

**Collective efficacy in micro-places:
Exploring the perception and enforcement of moral
rules in neighbourhood settings**

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Doctor of Philosophy

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Sam Jordan Cole

For Jo Diamond

Abstract

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This thesis aims to contribute theoretically, methodologically, and empirically to the study of collective efficacy theory when used as a measure of moral rules and their level of enforcement in neighbourhood settings. The first part of the thesis explores how the concept of collective efficacy has been developed in socio-spatial criminological research, bridging the theoretical gap between Sampson et al.'s (1997) original measure of 'contextual causality' to one which has been reappraised as a micro-level explanation for crime within Situational Action Theory. Observing the concept of collective efficacy to be a highly localised social process, chapter 3 then explores theoretically how both physical and social features of settings may shape collective efficacy's explanatory effect on crime in microplaces. Chapter 4 then focusses on the role and relevance of neighbourhood guardians in perceiving and enforcing neighbourhood collective efficacy across different settings – both within and outside of the home neighbourhood.

In order to answer assumptions as to how setting moral rules can be both perceived and enforced by guardians across settings, the second part of the thesis sets out the rationale and results of the Peterborough Neighbourhood Guardians Study (PNGS), conducted in 2019. The PNGS interviewed 92 participants from a cluster of high collective efficacy neighbourhoods in Peterborough, UK. An adapted Space-Time Budget methodology was developed and deployed in order to explore whether participants could perceive changes in neighbourhood collective efficacy across settings encountered as part of their routine activity patterns. Exploratory analysis of STB interview data found that (i) variation in setting moral rules were perceptible to participants; and (ii) that these perceptions were influential in shaping individual willingness to intervene in settings. Given that the PNGS 2019 represents the first application of the STB methodology to guardianship research, the thesis concludes by offering methodological reflections on the use of the method in this context.

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1 Introduction

'The idea of "community" is at once compelling and frustrating. Indeed, few would disagree that at some fundamental level a community's social context matters for crime. Yet the concept is sufficiently vague that it risks becoming meaningless – if community context is all things to all people then it is simply a metaphor with no real explanatory power...Even if we agree on the unit of analysis, what exactly about the community is doing the explaining? Do communities act? What is the mechanism at work?'

Robert Sampson (2009)

1.1 Collective efficacy as the contemporary image of communities and crime

The study of crime and place is arguably one of the founding components of criminology as a contemporary discipline (Bottoms, 2012). Originating in the Chicago School of urban sociology (Park and Burgess, 1925; Shaw, 1930), the endeavour to understand why crime is highly concentrated in urban spaces has a long-established place within this corpus. Against this historical backdrop, a wide range of research has emerged with a geographical component suggested to explain variation in neighbourhood crime: from spatial analyses of crime frequencies by place (Sherman, Gartin and Buerger, 1989; Weisburd, Groff and Yang, 2012) through to correlations of physical attractors (Weisburd *et al.*, 2016; Wortley, 2017) and social coincidences of people (Brantingham and Brantingham, 1981; Felson, 2017) said to explain this variation. By dissecting the city into neighbourhood units of study, criminologists have been able to measure the presence of certain features and theorise about their relationship to urban densities of crime. This dissection, at an ever finer scale, has led to a broad – if not fragmented – series of contributions in terms of the explanatory factors and mechanisms which shape neighbourhood crime outcomes (Bottoms, 2012; Weisburd, Groff and Yang, 2012; Braga and Clarke, 2014).

Consequently, the definition of ‘neighbourhood’ is linked to the study of people within such places.¹ The Oxford English Dictionary, for instance, defines neighbourhood as ‘a district or portion of a town, city, or country, in reference to the character or circumstances of its inhabitants’. Studying neighbourhoods as an explanatory unit therefore means consideration of the people who reside within that context, with the social dynamics of settings providing insight as to how places are dwelled and patronised. This aspect of place is typically subsumed under the umbrella term of ‘community’ – a concept with broad sociological depth of definition and societal relevance (Bauman, 2001; Delanty, 2010) that has been carried through to criminology (Taylor, 2015; Wilcox, Cullen and Feldmeyer, 2018). One concept identified to be the ‘prevailing image of communities and crime’ (Wilcox, Cullen and Feldmeyer, 2018, p. 2) is that of collective efficacy (Sampson, Raudenbush and Earls, 1997).

Over the past 25 years, the theory and derived concept of collective efficacy has deepened our understanding of the link between aggregate-level neighbourhood characteristics and variations in urban crime rates (Wikström, 2007, p. 346). This explanation centres on the importance of community social cohesion bringing residents together, in agreement, to enforce social control against crimes within their neighbourhood (Sampson, Raudenbush and Earls, 1997; Sampson, 2012, p. 154). Operationalised through community surveys testing the aforementioned concepts, the theory has garnered much in the way of empirical support across the western world (Sampson, Raudenbush and Earls, 1997; Morenoff, Sampson and Raudenbush, 2001; Pratt and Cullen, 2005; Sampson and Wikström, 2008; Mazerolle, Wickes and McBroom, 2010; Wikström *et al.*, 2012, pp. 202, 219). The overwhelming pattern appears to be that where the level of measured neighbourhood collective efficacy is low neighbourhood crime is high, and where the level of neighbourhood collective efficacy is high crime is comparably low (Sampson, Raudenbush and Earls, 1997; Sampson and Wikström, 2008; Wikström *et al.*, 2012, pp. 202, 219). For instance, a two-standard deviation increase in collective efficacy has been associated with a 30% reduction in self-reported violent victimisation, and a 39.7% reduction in police-recorded homicide (Sampson, Raudenbush and Earls, 1997, p. 222).

¹ Some contributions, which consider the influence of physical features of settings - such as building design and urban form – must ultimately reconcile this by accounting for its impact on people, in order to have the identified explanatory effect (Taylor, 2002a, 2018).

Collective Efficacy theory, therefore, seeks to explain how aggregate socio-demographic features of the neighbourhood shape relationships within communities. A socially cohesive community is more likely to intervene and enforce social control over its neighbourhood setting.² Its explanatory power is recognised as being largely situational - that is, the level of collective efficacy within a neighbourhood setting affects the commission of, or opportunity for, crime to be committed within that context (Sampson, Morenoff and Raudenbush, 2005; Sampson, 2011, p. 157).³ This clear pattern illustrates the implicit power that neighbourhood residents can have where they collectively agree and enforce rules pertinent to their residential environment. In accordance with Sampson's adaptations to his original theory,⁴ the causal social processes of relevance to crime 'reside at the social level', owing to the interdependence of human behaviour and interactions on social settings – in other words, these are 'collective' or 'community' level processes that, through their intertwined nature, are to be considered as a pact (Sampson, 2013). In this vein, the study of social environments, and the social processes which flow through them, are said to require a 'more flexible conception of causality', in contrast with individual-level experimental paradigms (Sampson, 2011, p. 245). But with decreased aggregation and a focus upon neighbourhood units of ever finer scale,⁵ criminologists are called to consider ultimately how these social processes unfold to truly understand their causal influence upon a neighbourhood's crime rate. Empirically, the strength of collective efficacy as an explanatory mechanism decreases when survey data is aggregated to smaller neighbourhood units (Kooi, 2007; St Jean, 2007; Oberwittler and Wikström, 2009; Sutherland, Brunton-Smith and Jackson, 2013; Brunton-Smith, Sturgis and Leckie, 2018; Hipp, Williams and Boessen, 2018). The influence of community processes, across urban space, does not therefore apply with linearity or consistency – scale matters in adjudicating community to crime links (Weisburd, Groff and Yang, 2012).

² As will be discussed, this perspective of social cohesion is distinct from density of social ties.

³ Note that developmental influences have also been identified within distinct theoretical frameworks (Wikström, 2012).

⁴ Whilst Sampson has continued to develop the theory and concept, collective efficacy was originally developed with Stephen Raudenbush and Felton Earls in their seminal 1997 paper *Neighborhoods and Violent Crime: A Multilevel Study of Collective Efficacy*.

⁵ The Project on Human Development in Chicago Neighbourhoods (PHDCN) aggregated data to neighbourhood clusters containing around 8,000 people.

1.2 Collective efficacy within micro-places – adaptations through Situational Action Theory

Given that one of the most replicable criminological findings identifies crime to be highly concentrated within micro-spaces (Sherman, Gartin and Buerger, 1989; Weisburd, Groff and Yang, 2012; Wikström *et al.*, 2012; Steenbeek and Weisburd, 2016; Weisburd *et al.*, 2016; Schnell, Braga and Piza, 2017), an understanding as to how collective efficacy may explain this is key to its future salience within the discipline (see contributions from St Jean, 2007; Weisburd, White and Wooditch, 2020). With decreased aggregation comes the ability to study and identify specific features within settings relevant to explaining these social processes. Consideration of these pre-existing features is necessary in light of continued policy prescriptions to increase neighbourhood collective efficacy as a means to reduce neighbourhood crime (Weisburd and Eck, 2004; Ferrier and Ludwig, 2011; Leverents, 2014; Sampson, 2014; Weisburd, Davis and Gill, 2015; Wikström and Treiber, 2017). Despite either parochial, organically produced efforts (Flint, 2006; Sampson, 2012, p. 382) or emergency responses as a consequence of natural catastrophes (Kirk, 2008) broad attempts to build collective efficacy – through policy routes such as community policing practices – have provided mixed results (Kochel and Weisburd, 2012; Weisburd *et al.*, 2020). Connecting macro-level policy responses to changes in the specified and necessary micro-level social processes of collective efficacy is arguably difficult to reconcile at the situational level of ‘contextual causality’, as Sampson himself accedes (Sampson, Winship and Knight, 2013).⁶

One theoretical integration and development which permits such appraisal is the adapted use of collective efficacy within Situational Action Theory (SAT). SAT has been developed to integrate ‘key insights from the main person and environment-orientated criminological theories and research, and relevant social and behavioural science theories and research more generally, within the framework of an adequate action theory’ (Wikström, 2014a). The theory was born out of a call to unify and slim down theoretical contributions across criminology (Wikström and Sampson, 2006) and identify those causal processes - rather than risk-based factors - relevant to explaining acts of crime (Wikström, 2011). The theory does so by

⁶ Despite promoting ‘contextual causality’, Sampson has suggested that policy graphs are an important tool for connecting macro-level interventions with the impact on crime through specified social processes such as collective efficacy.

explaining acts of crime as a result of a person and environment interaction, with many of the analytical frameworks set out within the theory explaining crime at the micro-level of causal aggregation, thus capturing these interactions with greater specificity. Briefly stated, individuals vary in their propensity to offend; environments vary in how conducive they are to offending; and the interaction of these, is said to explain the action alternatives individuals perceive and the choice to either offend or not offend within a given setting (Wikström *et al.*, 2012).

As a result, collective efficacy has been reappraised within SAT, allowing researchers the opportunity to break down the specific influences of these causal social processes relevant to explaining the neighbourhood to crime link. In their seminal text, *Breaking Rules*, Wikström *et al.* (2012) operationalise the influence of the environment within this analytical framework by using the concept of collective efficacy as a measure of ‘the moral norms and levels of enforcement’ within a setting.⁷ Distinctively, measures of ‘social cohesion’ represent the moral norms applicable to settings, with ‘social control’ indicative of their level of enforcement (Wikström *et al.*, 2012, pp. 178–179). In their wide-scale community survey of Peterborough, U.K., the authors found collective efficacy to be the second strongest predictor of police-recorded crime after non-residential land use (i.e. spaces including shopping centres and commercial spaces) (Wikström *et al.*, 2012, p. 203). In line with the ‘small is better’ thesis, collective efficacy survey data was aggregated to small geographic units (UK Census Output Areas) of around 150 residences per neighbourhood, therefore identifying collective efficacy’s explanatory power as one situated within localised residential contexts. Here, collective efficacy remained a persistent and reliable mediator between neighbourhood social composition and prevalence of police-recorded crime and young people’s self-reported offending (Wikström *et al.*, 2012). Whilst high collective efficacy produced low crime at ever finer scale, features of urban settings were evidenced as disrupting these pathways.

⁷ As alluded to, a ‘neighbourhood’ is a nebulous geographic concept. SAT largely focusses on ‘settings’ in order to explain the influence of ‘neighbourhoods’ (and other ‘settings’, as interacted with and perceived by individuals) when explaining the development of individual crime propensity (Wikström, 2012; Wikström and Treiber, 2019). ‘Settings’ are also applicable to situational explanations of crime – the environmental context within which such decision-making processes are considered. The ‘settings’ is what is available to the senses so as to be perceived.

Alongside this empirical angle, SAT presents researchers with opportunities to analytically appraise the causal social processes within collective efficacy which seek to explain neighbourhood crime rates, thus breaking down the neighbourhood-level conception of ‘contextual causality’ and better specifying collective efficacy’s impact on neighbourhood crime. The broad theory of SAT includes a model termed the ‘perception choice process’, which delineates the decision-making pathways relevant to an individual forming action alternatives, leading ultimately to a decision to either commit or not commit an act of crime (Wikström, 2017a). This model identifies both the environmental and individual micro-level causal factors of relevance, highlighting that the influence of neighbourhoods or settings on criminal decision making does not apply with contextual uniformity to individual actors. As we shall see, the ‘collective’ aspect within collective efficacy relies upon individuals acting within a specific way in order to achieve the purported deterrent effect on individuals (Oberwittler and Wikström, 2009).

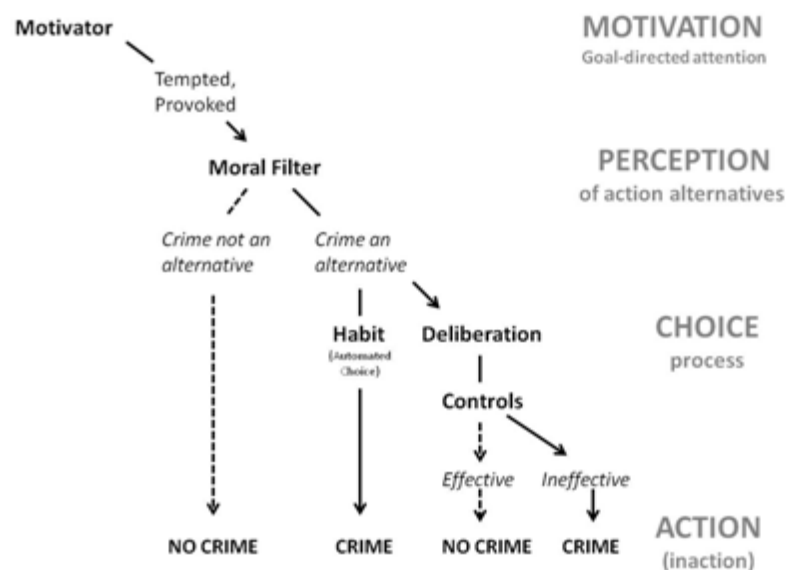


Figure 1: An overview of key steps in the ‘perception-choice action process’ describing the processes resulting from an individual interacting with a setting (social environment).

Figure 1 derives from SAT’s perception-choice action framework, and is based around four key interaction features: (i) a *motivation*, leading to (ii) the *perception* of action alternatives in response to the motivation, (iii) a *choice* process, through which an intention to act in a particular way is formed; whether crime could be an action alternative is part of the perception process, and (iv) the *action* or inaction. Perceptions of the environment are influential in each of these processes, and provide researchers with a useful framework through which to appraise

the influence of collective efficacy on individual action decisions. Each step in the perception-choice process allows us to theoretically disaggregate contextual causality, to explain why acts of crime do or do not occur within a given setting (Wikström, 2006, 2011).

