: none"> ➤ Offenders described offending with others from an early age; often this involved offending with older siblings or family members. ➤ 61% of offenders have offended with others. ➤ 30% of offenders committed offences by themselves <i>and</i> with others. ➤ 30% of offenders stated that they would offend with others and never by themselves. ➤ 70% of offenders stated that they would offend by themselves. ➤ 39% of offenders stated that they would offend by themselves and not with others.
Motivation	<ul style="list-style-type: none"> ➤ All offenders reported committing offences for financial gain. ➤ 87% of offenders reported offending to fund their substance use. ➤ A number of offenders described offending for psychological reasons; over a fifth (22%) of offenders described offending for the ‘buzz’ that burglary gave them.
Modus Operandi	<ul style="list-style-type: none"> ➤ A number of offenders described how they often went out with the intention to burgle, but the target was unknown until a suitable opportunity arose. ➤ Offenders also described instances where they took opportunities to burgle during the course of other activities during the day.

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- During interviews a small number of offenders appeared to describe a rather professional and organised set-up as part of their offending practice.
 - A handful of offenders further demonstrated their level of sophistication during the course of their offending, through recognising the importance of getting into the 'psyche' of residents to help understand them and understand what was on offer to assist in their offending practice.
 - The notion of professionalism appeared to be epitomised by individuals who offended as part of a 'steal-to-order' set up. Specifically, over half of offenders (65%) had stolen goods to order as part of their burglary offences.
 - Whilst cars were identified as the most popular type of goods to steal to order, over half of offenders interviewed (52%) admitted that they had stolen other goods to order beyond cars.
 - 17% of offenders described themselves as experts with respect to committing burglary offences. This sense of confidence was predominantly in relation to their skills in the notion of burglary as a craft.
 - One of the key methods described by offenders that emerged during interviews was the importance of 'blending in' to their surroundings. This raised the *concept of 'hiding in plain sight'*. Some of those interviewed described how they would act or dress in a way to help them blend in to their surroundings.
 - A further advanced method adopted by offenders in the commissioning of their offences was the use of tools to secure access to a property.
 - Offenders described how they could access such tools through the gardens of properties (or nearby properties) of those they were looking to target, to prevent the chance of being caught with tools in hand.
-

Risk

- Offenders reported to different extents being aware of police presence, though this did not appear to have substantial impact on their offending.
 - For the majority of offenders, they described how if the police emerged, they would move area, or wait for a while before returning to offending.
 - The presence of crime reduction initiatives appeared to have little impact on offenders, suggesting little deterrent power on offending.
 - The need for money and ineffective use of imprisonment as a deterrent meant that offenders may be more likely to take risks.
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Journeys Taken

- Walking to and from offences appeared to be the most popular means of transport, reported by 83% of offenders.
 - The use of cars to and from offences was also a popular mode of transport identified, reported by over half (57%) of offenders.
 - The use of taxis away from a property was also a popular mode of transport away from a property, being reported by over a third (35%) of offenders.
 - Just short of half (43%) of offenders reported using cars from a property on their way back from offences. For a number of offenders, this appeared to be largely a matter of convenience, with offenders who walked to offences but then took a car away from offences.
 - All 23 offenders questioned confirmed that they were flexible in terms of changing their burglary plans as required. This helps to support our understanding of the 'fluid' nature of the burglary process for offenders, and how their offending may change as required.
-

Reward

- The three most popular items taken were cash, jewellery, and technology, reported by 87%, 83% and 74% of offenders (respectively).
 - Preference for goods was heavily influenced by those that were easy to conceal and carry on their person.
 - Offenders expressed preferences in not taking certain technology items due to the security restrictions / capabilities of these items in terms of usage and tracking.
 - The other main type of goods targeted by offenders was cars, reported by almost half (48%) of offenders; this often appeared to be part of an organised, 'steal to order' system for high performance cars.
 - 91% of offenders reported offloading goods to one or more buyers.
 - Pawn shops were reported by a quarter of offenders as being a means of offloading stolen goods.
 - 83% of offenders said that they would travel directly from an offence to get rid of their stolen goods.
 - Three-quarters of offenders reported that they would get rid of goods within the hour after an offence; a further 17% of offenders stated that they would get rid of goods within two hours following an offence.
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Chapter 8: Discussion

8.1. Introduction

This thesis has sought to develop understanding of the target selection criteria of burglars within Leeds, through the use of police offence data and a series of interviews with incarcerated offenders. The research utilised a mixed-methods approach, and has identified a number of key findings that enhances understanding of the target selection undertaken by offenders, as well as the drivers of burglar heterogeneity across the city. For purposes of clarity, the key findings from the project have been discussed in relation to each of the thesis aims, whilst situating the findings amongst the wider body of academic work into this area.

8.2. Review of Research Aims

This thesis sought to address five key research aims, each centred on enhancing understanding of the nature of burglary within Leeds, and using this knowledge to inform crime prevention strategy. This section will now review each of these aims in turn, discussing the extent to which these have been met through the completion of this work.

Research Aim One

Research Aim	Chapter(s) that address this Research Aim
Understand the range of methods available to help understand burglary MOs	Chapter 3: Methodology: Overview and Justification of Methods Used

With regards to Research Aim One, Chapter 3 provided an overview of the methods available to understand the *modus operandi* (MO) of burglars. At a broad-level, these can be considered according to two distinct perspectives; those of quantitative, and those of qualitative, research methods.

From a quantitative perspective, whilst a variety of quantitative methods can be used to explore crime *per se*, for the purposes of establishing offence-based MOs, two main approaches were identified;

- Regression Analysis
- Cluster-based Analysis

Regression analyses may involve linear or logistic regression using a number of different variables, and can be used to explore the effect of multiple variables in accounting for variance in a particular outcome / set of outcomes. Cluster-based analyses allow for the grouping of offences based on their behavioural characteristics. Of the wide options available, Latent Class Analysis was identified as a specific form of such cluster analysis that would be valuable for this project; this 'groups' cases into categories that are qualitatively distinct from one another, based on the presence of latent variables in the population (see Fox and Farrington, 2012).

Chapter 3 then went on to discuss additional methods used to gather data relating to offenders' MOs, including the use of questionnaires, as well as tasks involving images of different properties, given to offenders to rate their degree of attractiveness. Methods such as these have been used to collect detail on offenders' MOs and target preferences in previous research. For example, Bennett and Wright (1984) used both videos and photos to supplement their interviews with offenders. Nee (2003) advocates for the continued refinement and development of such innovative research methods to understand the nature of burglary, to help strive towards what she identifies as Glaser and Strauss' (1967) sense of 'theoretical elaboration', and to discover offenders' true cognitions and behaviours (Glaser and Strauss, 1967; as cited in Nee, 2003, p. 8). This thesis rises to this challenge by drawing on a range of methodological approaches to meet the project's aims. Specifically, this work has involved the use of photos of properties to help establish the features that make targets attractive to offenders, as well as a questionnaire to assess offenders' propensity for risk-taking, and the use of semi-structured interviews with incarcerated offenders to explore target selection criteria and offender decision-making.

Though approaches such as ethnographic research were considered, it was established that semi-structured interviews would be particularly valuable for gathering data on offenders' MOs. Indeed, the use of this approach to explore offender MO has been identified as particularly valuable in previous research (Nee and Taylor, 2000). Various approaches to the analysis of such interviews were then discussed, including content analysis, thematic analysis, and grounded

theory. The merits of each of these approaches were discussed, and it was determined that content analysis would be most appropriate in helping to establish the nature of offender MOs and target selection preferences.

Research Aim Two

Research Aim	Chapter(s) that address this Research Aim
Understand the MOs of burglars within Leeds	<p>Chapter 4: Quantitative Analysis: Part One - Focusing on the Offence Features</p> <p>Chapter 5: Quantitative Analysis: Part Two - Exploring the Demographic Features of Offences</p> <p>Chapter 6: Qualitative Analysis: Part One - Understanding Targeting Choices</p> <p>Chapter 7: Qualitative Analysis: Part Two - Understanding the Crime Event</p>

The second research aim centred on exploring the specific MOs of burglars within Leeds. The five offence-based MOs identified through analysis of the police offence data were:

- Class 1: “Sneak Offences”;
- Class 2: “Smash and Grab”;
- Class 3: “Local Youthful Opportunism”;
- Class 4: “Confident Opportunism”;
- Class 5: “Local Juvenile Poverty Predation.”

Turning to MO 1 (“Sneak Offences”), offences in this class were evident of ‘sneak-ins’, whereby properties were often insecure, occupied, and targeted towards the rear of the property. Entry through the rear of properties was also adopted during offences in MO 2 (“Smash and Grab”), where the offences demonstrated a sense of opportunism, as well as the element of force used by offenders to gain access to unoccupied properties, for example at the un-overlooked rear of properties.

Turning to offences in MO classes 3 (“Local Youthful Opportunism”) and 4 (“Confident Opportunism”), offences in these classes may be characterised as both being offences of opportunism (which additionally could include ‘sneak-in’ offences). Offences in MO 3 were committed by younger offenders, travelling less

than 2 miles, with at least one other co-defendant in half the offences in this class. Whilst offences in MO 4 demonstrated a similar pattern, these were largely accessed and exited through the front door, where they may be visible to neighbours, suggesting a certain level of confidence. However, the fact that offences in this class were largely targeted in student areas may help to explain such confidence. Firstly, there may be a lack of social cohesion and sense of guardianship amongst neighbours in student areas; secondly, an unknown individual walking into a student property in this area is not uncommon and thus may not draw unnecessary attention.