- (i) *Motivation* – Motivations are described as a situational concept, for they influence the interaction of people and settings (Wikström, 2007). Collective efficacy may shape the extent to which settings vary by their motivating factors as relevant to individual decision making. In settings with low levels of collective efficacy, provocations may be more frequent. For example, the absence of social cohesion - meaning rule breaking is less likely to be challenged amongst neighbours – may create more provocations because of others’ rule breaking actions (Crawford, 1999). Reduced social capital and fear may also inhibit trust and legitimacy in mobilising formal social controls (Kochel and Weisburd, 2012; Weisburd, Davis and Gill, 2015). Conversely, settings with high collective efficacy may offer greater temptations to offend (high collective efficacy associated with low social deprivation) offering higher financial gains or rewards (St Jean, 2007). Within city centres and local commercial settings, collective efficacy has a weaker explanatory influence (Wikström *et al.*, 2012, pp. 203, 245). The turnover of patrons may mean every day incivilities (Smith, Phillips and King, 2010) or crimes go unchallenged, due to a disassociation of individuals from their home neighbourhoods (Taylor, 1988) with this absence of controls allowing individual motivations to be perceived in response to setting provocations (e.g. availability of high value goods).
- (ii) Within *perception* (ii) the level of collective efficacy is situationally relevant in shaping an individual’s consideration that crime may be an action alternative. Here SAT proposes the principle of moral correspondence: if an individual’s moral rules correspond with those of the setting, he/she is likely to act in accordance with those rules (Wikström, 2010). As stated, individuals differ as to their crime propensity;⁸ two people with a respective high or low crime propensity will perceive different action alternatives from their interpretation of the same setting. Further, settings

⁸ If an individual’s own moral rules correspond with those rules stated in law, he/she is said to have a low crime propensity, for he/she agrees to abide by the moral rules of the law. Those who have a low law-relevant morality have a higher crime propensity, for they do not agree to the moral rules as stated in law (Wikström and Svensson, 2010).

differ in the levels of collective efficacy (moral rules), which convey information about expected behaviours within that setting (Sampson, 2013) and the level of enforcement of those rules (Wikström *et al.*, 2012). Individuals with a low crime propensity (strong law-relevant morality) interacting in settings with high collective efficacy (strong law-relevant moral rules of the setting, and enforced) are in correspondence – they agree, and act in accordance with the rules of that setting (Wikström *et al.*, 2012; Sampson, 2013). The same person, interacting with a setting of low collective efficacy where there is no correspondence are also unlikely to perceive crime as an action alternative, for their moral rules ascribe to them what is right or wrong to do within that setting. However, for those individuals who have a high-crime propensity, their response to a motivation may be to consider committing an act of crime. However, their interaction with both settings of high and low collective efficacy may lead them to deliberate over the potential action alternatives permitted by the setting.

- (iii) *Choice* - For those individuals not acting habitually and who have considered crime as an action alternative, their perception of the level of collective efficacy within a setting influences both the commission of or opportunities for that considered crime to be committed. Where setting collective efficacy is low, this may be conducive to offending, for the individual may perceive that they are unlikely to be interrupted in committing the considered act. The moral rules of the setting communicate that crime is unchallenged there, or at least the risk of challenge is reduced; the setting is therefore conducive to their consideration to offend. Where however the setting has high collective efficacy, the individual, when considering committing a crime, may be deterred from committing the act in question by the potential enforcement of social control. Despite this, of course, they may still choose to offend, but the probability of their crime being interrupted increases in settings of high collective efficacy.

As demonstrated above, the connection between levels of neighbourhood collective efficacy and its requisite crime rate occurs through complex social processes and interactions, with individual deliberations shaping offending choices. The situational explanatory power of collective efficacy is therefore attuned within SAT, ultimately influencing the decision making pathways of those with a high crime propensity or those who have considered crime as a possible action alternative in response to an in-setting provocation (Wikström, Tseloni and

Karlis, 2011; Hirtenlehner and Hardie, 2016).⁹ Whilst the deterrent influence of high collective efficacy matters to some more than others, SAT's perception choice process helps us identify and better specify the key social processes of influence at micro-places. By using this theoretical framework, we see that what ultimately matters, therefore, is that (i) when residents say they will intervene, they do when called upon – i.e. engage in acts of social control; and (ii) that the level of collective efficacy within a setting can be accurately discerned. Whilst key to this micro-level explanation, both of these are largely assumed to occur, with little empirical testing exploring this further (St Jean, 2007; Wikström, 2007; Sutherland, Brunton-Smith and Jackson, 2013). Such an assessment matters in order to better understand how collective efficacy shapes and maintains the moral rules of micro-places, particularly where policy prescriptions seek to increase neighbourhood collective efficacy in order to interrupt and deter neighbourhood crime (Uchida *et al.*, 2015; Weisburd, Davis and Gill, 2015; Wikström and Treiber, 2017). For high collective efficacy to have its explanatory effect, it must play the role suggested in the explanation of crime.

1.3 Exploring analytical assumptions within collective efficacy

Answering these assumptions is understandably a tricky task, given the range of actors and levels of aggregation one could consider. Such an exploration requires methodological developments, building upon and complementing the community collective efficacy survey data and other econometric practices, in order to triangulate data sources (Raudenbush and Sampson, 2002). With the additional theoretical guidance from SAT's perception-choice process, such an assessment further demands a small-area or micro-level focus, in order to be attuned to and assess purported pathways of influence at this situational level. I submit further that both of these assumptions need to be answered together, given that facets of one impact upon the other through the perception-choice process. For collective efficacy to deter, it must be perceived accurately; and for it to have power in preventing crime, residents must intervene when called upon to so do.

⁹ Other criminological theories, such as within the routine activities approach, denote such individuals as 'motivated offenders', but seldom operationalise what this means in practice (Felson and Boba, 2010).

Attempts to explore the visual indicators of collective efficacy have used systematic social observations to record and subsequently correlate high frequencies of physical disorder with low levels of neighbourhood collective efficacy – an insight, perhaps, into the continuum of tolerated behaviours in a setting (Sampson and Raudenbush, 1999); or, a question as to how individuals perceive them (Sampson and Raudenbush, 2004; Sampson, 2009a). Further cues from how residents may choose to ‘target harden’ their properties against crime may also convey the impression of high collective efficacy – even though, empirically at least, such features have been shown to reduce neighbourhood interactions for community building (Reynald, 2011b; Cozens and Davies, 2013). Beyond objective observational assessments, qualitative interviews with frequent offenders have further been used to understand perceptions of neighbourhood collective efficacy at micro-places (St Jean, 2007). These largely draw upon offenders’ deterrence experiences of place rather than their immediate perceptions of its moral rules; offenders therefore identified pockets, even within neighbourhoods of high collective efficacy, which provided an ‘ecological advantage’ for offending (St Jean, 2007). Separating a perception of collective efficacy from the experience of sanction is difficult to do from the offender’s perspective, given the potential ‘relay’ influence of ‘experiential effects’ shaping such assessments (Hirtenlehner and Wikström, 2016). Hence, it is important to consider our second assumption - that individuals intervene when called upon to do so. Empirical assessments of collective efficacy tap into the level of expected action - how likely it is that your neighbour would intervene – identified as difficult to accurately ascertain (Oberwittler and Wikström, 2009; Warner, 2014). Field experiments to test social control in micro-places, such as in the bystander intervention cache, give limited consideration to the pre-existing moral norms of settings (Fischer *et al.*, 2011). Lost-letter studies however – using the act of returning a supposedly lost letter as a proxy measure of intervention – provide support for the notion that collective expectations of behaviour matter, and do bring about acts of control (Sampson, 2012, pp. 220–233; Volker *et al.*, 2016). Ultimately, however, the act of returning a neighbour’s lost letter comes with reduced individual costs as compared to intervening to prevent an act of crime.

With fruitful contributions as a basis, I submit that the study of these assumptions should now be considered concomitantly, in order to fully appraise the suitability of collective efficacy as a measure of the moral rules of a setting. It is clear that through the perception-choice process, that facets of one assumption impact upon the other: for collective efficacy to deter, it must be perceived accurately in correspondence with one’s own moral rules; and for it to have

explanatory power in preventing crime, residents must intervene when called upon to so do in order to sufficiently control individuals acting upon that impulse. With assessments tapping into these assumptions drawn largely from the offenders' perspective (St Jean, 2007), or those identified to have a high crime propensity (Wikström *et al.*, 2012), I suggest that a more fruitful avenue of empirical enquiry here is to focus instead on those who ultimately shape these moral rules and the resultant interactions in the perception-choice pathway – the neighbourhood residents, patrons of space, and place guardians.

1.4 The role and relevance of neighbourhood guardians

This thesis will seek to assess the suitability of using collective efficacy as a measure of the moral context (that is, the norms and their level of enforcement) within SAT by focussing on the role of neighbourhood residents and patrons in both interpreting and shaping the identified social processes. By focussing on those neighbourhood residents who both shape and comply with collective efficacy's moral rules, we can gain a more holistic understanding as to the suitability of collective efficacy as a measure of moral rules within this small-area context. The justification for doing so is as follows:

1. To bridge the theoretical gap between 'contextual causality' and the actions of individual actors in neighbourhood research.

SAT reappraises collective efficacy and uses it to explain crime at the micro-level of aggregation within the perception-choice process. As evidenced, this leaves an explanatory gap between (i) group-level, cohesion-induced, 'contextual causality' as per collective efficacy (Sampson, 2011, 2013) and (ii) the actions of individuals within those aggregates acting in the specified way (Oberwittler and Wikström, 2009). Any empirical enquiry seeking to assess the suitability of collective efficacy within this updated framework is therefore required to construct a suitable framework to accompany the analytical journey. As mentioned, environmental criminology, or the criminology of place, is a broad yet fragmented discipline, with extensive contributions with distinct theoretical underpinning and, consequently, commitments to certain assumptions (see and compare contributions in Bottoms, 2012; Wortley and Townsley, 2017; Bruinsma and Johnson, 2018; Wilcox, Cullen and Feldmeyer, 2018). One explanatory process which transcends a number of environmental crime theories is

the impact of social control. As illustrated in Figure 2, this has been operationalised and explained at both the community-level, with social control enhanced under conditions of mutual trust, and at the individual level, with individual willingness to intervene varying person-to-person in relation to different settings. In utilising such contributions to explain crime at microplaces, some criminologists have called for greater conceptual clarity in the specification of concepts and key mechanisms theorised and studied, in order to avoid a catch-all approach (Wikström, 2014b, 2019; Groff, 2015, 2018; Taylor, 2015; Wikström *et al.*, 2015; Wikström and Kroneberg, 2022). Ecological theories seeking to explain neighbourhood crime rates often posit social control to be a ‘key mechanism influencing opportunities for interpersonal crime in a neighbourhood’ (Sampson, Raudenbush and Earls, 1997: p. 918). However, in the case of collective efficacy, with the explanatory process being at the group-level (contextual social processes) (Sampson, 2013), it is arguably difficult to isolate specific mechanisms. Scientific realist perspectives define mechanisms linking a cause to a specified effect (Wikström and Bouhana, 2017; Wikström and Kroneberg 2022). Thus, social control literatures use the term mechanism more as a mechanical operation or process. This thesis, noting contributions to the development of Analytic Criminology (Wikström and Kroneberg, 2022), therefore refers to these less specified connections as social processes or processes, rather than mechanisms, unless a clear explanatory process (cause and effect) is being described. Focussing our theoretical enquires on the role of neighbourhood residents rather than offenders therefore allows us to consider some of the factors relevant to explaining an individual’s willingness to engage in an act of social control (i.e., the intervening act of social control).



Figure 2 Summary diagram of criminological theories seeking to explain variations in neighbourhood crime rates at the community and individual level

2. To assess the assumptions within collective efficacy concomitantly.

Shifting the focus from offenders or those with a high-crime propensity to those resident guardians¹⁰ allows us to explore the aforementioned assumptions when collective efficacy is used as a measure of the moral context within SAT. I submit that it is important to assess both of these together, given that one impacts upon our interpretation of the other; there is a contingency in how they shape neighbourhood crime through the perception-choice process. Focussing on neighbourhood guardians allows us to both (i) study their interpretation of settings – that is, their perception of its moral rules, whilst (ii) connecting this to their willingness to intervene within those settings when required to do so. This allows us to consider if the rule guidance communicated from the setting can shape individual guardianship propensity. In addition, such an assessment goes some way to analysing the community to individual level contributions outlined above, identifying relevant variables for empirical study.

1.5 Prospective Structure

1.5.1 Research Questions

This thesis will seek to do the following:

- 1) Assess the suitability of using collective efficacy as a measure of the moral context through the lens of neighbourhood guardians.

Doing so will entail both theoretical and empirical contributions:

- 1) Contributing to bridge the *theoretical* gap between Sampson's collective efficacy as 'contextual causality' and collective efficacy's use within micro-places, accounting for (i) the socio-physical influence of environment features on collective efficacy and (ii)

¹⁰ It is recognised that the term 'resident guardians' is somewhat vague as a sampling strategy, given that neighbourhoods are made up of residents who vary in many ways. To be a guardian, one must have a willingness to intervene in a setting; but, as I shall discuss, this likely varies in exposure to different settings. It is unclear, though, the extent to which one could be a guardian of one setting, or an offender in another.

the role and relevance of neighbourhood guardians enforcing moral rules across settings.

- 2) Assess the following assumptions *empirically* within collective efficacy through the study of neighbourhood guardians:
 - a. Can the level of collective efficacy be accurately discerned by visitors to a setting?
 - b. Will individuals intervene and enforce social control when required to do so?
 - c. Is their willingness to intervene related to the moral rules within the setting through their perception?
 - d. What are the identifiable moral rules of city and local centres? And how are these enforced?
 - e. Identify how the routine activity patterns of home neighbourhoods may influence the level of collective efficacy within that moral context?

In seeking to answer these research questions, this thesis will proceed as follows:

Chapter 2 will provide an overview of collective efficacy theory, exploring how it theoretically and conceptually explains crime at the neighbourhood level. It will explore the origins of collective efficacy and the theoretical pathways of influence outlined through numerous updates to the theory from its original authors over the last 25 years (Sampson, Raudenbush and Earls, 1997; Sampson, 2011, 2012). In order to understand how collective efficacy theory has come to be the ‘prevailing image of communities and crime’ (Wilcox, Cullen and Feldmeyer, 2018, p. 2), this section will also explore how the theory has been operationalised in community survey research, with an overview of findings from the body of empirical replications from across the world. With this in mind, discussion will then shift to consider some of the analytical assumptions made when considering these empirical findings at small areas and in micro-places. This chapter therefore foregrounds the theoretical developments set out in chapters 3 and 4, which develop collective efficacy’s analytical use within micro-places.

Chapters 3 and 4 will consequently present theoretical developments to collective efficacy’s use within microplaces. Chapter 3 will do so by appraising the potential influence of neighbourhood physical features, where I argue such influence on crime needs to be understood in conjunction with social features of micro-settings. As such, I develop a socio-physical

model, which sets out the need for an integrated and better-specified framework to explore the interaction of these influence on neighbourhood social processes. Chapter 4 will then set out in further detail how collective efficacy has been reappraised within SAT as a measure of the environment within the broader theoretical framework. Doing do is important given that, as I have alluded to, there are distinctions between how collective efficacy was originally constructed and developed as compared to how it is currently applied within SAT, as of relevance to micro-places. Such conceptual clarification is recognised as important to criminological knowledge (Groff, 2018). This appraisal then leads us to our aforementioned assumptions and construction of research questions, necessary to understand the suitability of collective efficacy as a measure of moral norms and enforcement. In answering these assumptions at micro-levels of aggregation, this chapter will then construct an interrogative pathway to help bridge the gap between Sampson's 'contextual causality' to the micro-level mechanisms within SAT. Theoretical and empirical contributions from domains such as Guardianship (Reynald, 2009a, 2009b) Crime Pattern Theory (Brantingham and Brantingham, 1981, 1993; Brantingham, Brantingham and Andresen, 2018) and Human Territorial Functioning (Taylor, 1988) will therefore be considered. The purpose of this is to inductively inform the development of the empirical aspect of this thesis, developed from chapter 4 onwards.

Chapter 5 will then bring such knowledge to bare on the development of an innovative methodology, which seeks to answer and explore the research questions outlined above. Given the persistence of these aforementioned assumptions in criminological literatures, and the need to explore interactions with micro-places, I have developed an adapted Space-Time Budget (STB) methodology to explore how resident guardians both perceive and interact with their routine environments. The STB methodology was initially developed in the Peterborough Youth Study (Wikström and Butterworth, 2006) and has become a core methodology in the Peterborough Adolescent Development Study (PADS+) (Wikström *et al.*, 2010; Wikström, Treiber and Hardie, 2012; Hardie and Wikström, 2020), for the purpose of studying the hour-by-hour exposure of individuals with, and interactions to, different settings. The method has been replicated across criminological contexts (Hardie and Wikström, 2020) and identified as being highly valuable to the development of socio-spatial criminology, permitting the detailed measurement of theoretical concepts outside of the traditional focus of home neighbourhoods (Hoeben *et al.*, 2014). This thesis will therefore be the first such study to apply the STB method to the study of neighbourhood guardians, by adapting the methodology to measure perceptions

of collective efficacy outside of the home neighbourhood in line with residents' routine activity patterns (as recommended by Hipp, 2016b, p. 665).

Chapter 6 will then outline the exploratory results from the first deployment of this methodology within collective efficacy research. In total, 92 STB interviews were conducted with residents of a high collective efficacy neighbourhood in Peterborough, UK; this produced 8,883 hours of data exploring residents' routine activity patterns, denoting their location, activity, and who they were with. For each micro-location visited, participants were further asked for their perception of the setting's moral rules, and the extent to which the interviewee would exercise social control if required to do so.¹¹ This resulted in 608 hours of setting perception data, which was subsequently triangulated and analysed alongside existing community survey data from the Peterborough Community Survey 2012, in order to explore the accuracy of setting perceptions. Chapter 6 will therefore use this empirical data to explore some of these research questions in turn.

Chapter 7 will then comment on this exploratory analysis in light of the successes and limitations of the methodology, as adapted and employed. The aim of this chapter is to offer methodological insights as to how the methodology could be re-employed in this research context, to the benefit of future research. Chapter 8 will then provide a review of discussion throughout the thesis, reintegrating findings into earlier theoretical conceptions to prompt next steps for academic research.

¹¹ This was conducted using existing collective efficacy survey scales to ensure continuity of measurement.

Part 1
Exploring the theoretical influence of collective efficacy in
small-areas and micro-places

2 An overview of collective efficacy theory

This chapter will explore how the theory and empirical concepts within collective efficacy theory have been developed in socio-spatial research. Initially, we will explore the origins of the theory, and discuss how it seeks to delineate the social processes connecting neighbourhood social composition with its resultant crime rate. Discussion will then focus on how these theoretical processes have been operationalised into empirical concepts, through the development of the pioneering ‘ecometric’ method employed within the Project on Human Development in Chicago Neighbourhoods (PHDCN). This study brought forth a key finding promoting collective efficacy’s salience within the socio-spatial discipline – that where measured neighbourhood collective efficacy is high, recorded crime is consequently low; and where neighbourhood collective efficacy is low, crime is consequently higher (Sampson, Raudenbush and Earls, 1997; Sampson, 2012). In creating a theory-driven testable methodology, there is now a significant body of empirical replications utilising the collective efficacy community survey method, conducted largely across the Western world; findings from these will also therefore be considered, with an analytical focus on how the methodology has been employed. In doing so, we see how neighbourhood aggregation - that is, the size of neighbourhood units of study considered - influences the power of explanatory findings, supporting a necessary appraisal of collective efficacy’s operation within microplaces. This chapter therefore gives context to the proceeding theoretical discussion, considering how collective efficacy can be or indeed has been utilised in the study of microplaces.

2.1 Collective efficacy theory – a mediating social process

‘Strain models are disconfirmed. Cultural deviance models are without foundation in fact. To the more definitive formulation of control models, to the more adequate linking of macrosocial and microsocial control theories, and to their more rigorous testing, the study of delinquency might profitably turn.’

R. R. Kornhauser (1978: p. 253)

*

‘People do not live in social isolation, nor can they exercise control over major aspects of their lives entirely on their own. Many of the challenges of life centre on common problems

that require people to work together with a collective voice to change their lives for the better.'

A. Bandura (1997: p. 477)

2.1.1 Background

Collective efficacy theory, as applied in criminology, has been termed 'neo Chicagoan' (Bottoms, 2012), building upon and developing traditional social disorganisation perspectives to suit the 'modern realities of urban life' (Sampson, 2012, p. 152). The social disorganisation perspective fell somewhat out of favour in the mid 20th century due to its 'pathologizing of the poor' (Cullen and Wilcox, 2015) with a shift in disciplinary focus to the individual traits and behaviours of persistent offenders rather than features of their social environment (Bottoms, 2012). Socio-spatial scholarship was however substantively renewed in the late 1970s through the pioneering work of Ruth Kornhauser. Her thesis sought to 'reappraise' bloated social disorganisation perspectives, such as Shaw and McKay's 'contradictory' suggestions that experience of strain, poor informal social control, and cultural transmission could all explain the persistence of high crime rates in some neighbourhoods (Wilcox and Land, 2015). Wikström (2007) notes that Kornhauser (1978) was therefore one of the first to specify and delineate the causal social processes which connect neighbourhood population features - such as social disadvantage, a high population turnover, and population heterogeneity - with residents' crime involvement. Socially-disorganised neighbourhoods failed to encourage informal social control necessary to tackle neighbourhood delinquency; a churn in resident populations meant social cohesion and shared neighbourhood norms were untenable; and high levels of social disadvantage reduced connections of social capital (Kornhauser, 1978; Wikström, 2007; see also Bursik, 2015).

The impact of Kornhauser's work evidently framed the development of collective efficacy theory through the initial testing of hypothesised social control processes in the late 1980s (Sampson and Groves, 1989). Indeed, Sampson's editorial and co-author roles in *Challenging Criminological Theory* – an enlightening book celebrating Kornhauser's influence across contemporary criminological theory – attest to this. But distinctively, collective efficacy builds upon this framework of specified social processes by incorporating social psychological theories, with Albert Bandura's concepts of 'self-efficacy', and indeed the aptly named

‘collective-efficacy’, strengthening this framework. These contributions identified how individuals, and consequently groups, come to achieve specific undertakings: individuals have self-efficacy related to a specified task; and when acting as a group, the perception of group collective-efficacy influences their ability to come together and achieve such a task (Bandura, 1995, 1997).¹² Thus, it is through this articulation of group efficacy that Sampson’s and Kornhauser’s version of social disorganisation part – the activation of social control was not attenuated by the cultural density of social ties within a neighbourhood setting, but rather the task-specific perceptions of shared expectations of action (Warner and Sampson, 2015).

2.1.2 Operationalisation and initial findings

Through this infusion, Sampson, Raudenbush and Earls (1997: p. 918) come to define collective efficacy as ‘social cohesion among neighbours combined with their willingness to intervene on behalf of the common good’. According to Sampson et al. (1997: p. 918) residents of neighbourhoods ascribe to the ‘common good’ of wishing to live in a safe and orderly environment; however, what ultimately differs is their ability to organise themselves effectively to achieve and enforce this. The ‘differential ability’ of neighbours to intervene and engage in acts of *social control* is identified as the key mechanism through which the observed variation in neighbourhood crime rates can occur (Sampson, Raudenbush and Earls, 1997, p. 918). But in order to effectively activate and exercise social control, residents must be in agreement about the need to intervene and share a common, collective approach to neighbourhood concerns; *social cohesion*, therefore, must be prevalent (Sampson, Raudenbush and Earls, 1997; Sampson, 2012).

¹² Hipp (2016a) notes that the concept of collective efficacy has a ‘dual intellectual lineage’ in both psychology and sociology, with its use in neighbourhood criminological research falling within the sociological strand. The concept of collective efficacy therefore enjoys broad application across a range of social-psychology disciplines and settings, seeking to explain, by way of example, variation in educational attainment (Donohoo, Hattie and Eells, 2018), group performance in sport (Spink, 1990), and leadership and management outcomes in businesses and other organisations (Schaubroeck, Lam and Xie, 2000; Tasa, Taggar and Seijts, 2007). Even in relation to anti-social behaviour, collective efficacy has been operationalised to measure specific settings such as family homes and schools (Wikström, 2012).

In seeking to better align the social disorganisation perspective with the ‘modern realities of urban life’, collective efficacy theory begins with the premise that a network of strong and dense neighbourhood social ties does not necessarily protect a locality from criminality. A neighbourhood is not so much ‘disorganised’ where residents are connected only by the space in which they reside; indeed, dense neighbourhood social ties are not always pro-social in nature (Sampson, 2012, p. 151). Instead, the theory assesses the ability of a community to organise itself in the realisation of specific goals to prevent crime - social cohesion being the ‘collective’ aspect and shared expectations for control being the ‘efficacy’ part of the concept (Warner and Sampson, 2015). As evidenced above, despite ‘harbouring a strong loyalty to control theory’, Sampson and colleagues posit a contemporary view of its relevance in urban life by questioning the importance of dense social ties persistent in previous explanatory frameworks (Wilcox, Cullen and Feldmeyer, 2018). Developments to collective efficacy theory submit that social cohesion is therefore built through repeated and observable interactions, creating shared norms and expectations for the future in a locality (Sampson, 2006a, p. 39). Where there is no such expectation, or where mistrust amongst residents pervades, the willingness of individuals to intervene for the common good decreases, thus allowing the opportunity for crime to be committed (Sampson, Raudenbush and Earls, 1997, p. 919).

Whilst, by implication, the concept of collective efficacy highlights that communities can achieve effective control through social cohesion, the development of these processes is ultimately influenced by aggregate-level neighbourhood characteristics. In line with social disorganisation theories, it is submitted that concentrated disadvantage and high rates of residential mobility act to reduce social cohesion, due to a lack of invested interest in community life (Sampson, Raudenbush and Earls, 1997, p. 919). Contrariwise, the tethered financial investment of homeowners, compared to the perceived temporary interests of those who rent, encourages a longsighted commitment to the ‘commonweal of neighbourhood life’ – stabilising and ensuring the necessary time for trust and social cohesion to form (Sampson, 2012, p. 154). Collective efficacy is not therefore immune to the socio-economic context within which communities form (Sampson and Morenoff, 2004) nor the imbuelement of wider, macro-level factors which come to shape them (Sampson, 2004).

The theory and its proposed social processes are best understood against the backdrop of how collective efficacy has been operationalised and empirically studied. In employing their

ecometric principles, Sampson and colleagues promoted the use of the community survey method, developing techniques to measure and explore the social dynamics within neighbourhood settings largely absent in routinely available administrative data (Sampson and Raudenbush, 1999).¹³ In their first collective efficacy paper, the authors developed a vignette survey measure to operationalise the central concepts of neighbourhood *social cohesion and trust*, and neighbourhood *social control*, with each explored through a five-item Likert-type scale, using survey respondents as ‘informants’ (Sampson et al. 1997).

Table 1: Table summarising how the concept of collective efficacy was originally operationalised through a five-item Likert-type scale.

Concept	Question and measures
Social Control	<i>Would you say that it is very likely, likely, neither likely nor unlikely, unlikely or very unlikely that your neighbours could be counted on to intervene if:</i>
	Children were skipping school and hanging out on a street corner
	Children were spray-painting graffiti on a local building
	Children were showing disrespect for an adult
	A fight broke out in front of their house
	The fire station closest to their home was threatened with budget cuts
Social Cohesion	<i>Do you strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree with the following statements:</i>
	People are willing to help their neighbours
	This is a close-knit neighbourhood
	People in this neighbourhood can be trusted
	People in this neighbourhood generally don’t get along with each other
	People in this neighbourhood do not share the same values

This instrument (Table 1, above) was first employed, alongside others, as part of the community survey of the Project on Human Development in Chicago Neighbourhoods

¹³ Prior to 1997, there was a strong trajectory of community survey research in criminology, designed to supplement existing aggregated administrative data sources (population census data; police-recorded crime data). In Europe, at least, this included the Sheffield Study on Urban Social Structure and Crime (Baldwin and Bottoms, 1976); the ‘Stockholm Project’ (Wikström, 1991a, 1991b); and the development and utilisation of British Crime Survey data (now separated into the Crime Survey for England and Wales and the Scottish Crime and Justice Survey) (Hough and Mayhew, 1983; Sampson and Groves, 1989).

(PHDCN).¹⁴ Overall, 8782 residents across 343 neighbourhoods were interviewed in their homes; these neighbourhoods encompassed around 8,000 people, and were said to be ‘geographically contiguous... and internally homogeneous’ based on census tract indicators such as ethnicity, socioeconomic status, housing density, and family organisation characteristics. These units were further infused by local knowledge (Sampson, Raudenbush and Earls, 1997, p. 924).

These original findings offered empirical support to the author’s newly developed collective efficacy theory, as applied in criminology. The measured concepts of social cohesion and social control proved to be highly correlated ($r = .80, p < .001$), indicating that both concepts tapped into related (or near identical) factors. This high correlation suggested support for the notion that willingness to exercise social control is ‘enhanced under conditions of mutual trust and cohesion’ (Sampson, Raudenbush and Earls, 1997, p. 920). Due to their high correlation, both concepts were therefore combined to form the summary measure of collective efficacy. In applying this latent measure, the authors demonstrated in a series of regression models that collective efficacy mediated the long-standing relationship between neighbourhood social composition and variations in crime. From survey measures of perceived violence and self-reported violent victimisation, along with police-recorded rates of homicide, their findings revealed a cogent pattern emergent throughout – namely, that as neighbourhood levels of collective efficacy increase, the rate of violent crime effectively decreases. A two standard deviation increase in collective efficacy was associated with a 30% reduction in self-reported violent victimisation, and a 39.7% reduction in police-recorded homicide (Sampson, Raudenbush and Earls, 1997, p. 922). What is more, the relationship between area composition – such as concentrated disadvantage, immigrant concentration, and residential stability – and violence, were further mediated by collective efficacy; when collective efficacy was included in such a regression model, the relationship between measures of neighbourhood composition and levels of violent crime diminished to non-significance (Sampson, Raudenbush and Earls, 1997, pp. 921–922). Collective efficacy was further evidenced to be a more significant predictor of neighbourhood crime rates than the density of friendship ties (Sampson, Raudenbush and Earls, 1997, p. 923), parting from previous assumptions that a lack of dense social ties accounted for observed higher crime rates (Sampson and Groves, 1989).

¹⁴ For an overview of the project, see Sampson (2012, Ch.4).

2.1.3 Empirical replications – largely supportive findings

Studies which subsequently utilised the original Chicago dataset continued to broadly support these substantive findings, magnifying collective efficacy's explanatory remit in connecting macro-level neighbourhood social features to observed crime outcomes. The relegation of social ties, for instance, has been somewhat adjudicated, with its explanatory influence evidenced in shaping processes of collective efficacy. In their assessment of homicide hotspots in Chicago, Morenoff et al. (2001) found police-recorded homicides to be evenly distributed across neighbourhood with both a low and high prevalence of social ties,¹⁵ whereas collective efficacy accounted for the observed variation. Whilst the prevalence of social ties was positively associated with collective efficacy, the authors identified that such processes operated indirectly in relation to homicide through collective efficacy, therefore fostering a willingness to intervene (Morenoff, Sampson and Raudenbush, 2001, p. 550). Further analysis however identified that, despite this relationship, social networks could paradoxically provide a source of social capital to offenders, diminishing the regulatory effect of collective efficacy (Browning, Feinberg and Dietz, 2004). Analysis of PHDCN data has also identified high collective efficacy to be associated with low levels of intimate partner violence incidents, despite high collective efficacy increasing the likelihood that victims would seek sources of support (Browning, 2002). High neighbourhood collective efficacy has also been found to attenuate the link between adolescent unstructured socialising with peers and measures of their self-reported violence, further centralising the importance of social control in explaining individual and macro-level variation in violence (Maimon and Browning, 2010).

Whilst the reproducibility of the PHDCN data set continues to be verified (Maxwell, Garner and Skogan, 2018), so too has the econometric basis upon which findings are drawn. Pratt and Cullen's (2005) meta-analysis, which included 214 studies, ranked collective efficacy as the fourth strongest macro-level predictor of crime. Despite limited collective efficacy studies at the time of analysis, the concept ranked higher than traditional explanatory theories linking experiences of poverty and strain directly to criminality (Pratt and Cullen, 2005, p. 427).

¹⁵ 'Social ties' were measured by the number of friends each respondent reported as living in their neighbourhood (Morenoff, Sampson and Raudenbush, 2001, p. 527)

Beyond the USA too, collective efficacy has been observed to operate consistently in terms of its measurement, as observed between Germany and Australia (Gerstner, Wickes and Oberwittler, 2019) – and its explanatory effect on crime (Sampson and Wikström, 2008). Notably, Sampson and Wikström (2008) directly compared¹⁶ the explanatory power of collective efficacy in two very different urban contexts: that of Chicago and the Swedish capital of Stockholm. Whilst both cities differed significantly in their respective levels of violence and social disadvantage, collective efficacy operated in the same fashion across both contexts: social cohesion and social control were similarly highly correlated in Stockholm as they were in Chicago (Sampson and Wikström, 2008, p. 104); and there was a ‘clear negative association, linear in pattern, and similar in slope’ between collective efficacy and both self-reported and police-recorded violent crimes - despite Chicago’s substantially higher overall counts (Sampson and Wikström, 2008, p. 112). In the Australian city of Brisbane, despite rates of police-recorded violent crime being substantially lower than those in Chicago and Stockholm, collective efficacy accounted for a significant proportion of the variation in neighbourhood crime (Mazerolle, Wickes and McBroom, 2010).¹⁷ With their city-wide community survey in Peterborough, UK, Wikström et al. (2012) further found collective efficacy to be the second strongest predictor – behind that of non-residential land use - of total police-recorded crimes and crimes committed by young people. Their findings also confirmed the mediating effect of collective efficacy on the relationship between social disadvantage, ethnic diversity, and residential stability and neighbourhood crime (Wikström *et al.*, 2012, p. 219).