As has been observed, there appeared two emerging themes amongst the MO categories; 'sneak-in' offences (MO Classes 1, 3, and 4), and offences of opportunism (MO Classes 2, 3, 4 and 5). However, what was apparent through the emergence of these themes was that such offence-based MOs were not distinct, heterogeneous groups. Indeed there was often substantial homogeneity and overlap between these (hence MOs 3 and 4 falling into both categories). This aligns with work by Robertiello and Terry (2007), who describe how typologies of offenders are in fact not 'mutually exclusive', and that offenders may not always specialise in particular types of behaviour. What the groups derived from the present research indicate are the *nuanced* nature of offence-centred MOs, based (predominantly) on the nature of crime incidents alone.

With regards to the nature of MOs, early work by Fosdick (1916) on the value of MOs and the detection of crime depicts an MO as a means of crime classification, or an examination of different elements of the method taken to commit a crime. These elements include factors such as point of entry, means of access, goods taken, transport to or from an offence, and the type of property targeted. In seeking to establish MOs, there are two broad ways in which this can be achieved. The first is through deriving 'offence-based MOs', as has been discussed above, and detailed in Chapters 4 and 5. However, MOs emerging from offence-based data alone are unlikely to be clear-cut, and whilst they may uncover some of the subtleties of offence targeting, may be difficult to generalise to broad offender groupings. For example, Bouhana *et al.* (2016) explored the crime histories of over 150 prolific burglars to explore the degree of consistency and specificity across their offending. They found that whilst there was some degree of consistency across individuals' offending, these patterns were not consistent across offenders or specific MOs (Bouhana *et al.*, 2016).

The second main way in which to derive MOs is through the use of ‘offender-based MOs’. Unlike offence-based MOs, which may consider the crime event in isolation, offender-based MOs consider beyond this; i.e. the planning and target selection prior to a burglary offence, as well as the process of getting rid of stolen goods following an offence. Thus, offender-based MOs may be classified as broad MO types, which encompass a whole range of features from the burglary process itself, to the process of selecting a target, to the means in which stolen goods are offloaded. MO types based on these features are presented through a specific categorisation; i.e. ‘professional’, or ‘opportunistic’, so that they can be useful in applied settings. However, this is not to say an offender within this group is typified by this categorisation; it is more so that they may be likely to engage in a range of behaviours and offending practices that are *typical* of the nature of the category they are defined in.

Of course, MOs for particular crime types may also be derived through the optimal approach of combining both offence-based and offender-based information (the latter may be collated through the case history of an individual, as is the case with Fox and Farrington, 2012, or through bond interviews², as is the case with Vaughn *et al.*, 2008). This approach has not been taken within the quantitative analysis here (beyond considering offender features such as age or distance from home location to offence) due to difficulties in accessing extensive data in this form; however, this will be something to consider for future work in this area. Nevertheless, it should be noted that a number of areas of the quantitative aspect of this research were complemented through the qualitative research undertaken, as detailed below, demonstrating the value of this work.

Turning back to the current research, despite the lack of clearly defined offence MOs based on the analysis of the police offence data, there remained considerable overlap with a number of the features identified through the *offender*-based MOs based on the interviews conducted. Specifically, through the interviews there emerged three broad types of MO. Again, whilst such MO types do not typify offenders as such, they can be used to help distinguish between the

² In the specific jurisdiction in which the research by Vaughn *et al.* (2008) was carried out (Colorado), bond interviews were carried out by legal officers (‘bond commissioners’) at the county jail. Bond interviews (classified as legal proceedings conducted under oath) were conducted with all criminal defendants brought to the jail, as a means of gathering information on their employment, residency, and criminal history, with a view to determining the appropriate bond (bail) to set (Vaughn *et al.*, 2008).

behavioural patterns of characteristics of burglar offenders. Specifically, these types were categorised as ‘professional’, ‘opportunist’, and ‘sneak-in’.

With regards to the ‘professional’ offender, offenders that fell into this category demonstrated a sense of professionalism *across* their offending. Such offenders are characterised as demonstrating a degree of planning during their offences. They demonstrate a sense of sophistication and expertise in their offending, and some even have particularly advanced networks or practices as part of their offending patterns; for example, in the organisation of ‘legitimising’ car registration plates, or the co-ordination between offender ‘teams’. Further features of such professional offenders were the ability to ‘blend in’ to their surroundings, or committing ‘steal to order’ offences. This raises the notion of ‘hiding in plain sight’ to help evade detection and avoid drawing unwanted attention from the authorities. This is described as creating an “illusion of normalcy” by Cherbonneau and Copes (2006, p. 193), who describe strategies taken by vehicle thieves whilst driving stolen vehicles to deflect unwanted attention from the authorities away from themselves.

In identifying such offenders, this research supports the work of Fox and Farrington (2012); Cromwell *et al.* (1991a); Nee and Taylor (1988); Bennett and Wright (1984); and Maguire and Bennett (1982), all of whom identified professional traits amongst their burglar samples. Previous authors have also discussed the level of procedural and perceptual expertise during the decision-making process (Nee and Meenaghan, 2006; Wright *et al.*, 1995). Such offenders were characterised by the level of forethought in the planning of their offences, to both maximise rewards yet minimise the risks encountered involved. This has substantial implications in this context, because it suggests that such an MO may be more likely challenged / disrupted through targeting specific areas of the offence process itself; i.e. the distribution of stolen goods, or disrupting the process in which legitimate number plates may be created for stolen vehicles. One example of how this may be enacted in practice is detailed later in this chapter.

The second MO identified through interviews was that of the ‘opportunist’ offender. It appeared that the features of opportunist offenders were very closely matched to those of the opportunistic MO identified by Fox and Farrington (2012). For example, they found that such offenders did not tend to ‘plan’ their offences, as is acknowledged in the current research, but instead would only tend to commit an offence as a suitable opportunity presented itself. Furthermore, this

research, as well as that of Fox and Farrington (2012), found that such opportunist offenders did not go equipped to burgle; indeed, in the current research it emerged that offenders tended to find suitable tools in the gardens (or neighbouring gardens) of the property they were targeting. Details of this MO class are hugely important in a preventative context, because it appears that offenders in this bracket are driven solely by the presentation of suitable opportunities to offend. Therefore, reducing the opportunities for offenders to target particular properties, utilising the detailed results of Chapter 6, will help to reduce the overall level of offending amongst this group.

The third type of offender MO emerging from the results was that of a 'sneak-in' offender. However, offenders within this category fell into one of two groupings, both of which involved the targeting of occupied properties. The first, an MO of 'sneak-in by convenience', captured those offenders who would sneak into an occupied property purely for the ease of access because of the opportunity presented, and who were prepared to target such properties despite them being occupied, given the fact that such properties were largely insecure. However, the second type of 'sneak in' offender identified was those offenders who would sneak into occupied properties predominantly for the 'buzz' it provided them. This draws clear comparisons with the interpersonal drivers for offending as identified in the review of the literature in Chapter 2. However, the MO of this type of offender appeared to move *beyond* either the need for vengeance, or the need for sexual gratification, as specified in Chapter 2. Specifically, offenders in this category reported offending for the psychological 'buzz' they received *during* the course of burgling an occupied property. This finding moves beyond research whereby offenders receive a 'buzz' or experience feelings of 'elation' *following* a burglary event (Wright and Decker, 1994), demonstrating how in fact such feelings may also be experienced during a burglary event itself (see also, Nee, 2015), illustrating this as an intrinsic driver of behaviour.

What is noticeable in comparison with the literature is that none of the offenders interviewed herein appeared to demonstrate a disorganised or 'chaotic' offending style, which has been found by others (Fox and Farrington, 2012; Vaughn *et al.*, 2008). It may be the case that this style of offending was genuinely not present amongst those interviewed, or it may rather have been as a consequence of offenders presenting themselves favourably through a process of post-rationalisation and 'rational reconstructions' (Cromwell *et al.*, 1991a).

Research Aim Three

Research Aim	Chapter(s) that address this Research Aim
Identify the features that attract / deter offenders to burglary targets	<p>Chapter 4: Quantitative Analysis: Part One - Focusing on the Offence Features</p> <p>Chapter 6: Qualitative Analysis: Part One - Understanding Targeting Choices</p>

In exploring the specific features of properties that would attract offenders to targets, there appeared to be a number of generic themes that played out in making properties attractive to offenders. One such theme was the notion of wealth, with offenders describing using such proxies for wealth as nice cars, furnishings, and gardens (supported through the work of Taylor and Nee, 1988). In addition, offenders described how they targeted properties for high-performance or luxury cars, sometimes as part of a ‘steal-to-order’ operation.

A clear feature that attracted offenders to properties (based on both the quantitative and qualitative elements of the analysis) was properties that were insecure. These presented suitable opportunities for individuals to offend, as suggested by the ‘opportunist’ type MO emerging through this research. It also emerged through both the police offence data and interviews undertaken that offenders would also target occupied properties, a feature present in four out of the five MO categories identified in Chapter 4. For a number of offenders interviewed, whilst unoccupied properties were generally preferred, occupied properties would not necessarily act as a deterrent, and, parallel to the findings of Bennett and Wright (1984), only appeared to be a ‘conditional’ deterrent. In fact, a small number of offenders interviewed actually preferred occupied properties, whether this was for the ‘buzz’ (as described previously), or due to the increased likelihood of items being present in the property, for example; car keys. This closely mirrors the findings of Nee and Taylor (1988), who discovered that 12% of offenders preferred occupied properties because of the level of valuables on offer in an occupied property (Nee and Taylor, 1988, p. 111).