2.1.4 Empirical replications – divergent findings

Despite the majority of collective efficacy studies observing similar trends, there are a number of evidential exceptions.¹⁸ Data from the Los Angeles Family and Neighbourhood Study (LAFANS) – utilising a similar collective efficacy survey instrument with 2593 respondents across 65 neighbourhoods – replicated many of the typical trends: a high correlation between social cohesion and social control (.86); and, overall, collective efficacy was observed to

¹⁶ With a reduced number of survey vignettes to ensure a ‘common set’ of social processes were understandable in each context (Sampson and Wikström, 2008, p. 103).

¹⁷ The density of social ties failed to account for this variation.

¹⁸ Other divergent findings will be reported elsewhere when we come to consider some of the assumptions which underlie collective efficacy theory.

mediate the relationship between concentrated neighbourhood disadvantage and robbery victimisation (Burchfield and Silver, 2013). However, the authors noted what they termed a ‘Latino paradox’. In majority Latino neighbourhoods¹⁹ the observed mediation effect for concentrated disadvantage was substantially weaker than in non-Latino neighbourhoods, indicating collective efficacy to be less linked to concentrated disadvantage within these contexts (Burchfield and Silver, 2013). The authors concluded with a call for greater cultural awareness in collective efficacy analysis, suggesting that Latino neighbourhoods had greater ‘vitality in public spaces’ encouraging social interactions and surveillance amongst neighbours - net experiences of concentrated disadvantage (Burchfield and Silver, 2013, p. 170). In Peterborough, Wikström et al. (2012: p. 182) found that whilst poor collective efficacy was moderately associated with ethnic diversity of the neighbourhood ($r = .31, p = .000$), Asian respondents generally reported stronger collective efficacy as compared to other groups (white British).²⁰ Similar to the ‘Latino paradox’ considered above, the researchers noted that Asian survey respondents were more likely to report social interactions amongst neighbours within their community as the concentration of Asian populations increased in a setting (as compared to White British respondents), providing those respondents with a distinct perception of the readiness of neighbours to engage in common action to prevent crime (Wikström *et al.*, 2012, p. 182). Other comparative collective efficacy researchers have found variance in the structural underpinnings of measured collective efficacy, with neighbourhood structural conditions explaining more variance in score in Germany (90% of variance) as compared with in Australia (47% of variance) (Gerstner, Wickes and Oberwittler, 2019). As such, whilst these findings indicate that the structural underpinnings of collective efficacy may vary, the substantive social processes of social cohesion and social control are still key intervening factors in shaping neighbourhood crime experiences.

Longitudinal collective efficacy research has also questioned the extent to which the concept can explain neighbourhood crime variations, with analysis of survey waves finding no relationship between measures of collective efficacy and neighbourhood violence over time (Hipp and Wickes, 2017). One study, conducted amongst 3575 residents across 86

¹⁹ Latino neighbourhoods were identified with a threshold of 70% Latino residents; non-Latino neighbourhoods were below this.

²⁰ In the UK, ‘Asian’ typically refers to people with South Asian ancestry, rather than East Asia (referred to as Chinese in the UK Census).

neighbourhoods in The Hague, Netherlands, reported further divergent findings. Here, no significant relationship was observed between measures of collective efficacy and neighbourhood crime rates (Bruinsma *et al.*, 2013, p. 956). Meanwhile, concentrated disadvantage, immigrant concentration and measures of family disruption (akin to population turnover) all exerted substantial independent effects (Bruinsma *et al.*, 2013, p. 956). In stating their adherence to familiar collective efficacy methods,²¹ the authors noted that increased mobility across Dutch cities may have contributed to the observed findings, concluding that further research outside of the United States be required in order to validate such social disorganisation theories. Other European collective efficacy studies have found similar distinctive results, with compromised explanatory effects evidenced in London (Sutherland, Brunton-Smith and Jackson, 2013) and in Malmö (Gerell, 2017). The latter study considered the relationship between collective efficacy and arson across the Swedish city, highlighting that there may be distinctive cultural and criminogenic influences which stifle the efficacy aspect of this concept – ‘efficacy’ being task specific to the type of crime tackled.

2.2 Theoretical and methodological developments

2.2.1 *A situational or developmental effect?*

Alongside these empirical replications, the theoretical mechanics behind collective efficacy theory have been developed and tweaked over time. Ecological theories of crime identify that community social processes can affect crime through (i) developmental effects, shaping the propensity of individuals to offend (namely through the socialisation of young people in those settings); and (ii) through situational effects, tied to the interruption of crime committed within those settings for action (Wikström and Sampson, 2003). Collective efficacy has largely been

²¹ The collective efficacy survey measures used in this study did however include two distinct social control items: ‘suppose you are on holiday and your window would be smashed, would your close neighbours get it repaired when you were still away’ and ‘suppose your community centre will be closed, would your neighbours organise something to keep it open’. The former measure arguably taps into constructs related to social ties, with ‘close neighbours’ in either proximity or ties being distinct from a neighbourhood being ‘close-knit’; the commitment to fix a broken window also requiring financial investment or social capital. The latter measure is a European operationalisation of Sampson *et al.*’s (1997) fire station closure measure, which was dropped in Wikström and Sampson’s (2008) comparisons and Wikström *et al.* (2012: p. 144) community surveys due to its impact upon internal consistency. Alpha scores for the Bruinsma *et al.* (2013) measure of social control were however 0.79.

understood and advanced as shaping crime situationally - that is, the level of collective efficacy within a setting affects the commission of, or opportunity for, crime to occur within that specific setting (Sampson, 2011, 2012). Data from the PHDCN study was largely unsupportive of collective efficacy's influence on developmental effects and crime, noting that the level of collective efficacy within a young person's residential neighbourhood failed to predict their self-reported violent offending (Sampson, Morenoff and Raudenbush, 2005). Whilst neighbourhoods that are high in collective efficacy have been suggested to uphold community norms in relation to children's behaviour (Sampson and Raudenbush, 1999), such developmental effects are further shaped by other agents of socialisation, such as family and schools (Wikström, 2012).²² Despite these new analytical avenues of research, results have served to confirm the mediating and yet distinct role of collective efficacy, namely in substantiating the link between experiences of social disadvantage and crime outcomes. Empirical epidemiological research has identified that for children in deprived neighbourhoods, higher levels of neighbourhood collective efficacy significantly predicted lower levels of anti-social behaviour; however, such an effect was not observed for children raised in affluent neighbourhoods (Odgers, Moffit, *et al.*, 2012). Such a finding highlights that whilst collective efficacy and neighbourhood social disadvantage are related, they serve to exert distinct effects on crime outcomes.

2.2.2 *A macro-level focus*

'Rejecting methodological individualism as the dominant paradigm for criminology, I argue that although individuals are the ultimate actors causality resides at the social level'

R. J. Sampson (2013: p. 24)

Despite this consideration, the predominant body of scholarship in relation to collective efficacy continues to centre on its situational effect. In this situational vein, there is however a

²² In this study, Wikström (2012: p. 113) constructed a measure of collective efficacy in both the home (family) and within schools and considered how this shaped individual crime propensities of young people (measures of individual morality and self-control). Whilst observing a clear association between neighbourhood collective efficacy and these developmental effects, he found that these were weaker in comparison to levels of, and so exposure to, collective efficacy within families and schools (Wikström, 2012). Time and space exposure therefore mattered in shaping individual propensity to offend.

disjunct in how scholars seek to utilise and advance collective efficacy's salience further within the discipline and in policy. Originators of the theory, such as Sampson, have focussed on the macro-level determinants and underpinnings of collective efficacy, considering that adaptations to such variables be a route to policy activation (Sampson, 2011, 2012, 2017). Others, however, have called for further study of the concept of collective efficacy itself, with the micro-level social processes which operate to interrupt or prevent crime requiring further theoretical and empirical refinement (Wikström, 2007; Wikström, Treiber and Hardie, 2012; Sutherland, Brunton-Smith and Jackson, 2013; Taylor, 2015).

Whilst Sampson's core notion of collective efficacy theory has remained largely unchanged, he has further developed the explanation of how these purported mechanisms operate in reducing neighbourhood crime. For instance, in '*Taking Stock*' of the theory, Sampson explains further that social control serves to assert to residents the common socially-cohesive rules agreed over their neighbourhood (Sampson, 2006a). Observed enforcement of such rules is further said to create actionable expectations of permitted behaviour for the future, conveying to individuals the common values of the community (Sampson, 2006a, 2012). Collective efficacy can further motion informal and formal apparatus of social control, such as by encouraging a call to the police (Sampson, 2006a). Thus, we see that the intervening act influences neighbourhood crime not only through its direct effect, but further by demonstrating and making clear the accepted behaviours within that setting. Collective efficacy therefore has a communicative function in deterrence.

Beyond these refinements, Sampson's work continues to accept the core mechanisms within collective efficacy, but has sought to advance study of the broader, macro-level networks and variables that may come to shape these processes. In a departure from his previous admission at having 'succumbed' to the notion that 'taking individuals seriously means treating neighbourhood context as a trait of the individual' (Sampson, 2006b, p. 55), the role of broader macro-level networks has been identified as important for activating the intervening power of collective efficacy in urban America (Sampson and Graif, 2009; Sampson, 2012). Thus, a neighbourhood's collective efficacy resource may be boosted by proximity to agents of social capital, such as leaders of community organisations, politics, businesses; this expands the point that collective efficacy processes are shaped by a network of neighbourhood-level variables infused with, of course, the entrenchment of concentrated disadvantage featured in many American cities (Sampson, 2009b). Given these interconnected neighbourhood-level variables,

Sampson has promoted the methodological notion of ‘contextual causality’ as a way in which to ensure that the future study of neighbourhood effects follows a ‘pragmatist philosophy of science’ (Sampson, 2012, p. 383). The causal social processes of relevance to neighbourhood crime, and those of our focus, are said to ‘reside at the social level’, owing to this interdependence of human behaviour and interactions in social settings (Sampson, 2013, p. 24). In other words, the ‘collective’ aspect of collective efficacy, and the broader elements which underlie this, is where our analytical focus should rest for the most realistic policy outcomes (Sampson, 2013).

But in many of these macro-level developments, we find further micro-level questions. The idea of ‘contextual causality’ shifts the explanatory focus away from specific mechanisms which may interrupt neighbourhood crime (i.e. social control). Consequently, the ambit of explanation becomes much broader, potentially expanding rather than narrowing the notion of a neighbourhood effect (Oberwittler and Wikström, 2009). For example, on the relevance of social capital and the structural resources which underpin this, despite finding that a higher density of neighbourhood community institutions is associated with high neighbourhood collective efficacy (Sampson, 2012, chap. 8), the role such organisations may play in strengthening neighbourhood norms is still unclear (Warner and Sampson, 2015). The type of institution, and indeed the make-up of the neighbourhood matter in attenuating this link: for instance, the density of churches was found to depress collective efficacy in Chicago (Sampson, 2012, p. 196). If we consider collective efficacy to be the ‘cosmopolitan’ update to social disorganisation theory, limiting the need for dense social ties within the neighbourhood, then an understanding of its underpinnings, and how these factors lead to acts of informal social control, are important considerations.

2.2.3 The importance of neighbourhood aggregation

Perhaps we understand little about what is behind ecological correlations because the field has failed to connect ecological properties or dynamics with either small-group or individual-level psychological and behavioural dynamics.’

R. B. Taylor (2015: p. 21)

As noted, Sampson's scholarship has largely retained the explanatory processes set out within the original conception of collective efficacy, whilst advocating for a broader methodological focus and aggregation in order to enhance the policy utility of the concept. It is important to note, however, that the overwhelming body of empirical support for the concept and its purported pathways of influence on crime (i.e., that social cohesion increases individuals' willingness to intervene and prevent crime), derive from findings drawn from sizeable neighbourhood units of study. For instance, data from the PHDCN study aggregated collective efficacy data to neighbourhood units encompassing an average of 8,000 people (Sampson, Raudenbush and Earls, 1997). More contemporary replications of the econometric method – namely from European urban contexts – have seemingly found that as the level of neighbourhood aggregation decreases, i.e., smaller neighbourhood units are surveyed and studied, the significance of collective efficacy as a mediator of social composition on crimes reduces. For instance, collective efficacy research in London, UK, using administrative boundaries comprising an average of 1,500 residents (Lower Super Output Areas of UK Census boundaries), found the association between collective efficacy and neighbourhood crime to be 'considerably weaker' than in previous research – with a 1.9% decrease in violent crimes for every one standard deviation increase in collective efficacy (Sutherland, Brunton-Smith and Jackson, 2013). They further found that at this level, collective efficacy failed to mediate the relationship between social disadvantage and crime (Sutherland, Brunton-Smith and Jackson, 2013). When aggregating data to even smaller administrative units, encompassing around 300 residents, Wikström et al. (2012) found that in the city of Peterborough, non-residential land use was the biggest predictor of police-recorded crime counts ahead of collective efficacy, suggesting these environments are influenced more by the temporal visitors to settings and the presence of businesses which may act as situational crime attractors.

Explanations as to these distinctive results have often concluded that the size of neighbourhood units studied are an important consideration which can influence the homogeneity of community survey data (Oberwittler and Wikström, 2009). Specifically in relation to collective efficacy, larger neighbourhood units have been found to mask internal variation in the extent to which resident respondents agree in their perceptions of social cohesion and social control within their neighbourhood (Oberwittler and Wikström, 2009; Gerell, 2015; Brunton-Smith, Sturgis and Leckie, 2018). Higher levels of within-neighbourhood variation in collective efficacy perceptions (i.e. where more respondent disagreement is evident) has been further found to mediate the relationship between neighbourhood collective efficacy and self-reported

victimisation – that is, higher within-neighbourhood respondent disagreement reduces the effectiveness of high collective efficacy in preventing crime (Brunton-Smith, Sturgis and Leckie, 2018). Aggregating to large neighbourhood units may therefore serve to mask disagreement across community survey respondents, leading to inflated homogeneity across measurement settings (Oberwittler and Wikström, 2009).

This analytical shift in focus speaks to the divergence of thinking on collective efficacy mentioned above. Translating a higher aggregate-level finding, and using it to explain crime situationally, as an intervening social process, is arguably difficult when aggregates do not act – it is individuals, within those aggregates, and in specific situations, that do (Oberwittler and Wikström, 2009, p. 38). Even though collective efficacy theory seeks to explain community social processes at the social-level of causality (Sampson, 2013) individuals within that community are still required to act in the hypothesised way – i.e., to exercise social control. With a social process grounded in collective agreement, how localised can one realistically study the relationship between collective efficacy and crime? The boundaries of this ‘neighbourhood’ and agreement appears to operate at a much smaller level than that initially suggested from the PHDCN data (Oberwittler and Wikström, 2009; Gerell, 2015; Taylor, 2015; Uchida *et al.*, 2015; Weisburd, White and Wooditch, 2020). In their recent paper - finding that levels of collective efficacy explains crime at local street segment hotspots in Baltimore, USA - David Weisburd and colleagues recently concluded that their results challenge scholars who ‘argue that there is a division of labour between collective efficacy and situational factors... with the former [collective efficacy] operating only at the community level and the latter operating only at a microgeographic level’ (Weisburd, White and Wooditch, 2020, p. 13).

Empirical research continues to find therefore that collective efficacy is in fact a highly localised process, with the cogency of residents’ perceptions and willingness to intervene relevant to smaller or micro-level neighbourhood boundaries such as street segments (St Jean, 2007; Gerell, 2015; Uchida *et al.*, 2015; Weisburd, White and Wooditch, 2020).²³ These

²³ The micro-level operation of collective efficacy was also recognised by David Weisburd *et al.* (2012) when focussing on how collective efficacy operates at street-segments – i.e. by focussing on how American street blocks within a nested neighbourhood are themselves a micro-neighbourhood. In this work, however, Weisburd *et al.* (2012) used percentage of voter registration as a proxy measure of collective efficacy – something analytically distinct from the micro-level processes of collective efficacy discussed here.

findings lend support to the notion that collective efficacy is better studied as a small area mechanistic construct, rather than one representing a more flexible notion of contextual causality. As a result, if we hope to make assertions about such social processes through the mean collective efficacy scores and crime rates of a given neighbourhood, then the size and boundaries used are important considerations (Oberwittler and Wikström, 2009; Gerell, 2015). Smaller units permit more detailed study of these suggested causal social pathways, and may be of benefit to forming cogent policies able to utilise and activate collective efficacy for reducing crime (Taylor, 2015).