Conversely, a number of offences within the analysis in Chapter 4 were also based on the presence of unoccupied properties, which was also reported during interviews as generally being favoured by offenders. Indeed, this has been

previously highlighted as an important feature in many offenders' decision-making (Maguire and Bennett, 1982).

The targeting of specific types of properties was detailed in Chapter 4, where the derived offence MOs revealed the targeting of semi-detached properties in particular. During interview, preference was found for both semi-detached and detached properties. This mirrors the findings of Nee and Taylor (1988), who found particular importance placed on both detached and semi-detached properties in making attractive targets for offenders. These preferences were based not only upon seeing such property types as conveying a degree of affluence, but also because such properties were not in as close proximity to other properties. Hence, they were less visible, and offenders would not necessarily be heard during offences in such properties (as they may be in terraced-type housing, for example).

One feature that also appeared prevalent across both the police offence data, as well as that of interviews, was the *localised* nature of properties targeted. For example, a number of offences within the police offence data were found to be less than two miles from an offender's home residence. Similarly, during interview, a number of offenders described how they would travel short distances, to areas that may be similar to their own. This supports the work of Chamberlain and Boggess (2016), who found that burglars tend to target neighbourhoods similar to their own, and those which are in close geographical proximity. However, they also found that for those offenders who did target areas different to their own, they would target areas with greater relative levels of deprivation than their own neighbourhood (Chamberlain and Boggess, 2016). This is particularly important in helping to identify areas and demographics that may be at particular risk from offenders, and supporting the use of targeted crime prevention advice to help reduce the incidence of crime amongst particular demographics / areas.

One of the ways in which the attractiveness of properties was established by individuals was through understanding the mind-set, or 'psyche' of victims. This was found to be useful in determining both attractive as well as deterrent features of properties, and demonstrates a degree of sophistication beyond what has been found in previous studies of burglar expertise (Nee and Meenaghan, 2006). As such, this represents an important finding that has clear implications for crime prevention; for example, through making homeowners / residents aware that such a strategy is employed by offenders. Furthermore, this builds on the

sentiments offered by Brown and Bentley (1993), who discuss the notion of making inferences regarding the nature of occupants based on an inspection of the visible features of a property.

Whilst identifying the key features that would attract offenders to a property are important to understand, it is similarly crucial to understand the features that may subsequently *deter* someone from a property. In trying to ascertain the features that may deter offenders from a property, because the MO categories derived from the police offence dataset were offence- rather than offender-driven, it was difficult in the quantitative analyses to establish specific features that may in fact have deterred an offender from an individual property. In this context, the absence of particular features in an offence do not necessarily suggest that this feature acted as a deterrent. However, the features that deterred offenders from specific properties were discussed during the subsequent prison interviews, as outlined in Chapter 6. Approximately half of offenders (48%) reported that dogs would prevent them from targeting a particular property, not only because of the associated fear, but also due to the resulting noise created. This mirrors the previous findings of Nee and Taylor (1988), who, in their work on convicted residential burglars in the Republic of Ireland, found that dogs were an important deterrent in approximately half of their sample.

Over a third (35%) of offenders interviewed reported that ADT alarms, or other makes of alarms linked to the police would deter them from a property, implying that this was simply too 'risky' for them. Whilst 30% of offenders also viewed alarms *in general* as a deterrent feature, the majority of offenders reported being confident in their ability to 'adapt' to such security features; for example, filling alarms with WD40 / expanding foam, or avoiding alarm sensors. However, offenders were less confident in their ability to circumvent ADT or similar such systems. This is a significant contribution to the crime prevention literature which generally does little to distinguish alarm types. For example, Tilley *et al.* (2015) found that property alarms in general were associated with a *higher* risk of burglary victimisation. Of the hypotheses put forward to help account for this, one notable hypothesis is the argument that alarms act as a 'flag' to offenders that the property may contain valuable goods worthy of protection (Tilley *et al.*, 2015). However, they did not have sufficient data to establish if such association with risk was based predominantly on lesser quality alarms, thus potentially 'masking' any stronger deterrent effects with higher quality alarm systems. The results from the current research are therefore

important in highlighting the value of ADT-style alarms over regular alarm systems, and emphasises the point that alarms that are linked to the authorities make for a stronger deterrent amongst potential burglars than regular alarm systems. The current research also adds specific value to this area, because the results were gathered through interviews with offenders, rather than being based on data from the Crime Survey for England and Wales, as is the case with the work by Tilley *et al.* (2015).

Just under a third (30%) of offenders reported that the presence of CCTV would put them off from targeting a property. In considering the value of security devices as a preventative measure for offenders, it was found that rather than one standalone feature being a deterrent for properties (with the potential exceptions of ADT-style alarms and CCTV), a combination of security features acted as a deterrent to offenders. This supports the findings of Tseloni *et al.* (2014), who found that combinations of certain security devices had a substantial deterrent effect.

A further theme that emerged in relation to the targeting of particular properties was their perceived attractiveness and appearance to offenders. For example, amongst a number of offenders, features such as gardens were used as a proxy of whether properties were well-looked after and 'tended to'; consequently properties with 'unkempt' gardens were viewed as unattractive to offenders. This mirrored the findings of Taylor and Nee (1988), who identified properties with 'well kept' gardens as being particularly vulnerable to being targeted due to their use as a proxy for wealth. This finding also supports the work of Armitage and Joyce (2016), and in doing so challenges the principles of 'Broken Windows' Theory (Wilson and Kelling, 1982), whereby property left in disarray left unattended invites further criminal behaviour. In the current research, a state of 'unkemptness' was found to actively deter offenders from pursuing a property as a target.

Offenders also appeared to demonstrate a sense of moral engagement in their selection of burglary targets, and particularly with regards to the groups they would tend *not* to target. Specifically, a number of offenders reported how they would not target the very elderly, or those with young children, which, based on the reasons why, largely appeared to draw on the sense of moral compass as reported by Taylor (2014) in her work into morality on burglars' decision-making. As such, the current project has made a significant contribution to understanding attractor and deterrent features of properties as perceived by burglars, and holds

clear utility for the purposes of crime prevention; whether the findings support the conclusions of previous work, or build on knowledge in this area.

Research Aim Four

Research Aim	Chapter(s) that address this Research Aim
Identify the environmental features that are linked to specific offender MOs	<p>Chapter 5: Quantitative Analysis: Part Two - Exploring the Demographic Features of Offences</p> <p>Chapter 6: Qualitative Analysis: Part One - Understanding Targeting Choices</p>

In the emerging findings, there were a number of environmental features present across offences and / or offenders and linked to specific MOs. For example, the notion of affluence or wealth in an area appears to have played a substantial role in attracting offenders to that area. Offences in MO 1 (“Sneak Offences”), accounting for 37% of the total offence sample, for example appeared to target areas with a certain degree of affluence. Offences in MO 2 (“Smash and Grab”), accounting for 14% of the total offences in the sample, also appeared to include aspects of affluence, but were targeted in areas with higher population density. Collectively, offences in these two MOs accounted for over half (51%) of the total offence sample. This is compared with over two-thirds of those interviewed (70%), who reported affluent areas as being specifically targeted by them during the course of their offending. The figures reported here are broadly comparable, and are of clear importance in challenging previous work into this area which did not find a significant link between affluence and burglary risk (Bernasco and Nieuwebeerta, 2005).

Offences falling into MO 3 (“Local Youthful Opportunism”) were focused heavily on those living within Multicultural Metropolitan areas; in particular those of Pakistani ethnicity. Offences in this MO accounted for 12% of the total offence sample. This is then compared with 30% of those interviewed, who reported that they would target Asian communities specifically during the course of their offences, predominantly due to the potential goods on offer (i.e. Asian Gold), and the reported perception that those of Asian heritage do not believe in using banks to store their money. The subsequent risk to this particular demographic is supported by the work of Jansson (2006), who, based on her analysis of the 2004/05 British Crime Survey, found that whilst ethnicity was not associated with

risk of household crimes in general, both Asian and mixed ethnic groups were linked to a higher risk of being targeted in the context of burglary specifically. Again this is a valuable finding in highlighting the vulnerability, as well as the reasons for such vulnerability, of this specific demographic group amongst the wider population.

Turning to MOs 4 (“Confident Opportunism”) and 5 (“Local Juvenile Poverty Predation”) as identified in Chapter 4, offences in these categories appear to have taken place in deprived areas, with high levels of multiculturalism, and targeted towards students (and local areas for offences in MO 5). Both of these MOs collectively account for over a third (37%) of the total offence sample. Again, this is comparable with the findings that emerged through interviews, demonstrating the value of a mixed-methods approach as ‘methodological triangulation’. Specifically, as detailed earlier in this chapter, 30% of those interviewed reported targeting Asian communities during the course of their offending. In addition, 35% of those questioned reported that they would target areas local to them (which may also demonstrate relative levels of deprivation). The notion of deprived areas being targeted by offenders is supported by the work of Ratcliffe and McCullagh (1999), who found that properties in deprived areas are more likely to face repeat offences than those in affluent areas. This was also supported by the work of Chamberlain and Boggess (2016), who found that offenders would tend to target neighbourhoods in closer geographical proximity, and that of the burglars who would target areas dissimilar to their home neighbourhood, they would generally target areas with greater levels of deprivation than that of their home area. 35% of those interviewed also reported targeting student demographics in particular; this confirms previous research into this area that highlights the vulnerable nature of students to burglary (Barbarett and Fisher, 2009). Offenders discussed their ability to blend in as students through the clothes they wore, and often described the nature of students as relatively ‘easy’ targets;

“...easy pickings, like throwing bread for birds, throwing laptops for criminals” (Participant 4).