2.3 Collective efficacy's influence on policy

Despite its now well-established place within the corpus of socio-spatial criminology, the concept of collective efficacy has achieved limited influence on social policy. In light of the empirical support outlined above, recommendations from academia to increase collective efficacy, as a policy prescription to reduce crime, have been forthcoming (Ferrier and Ludwig, 2011; Sampson, 2011, 2014; Leverents, 2014; Wikström and Treiber, 2017). Yet despite this call, there are limited examples which specifically utilised the principles of collective efficacy to reduce neighbourhood crime in practice.²⁴ Where successful, this is largely reported as being small-scale, community-led 'organically produced' efforts in response to specific neighbourhood problems (Warner, Beck and Ohmer, 2010; Sampson, 2012, p. 386).

Given the body of supportive empirical evidence, consideration as to why policy developments have not been forthcoming reflects the dichotomy in our discussion thus far: that further translational work connecting the micro-level social processes which underpin the concept's utility, to meso and macro-level policy levers which can come to achieve such change, is lacking (Taylor, 2015). As discussed, Sampson's pitch for the pragmatic suggestion of 'contextual causality' suggests that broader policy influences can impact upon collective efficacy and achieve the desired effect of reducing neighbourhood crime (Sampson, 2013). Attempts at doing so within neighbourhood research have, thus far at least, provided mixed results, precisely because the connections between policy actions and resulting social processes are impacted by broader neighbourhood selection effects. Whilst not an intervention focused

²⁴ Interestingly, there have been attempts to utilise collective efficacy theory interventions in shaping public health outcomes, such as in reducing HIV infections (see Sikkema *et al.*, 2000).

on improving collective efficacy, the Moving to Opportunities (MTO) programme in the United States provides an interesting example of this point. Randomly selected households in Baltimore, Boston, Chicago, Los Angeles and New York City were offered subsidised housing in lower poverty neighbourhoods than their existing conurbation. Where they accepted, the household moved to a different neighbourhood, forming an experimental group; those who refused, formed a control group. With mostly mixed findings, understanding the ‘neighbourhood effect’ of MTO on individual outcomes has been challenging, owing to the potential ‘bundles’ of variables shaping why neighbourhood context may matter to individual development (Jens *et al.*, 2008).²⁵ As discussed, the neighbourhood context matters for both the situational and developmental explanations of social phenomenon.

Undertaking such a broader and underspecified policy aim, even with the remit of an experimental research design, did not however harness the purported situational and developmental benefits of high collective efficacy which may come with it. Whilst we see that low levels of social disadvantage (so a ‘move to opportunity’) are associated with high levels of collective efficacy (Sampson, Raudenbush and Earls, 1997; Odgers, Moffit, *et al.*, 2012; Wikström *et al.*, 2012), Sampson’s (2012: 274) analysis of MTO moves in Chicago found that those in the experimental group nonetheless ended up in neighbourhoods characterised by low collective efficacy. Thus, shifting families into neighbourhoods with less social disadvantage did not necessarily mean they would benefit from high neighbourhood collective efficacy. The MTO experiment therefore underlies the importance of considering how macro-level socio-demographic features of settings interact on individuals through social processes, such as collective efficacy. This is especially true given that these socio-demographic measures and variables are often seen as the policy levers deployed to tackle neighbourhood crime. By way of example: given that one macro-level explanation for collective efficacy’s stability over time is due to the ‘enduring’ rather than ‘situational’ effect of social disadvantage (Sampson, 2006a, 2012)²⁶ a policy aim seeking to ‘*increase neighbourhood collective efficacy*’ may, it seems, be

²⁵ Long-term effects of the experiment appear positive for those who, as children (below 13), moved to the more affluent neighbourhoods, now having average annual incomes 31% higher than the US mean (Chetty, Hendren and Katz, 2015).

²⁶ Sampson supports this claim empirically by comparing collective efficacy data from two waves of PHDCN community surveys in 1995 and 2002, with collective efficacy correlated at 0.73 over the two time periods. He

achieved through an objective to ‘*reduce neighbourhood social disadvantage*’. Rather than moving individuals to new settings (and therefore disrupting existing collective efficacy) we may hypothesise that for this leverage to be successful, reducing neighbourhood social disadvantage would increase neighbourhood social cohesion, which would, in turn, encourage acts of social control - thus reducing neighbourhood crime. Of course, the extent to which this may occur in practice is theoretically plausible but practically questionable, given the limited number of policy examples which have achieved such an effect and observed these variations. Of course, the relationship between social disadvantage and crime is arguably a ‘criminological topic that is more debated but less scientifically understood’ than any other in the discipline (Wikström and Treiber, 2016). How we both can increase collective efficacy and assess if a dynamic increase actually leads to a reduction in crime, are not fully evidenced considerations. Recent longitudinal research using waves of collective efficacy data found no direct relationship over time between levels of neighbourhood collective efficacy and violent crime, identifying, instead, a strong reciprocal relationship between concentrated disadvantage and violent crime (Hipp and Wickes, 2017). Here then, despite strong academic basis for our policy pathway outlined above, collective efficacy’s utility to policy makers may be absent given the reported reciprocal direct effects between social disadvantage and crime, highlighting other potential mechanisms at play. I submit that understanding these connections and interactions cannot be achieved only through a macro or meso-level lens.

Thus, collective efficacy’s utility in tackling these ‘enduring’ neighbourhood effects is seemingly difficult to achieve when there is little by way of empirical evidence connecting macro-level changes in neighbourhood socio-economic structure with the micro-level social processes of collective efficacy. But where, perhaps, collective efficacy may add value is by focussing specifically on the concept’s situational utility – that is, bolstering the intervening social processes which explain neighbourhood crime. This more targeted approach at the micro-level of neighbourhood focus has been operationalised through agents of formal social control, attempting to utilise neighbourhood police forces as brokers of community change (Uchida *et al.*, 2015).²⁷ To date, however, this approach has also netted limited successes. A

concludes that ‘communities that are high [in collective efficacy] tend to stay high, and vice versa’ (Sampson, 2012, p. 169).

²⁷ A distinct approach from the traditional patrol, presence, and enforcement focus in hot-spots policing practices, noted as being an ‘effective crime prevention strategy’ (Braga *et al.*, 2019).

recent randomised control trial of ‘Collective Efficacy Policing’ in Brooklyn Park, Minnesota, was one of the first formal attempts to create a neighbourhood crime intervention centred on enhancing collective efficacy. The Assets Coming Together (ACT) intervention directed by the local police department sought to increase collective efficacy (and thus collective action) within identified crime hot-spots across the city. This was done through a reconfiguration of police officer time, utilising targeted patrols to (i) establish proximal relationships with residents; (ii) increase working trust with members of the community; and (iii) develop shared expectations to empower residents to take action against crime problems (Weisburd *et al.*, 2020). The results of this experiment – using pre and post community survey measures in treatment and control sites²⁸ – found little impact on measures of collective efficacy within the treatment neighbourhoods (Weisburd *et al.*, 2020). The authors of the study explain this by pointing to the short-time frame in which the experiment was conducted (baseline surveys in summer of 2015, and follow-up between December and June 2017) emphasising that ‘collective efficacy in its general form is likely to emerge over longer periods of time’ (Weisburd *et al.*, 2020). Interestingly however, the intervention did lead to significantly more calls to the police, unrelated to levels of perceived police legitimacy (Weisburd *et al.*, 2020). Thus, whilst the intervention did not lead to an increase in informal social control, there is evidence to suggest that such directed policing techniques can encourage broader acts of social control through contacting the police.

The Brooklyn Park experiment provokes some interesting thoughts about how any collective efficacy policy initiative can ultimately be implemented. I was fortunate enough to spend a week with the police officers in Brooklyn Park and observe their deployment of the ACT initiative.²⁹ This involved speaking with police officers administering the programme, and joining police officers on a number of day and night patrols (in their vehicles) to observe interactions with neighbourhood residents. Observing these interactions highlighted to me the differing principles and role of police in the USA and the UK. For the police officers at

²⁸ Control sites were said to receive the standard police response. Given that the entire police force received the ACT training there may however be an unobserved treatment influence on these sites (e.g., training had changed the manner in which officers dealt with an incident).

²⁹ I would like to thank Dr Charlotte Gill, George Mason University, and William Barritt, Brooklyn Park Police Department, for their assistance in organising the research visit. I also wish to thank Santander for their financial support for the trip through the Santander Research Travel Grant, administered by the University of Cambridge.

Brooklyn Park, USA, the idea of talking to and engaging with the local community was a new challenge – getting out of the patrol car, introducing themselves to residents, and discussing ongoing neighbourhood crime issues was distinct from their usual response-orientated approach in tackling crime. The principles of collective efficacy therefore augmented the police department's idea of serving their city.

In contrast, such policing practices are not as absent in UK policing. For instance, in England and Wales, the notion of neighbourhood policing initiatives are well-established, especially since the advent of Police Community Support Officers (PCSOs) in 2002 – the purposefully disempowered liaison between the police force and its communities (O'Neill, 2014). Thus, whilst collective efficacy is an American theory and concept, its policy reach may be evidenced in other tangential forms, rather than in explicit substance. For instance, whilst UK policy references to 'increasing collective efficacy' are explicitly absent³⁰, there is evidence of a similar notion which has shaped neighbourhood policing agendas. Crawford's work is important here. He analysed the localism agendas developed throughout the 1980s and 1990s in England and Wales, which, at the time, sought to use community as a force for crime control through the 'othering' of visitors to place (Crawford, 1999). In doing so, he subsequently submitted an alternative vision:

'Instead of localism what is needed are forms of social cohesion which both foster social solidarities yet preserve a cosmopolitan acceptance of cultural difference. This requires a radically different conception of social order in which considerations given to the conditions under which individuals or groups are prepared to cooperate with one another to reach common goals.' (Crawford, 1999, p. 289)

The parallels between Crawford's submissions and those put forward by Sampson (2006) are clear: a shift from 'localism' (Crawford, 1999, p. 289) and 'the stocks of social resources as found in ties and memberships' (Sampson, 2006a, p. 159) driving social control; and the need for neighbours to cooperate to achieve 'common goals' (Crawford, 1999, p. 289) or the 'common good' (Sampson, Raudenbush and Earls, 1997) of wishing to live in a safe and orderly environment. But in the UK, it has been Crawford's more theoretical articulation which

³⁰ Except for in UK academia. See Wikström and Treiber (2017).

has garnered policy influence. The absence of an organising theoretical framework, or empirical support of these assertions, may have contributed to observed ineffective or indeed mistargeted policy outcomes. Evaluation studies have found that community cohesion and social capital have often been assumed as by-products of consultative initiatives, with an absence of evidence identifying ‘added value’ to communities in the UK (Myhill, 2012, p. 40). Arguably, without the organising model of collective efficacy delineating what may underpin these social processes, evidence highlights that the most successful community-led initiatives in the UK are found in those communities which already have high levels of community cohesion – precisely where such initiatives are not required or add little value in reducing crime (Myhill, 2012).

Operationalising collective efficacy for policy is evidently a difficult task. I therefore conclude that criminology has underutilised the principles and concepts of collective efficacy theory to its advantage, largely due to the social policy challenges of applying such macro-level leverage, or micro-level interventions, into pre-existing neighbourhood settings. Evidence which demonstrates how collective efficacy explains neighbourhood crime is one part of this puzzle; but understanding whether we can (i) increase collective efficacy, and (ii) observe an explanatory effect in reducing crime, is a more complex consideration. As I set out in the rest of this thesis, continuing to consider the micro-level interactions of social processes within pre-existing settings is key to activating this evidence.

2.4 Collective efficacy as a moral rule

As explored above, collective efficacy’s theoretical and empirical salience within socio-spatial criminology is well-established. The broad empirical support for the concept across US, European and Australian urban context highlights the impact that neighbourhood residents can have in shaping levels of crime. Nonetheless, we have seen that there are questions as to where the true utility of the concept lies in neighbourhood research of the future. With evidence suggesting that neighbourhood social processes are more localised than initial collective efficacy research measured or identified (Oberwittler and Wikström, 2009; Gerell, 2015; Taylor, 2015; Uchida *et al.*, 2015; Weisburd, White and Wooditch, 2020) it is evident that an analytical approach to the concept may be welcomed to consider not just the broader ‘contextual’ effects, but also how social processes interact upon individuals within the

situational crime context. If collective efficacy is a concept which explains crime situationally (Raudenbush and Sampson, 2002; Sampson, 2006a, 2012) – through either a deterrent effect (threat of sanction) or an intervening action (sanction carried out) – then a better understanding of how these processes shape individual decision making is required in order to account for key assumptions which underlie any identifiable mechanism in practice (Wikström, 2007). For which individuals, in which contexts, does collective efficacy have an explanatory effect?

One pivotal theoretical development to our understanding of collective efficacy comes through the concept's reappraisal in Situational Action Theory (SAT) (Wikström, 2006, 2019; Wikström *et al.*, 2012). SAT has been developed to integrate 'key insights from the main person and environment-orientated criminological theories and research, and relevant social and behavioural science theories and research more generally, within the framework of an adequate action theory' (Wikström, 2014a). The theory was born out of a call to unify and slim down theoretical contributions across criminology (Wikström and Sampson, 2006) and identify those causal processes - rather than risk-based factors - relevant to explaining acts of crime (Wikström, 2011). Thus, SAT goes beyond the explanatory remit of collective efficacy by bringing together 'fragmented' paradigms across criminology which are either (i) person-orientated (why do some individuals commit acts of crime) or (ii) environment-orientated (why do some environments experience higher crime rates), and uses facets of both to explain the *act* of crime (Wikström *et al.*, 2012). Underlying the theory is the starting point that an act of crime results from the interaction of an individual within an environment; within this situation, the individual's perception of crime as an option and choice of action represents the causal processes that lead to crime (Wikström *et al.*, 2012). Briefly stated, individuals vary in their propensity to offend; environments vary in how conducive they are to offending; and the interaction of these, and the perception of action alternatives individuals perceive as a consequence, is said to explain the choice of individuals to either offend or not offend within a given setting (Wikström *et al.*, 2012).

In empirically studying this analytical model of crime resulting from a person and environment interaction, SAT scholars have utilised the concept of collective efficacy as a measure of the 'moral rules and their level of enforcement' within a setting (Wikström *et al.*, 2012, p. 143). As such, environments across a city, and so settings for action, vary in their levels of collective efficacy – that is, they vary in their levels of moral rules and how these are enforced. In the broader criminological literature, collective efficacy's use as a measure of the moral context

has been acknowledged as one which aligns with the developments to the theory: ‘a key argument of collective efficacy theory is that it matters *what I think others think*, making collective efficacy a kind of deterrence or moral rule – i.e., generalized “common knowledge” which goes beyond any single act of control’ (Sampson, 2013, p. 20; Warner and Sampson, 2015).³¹ However, little scholarly attention has been given to considering how this idea of collective efficacy as a ‘moral rule’ changes and adapts our understanding of collective efficacy’s explanatory effect. This sub-section therefore delineates the key theoretical developments and divergences which occur where collective efficacy is used as a measure of moral rules and their enforcement within SAT. A better understanding of this development will set the scene of further discussion in chapter 4, where I demonstrate how this use of collective efficacy within SAT permits us to explore further some of the theoretical assumptions which underlie collective efficacy theory’s utility in practice. This will form the basis of my empirical study exploring these assumptions in small neighbourhood units (chapter 5).

2.5 Collective efficacy and Situational Action Theory – a brief overview

As stated, SAT posits itself as a general theory of crime – that is, one which seeks to explain why all acts of crime occur. SAT has developed over time and now contains a number of specified explanatory frameworks of crime and its causes.³² Here, we focus on what has been termed the ‘situational mechanisms’, containing the perception-choice process. This framework seeks to explain why crime events occur by delineating how relevant individual and environmental factors interact, with individuals making decisions as to whether or not they will commit an act of crime in that moment (Wikström, 2017b).

³¹ Sampson includes this development to collective efficacy theory in this article and book chapter, supporting the broader notion of ‘contextual causality’ in assessing neighbourhood effects. SAT specifies this distinction further, by noting that where individuals agree with the moral rules of a setting they are more likely to experience shame and guilt in violating them (Wikström *et al.*, 2012; Trivedi-Bateman, 2019). This helps to explain why individuals are suggested to not violate certain moral rules because they care what others think.

³² In addition to that described, frameworks include one explaining the social and self-selection of individuals into certain settings; and a more recent Developmental Ecological Action (DEA) model explaining the personal and social emergence of individuals and places over the life course (Wikström and Treiber, 2019).