Research Aim Five

Research Aim	Chapter(s) that address this Research Aim
Explore how a mixed methods approach can be used to inform crime prevention advice	<p>Chapter 4: Quantitative Analysis: Part One - Focusing on the Offence Features</p> <p>Chapter 5: Quantitative Analysis: Part Two - Exploring the Demographic Features of Offences</p> <p>Chapter 6: Qualitative Analysis: Part One - Understanding Targeting Choices</p> <p>Chapter 7: Qualitative Analysis: Part Two - Understanding the Crime Event</p> <p>Chapter 7: Applications for Crime Prevention</p> <p>Chapter 8: Discussion: Discussion of the Results and implications for Crime Prevention</p>

This thesis has utilised a ‘mixed methods’ approach to help understand the selection criteria of burglars within Leeds, and this approach has clear value for the purposes of crime prevention. The implications of this work for crime prevention will be covered extensively in the later part of this chapter and therefore will not be replicated here. However, as reasoned by Johnson *et al.* (2015), a mixed-methods approach to inform crime prevention strategy is widely beneficial, in being more widely informed by a range of different methods.

Both quantitative and qualitative analysis approaches have been used to explore the nature and risk of burglary at both the level of the environment, and the offender themselves, using a method of triangulation in order to verify the importance of different factors on subsequent burglary risk. This has led to the identification of key emerging themes regarding the nature of burglary target selection, which can be utilised for the purposes of crime prevention. What has also emerged is that crime prevention lessons can be used and applied to different contexts; for example, different criminal justice agencies, a range of other organisations, the academic community, or occupants of properties themselves, to help enhance the effectiveness and coverage of crime prevention strategies (Home Office, 2016). A particular strength of this work is how it has supported a number of features relating to crime prevention identified through

previous mixed-methods research into this area (Maguire and Bennett, 1982), particularly with respect to the importance of cover, accessibility and occupancy.

However, the extent to which the findings from this research can be applied for the purposes of crime prevention should be considered within the context of the data collection approaches themselves. For example, with respect to the police offence data, though quantitative data hold a clear advantage in terms of the volume of data offered, it is important to remember that such data were not collated specifically for the purposes of research. That is not to say it is not useful for the purposes of this research; indeed it is, however, it is important to consider how the nature of the data used meant subsequent MO classes were predominantly offence- rather than offender-oriented, with knock-on issues for the range of crime-prevention findings (for example, in terms of deterrents – see earlier in this chapter).

Overall, there appeared to be a lack of distinct heterogeneity in terms of offenders' selection criteria and their offender MOs. This should be reflected in subsequent crime prevention strategies / policies borne out of such work, in that such policies should not necessarily focus on specific classes of offenders alone, but more so the particular features within, or across, offender MOs and groupings. Whilst quantitative analysis has been of value to help uncover crime prevention lessons based on a greater range of offences, ultimately the nature of lessons learnt through interviews with offenders has been invaluable. Though the results cannot necessarily be attributed to all offenders, the features that have emerged appear to be invaluable for the purposes of crime prevention across a range of potential offenders, audiences, and contexts.

8.3. Key Contributions of the Project

One of the key contributions and strengths of this project is the methodological nature of the research itself; specifically, the mixed methods approach used. In particular, this project took a very important social problem, burglary, and sought to develop further understanding of the nature of this offence through both quantitative and qualitative lenses.

It was found through the use of both quantitative and qualitative approaches that on the whole, there were a number of similarities with regards to the types of MO that emerged during interview as were suggested through the quantitative analysis sections of the research. In particular, the presence of MOs akin to sneak-in and opportunist-type offenders were identified through both

analyses, as well as those offences (and offenders) that may target occupied properties. The information gathered during interviews was able to supplement the MOs identified through Chapter 4. This confirms the use and value of using various approaches to 'triangulate' knowledge on the nature of burglary, as discussed by Nee and Taylor (2000). Furthermore, the strengths of the mixed-methods approach taken in this work are demonstrated by its support of previous mixed-methods work into burglary such as that by Maguire and Bennett (1982). Indeed, there are a number of similarities with regards to the findings across both studies, including the importance of cover, accessibility, occupancy, wealthy properties, and the notion of a 'professional' type offender, demonstrating the applied value of this work.

The research has also been particularly valuable in its use of additional tasks to help establish the target selection criteria and actions taken by offenders during the offending process. Specifically, these involve the risk-taking questionnaire, and property image task, which were both used to ascertain the propensity and nature of risks participants were willing to take, as well as exploring how features such as perceived occupancy, visibility and accessibility may impact on the subsequent attractiveness of a property (respectively). Such work therefore represents the innovative use of research methods to further our understanding of this area (Nee, 2003).

As was found in Chapter 7 of this thesis, through the risk-taking questionnaire, offenders were more likely to engage in an activity if they believed there to be greater associated benefit. This suggests an attitude towards risk that offenders are prepared to manage and mitigate the impact of the risk if the perceived reward is sufficient (as well as suggesting the potential ineffective use of imprisonment as a deterrent).

With regards to risk-taking and the presence of police or crime reduction initiatives, it was found that these did not appear to impact on offenders' behaviour, and that they would simply adapt their behaviour as required. What struck the author during the research was the ability and dynamic nature of offenders to be able to adapt to their environment and mitigate risks posed as and when required. Examples of this involved hiding temporarily, returning to an offence, moving on to a different area, or 'hiding in plain sight' / blending in to the environment, so as not to attract unwanted attention. This mirrors the findings of Cherbonneau and Copes (2006), and demonstrates clear value in informing offender responses from a crime prevention perspective.

As noted above, the work of this thesis holds considerable utility for the purposes of crime prevention. The research has involved close working relationships with criminal justice agencies across Leeds, to demonstrate clear practical applications for the purposes of crime prevention. Indeed, the value of such work is illustrated within Section 8.5 of this chapter, where the lessons learnt for the purposes of crime prevention have been outlined. However, whilst the recommendations for crime prevention emerging from this work are detailed later in this chapter, it is to be noted that the research demonstrates clear value in understanding the nature of repeat and / or near-repeat offences in the city. For example, the majority of offenders questioned (91%) described offending in the same areas that they have targeted previously, citing the reward and types of goods on offer as being a key driving factor in this, and targeting certain neighbourhoods over others with respect to the goods available. Moreover, approximately half (48%) of offenders interviewed stated that they would burgle the same property on more than one occasion. An important finding that emerged through this research was the notion of a 'serial target', whereby a property was targeted by the same burglar(s) on a number of occasions. This emerged a number of times during interview, and appeared to be driven predominantly by levels of (in)security in specific properties. This has substantial implications for crime prevention, and illustrates the importance of enhancing awareness about security and crime prevention to local communities. This is because it appeared that such 'serial targets' were underpinned by a sense of complacency amongst residents with regards to 'ignoring' property 'weak spots' identified and exploited by offenders over time.

What has been particularly valuable from this work is the range of key findings that have emerged, and the implications of these for crime prevention. For example, this project identified a process of 'socialisation' into burglary amongst offenders from a young age, something which has previously been highlighted by the Audit Commission (2011) on a report into burglary in Leeds. This emphasises the importance of work around early interventions and family-based initiatives to try and disrupt this socialisation process.

In addition to considering the onset of offending, the research also found that all of the offenders interviewed used drugs in one form or another, and thus the need to finance their substance use was a key driver across their offending. This is despite a sense amongst law enforcement agencies through recent discussions that this has reduced as a driver. The factors driving this view amongst

law enforcement agencies remain unclear, particularly in light of the findings presented here. However, this may be as a result of changes in drug use amongst offenders; for example a fall in the use of category A substances, and a rise in more recreational substance use; for example, with the introduction of new psychoactive substances (or 'NPS', as they are commonly known). This highlights the importance of work not only to investigate the nature of the substance misuse within the community, but also to prevent the onset of drug-taking amongst 'at-risk' groups in the community, and support the efforts towards desistance (or at least, harm reduction) of those currently using substances.

Chapter 5 of this thesis involved the exploration of features associated with crime rates for each MO, using Multiple Linear Regression to derive models that would account for variations in crime rates. It is of note that the adjusted R^2 values gleaned from these models are comparable with other studies in criminology; for example that of Dunaway *et al.* (2000). Indeed, the adjusted R^2 values for MOs 4 and 5 were approximately three times higher than the average of models based on total incidents (Weisburd and Piquero, 2008). This suggests a strength of this work and a degree of predictability across these models, which may be used to help support crime prevention efforts.

A further notable finding emerging from this work was the fact that there was a seasonal element found to offending; for example in September / October, with an influx of new university students, and over the winter months, with reduced daylight hours providing greater cover for offenders. This supports the work of Hird and Ruparel (2007), who highlight how domestic burglary peaks over winter, yet falls in the summer months.

This project also highlights the importance of visibility in supporting the decision-making of offenders, with this element apparently taking precedent over measures of security, and occupancy. These two latter features appeared to be only 'conditional deterrents' amongst a number of offenders (see also Clare, 2011; Bennett and Wright, 1984), which offenders were (often) able to circumvent during the commissioning of an offence. As such, though the current research reaffirms the importance of cover, security / accessibility and occupancy in burglars' target selection (supporting previous work of Cromwell *et al.*, 1991a), what this work has done in particular is illustrate how greater weight may be given to features of cover / visibility by offenders over the other two elements. This has substantial importance for crime prevention policy, as well as helping understand how offenders may perceive potential targets as suitable.

Of those who committed offences with others, this did not appear to impact on their selection of properties to target, or impact on what was deemed as attractive to offenders (supporting the findings of Bernasco, 2006). Rather, co-offending simply meant that offenders may have different roles to play during their offences, and would play to their strengths in such instances; i.e. acting as the 'lookout'.

With respect to goods taken, whilst a range of goods were taken on a regular basis, the two most popular items were cash and jewellery. This finding is in line with the notion of the 'CRAVED' acronym (Clarke, 1999) in relation to stolen goods chosen and the requirements for these:

- Concealable;
- Removable;
- Available;
- Valuable;
- Enjoyable;
- Disposable.

The ways in which stolen goods were sold on is also of value to wider research in this area. Most offenders described having at least one or more 'contacts' who would buy stolen goods from them. Often this was within an hour or two after the offence, and their journey away from an offence would be predominantly dictated by the need to sell on their stolen goods. As such, this work highlights the speed in which offenders are able to offload stolen goods, as well as the 24-hour nature of the stolen goods market, supporting previous work into this area (Sutton, 2008). Other means of offloading stolen items included the use of pawn shops, pubs, as well as online merchants. This highlights the further need to increase the regulation of such services, to try and disrupt the stolen goods market and thus the chain of offending. As highlighted by Schneider (2005b), such businesses have an important part to play in disrupting the stolen goods market. This research has also helped to shed further detail on the nature of the *online* stolen goods market, building on the work of Sutton (2010). Again, the findings from this research are of clear value, in illustrating potential intervention or 'pinch' points that may be utilised by authorities to try and disrupt the processes taken by offenders during the course of their offending.

This research has also been particularly valuable in illustrating the nature of journeys taken by offenders to and from their offences; for example, in the use of taxis. Again, this illustrates clear utility for the purposes of crime prevention; for example, through increasing regulation / reporting from taxi companies, which may help in detecting criminals following a burglary event.

This research has demonstrated the presence of a professional type burglary offender, whilst also raising awareness about professional offender 'networks', and the level of sophistication and co-ordination between offending groups. One feature of such professional offenders was the use of car sales websites, as well as websites to check whether cars are insured, to help in identifying 'legitimate' registration plates for specific makes and models of car. These details can then be used to make up replica registration plates to put on a stolen vehicle so that this will not attract attention from the authorities. Consequently, if such cars sales websites were to anonymise the registration plates of cars for sales, this would create substantial disruption of this process for offenders. What is particularly important about this finding is that this is a technique likely to be employed by offenders across a range of different crime types. Consequently, if steps could be taken from this work to help disrupt this process, this would represent a valuable breakthrough in helping to reduce organised criminal activity.

A further key finding from this research relates to the utility of police-linked alarms, and the distinction made by offenders with respect to these over more conventional alarms. Offenders were less confident in their ability to circumvent ADT-style alarms, because whilst they felt that they could silence such alarms, they were less confident in their ability to cut off / prevent the telemetry elements of the alarm. Coupled with the fact that these types of alarms are linked directly to the police, this meant that they demonstrated greater deterrent influence to those offenders interviewed. This supports the work of Armitage and Joyce (2016), who also noted this finding, and builds on previous work in this area, which has largely failed to make such a distinction between different types of alarm. This makes a significant contribution not only to the crime prevention literature, but also to the provision of crime prevention advice for residents / homeowners.

The similarities between the current research and that of Armitage and Joyce (2016) help to further illustrate the value of this work. Specifically, the work of Armitage and Joyce (2016) explored offenders' perspectives of risk /

protective factors (for burglary) in residential housing design. They recruited participants from three adult male prison establishments, one of which was HMP Leeds, where the interviews were conducted for the current project. Their work involved the recruitment of prolific burglars, taking an inductive approach to explore and re-evaluate the key principles of CPTED. Despite the fact this work involved only prolific burglars (the current project did not place such restrictions on offender recruitment), there were a number of resulting themes that were supported by the current work. For example, the popularity of raised hedges surrounding properties was identified as an important feature amongst burglars, as these reduce visibility from the street, affording offenders cover in which to access a property. Both projects also identified the use of mole-grips as an effective tool to access particular types of door. The research by Armitage and Joyce (2016) also identified how offenders would target properties where the gardens appeared well-maintained, but not if they looked deprived and 'unkempt', challenging the tenets of Broken Windows Theory. Furthermore, their work supported that of the current project through identifying how ADT or other police-linked alarms were seen as a deterrent by offenders, especially over more standard alarm systems. As such, the similarities identified between these works help to validate the importance of crime prevention recommendations / suggestions emanating from the current project. Nonetheless, beyond the work of Armitage and Joyce (2016), the current study contributes a number of additional findings to this field; for example, in the areas of offender (and offence-based) MOs, the journeys to crime taken by offenders, the process of offloading stolen goods and the nature of stolen goods markets, the nuances of professionalism and opportunism exhibited by offenders, the impact of police / crime reduction initiatives, and the notion of 'serial targets'.

8.4. Limitations of the Research

Whilst this thesis has made some valuable contributions to work in this area, it is important to acknowledge the limitations and challenges encountered, as well as the areas in which this research could be developed. One of the difficulties with this research was the recruitment of participants. Whilst interviews for the research were conducted with a sample of offenders in prison, prior to this, invitations to participate in the research had been sent out to a number of individuals currently residing in the community with a previous history of burglary. This was carefully co-ordinated with the support of West Yorkshire Police. Despite

the offer of gift vouchers as an incentive to take part in the research, no offers to participate in the research through this particular mechanism were taken up. Consequently, the sample of participants used was solely prison-focussed. Though the number of prisoners interviewed (n=23) was not substantial in comparison with the total number of offenders in the city region, this still provided the opportunity to gain invaluable information concerning offenders' preferences on burglary target selection. Whilst the researcher had initially hoped to conduct a greater number of interviews, recent changes in prison management towards the end of the fieldwork process, as well as the demand on resources to facilitate the prison interviews ultimately meant that unfortunately the sample was limited to less than those willing to take part.

With regards to the police offence data used, once the data set had been 'cleaned', this was a relatively small sample (n=1,599) from which to draw confident conclusions regarding offence MOs (contrasted with the full dataset of 2,075 burglary events for which there was a known perpetrator). Nevertheless, this research did find that these MOs were supported through the subsequent interviews undertaken. Also with regards to the quantitative analysis, offenders' home addresses were utilised as the starting point for their journeys to crime; however this aspect was not covered during the interviews, and therefore remains speculative. It may be that offenders travel from social locations, or commit multiple offences without returning home. The latter will skew distance to crime statistics considerably. Measures of Euclidean (straight-line) distance were used over distance by street network, which could be incorporated in the future to help develop this work. It should also be remembered that the police offence data used during the course of this work were not produced for the purposes of research, despite the fact they was used in this way, and therefore there was a certain degree of detail that couldn't be accessed within this dataset.

As has been found, research across both quantitative and qualitative research often comes down to a numbers problem, that is; quantitative data provide an abundance of data from which to make conclusions, however, the nature of data provided may require the asking of more questions to elicit further detail, questioning its capacity to generalise this to the wider population. Conversely, the use of interviews provides extensive detail regarding offender target selection from the perspective of the offender themselves, however the number of those involved in these is considerably smaller; thus again questioning the possible extent of generalisation to the wider population. However, the

triangulation approach taken here goes some way to validating the understanding of burglary gained through both quantitative and qualitative approaches.

With regards to the use of qualitative data for this research, it was established earlier in this thesis that it was difficult to verify the accounts given by offenders, and establish whether offenders' accounts may reflect an element of bravado, e.g. in terms of their flexibility with regards to their offending. Offenders' accounts may also have demonstrated a degree of post-offence rationalisation, which may reflect the fact that offenders may be able to discuss / consider their decision-making in a more rational manner than at the time of the offence. This is a concept that has been explored considerably within the current literature (see Cromwell *et al.*, 1991a).

The next steps for this work will focus on implementing the lessons taken from this research, in terms of exploring the effectiveness of the suggested lessons for the purposes of crime prevention. These are discussed in the following section.

8.5. Implications for Crime Prevention

Throughout this thesis the invaluable practical application of this work has been emphasised, in terms of how the research can be used for the purposes of crime prevention. This section will now provide an overview of the lessons learnt across the thesis. What has emerged is how the implications for crime prevention can be considered across a range of audiences, in a range of different contexts. These crime prevention lessons have been brought together in Table 8.1, below.

Table 8.1. Key Crime Prevention Messages from the Thesis.

Audience	Area	Crime Prevention Advice / Messages
Police	Distribution of goods	Seeking opportunities to identify and disrupt the chains of drug dealers' distribution.
	Visibility	Continued use of patrol of police cars through main routes in areas with high crime rates / levels.
	Crime Reduction Initiatives	Crime reduction initiatives and the presence of the police appeared to have little impact on individuals' offending; therefore consider development of initiatives used.