SAT defines an act of crime as the ‘breach of a moral rule (defined in law)’ (Wikström, 2010, p. 216). These moral rules are rules which communicate what is right or wrong to do in particular settings or circumstances (Wikström, 2010). This conception of crime as a breach of ‘moral rules’ therefore shifts the emphasis from specific *acts* (i.e., a criminal offence being committed) to the *breaking of rules* (Wikström, 2010). Acts of crime, of course, break moral rules as stated in (criminal) law; but social environments are regulated by a broader range of norms that vary according to the specific context at hand (e.g., where residents can park their cars; whether children can play unsupervised).

According to SAT, an act of crime ultimately occurs due to the interaction of (i) a person’s own ‘criminal propensity’ and (ii) the ‘moral context’, which encompasses the moral rules applicable to a setting and their level of enforcement (collective efficacy) (Wikström *et al.*, 2012). These aspects of ‘propensity and ‘exposure’ are seen as the direct ‘causes’ of crime pertinent to the perception-choice process which delineates a series of steps in how individuals do or do not deliberate on either committing or not committing an act of crime (Figure 1). The relevance of collective efficacy within the perception-choice process will be explored further in chapter 4. The main point to consider here is that SAT is a theory centred on explaining crime as the result of a person and environment interaction.

2.5.1 *Individual criminal propensity*

A person’s criminal propensity is defined as his/her ‘tendency to see and, if so, to choose acts of crime... as a viable action alternative in response to a motivation (temptation or provocation)’ (Wikström *et al.*, 2012, p. 15). This propensity is formed through a combination of an individual’s (i) morality, and (ii) their ability to exercise self-control (Wikström *et al.*, 2012). According to SAT, individual morality is based upon what a person thinks it is right or wrong to do in a given circumstance or setting (Wikström and Svensson, 2010). As stated, SAT accepts that moral rules can be both ascribed by law or not; they are rules of conduct within given context. Thus, an individual’s *crime* propensity (a criminal offence) is related to what is termed their ‘law-relevant morality’. That is, if an individual’s own moral rules corresponds to those rules stated in law, he/she is said to have a low-crime propensity; those who have low law-relevant morality have a higher crime propensity, for they do not agree to the moral rules as stated in law and are less likely to adhere to them (Wikström and Svensson, 2010).

Individuals therefore vary by the extent to which they consider crime to be an option, or as SAT terms it an ‘action-alternative’ in response to a motivation. Secondary to the influence of moral rules on an individual’s criminal propensity is the notion of self-control. Empirically, it has been shown that for young people with weaker levels of law-relevant morality, their ability to exercise self-control will play a role in their ‘perception-choice process’ (Wikström and Svensson, 2010).

2.5.2 *The moral context*

An individual’s criminal propensity does not influence action alternatives unless considered in relation to the setting (Wikström *et al.*, 2012, p. 17). SAT refers to settings as ‘moral contexts for action’, defined as ‘the *moral rules* that apply to the setting and their *level of enforcement* and *sanctioning*’ (Wikström, 2006, p. 90). These contexts vary in the potential source of temptation or provocation and the moral rules applicable within them. Settings are therefore regarded as ‘criminogenic’ when the moral norms of the setting deviate from the rules of conduct as stated in law and/or when the moral context encourages, or does not discourage, breaking the law (Wikström *et al.*, 2012).

As stated, it is in operationalising the moral context that the concept of collective efficacy has been utilised with SAT. Measures of neighbourhood ‘social cohesion’ are said to represent the strength of the moral norms of a setting; measures of ‘social control’ represent their level of enforcement (Wikström *et al.*, 2012, p. 143).

2.5.3 *Adapting Collective Efficacy’s explanatory power within Situational Action Theory*

The key point to consider from the above is that SAT seeks to explain crime through interactions between individuals (who vary in their criminal propensity) and environments (which vary in their moral rules and level of enforcement). Whilst collective efficacy’s explanatory framework focuses on the neighbourhood context, SAT goes further by considering how individuals interact with, interpret, and respond to that context. Studying collective efficacy’s causal influence on crime in this way permits a better understanding as to the ultimate impact of collective efficacy on neighbourhood crime. The original conception of collective efficacy of course purports a deterrent effect, explaining variations in neighbourhood

crime; what SAT does further here is illustrate how this deterrent effect is, or indeed is not, relevant in individual offending decision making.

As we have discussed, the central premise of collective efficacy is that conditions of social cohesion are said to encourage both acts of social control, or the ‘latent capacity for action’ when required (Sampson, 2013). It is these direct acts of social control, or the perception that residents would act if required (that is, if an act of crime was committed) that ultimately explains how collective efficacy accounts for neighbourhood variations in crime by: (i) neighbourhood residents directly intervening to prevent the commission of a crime; or (ii) would-be offenders being deterred by the potential threat of sanction (Sampson, 2011, 2012). Whilst Sampson’s updated notion of collective efficacy as a moral rule considers this broader deterrent effect by noting that ‘it matters what I and others think’ (Sampson, 2013, p. 20; Warner and Sampson, 2015) the theory still underlines that informal social control enforces and therefore communicates the agreed rules over that setting (Sampson, 2006a). Repeated and observable interactions matter in shaping and communicating the agreed rules of the setting to its population (Sampson, 2006a).

Whilst social control is an important mechanism in communicating the standard of agreed norms in a setting, it may not explain crime purely through a deterrent effect. Collective efficacy, as conceived within SAT (as a moral rule), arguably weakens the impact of social control on general deterrence by considering individual actors and their differences in criminal propensity when interacting with a setting. Empirical research testing SAT finds that for the majority of people, the threat of sanction/social control is actually immaterial; they do not offend in a setting because their own criminal propensity is low (their law-relevant morality is high, or if low their self-control compensates); regardless of the environmental inducements, they do not perceive crime as an action alternative in the first place (Wikström, 2008). The requisite level of collective efficacy within a given locality makes environments more or less criminogenic, but owing to differences with individual’s crime propensities abiding by those rules is not purely based on the willingness of residents to intervene and enforce them. By way of example, imagine an individual with high law-relevant morality. They interact with a setting of high collective efficacy and observe an unlocked bicycle on the pavement. Do they not steal the bike because of the potential threat of sanction, or because they do not consider crime to be an option in the first place? For this individual, SAT highlights that rather than neighbourhood threat of informal social control, it is their individual law-relevant morality which prevented

any crime from taking place – the crime (to steal the bike) was not considered an option. That same person is unlikely to steal the bike in a setting of low collective efficacy, where the threat from informal social control is also lower. The relevance of collective efficacy here is arguably more limited in its influence on those individual's decision making.

This threat, or knowledge of the potential for, social control does however influence decision making for other individuals. For those with a high crime propensity, their sensitivity to the likelihood of sanction means they are less likely to offend (Wikström, Tseloni and Karlis, 2011); and settings of low collective efficacy still account for a large proportion of police-recorded crime (Wikström *et al.*, 2012). That said, what SAT's use of collective efficacy demonstrates here is that individual differences matter in accounting for collective efficacy's explanatory effect.

Another distinctive aspect of collective efficacy with SAT relates to what the 'efficacy' part of the concept seeks to achieve. In Sampson's conception of collective efficacy, the 'one central goal is the desire of community residents to live in a safe and orderly environment' (Sampson, Raudenbush and Earls, 1997, p. 918). Collective efficacy is therefore ascribed a standard, or an end goal – to ensure the neighbourhood is 'free from predatory crime' (Sampson, 1999, p. 101). Thus, behaviours which go against this goal – such as a neighbourhood norm not to 'snitch' or call the police – are described by Sampson as 'a form of anti-collective efficacy', largely driven by strong social ties in a neighbourhood which may not be so pro-social (Sampson, 2013, p. 20). Within SAT however, the notion of a moral rule does not have an ascribed content: moral rules are not ranked by 'some independent (higher-order) criterion of what is good or bad to do', but rather they describe whether residents in that neighbourhood ascribe to certain rules (Wikström, 2006, p. 75).

Neighbourhoods high in collective efficacy are likely to uphold moral rules as ascribed by law – hence the low police-recorded crime (Sampson, Raudenbush and Earls, 1997; Wikström, 2012). With this conception of moral rules however, SAT permits the possibility that areas high in collective efficacy could also be high in crime; they would not be 'anti-collective efficacy', but rather uphold different moral rules to those as ascribed by law. An example in the UK could include Irish traveller communities. Typified with strong within-community moral rules being socially cohesive, and willing to exercise social control where there are breaches of those moral rules; yet owing to their cultural lifestyle, often conflict with the

demands of moral rules as ascribed by law. The moral rules of a nomadic way of life conflict with moral rules as ascribed by law, challenging the existence of such moral rules for traveller communities (Kabachnik, 2009).

A further distinction to note here is that the content of moral rules, as collective efficacy, can vary across settings – that is, neighbourhoods measured and categorised as having high collective efficacy may uphold and value different moral rules in those contexts. They may be characterised by ‘high collective efficacy’, with similar collective efficacy scores deriving from social surveys (Oberwittler and Wikström, 2009), but may place different idiosyncratic value on the moral rules which they deem acceptable or unacceptable to break (Wikström, 2007). For instance, residents in one high collective efficacy neighbourhood may see parking two wheels on the pavement as an acceptable act; residents are affluent, with each household having a number of vehicles. In another neighbourhood, this could be a cause for challenge if this blocked access for residents with mobility issues. Settings ultimately vary in moral rules that they prioritise and regulate. In using measures of social cohesion as a proxy for identifying what the moral rules of the setting are, SAT’s community survey research has identified higher intraclass correlation coefficients (ICC) for measures of social cohesion and trust (.75) as compared to measures of social control (.61) (Oberwittler and Wikström, 2009, pp. 49–50). Resultantly, respondents within UK Census Output Areas (OAs) were more like to agree on the level of social cohesion within a neighbourhood when compared to their perceptions of neighbour’s willingness to intervene through social control (Oberwittler and Wikström, 2009). But completing a community survey scale on Likert-type measures of social cohesion (see Table 1) taps into the agreement of shared moral rules within a neighbourhood, not necessarily the content of those rules between neighbourhoods. Thus, SAT’s use of collective efficacy theory recognises that each setting varies not only in their agreement of rules, but also their context – regardless of if they are high, medium, or low collective efficacy neighbourhoods.

2.6 Conclusion

In this chapter, we have explored the concepts and empirical research which make up collective efficacy theory. As evidenced, research to date continues to support a number of key assertions of collective efficacy’s explanatory effect in neighbourhood research – namely, that settings high in collective efficacy experience lower rates of crime (Sampson, Raudenbush and Earls,

1997; Sampson and Wikström, 2008; Mazerolle, Wickes and McBroom, 2010; Sampson, 2012; Wikström, Treiber and Hardie, 2012). I noted that despite this strong empirical backdrop of comparable support in North American, European and Oceanic cities, that the social processes delineated by the theory likely occur within much smaller neighbourhood units – or, at least, are more pertinent and have more salience to residents within a small neighbourhood setting – than original large-scale collective efficacy surveys have identified (Oberwittler and Wikström, 2009; Wikström *et al.*, 2012; Sutherland, Brunton-Smith and Jackson, 2013; Gerell, 2015). Such findings have led to an ontological distinction in research focus. Where academics agree is in proposals to increase neighbourhood collective efficacy to shape and influence neighbourhood social policy (Sampson, 2013; Sampson, Winship and Knight, 2013); where they differ is in how such leverage can and should be achieved, and where our analytical focus should settle. In appraising collective efficacy within SAT, researchers identified that collective efficacy has its part to play in explaining neighbourhood crime for individuals with a high-crime propensity (Wikström, Treiber and Hardie, 2012); but its ultimate influence on neighbourhood crime is attuned by the individual actor interacting with and interpreting those social cues within a setting. Thus, policy improving both individual law-relevant morality, and the law-relevant morality of settings ultimately reduces crime (Wikström and Treiber, 2017).

I further argued that Sampson's (2013) more flexible notion of 'contextual causality' – being more malleable and adaptable to neighbourhood policy prescriptions – is insufficient for exploring some of the underlying assumptions and localised mechanism of collective efficacy in practice (Wikström, 2007). I submit that specifically because of the inter-dependence of human behaviour and interactions on social settings (Sampson, 2013), in this study we should shift the analytical focus to the micro-unit, or smaller units of analysis, to disentangle and better understand these social processes of place (Oberwittler and Wikström, 2009; Schnell, Braga and Piza, 2017; Weisburd, White and Wooditch, 2020). This is especially so when we consider collective efficacy as a moral rule, permitting variation in the acceptable moral rules across different neighbourhood settings, even where there is agreement.

The upcoming chapters of this PhD will therefore seek to continue and contribute to the lineage of studying collective efficacy theory as a localised community social processes within small and micro neighbourhood units (Oberwittler and Wikström, 2009; Gerell, 2015; Weisburd, White and Wooditch, 2020). I submit that doing so can not only sharpen our analytical attention as to how collective efficacy operates to explain crime, in practice, but can also be informative

in shaping policy responses and interventions which seek to increase neighbourhood collective efficacy, in practice. This is because, ultimately, such policies will be applied to pre-existing social contexts, replete with both physical and social features which ultimately impact upon intervening neighbourhood social processes. As evidenced, increasing collective efficacy is difficult to achieve in practice (Kochel and Weisburd, 2012; Rinehart Kochel and Weisburd, 2019; Weisburd *et al.*, 2020). By reducing our research aggregation to a grounded level of, for instance, small administrative boundaries, such as UK Census Output Areas (OAs) (Oberwittler and Wikström, 2009), street segments (Weisburd, Groff and Yang, 2012), and even individual residential properties, I submit that we can better capture and assess how collective efficacy operates in interaction with pre-existing features of neighbourhood settings. Such study permits greater analytical bandwidth and consideration of factors which underlies the principles of the ‘ecometric’ method (Raudenbush and Sampson, 2002).

In chapter 3, I seek to contribute to criminological theory by assessing how physical features of neighbourhood settings may interact with the purported social processes of collective efficacy, by developing a socio-physical model explaining variations in neighbourhood crime. I submit that this is an important but potentially overlooked consideration in collective efficacy research, given that the physicality of a neighbourhood setting has some influence as to how people use and interact outside of their residences (Bull, Giles-Corti and Wood, 2010). In constructing this theoretical model, I explore a dichotomy in neighbourhood crime research between socio-spatial and physical-spatial explanatory perspectives. As we shall discuss, some researchers have focussed solely on the social features of settings, arguing that the socio-demographic makeup of neighbourhoods influences the social processes within it which disrupts crime – i.e. collective efficacy. Others posit that it is physical features of neighbourhood settings, including its layout, architectural design, and specific measures to ‘target harden’ buildings against property crimes, that have an explanatory effect. Whilst both explanations profess empirical support, there is hardly any theoretical research (note contributions by Taylor, 2002, 2018, calling for this integration) which seeks to integrate these perspectives, and assess their explanatory value analytically (empirically, see Reynald, 2011b, 2011a). This theoretical development is therefore one of the first attempts to integrate socio-spatial and physical crime prevention neighbourhood research, with the benefit of exposing analytically the assumptions which underpin these models in order to better analyse their purported influence in future research.

In chapter 4, I will seek to continue this contribution to theoretical knowledge by looking more closely at the concept of collective efficacy's social processes and influence on crime in relation to its use within SAT, as a measure of the moral rules and their level of enforcement in neighbourhood research. When we consider how collective efficacy influences individual decision making to offend, or not, through the perception-choice process, we see that there are a number of theoretical assumptions which underpin how collective efficacy operates to explain crime variation. These assumptions, namely, are that (i) when individuals say that their neighbours will intervene, that they actually do so when called upon; and (ii) collective efficacy, communicating the content of the moral rules of the setting, can accurately be discerned by residents and visitors to settings. Whilst noted in criminological literatures (Wikström, 2007) little has been done to explore these assumptions further in collective efficacy research. In order to do so, I continue in chapter 4 by proposing the study of these assumptions together through the role of neighbourhood guardians – those residents who should enforce and maintain the moral rules of the setting in high collective efficacy areas. By focussing on neighbourhood guardians and their potential intervening role in shoring the moral context, we are able to draw upon social control literatures in criminology, and use their insights to better understand the perception and influence of moral rules of settings.

3 Social and physical influences on collective efficacy

‘When we are talking about features of the physical environment, features that have been in place for some time, and at different geographical scales, that people are exposed to for different durations, during different periods of life or times of the day, this is no simple task. At the same time, it is the crux of the matter.’

Ralph B. Taylor (2018, p. 60)

3.1 Physical influence of urban space on collective efficacy

Chapter 3 begins our first theoretical assessment of how collective efficacy operates and interacts with features of micro-places or neighbourhood units, by considering the impact of physical features of space on neighbourhood sociality and social processes. As stated, there has been a substantive push in ecological criminology to adopt a ‘small is better’ approach to the study of neighbourhoods (Oberwittler and Wikström, 2009). The observation, that crime is highly concentrated in certain places, is now well-established within the corpus of this sub-discipline. It therefore serves to refine observations about crime and place: for example, whilst one neighbourhood unit may have a higher observed rate of police-recorded crime compared to another, much of that variation may be highly concentrated at certain ‘street segments’ (Weisburd, Groff and Yang, 2012; Weisburd *et al.*, 2016) or centres with a high concentration of retail and leisure spaces (Wikström *et al.*, 2012; Wikström, Treiber and Hardie, 2012). Equipped with such knowledge, it is clear therefore that the study of environmental effects on crime requires an adjustment of aggregation to better understand and approximate the causal social processes of relevance in shaping crime outcomes (Oberwittler and Wikström, 2009; Taylor, 2015). Despite Sampson’s commitments to a more flexible paradigm of ‘contextual causality’ for neighbourhood effects, collective efficacy is nonetheless pitched as a mediating and explanatory social process at the situational level – it purports to explain the prevalence of crime in a neighbourhood through the action or inaction of its residents (Sampson, 2006b). Thus, whilst the structural factors which shape collective efficacy may be ‘interdependent’ (Sampson, 2013), those intervening social processes require specification. The study of collective efficacy cannot therefore be exempt from this ontological adjustment, especially in light of some empirical findings.

Despite recurrent empirical support, we have seen that the strength of collective efficacy, as an explanatory mechanism decreases when aggregating to smaller neighbourhood units. Data from the Project on Human Development in Chicago Neighbourhoods (PHDCN) is aggregated data to units of around 8000 residents. Reducing the scale to 1,500 residents, Sutherland et al. (2013) found collective efficacy to be ‘considerably weaker’ in explaining decreases in crime across London, UK. Social explanations for such disparities have considered the level of agreement—or rather, disagreement—amongst respondents within the same neighbourhood regarding perceptions of social cohesion and social control (Oberwittler and Wikström, 2009; Brunton-Smith, Sturgis and Leckie, 2018; Hipp, Williams and Boessen, 2018). However, when taking the ‘small is better approach’ further, we see that the relevance of physical features within settings can also shape how collective efficacy operates on the ground. When aggregating to UK Census Output Areas (which an average 300 residents) Wikström et al. (2012) found that non-residential land use, rather than collective efficacy, was the strongest predictor of police-recorded crime counts across Peterborough, UK.³³ By breaking down a neighbourhood to take account of local commercial centres which may be within its broader boundaries, we see that factors such as the nature of businesses within those centres (Weisburd, Groff and Yang, 2012) and visitors to them (Brantingham and Brantingham, 1981; Brantingham, Brantingham and Andresen, 2018) encouraged by features such as bus stops or public transport infrastructure (Kooi, 2007) are of more relevance to a ‘neighbourhood’ than its residents’ cohesive interactions. Even within units of high collective efficacy, Wikström et al. (2012, p. 337) found that parks were nonetheless popular settings for young people’s self-reported crime. Thus, whilst socio-spatial explanations make an impactful contribution to understanding the variation of crime by place, there is a need to consider how social processes interact with the physical features of settings to shape such outcomes. Situational factors therefore matter for the study of collective efficacy, despite its aggregate-level origins (Weisburd, White and Wooditch, 2020).

Furthermore, the construction of neighbourhood units for analysis is not guided by a universal principle that can be applied across all settings (Oberwittler and Wikström, 2009, p. 38). Instead, units of analysis are often dictated by a number of physical and social factors: these can include the urban geographic features of the locality, such as the street grid system in many

³³ Low collective efficacy being the second strongest predictor.

US cities; pre-existing official governmental sources, such as Census output and super output areas in the UK (Wikström *et al.*, 2012; Wikström, Treiber and Hardie, 2012); or even through the infusion of local knowledge as seen in the PHDCN dataset (Sampson, Raudenbush and Earls, 1997; Gerell, 2015). Within the UK for Census Output Areas (OAs) the influence of features such as roads often serve as the designated boundary of a neighbourhood. Thus, not only can physical features shape the social processes within the neighbourhood, they can also shape the neighbourhood unit itself.

3.2 The study of neighbourhood effects – a physical and social divide

Despite a shared focus on the ‘neighbourhood’ as a unit of analysis, criminologists are arguably divided in the features that they see as most relevant to explaining variations in crime. As we have discussed in chapter 2, those from the socio-spatial perspective, which includes collective efficacy theory (Bottoms, 2012), focus on the social aspects of settings, with aggregate socio-demographic neighbourhood features said to influence social processes relevant to the facilitation or disruption of crime. Others however, largely from the perspective of crime prevention through environmental design (abbreviated to CPTED), analyse how physical features of a setting—such as building and street design—and adaptations which ‘target harden’ built-form aspects against crime, create a deterrent effect against offending. Studied together, both of these perspectives demonstrate a situational neighbourhood effect on crime (Tseloni *et al.*, 2004; Reynald, 2011a, 2011b; Weisburd, Groff and Yang, 2012). We further see the potential for physical influences to shape how collective efficacy explains crime within this situational framework (Kooi, 2007; Wikström *et al.*, 2012). Yet despite these attempts, little has been done to theoretically integrate and interrogate these perspectives concomitantly. Both domains discreetly profess an explanatory effect: many of the purported socio-spatial explanations may be influenced by the ecology of neighbourhood units studied; and physical affordances in neighbourhood design may also depend on the social makeup necessary to foster active citizenry. In this chapter therefore, I respond to calls in criminology (Taylor, 2002a, 2018; Sampson, 2017) to bring together the study of both socio-spatial and physical features of settings in an organising theoretical framework. In doing so, I use collective efficacy theory as an analytical tool through which to appraise these purported effects and their influence on crime. Through developing this organising model, we see that some of the specified and or suggested mechanisms within each domain rely upon yet are contradicted by one another,

raising questions about some of the purported neighbourhood effects - particularly in CPTED research. To remedy this, I suggest how future empirical assessments can be configured by using systematic social observations and community survey research data to disentangle current inconsistencies. This suggestion is not the basis of empirical work in this thesis; rather, this chapter represents a theoretical and methodological contribution to environmental criminology. Aspects of this chapter are drawn and adapted from a peer-reviewed article which I published during the PhD, which formed part of a special issue titled 'Crime Prevention Through Pro-Social Design' (see Cole, 2019).

This chapter will proceed as follows: first, I outline some of the key tenets of physical neighbourhood effects research in the CPTED domain. CPTED was chosen given that facets of this broad cache appear to affect the social process (akin to but not necessarily expressed as) collective efficacy theory. Therefore, without considering theoretical integration and interrogation, we do not know if physical influence may affect these social processes. In order to appraise competing explanations for crime, I develop a rudimentary socio-spatial model, which uses collective efficacy as a central and organising concept to disaggregate explanatory influences. The purpose of this is to both (i) benefit CPTED scholarship, by highlighting some of the causal confusion delineated in the body of work; and (ii) benefit collective efficacy scholarship, by considering how and when physical features of settings should be duly considered at the small-area level. Whilst not explored in this these, I submit that each aspect of the socio-physical model can be operationalised for deductive testing in the field.

3.3 Physical features of settings – The under-specified approach of crime prevention through environmental design (CPTED)

Criminological research focussing on the physicality of settings was said to have been developed in order to counter the dominance of social disorganisation perspectives (Jeffery, 1971), perhaps explaining why physical and socio-spatial perspectives have largely been studied separately. Within criminology today, the influence of physical, built-form features on crime is drawn within the sub-discipline of CPTED. This broad theoretical catchment incorporates an assortment of ecological crime theories which assert that crime is inhibited or permitted (afforded opportunities) by features of the physical environment (Cozens and Love, 2015). Armitage (2018) identifies core elements of CPTED research, which is said to: (i)

encourage defensible space and territoriality; (ii) limit the through-movement of people; (iii) enhance surveillance; (iv) enhance physical security; and (v) maintain neighbourhood space. Despite a sizeable body of empirical research across these categories, however, many criminologists within the sub-discipline assert that the true effect of CPTED on crime is underspecified and therefore ‘poorly tested’ (Hillier and Shu, 2000; Taylor, 2002a, 2018; Minnery and Lim, 2005; Armitage, 2013). This is due to a lack of theoretical clarity regarding CPTED principles and scope (Ekblom, 2011, 2019; Armitage, 2013, 2018; Reynald and Mihinjac, 2019) and the dominance of cross-sectional research designs attempting to measure aspects of these features (Taylor, 2002a). As we see in Armitage’s (2018) summary above, there are many facets of CPTED aims which are akin to what collective efficacy seeks to explain and encourage; however, CPTED arguably lacks a specified analytical model which articulates the hypothesised causal pathways of influence (Taylor, 2002a).

Where CPTED has been most successful, and perhaps better specified, is when explaining the variance in neighbourhood property crimes. Target hardening approaches involve designing built-in protections to inhibit the ability of offenders to commit crime successfully (Reynald and Mihinjac, 2019).³⁴ For example, the use of physical home security measures such as external lights on a sensor and enhanced window locks has been shown to affect trends in burglary rates (Tilley *et al.*, 2015; Tseloni *et al.*, 2017). Research assessments - correlating coded observations of certain design features with measures of neighbourhood crime, and through interviews with persistent offenders - further suggest features such as street design and limiting the consequential through-movement of people (Armitage, Monchuk and Rogerson, 2010; Johnson and Bowers, 2010), and the presence of a front garden (Montoya, Junger and Ongena, 2016)³⁵ to account for neighbourhood property crimes. Packages of recommended design specifications have gathered force in the policy sphere, with the secured by design

³⁴ Reynald and Mihinjac (2019) note that ‘target hardening’ forms part of both CPTED and Situational Crime Prevention approaches, related to the twenty-five techniques of situational prevention (see Cornish and Clarke, 2003). Whilst SCP is not fully considered here, aspects of the Socio-Physical Model outlined below could be configured to assess interactions between ‘target hardening’, ‘extended guardianship’, and ‘natural surveillance.’ This point illustrates that this body of literature is poorly specified.

³⁵ Dependent upon the upkeep and scale of garden shrubbery (Nee and Taylor, 2000). An element of neighbourhood upkeep that taps into moral rules of the setting, re collective efficacy (Sampson and Raudenbush, 1999).

(SBD) scheme promoted by police forces across England and Wales, certifying the design of residential homes (Secured By Design, 2019), commercial properties (Secured By Design, 2015) and even public transport infrastructure (Secured By Design, 2014) as ‘hardened’ against crime. A systematic review of CPTED-type adaptations to settings in the UK and the USA, which blocked street segments to reduce permeability (people walking through) of the setting, reported some short-term ‘desirable effects’ reducing crime (Welsh and Farrington, 2009, p. 101). The extent to which adaptations to property, residences, and neighbourhoods, can produce long-term crime reduction benefits is, however, questionable, without continuous renewal and re-adaptation. In their longitudinal assessment of the effectiveness of SBD over ten years, Armitage and Monchuk (2011) achieved mixed findings when comparing SBD-certified housing estates with non-SBD counterparts in Leeds, UK. Whilst SBD estates had experienced substantially lower burglary counts over ten years, increases and decreases in crime were also evidenced in matched-pair control sites, with differences in victimisation failing to reach statistical significance (Armitage and Monchuk, 2011, p. 339). Such differences were therefore said to ‘raise concerns regarding the scheme’s lifecycle’ (Armitage and Monchuk, 2011, p. 339).³⁶ Thus, whilst CPTED approaches may help explain reductions in property crime, they are limited in accounting for long-term neighbourhood effects.

CPTED’s broader influence on crime is also found in work considering how features of urban design can serve to enhance or inhibit acts of social control - necessary, as we have seen, to interrupt the commission of or opportunity for crime within a setting (Sampson, Raudenbush and Earls, 1997). The influence of planned architectural designs has long been theorised by architects and civic planners to shape social interactions amongst patrons (Rosenau, 1959). Research from Oscar Newman (1972) and Alice Coleman’s research team at Kings College London sought to articulate this link by focussing on the features of specific housing ‘projects’ or housing ‘estates’ in the USA and UK respectively. At the time, neighbourhoods with high concentrations of social housing experienced a disproportionate amount of crime (Baldwin and

³⁶ Relatedly, reductions in crimes such as burglary and motor vehicle theft, noted across the U.S., England and Wales, and Australia, have been connected to the improvement in securing such items since the 1990s (Farrell, Tilley and Tseloni, 2014). Yet despite car immobilisers having done just that (Home Office, 2016), a recently reported ‘five-fold increase’ of car theft in the West Midlands region of the UK indicates that offenders may be using recently-developed technology to bypass product adaptations (Commissioner, 2018).

Bottoms, 1976);³⁷ their distinctive ‘utopian’ designs (Tuffrey, 2013) therefore became the focus of explaining social ills. For many commentators, the high-rise nature of housing projects limited opportunities for residents to engage in the ‘natural surveillance’ of their neighbourhoods; street designs also promoted blurred boundaries between public and private space, meaning offenders were not challenged by neighbourhood residents (Jephcott, 1971; Newman, 1972, p. 78). Physical features which would encourage such surveillance conditions were set out in Newman’s updated guidance on creating ‘defensible space’, which he defined as ‘a residential environment whose physical characteristics - building layout and site plan - function to allow inhabitants themselves to become key agents in ensuring their safety’ (Newman, 1976, p. 12). Similarly, Coleman *et al.*’s (1990) theoretical and empirical assessment of a housing estate in London, UK, considered how distinct property features - such as the number of dwellings accessible from long internal corridors - meant residents were unable to acknowledge ‘legitimate’ users of space. Consequently, physical alterations were recommended, reducing the number of residences (so doors) connecting onto corridors, and splitting existing structures effectively in half, suggested to reduce the opportunity for unimpeded offending (Coleman, 1989, p. 123; Coleman *et al.*, 1990). Relatedly, resident territoriality may be enhanced by manipulating neighbourhood designs which (i) limit access to the neighbourhood itself; and (ii) permit residents an uninterrupted view of the streetscape. By way of example, the traditional ‘true’ closed cul-de-sac design - with one route in and street-facing properties - experience significantly less property crime than those with alternative exits (Armitage, 2006; Armitage, Monchuk and Rogerson, 2010).

Despite empirical associations, understanding the influence of defensible space and territoriality on crime requires further causal unpacking. We see that ‘more permeability’ is consistently said to lead to ‘more crime’ (Taylor, 2002a), and so limiting the access of individuals through design may reduce the opportunities for offending. But to say that such adaptations can then enhance resident social control (see Fennelly and Crowe, 2013) requires consideration of distinct analytical social processes (as articulated Sampson, Raudenbush and Earls, 1997). Running through many such CPTED narratives is an implicit assumption that

³⁷ In their study of social housing estates in Sheffield, UK, the researchers found that rates of delinquency were not associated with traditional features of social disorganisation, such as the transience of populations housed (Baldwin and Bottoms, 1976).

affordances³⁸ made in building design directly encourage the willingness of residents to intervene and prevent crime. Early criticism of defensible space recognised that social dynamics were far more nuanced than Newman's empirical comparisons - conducted between two housing projects with different design features - could consider.³⁹ Macro-level factors such as residential social and self-selection (Bottoms, 1974) and limited knowledge of the micro-level social processes which induce residents to intervene (Merry, 1981), were said to compound methodologies employed.

Recent calls from writers such as Reynald and Mihinjac (2019) assert that contributions in the CPTED domain should also be reconciled with research on capable guardians, given the reliance each theoretical catchment has on the other in delineating socially-intervening processes.⁴⁰ But as identified, socio-spatial research asserts the importance of neighbourhood social cohesion as a necessary ingredient enhancing residents' willingness to engage in acts of social control (Sampson, Raudenbush and Earls, 1997). Thus, the effectiveness of defensible space is subject to agreed norms of behaviour and a shared responsibility over it (Wikström *et al.*, 2012). In light of this, the refined 'Second-generation CPTED' moots the importance of the social dimension of settings as relevant to the sustained influence of CPTED design principles (Cozens and Love, 2015, p. 397). 'CPTED2' promotes integration of social cohesion - such as willingness of residents to observe space and engage in social control - as key elements in activating the affordances made in designing 'defensible' urban spaces (Cozens, Saville and Hillier, 2005; Saville and Cleveland, 2008; Cozens and Love, 2015). As such, any architectural endeavour which seeks to design-in community needs to factor in programmes which promote the social sustainability of locales (Colquhoun, 2004, chap. 5). Whilst this integration is recognised, little theoretical and empirical research has been carried out which analytically appraises the effectiveness of architecturally-infused community cohesion

³⁸ Such as encouraging private space, enhancing lines of sight on to the streetscape (Newman, 1972)

³⁹ Whilst Newman adapted his original work to propose an optimum balance of 'physical design and social mix' (Newman, 1980), little consideration was given to the impact such formulations would have on crime; this was rather assumed owing to the fact residents would be segregated by lifestyles.