Housing Landlords	Security / Accessibility	If residents have been burgled previously, taking action against any 'weak spots' or the particular means of access used by the offender(s).
	Security Awareness	<p>Student (or private) landlords to inform new tenants if a burglary has taken place at the property in the past 12/18 months.</p> <p>Enhancing the importance of security awareness and security precautions amongst student populations, particularly in shared / student housing.</p>
Universities	Security Awareness	Enhancing the importance of security awareness and security precautions amongst student populations, particularly in shared / student housing.
Taxi Companies	Security Awareness	For taxi drivers / operators to report instances of suspicious behaviour. Potential for comparison with pickup locations and burglary offences within a few streets area; automated computer programme to identify such instances. Use of on-board cameras to help in detection of potential offenders.
Pawn Shops	Distribution of Goods	Increased regulation of pawn shops.
Car Manufacturers	Tracking offenders	Installation of car trackers in high-performance vehicles.
Online Vehicle Sales websites	Facilitation of Offending	Anonymisation of number plates on car sales websites such as 'Auto Trader', so that offenders are unable to identify 'legitimate' number plates for specific makes and models of stolen vehicles, that they could then use to make matching plates and assist with their offending.
Residents	Accessibility / Security	<p>If residents have been burgled previously, taking action against any 'weak spots' or the means of access used by the offender(s).</p> <p>Ensuring that property alarms are utilised on a regular basis where these are installed. Consideration could also be given to the installation of an alarm system that is linked to the police, i.e. an 'ADT' alarm.</p> <p>If you have a 'Euro Cylinder' lock, consider having anti-snap lock cylinders installed.</p> <p>Shredding confidential material / post</p>

	<p>Ensuring the property is secured even when you are present in the property.</p> <p>Ensuring you don't leave tools around in the garden / proximity of a property that could be used to access a property.</p> <p>Not to become complacent of unknown people around their home area; even if they appear to 'blend in' and look like they belong there - it doesn't necessarily mean they do.</p>
Occupancy	<p>Turning internal lights on if you are going out briefly (particularly at night).</p> <p>If you have children, make it evident from the outside; i.e. having children's toys / books visible.</p> <p>If you have a dog, make it evident from the outside; i.e. visible dog bowl, dog toys.</p>
Visibility / Cover	<p>Consider installation of security / sensor lights to increase visibility and lessen cover for potential burglars.</p> <p>Trim your shrubbery / bushes - make sure your property (and potential entry points) are visible where possible; if you can't see the street from the property, the chances are the street can't see a burglar at your property!</p>
Goods taken	<p>Taking care not to leave any valuables visible from outside of the property; i.e. keys, wallets, iPhone chargers that indicate such associated devices maybe inside the property.</p> <p>Be careful not to have individual / family photos wearing expensive jewellery visible from outside of the property.</p> <p>Avoid advertising jewellery from outside your property.</p> <p>Activate the use of tracking technologies on smaller items of technology.</p> <p>Avoid storing large amounts of cash in the house, and to store this securely.</p>

As is evident in Table 8.1, the findings from this research are of clear utility in informing / contributing to a range of crime prevention policies,

demonstrating a clear sense of applied impact from this work. As can be seen, the lessons for crime prevention vary significantly not only in terms of their nature, but also with respect to their potential audience. Some of these crime prevention messages have been identified with features of certain types of offender in mind, i.e. for 'sneak in' and 'opportunist' offenders, emphasis is placed upon preventing simple opportunities for properties to be readily and easily targeted. With regards to crime prevention strategies for more professional offenders, the advice focuses more on disrupting the offending chain; i.e. making it more difficult to create false number plates, and increasing the use of tracking technologies.

In general, a number of the lessons learnt centre on raising awareness, not only amongst residents but also those within the wider community, and how they can assist in this process. The ultimate aim is to prevent and / or minimise the opportunities for offenders as much as possible, but where these opportunities are presented, then making the process of selling on goods after an offence more difficult. Imagine the process of crime as a watch. For a crime to take place (and to continue taking place in the future), a number of processes, or 'cogs', have to work in unison; selection of an appropriate target, the process of the burglary offence, selling of the stolen goods, as well as ensuring the demand for stolen goods (among others). If one of these steps was to come to a halt, the whole cycle would stop. Consequently, as each of these steps can be thought of as a 'cog' in the burglary process, to prevent the onset of crime, criminal justice agencies have to work collaboratively in order to stop one (or more) of these cogs, in order to halt the burglary cycle.

8.6. Research in a Prison setting: Reflections on the Process

This research involved considerable work within a prison setting, and therefore it was felt important to reflect on some of the experiences and lessons learnt during this process. The research involved considerable journeys to HMP Leeds in order to conduct interviews. For the majority of offenders who took part, they reported being happy to 'give something back' to society, and wanted to make a difference for the good, therefore viewed their involvement in this research as an opportunity that would allow them to work towards achieving this. Within prison, prisoners are subject to a behavioural incentive system known as the Incentives and Earned Privileges ('IEP') scheme, used to promote and reinforce pro-social behaviour in custody. There are three levels on the scheme that a prisoner will fall under; basic, standard, or enhanced. An individual's level on the scheme is

determined by their behaviour and engagement with the prison regime, and the level they are on determines the level of privileges they are entitled to in prison. Regular reviews are held to ensure prisoners are on the appropriate level. Through taking part in the research, prisoners were given a positive comment in their online wing record to thank them for their involvement and acknowledge their level of motivation shown. This may subsequently have been used to contribute to a review for the IEP scheme. Some of the participants were curious about how the work would be used and therefore it had to be reiterated to participants that the research was not being used to identify *specific* properties that had been targeted, but instead the general patterns or schemas / rules followed by offenders during the course of their offending.

For some offenders, they were simply content in having the opportunity to leave the wing for a couple of hours, and break the monotony of prison life. However, because this sample was a captive audience, it was difficult to decipher whether individuals had a genuine desire to engage with the work, or whether this was 'simply a break from the norm'. Regardless of this, offenders appeared to value having someone to talk to, and in this respect it appeared to serve as a beneficiary process for both the researcher and participant.

In relation to the above point, one of the earlier issues concerned the question of whether offenders' accounts should be verified. It was decided that these would not be verified, not only because of logistical reasons, but also because of the importance of being able to build a sense of trust and rapport with individuals, which would undoubtedly have been broken had individuals been challenged with regards to their personal accounts versus those on official records. Furthermore, the approach taken with offenders made it clear that the research was more concerned with more generalised patterns / schemas and rules that they would follow, *rather* than details of specific offences themselves; it was hoped that this may present a lesser incentive for offenders to present themselves in a favourable light.

Despite such concerns over the potential for offenders to present themselves favourably during interview, as noted in Chapter 3, for the majority of offenders they reported being happy to engage in the research as this provided them with the opportunity to 'give something back', or supported them in 'moving away' from a criminal lifestyle. Consequently, when considering the validity of participants' accounts in general, the researcher was reasonably confident that the accounts presented were largely genuine. Nevertheless, during

the research there were occasions where offenders appeared to attempt to present themselves favourably. This appeared to be more prevalent amongst those whose motivation to engage with the research emerged from a desire to 'break from the norm' of prison life, rather than to 'give something back'. An example of such instances relate to where participants spoke about a sense of moral reasoning informing their decision-making in selecting a property to burgle. For some offenders, this was often substantiated through a later part of the research process; for example, during the property image task. However, for some participants, this self-disclosed sense of morality transpired to be somewhat superficial, and was typically exposed during a later part of the research process. For example, some individuals reported that they would actively avoid properties with elderly residents, however during the subsequent property image task, they went on to select the property to burgle from the task that was widely identified by offenders as belonging to elderly residents. Alternatively, upon further exploration with such individuals, it became transparent that such a preference was not driven by a need to protect the victim(s), but instead by a desire for self-preservation; i.e. to avoid causing victims to have, for example, a heart attack, which would promptly turn a burglary charge into something much more serious.

Consequently, whether offenders' *genuine* views were presented openly from the outset, or were revealed upon further probing, the researcher was satisfied that any efforts / desires by offenders to present themselves favourably (where evident) did not hamper the authenticity (and accuracy) of accounts uncovered. Nevertheless, the use of different methodological approaches in this work demonstrate the value of methodological triangulation in helping to validate and verify offenders' accounts (Zetinigg and Gaderer, 2010).

One of the biggest challenges faced with regards to this research was the logistics involved in bringing this project to fruition. For example, initially the project experienced a protracted period of time to receive the necessary clearances through the ethics process and security clearances. However, once this had been achieved, it was then a process of organising the logistics to arrange a visit, in terms of negotiating appropriate times for staff with regards to their time and resources. Significant work was undertaken in relation to the process of how individuals were approached, recruited and then interviewed for the purposes of this research. Indeed, the researcher is sincerely grateful to all of the staff and offenders that made this research possible, in terms of the time and effort taken to make this project a reality.

8.7. Future Work

Future work in this area will benefit from projects that are able to utilise and put into practice the important results from this research. This thesis has taken an applied and theoretical focus, in terms of enhancing understanding on the target selection of offenders, as well as knowledge on the broader burglary process. Indeed, this project reflects a process of exploratory work into understanding the specific nuances of offenders' target selection. The next steps for work in this area are therefore likely to centre on the practical utilisation of this project.

One clear option for extending this work is to apply the lessons from this project into police / criminal justice practice, to help prevent and disrupt the burglary process of offenders. This may also be supplemented through building on the MOs identified in this research. This work may also be applied in the context of 'simulation' approaches. For example, Malleson (2010) developed an Agent-Based simulation model of burglary, testing this on key Environmental Criminology theories. One of the areas identified for future research in Malleson's work was the need to include real-life data on offenders; this work could therefore fulfil that requirement in providing such real-life data on offenders.

Because this research has explored not only offenders' preferences for specific features of properties and / or areas, but also the *environmental* features associated with particular types of offenders / offences, this work lends itself particularly well to the strengths of the Risk-Terrain Modelling approach (Caplan and Kennedy, 2010). In this approach, weightings of risk are attached to specific features of the environment, with a view to highlighting not only areas of particular risk from different types of offences, but also the nature of such risks. This approach demonstrates clear practical application in terms of supporting crime prevention efforts, and signifies a potential area for future work.

One of the key features emerging from this work is the dynamic nature of offenders' preferences and target selection criteria, i.e. their flexibility at assessing and utilising potential targets as they present themselves. An avenue for future research to explore this area further could incorporate the use of walkthrough simulation technology (as carried out by van Gelder *et al.*, 2017, in the context of the burglary process), to examine the extent to which different features of the environment may impact on the dynamics of offenders' behavioural choices during the process of searching for a target itself. This will help to develop further insight into the dynamic processes and behaviours as and

when offenders are presented with new stimulus, opportunities, potential rewards and potential risks.

Chapter 9: Conclusion

This thesis has helped to develop a greater understanding of the nature of burglary and burglars in order to better understand offending behaviour in general, and to support policing and crime prevention efforts within Leeds. The work has built upon previous work in this area, not only through using a very localised focus from which to support city-wide policing and crime prevention efforts, but also through the use of both quantitative and qualitative approaches to triangulate methods and validate emerging findings. In doing so, this work has highlighted the value of both research perspectives separately, as well as collectively, in helping to complement the strengths of one another. Furthermore, this work has identified important and novel findings with clear application in the crime prevention field.

This research highlights the importance of visibility on offenders' target-selection, with this carrying greater importance over features such as occupancy, or security, both of which could be navigated during the offence process. The work also highlights the importance and use of technology by offenders, who may use websites to sell goods freely, or access databases to help facilitate the transfer of stolen vehicles. Conversely, offenders have also highlighted through the research how such technologies may be used to their detriment; for example, in terms of tracking technologies on certain goods.

The use of a property image task enabled offenders to establish the features that may attract them to a property. Rather than there being one particular feature to entice offenders, it was a combination of such elements that would attract them. However, such a combination could not be offered without contextual cues; as whilst a precise formula could not be identified prior to the property image task, offenders established very quickly whether or not properties made attractive targets during the task.

Particular features that stood out as attractive were a sense of affluence, or a sense that a property was 'well kept' and 'well-maintained'. Whilst offenders reported being deterred by features such as police-linked alarms, or dogs, they were less concerned with neighbourhood watch or other such initiatives. This has substantial implications within the crime prevention domain.

The research found that a mixed methods approach helped to validate some of the offence / offender-based MOs, as well as the identification of features attractive to offenders. The quantitative analysis found that offence-

based MO categories were not distinct and there was much overlap and heterogeneity, differentiating across a number of features. This same finding was discovered through the interviews undertaken with offenders and the subsequent *offender*-based MOs derived. One finding that was particularly notable was the degree of sophistication shown by a number of offenders, as well as the different mechanisms through which professionalism was exhibited.

Turning to crime prevention, the nature of offenders identified meant that crime prevention strategies will likely differ depending on the nature of offender; i.e. if an offender is more opportunistic, it is important to ensure that opportunities are not available to them. This is an important distinction to draw out, as this will have substantial bearing on crime prevention policy. This is particularly important in communities favoured by offenders, such as those populated by students, or those of Asian ethnicity, because of the perceived rewards on offer, as well as ease of access with such groups. This is also particularly relevant in the context of 'serial targets' identified through this research. However, for those offenders who exude a greater sense of professionalism, it may be more difficult to intervene at the point of a specific burglary target because of the complexities in predicting a specific target before a crime takes place (aside from providing general crime prevention advice to 'at risk' neighbourhoods). However, intervention with this type of offender can be made at a different stage in the process, i.e. disrupting the chain / demand for stolen goods or mechanisms used to facilitate their offending.

In conclusion, this work has helped to provide a current snapshot of the nature of burglary within a city that has one of the highest burglary rates in the UK, with important findings from which key recommendations have been identified, to support policing and crime prevention efforts. Whilst the research has shown the value of different research perspectives in understanding the nuances of burglary, it also demonstrates that offence selection is a dynamic process that evolves over time and space. Consequently, it is crucial to consider how target selection may evolve over time, and how this may reflect emerging crime patterns on the ground. Doing so will help to ensure that crime reduction efforts can be co-ordinated and revised over time, to meet the needs of the communities they seek to protect.

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Appendices

Appendix A:

2011 UK Census Output Area Classification Variables Used

Var. #	Variable Description	Domain
1	% Persons aged 0- 4	
2	% Persons aged 5-14	
3	% Persons aged 25-44	
4	% Persons aged 45-64	
5	% Persons aged 65-89	
6	% Persons aged 90+	
7	Number of persons per hectare	
8	% Persons living in a communal establishment	
9	% Persons aged over 16 who are single	
10	% Persons aged over 16 who are married or in a registered same-sex civil partnership	
11	% Persons aged over 16 who are divorced or separated	
12	% Persons who are white	
13	% Persons who have mixed ethnicity or are from multiple ethnic groups	
14	% Persons who are Asian/Asian British: Indian	Demographic structure
15	% Persons who are Asian/Asian British: Pakistani	
16	% Persons who are Asian/Asian British: Bangladeshi	
17	% Persons who are Asian/Asian British: Chinese and Other	
18	% Persons who are Black/African/Caribbean/Black British	
19	% Persons who are Arab or from other ethnic groups	
20	% Persons whose country of birth is the United Kingdom or Ireland	
21	% Persons whose country of birth is in the old EU (pre 2004 accession countries)	
22	% Persons whose country of birth is in the new EU (post 2004 accession countries)	
23	% Persons whose main language is not English and they cannot speak English well or at all	
24	% Households with no children	Household composition
25	% Households with non-dependent children	
26	% Households with full-time students	
27	% Households who live in a detached house or bungalow	Housing
28	% Households who live in a semi-detached house or bungalow	
29	% Households who live in a terrace or end-terrace house	
30	% Households who live in a flat	
31	% Households who own or have shared ownership of property	
32	% Households who are social renting	
33	% Households who are private renting	
34	% Households who have one fewer or less rooms than required	

35	Individuals day-to-day activities limited a lot or a little (Standardised Illness Ratio)	
36	% Persons providing unpaid care	
37	% Persons aged over 16 whose highest level of qualification is Level 1, Level 2 or Apprenticeship	Socio-economic
38	% Persons aged over 16 whose highest level of qualification is Level 3 qualifications	
39	% Persons aged over 16 whose highest level of qualification is Level 4 qualifications and above	
40	% Persons aged over 16 who are schoolchildren or full-time students	
41	% Households with two or more cars or vans	
42	% Persons aged 16-74 who use public transport to get to work	
43	% Persons aged 16-74 who use private transport to get to work	
44	% Persons aged 16-74 who walk, cycle or use an alternative method to get to work	
45	% Persons aged 16-74 who are unemployed	
46	% Employed persons aged 16-74 who work part-time	
47	% Employed persons aged 16-74 who work full-time	
48	% Employed persons aged 16-74 who work in the agriculture, forestry or fishing industries	
49	% Employed persons aged 16-74 who work in the mining, quarrying or construction industries	
50	% Employed persons aged 16-74 who work in the manufacturing industry	
51	% Employed persons aged 16-74 who work in the energy, water or air conditioning supply industries	
52	% Employed persons aged 16-74 who work in the wholesale and retail trade; repair of motor vehicles and motor cycles industries	
53	% Employed persons aged 16-74 who work in the transport or storage industries	
54	% Employed persons aged 16-74 who work in the accommodation or food service activities industries	
55	% Employed persons aged 16-74 who work in the information and communication or professional, scientific and technical activities industries	Employment
56	% Employed persons aged 16-74 who work in the financial, insurance or real estate industries	
57	% Employed persons aged 16-74 who work in the administrative or support service activities industries	
58	% Employed persons aged 16-74 who work in the in public administration or defence; compulsory social security industries	
59	% Employed persons aged 16-74 who work in the education sector	
60	% Employed persons aged 16-74 who work in the human health and social work activities industries	

Source: Office for National Statistics (2015b, pp. 2-3).

Appendix B:

Code used to test for the presence of variables in the Excel spreadsheet for the Latent Class Analysis

Step 1: Count function used to determine number of times a specific keyword is present for a specific case in a specific cell.

```
=COUNTIF(Property!$C:C,Offences!$A6&"-"&Offences!$Z$1)
```

Step 2: Conditional formula which returns a '1' if the result from the above count function is over 0, but a '0' if the above count function returns a '0'.

```
=IF(Z4>0, 1, 0)
```

Appendix C:**List of variables tested for in Latent Class Analysis**

Offender Age	End Terraced Property Type
Distance between offender home and victim location	Insecure Property
Attempted Offence	Euro Profile Locks
Multiple Offenders	Mole Grips Used
Distraction Burglary	Part of Property Smashed
Jewellery taken	Force Used
Cash taken	Professional Snapping Tool Used
Cash and Jewellery taken	Front Door Entry
Radio/ T.V. taken	Front Door Exit
Computers, parts or accessories taken	Back Door Entry
T.V./ Computer taken	Back Door Exit
Car taken	Side Door Entry
Personal accessories taken	Side Door Exit
Debit/ credit cards taken	Victim over age of 65
Household articles taken	Untidy Property Search
Photographic Equipment taken	Tidy Property Search
Drugs taken	Property Occupied
Alcohol taken	Property Unoccupied
Bicycle taken	Screwdriver Used
Foreign Currency taken	Tool Used
Semi-Detached Property Type	Tools Used
Detached Property Type	Alarm
Bungalow Property Type	Alarms
Flat Property Type	ADT (alarm)
Terraced Property Type	Alarm Locks
UPVC	CCTV

Appendix D:
Interview Schedule

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*‘Understanding the behaviour of
burglars within Leeds’ Research Project*

Interview Schedule

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'Understanding the behaviour of burglars within Leeds' Research Project -

Interview Schedule

Because the research looks at burglary, there shall be a number of questions relating to your burglary experiences. These will explore your past offences to help me learn about how you select a target and the process that you take when deciding on a property to burgle.

NB: The questions detailed below are to be used as a guiding tool; not all of these need necessarily be asked, these shall merely be used as a broad template from which the details of an individual's offending may be gathered and explored for use within the model. These questions shall focus upon specific offences, before focusing on more general burglary practice.

<u><i>Model feature</i></u>	<u><i>Questions that can be used to elicit this (starting with specific then moving to more general)</i></u>
Burglary socialisation; General Role Models	<p><u><i>OPTIONAL ADDITIONAL QUESTIONS IF REQUIRED.....</i></u></p> <p>How did you get into burglary? Did you have any Role Models for Offending?</p> <p>Why burglary over other offences? Have you committed other offences? If so, what? How many offences have you committed? When did you start? How many times have you been caught?</p>
Planning	<ul style="list-style-type: none"> ➤ Tell me about your <i>easiest/ scariest</i> burglary. Why was it so? ➤ Now have a think about the last burglary you can recall - tell me about this. ➤ Did you plan the offence? In what way? Tools? Was this

	<p>typical?</p> <ul style="list-style-type: none"> ➤ Did you plan by yourself? Or with others?³ ➤ Did you intend to commit the burglary when you left the house? ➤ Did you know what property you were targeting when you left the house? ➤ Did you offend by yourself/ with others? Number? Ages? What was your role? ➤ Why did you commit that burglary? What about other burglaries, i.e. taking car keys to steal a car etc? If so, what were the details of this? ➤ Did you use drugs/ alcohol prior to/ during the offence? Why? Other times? ➤ Did you ever burgle the same/ nearby properties? Why? Were there certain property/ area types you were most likely to commit repeat offences on?
Target Selection	<ul style="list-style-type: none"> ➤ What type of property did you target? Why? Did you do any research about the property? Why did you choose that area? Was this typical? ➤ How did you select a property to burgle? What features did you look for? Why? Did these differ amongst properties? How? What features are most important? Do these selection criteria stay the same across offences? ➤ What factors deter you from a property? Why? How important were these? ➤ Are there any people that you wouldn't burgle from? Why? ➤ How important is occupancy? Did you use signs for occupancy? What signs? ➤ How important is visibility? What impact did this have on your offence? ➤ How important is security? What impact did this have on your offence?
Offending Process	<ul style="list-style-type: none"> ➤ Was the offence on a weekend/ weekday? What time? Was this typical?

³ Potentially contentious topic areas.

	<ul style="list-style-type: none"> ➤ What mode of transport did you use to the offence? From the offence? How typical was this? If you drove, was the car stolen? When did you steal that? When you offended, where did you travel from? How far did you travel? ➤ Which sections of the property did you target to access it? Why? Does this differ among property types? What is your preferred mode of entry into a property? Why? Was it always this? ➤ During the offence, what goods did you take from a property? How much could you get for these? Do you prefer particular goods over others? Are there particular types of goods you target from different victims/ areas?
Post-offence	<ul style="list-style-type: none"> ➤ After the offence, how did you travel home? Why? Where did you travel to? ➤ Did the goods you stole affect your journey from the crime? How/ why? Would different goods affect your route home after an offence? How/ why? ➤ Did you steal goods for personal use or to sell on? Would you steal to order? Tell me about how you got rid of items. Did you sell on different items to different people? How long would it take you to get rid of items?
Risk taking/ perception	<ul style="list-style-type: none"> ➤ What do you think are the risks with committing a burglary? ➤ Why burglary despite these risks? <p style="text-align: center;"><i>SEE ADDITIONAL QUESTIONNAIRE, RISK TAKING QUESTIONNAIRE</i></p> <ul style="list-style-type: none"> ➤ How aware were you of Police movement/ presence/ Crime reduction initiatives in an area at a given time? What was your response to this? Did your behaviour change? How? ➤ Did you ever consider being caught? If no, what if the Police were about? ➤ How flexible were you to change plans? Did your offending pattern/ motivation change? How? Did your target area change? Did you ever change your offending to other offences? What/ why? How likely was this to occur?
Risk of being caught and potential payout	<ul style="list-style-type: none"> ➤ What do you think is the chance/ probability of being caught when committing a burglary? ➤ How many burglaries/ attempts have you tried? How often have you been caught?

	<ul style="list-style-type: none"> ➤ When was your first burglary? How old were you? ➤ So, if the chance of being caught is [YOUR PERCEPTION HERE %], what's the lowest payout at which you would offend? ➤ What if the chance of being caught was half of this, i.e. [BLANK/ 2], what's the lowest payout at which you would offend? ➤ What if the chance of being caught was double this, i.e. [BLANK x 2], what's the lowest payout at which you would offend?
General Reflections	<ul style="list-style-type: none"> ➤ <i>To what extent was this most recent offence typical of your offences? How?</i> <li style="text-align: center;"><i>Now I'd like to talk more generally about your offending.</i> ➤ Why do you commit burglary? What does it give you? What stops you from achieving this without offending in daily life? ➤ At what point would this factor cause you to offend? ➤ Based on this, how frequently would you need to burgle? Did this ever change? ➤ How long would the payout from a burglary last before you needed to commit another burglary? ➤ If you burgled more frequently, why would this be? ➤ Would you consider yourself an 'expert' burglar? Why? What features define an expert? ➤ What do you know about other offenders in Leeds? Where do/ have they offended? Why do they offend? ➤ Tell me about your associates (social or criminal). How many associates? How did you become associates? Do you use this network to offload stolen goods? Does this network impact upon your offending? How? ➤ How has your offending changed over time? i.e. moving house? Have you kept the same practices/ techniques/ targeted same goods? ➤ How did you select areas to burgle? What areas in Leeds did you prefer to burgle? [SHOW MAP OF LEEDS]. Why? Did this change? Has this always been the case? What populations did you prefer to target?

	<ul style="list-style-type: none">➤ Where have you lived in Leeds? Which areas are you most familiar with? What impact did this have on choosing areas to burgle? Where did you choose to target when you were living at your old addresses? Why?➤ Have there been times when you have tried to burgle but given up? What factors made you give up? What did you do then? How did you respond? How often do you go out and come back empty handed? Tell me about that.➤ Is there anything else we haven't covered that you would like to share?
--	---

Appendix E:

Property Image Task Question Sheet

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'Understanding the behaviour of burglars within Leeds' Research Project - Property Image Task Question Sheet

1. How attractive would this property be to burgle?

Very unattractive										Very attractive	
1	2	3	4	5	6	7	8	9	10		

Why is this? What features make this property attractive/ unattractive to burgle?

2. How accessible does this property look?

Not accessible at all										Very accessible	
1	2	3	4	5	6	7	8	9	10		

3. How concealed does this property look?

Very visible										Very concealed	
1	2	3	4	5	6	7	8	9	10		

4. Does this property look like there are people at home?

Yes			Maybe			No		

Why/ why not?

Appendix F: Risk-Taking Questionnaire

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Adapted* Domain-Specific Risk-Taking (DOSPERT) Scale

**This questionnaire examines the intention or likelihood of individuals to engage in risky activities/ behaviours, and is adapted from the revised DOSPERT risk-taking scale (Blais and Weber, 2006), a well-known questionnaire used to explore risk-taking in adult populations across different lifestyle domains. However, this questionnaire has been shortened for the purposes of this research as it was considered unreasonable for participants to respond to each of the original 30 items across the 3 risk scales.*

Adapted* Domain-Specific Risk-Taking (Adult) Scale – Risk Taking

For each of the following statements, please indicate the **likelihood** that you would engage in the described activity or behavior if you were to find yourself in that situation. Provide a rating from *Extremely Unlikely* to *Extremely Likely*, using the following scale:

1	2	3	4	5	6	7
Extremely Unlikely	Moderately Unlikely	Somewhat Unlikely	Not Sure	Somewhat Likely	Moderately Likely	Extremely Likely

1. Going camping in the wilderness. (R)
2. Drinking heavily at a social function. (H/S)
3. Going down a ski run that is beyond your ability. (R)
4. Going whitewater rafting at high water in the spring. (R)
5. Engaging in unprotected sex. (H/S)
6. Driving a car without wearing a seat belt. (H/S)
7. Taking a skydiving class. (R)
8. Riding a motorcycle without a helmet. (H/S)
9. Sunbathing without sunscreen. (H/S)
10. Bungee jumping off a tall bridge. (R)
11. Piloting a small plane. (R)
12. Walking home alone at night in an unsafe area of town. (H/S)

Note. H/S = Health/Safety, R = Recreational.

Adapted* Domain-Specific Risk-Taking (Adult) Scale – Risk Perceptions

People often see some risk in situations that contain uncertainty about what the outcome or consequences will be and for which there is the possibility of negative consequences. However, riskiness is a very personal and intuitive notion, and we are interested in **your gut level assessment of how risky** each situation or behavior is.

For each of the previous statements, please indicate **how risky you perceive** each situation. Provide a rating from *Not at all Risky* to *Extremely Risky*, using the following scale:

1	2	3	4	5	6	7
Not at all Risky	Slightly Risky	Somewhat Risky	Moderately Risky	Risky	Very Risky	Extremely Risky

Adapted* Domain-Specific Risk-Taking (Adult) Scale – Expected Benefits

For each of the previous statements, please indicate **the benefits** you would obtain from each situation. Provide a rating from **1 to 7**, using the following scale:

1	2	3	4	5	6	7
No Benefits at all			Moderate Benefits			Great Benefits

Reference:

Blais, A-R. and Weber, E.U. 2006. A Domain-specific Risk-taking (DOSPERT) Scale for Adult Populations. *Judgment and Decision Making*. **1**(1), pp.33-47.