⁴⁰ Reynald's research has sought to expand and better-specify the role of neighbourhood guardians in criminology, as situated within the routine activities approach (Reynald, 2009b). As will be discussed in chapter 4, this work has advanced knowledge of the dynamic nature of guardianship in action, but fails to take account of the pre-existing motivators in the setting which enhance guardianship practices.

initiatives on neighbourhood crime rates (Cozens and Love, 2015). Such reformulation also recognises that physical influences on crime are required to operate through some form of social process. Further specification is therefore needed.

3.4 Exploring socio-spatial and built-form neighbourhood effects on crime through collective efficacy – a socio-physical model

On the face of it, the broadening of CPTED principles to account for the relevance of social cohesion appears logical, for its conceptual influence on crime is evident from chapter 2. In doing so, however, there is a threat that CPTED research expands to contain so many features of potential relevance, that understanding its true effect on crime becomes compounded by and indivisible from the social features of settings (Taylor, 2002a; Armitage, 2013) as specified in collective efficacy research (Sampson, Raudenbush and Earls, 1997). Furthermore, explaining correlations between features of urban design with neighbourhood levels of crime through their impact upon neighbourhood social processes requires an articulated mechanism of resident action; yet despite expansion through CPTED 2 models, design influences which motivate intervening social processes continues to be ‘assumed’ (Minnery and Lim, 2005, p. 331; Ekblom, 2019). Danielle Reynald’s mixed-method study of 2847 properties over 94 neighbourhoods in The Hague, Netherlands, is one of the few studies to consider the proportionate explanatory power measured physical and social features of settings have on neighbourhood property crimes through the lens of guardianship intensity (distinct from collective efficacy). With measures operationalising CPTED - such as territoriality, image/maintenance, surveillance opportunities, and target hardening - alongside those of social cohesion, social interactions, and demographic measures of neighbourhood settings, Reynald concludes ‘that all these factors interact to create conditions that are either ripe with opportunities for capable guardianship or ripe with opportunities for criminal violations’ (Reynald, 2011a, pp. 135–136). Whilst both socio-physical and socio-demographic measures accounted for 20% of the variance in observed guardianship intensity, resident surveillance opportunities and distance of properties to the city centre served to explain most of this finding. Many of these explanatory variables were however observed to be highly correlated (Reynald, 2011a, p. 133). As shall be discussed, given these competing explanatory effects at the micro-level, bringing these research silos together requires further analytical consideration.

In order to achieve this analytical clarity, I develop a socio-physical approach, using research findings from both domains in order to specify the potential pathways of influence social and physical features of setting may have on neighbourhood crime rates at the micro-level. My socio-physical model, outlined in Figure 3 aims to help researchers disentangle some of these purported links and aid empirical study of the proportionate influence of these neighbourhood features concomitantly. To illustrate the explanatory potential of such an approach, I take aspects of the CPTED canon related to collective efficacy - namely defensible space and territoriality, limiting through movement, enhanced surveillance, and physical security 'target hardening' techniques - and interrogate these findings with the processes delineated by collective efficacy research. Utilising collective efficacy in this way provides a number of benefits to the better specification of criminological theory:

1. Enhances our understanding of how collective efficacy theory explains crime at micro-places through interaction with pre-existing built-form features of place.
2. Analytically appraises CPTED and CPTED2 scholarship by developing an organising conceptual model to both connect and disentangle competing or contradictory aspects of the CPTED canon.
3. Appraises how certain design features can shape neighbourhood social cohesion as a further means of enhancing social control, alongside direct influences on social control, providing a more nuanced understanding of socio-physical neighbourhood effects.
4. Provides researchers with an analytical model which can be operationalised to measure these interactions empirically (not in the purview of this PhD).⁴¹

⁴¹ Whilst not the purpose of this PhD, each aspect of the socio-physical model can be operationalised and expanded upon for empirical study. Collective efficacy survey data from community surveys aggregated to small neighbourhood units, and socio-demographic data from censuses could be considered alongside coded measures of CPTED physical features of space (see Minnery and Lim, 2005; Armitage, Monchuk and Rogerson, 2010) derived from systematic social observation techniques (Raudenbush and Sampson, 2002). A cost-effective option can be to utilise Google Streetview as a validated measure for conducting systematic observations, but only when assessing dormant physical features (Odgers, Caspi, *et al.*, 2012; Vandeviver, 2014).

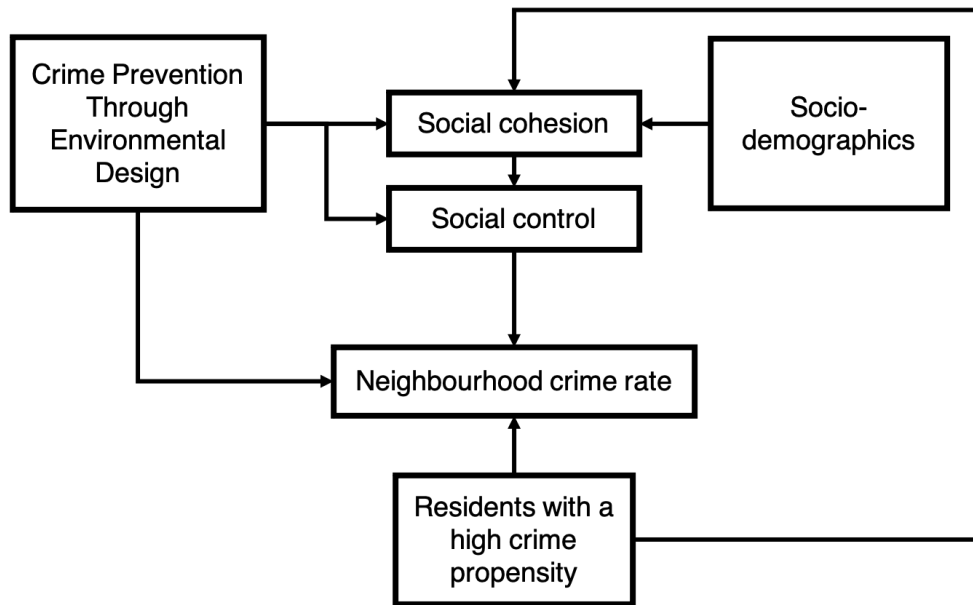


Figure 3: Summary model illustrating the potential dual influence of physical and social features of neighbourhood settings on crime

In proposing the above model, I submit some caveats. The pathways outlined in Figure 3 are a crude demonstration of the potential interactions that physical elements may have on crime - either directly or indirectly through collective efficacy. Given that CPTED principles are often promoted as a package, for the sake of analytical and illustrative clarity, I limit my discussion to those aspects outlined above that arguably compete with collective efficacy for explanatory power, or indeed are recommended to motivate intervening social processes. Whilst not explicitly in this chapter, consideration of how ‘activity support’ and ‘image maintenance’ shapes collective efficacy are also worthy of future integration, especially in light of findings which link disorder to crime through collective efficacy (Sampson and Raudenbush, 2001). This more contentious discussion in the field will be considered further in chapter 4, where we review the visual cues for interpreting the moral rules of the setting. The model should be considered therefore as an analytical tool for the appraisal of micro-level and small neighbourhood unit interactions between the physical and the social explanators of crime.

The following section breaks down Figure 3 and considers social and physical situational influences on crime in further detail.

3.4.1 Social features

3.4.1.1 Demographics

Social-demographic features of neighbourhoods influence the level of social cohesion within those neighbourhoods. As has been identified, high levels of social disadvantage, population turnover, and population heterogeneity have been empirically demonstrated to reduce the extent to which residents get along and interact to build shared common norms (Sampson, Raudenbush and Earls, 1997; Wikström and Sampson, 2003; Wikström *et al.*, 2012; Gerstner, Wickes and Oberwittler, 2019). Reduced social cohesion limits resident social control - be that informal, or through the mobilisation of more formal resources (Sampson, 2006a). Some scholars note that increases in social cohesion may not result in an enhanced willingness to intervene, given that empirical assessments tap into an expectation of action (Wikström, 2007); and, are derived from a correlation between social cohesion and social control, questioning temporality (Steenbeek and Hipp, 2011). A number of field experiments using lost letters as a proxy to test such perceptions support the notion that collective expectations of behaviour matter in shaping other-regarding intervening behaviours (Sampson, 2012; Volker *et al.*, 2016).

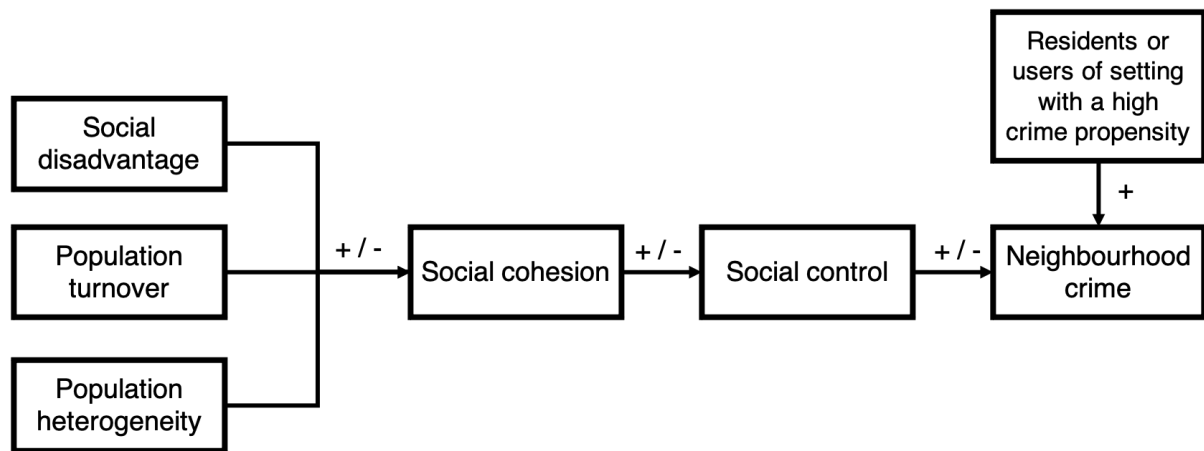


Figure 4: Pathways illustrating purported socio-demographic influences on crime through collective efficacy. Symbols denote an increase or decrease along pathways.

3.4.1.2 The residence and presence of frequent offenders and those with a high crime propensity

According to collective efficacy theory, social control is exercised by residents when they are called upon to act; but as Sampson (2006, p. 40) himself submits, ‘if high collective efficacy leads to low crime, then at any given moment no intervention will be observed precisely

because of the lack of need'. The question as to how would-be offenders can discern the level of collective efficacy within a physical setting, and therefore be effectively deterred, is largely assumed (Wikström, 2007; Hirtenlehner and Wikström, 2016). Thus, the effectiveness of, or at least the threat of, direct social control reduces situational opportunities for crime only if it exerts a sufficient deterrent effect on individuals within that setting. Persistent offenders are more likely to commit offences in areas in which they already reside (Baldwin and Bottoms, 1976; Bernasco, 2010; Wikström *et al.*, 2012); their 'awareness' of that space, and the opportunity that setting provides for offending, can derive from their familiarity with it (Brantingham and Brantingham, 1981; Wikström, 2008; Brantingham, Brantingham and Andresen, 2018). As discussed, Situational Action Theory (SAT) indicates that rather than a notion of persistent offenders, criminologists should consider how individuals with a 'high crime propensity' - low levels of law-relevant morality blurring the distinction between what is right or wrong to do, and an inability to exercise self-control in response to a motivation to offend - interact with the collective efficacy of a setting. For such individuals, their deterrence sensitivity may be formed through previous 'deterrence experiences', where sanctions inform knowledge about the requisite level of collective efficacy within a neighbourhood, consequently affecting the perception of viable action alternatives within that setting (Wikström, 2006, p. 356, 2008; Wikström, Tseloni and Karlis, 2011, p. 405). Conversely, a lack of having experienced or witnessed social control in an area of low collective efficacy may stand to support 'moral habits'⁴² - that is, habitual offending, where deliberations about the threat of deterrence are not duly considered (Wikström, 2006, p. 103).⁴³ Therefore, social consideration should not only be given to the demographic context of neighbourhood units studied, but also the proximity and activity patterns of those with a high crime propensity within situational crime activity.

3.4.2 Physical features at different levels of aggregation

3.4.2.1 Individual properties in a neighbourhood

⁴² For a summary, see Wikström *et al.* (2012, pp. 19-22).

⁴³ The importance of considering individuals within settings has been identified in recent reformations of SCP principles, lessening the reliance on rational choice (Wortley and Tilley, 2018).

Target hardening measures may have both a direct and an indirect effect on neighbourhood crime rates (Reynald and Mihinjac, 2019). Direct effects namely occur in explaining property crimes, with, for example, home protection security devices and reinforced windows and doors limiting the victimisation of such properties (Vollard and van Ours, 2011; Tseloni *et al.*, 2017). The variance in (property) crime at the neighbourhood level is therefore explained as properties become harder to break in to, limiting opportunities for offending in a given context.

Indirect influences may further occur by considering how the differing presentations of these controls - both the social and the physical - can cumulatively shape crime (burglary rates, as typically studied) within a neighbourhood unit (Wilcox, Quisenberry and Jones, 2003). Residents who are concerned and alert to crime are more likely to use target hardening devices in their properties (Minnery and Lim, 2005, p. 337) which seemingly complicates our ability to distinguish between effects on property crime. Wilcox *et al.* (2007) considered the interaction between individual-level measures of guardianship (self-reported individual measures of target hardening, home occupancy, informal social control, and defensible space⁴⁴) and neighbourhood-level measures (mean scores of individual-level measures at US Census tract level). Through hierarchical logistic modelling (HLM), researchers found that individual-level target hardening was more effective at reducing burglary victimisation where neighbourhood-level target hardening was also high (Wilcox, Madensen and Tillyer, 2007). The deterrent effect of measured target hardening (physical) was enhanced when neighbourhood social guardianship levels increased.⁴⁵ Researchers concluded that whilst ‘informal social control is still key... environmental design is assumed to foster/impede such efforts’ (Wilcox, Madensen and Tillyer, 2007, p. 775).

As identified in Figure 5, below, impediments to processes of social control may however come from target hardening measures themselves. For instance, defensive adaptations to properties, such as the presence of window shutters (Cozens and Davies, 2013), and high boundary fences

⁴⁴ These aspects of guardianship were measured using an index sum of characteristics that interviewed respondents reported as having on their properties. For example, measures of ‘target hardening’ asked if respondents had engaged, in the last two years, in safety precautions including locking doors, leaving lights on when not at home, using a burglar alarm, and keeping a weapon in the home. For full list of items, see Wilcox *et al.* (2007, p. 782).

⁴⁵ Measured by the willingness of neighbours to watch over property when individual residents were away.

(Reynald, 2011b) have been found to reduce neighbourhood guardianship practices. Thus, whilst measures to target harden may reduce individual victimisation of property offences, the consequential impact is that residents fail to be effective guardians of the neighbourhood outside the property window (Reynald, 2009b, 2011a, 2011b)

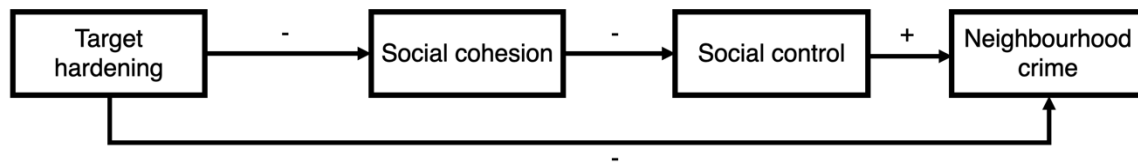


Figure 5: Pathway illustrating the purported influence of target hardening measures on crime directly and through collective efficacy

Given the contradiction of effects outlined above, pursuing analytical assessment organised through collective efficacy theory further reminds us of the importance of social cohesion in shaping practices of neighbourhood social control. Do we see, for instance, that the presence of defensive adaptations to neighbourhood properties - ‘keep out’ signs, high fences, gated residences (see Branic and Kubrin, 2018) - impacts upon the ability of neighbours to interact within the neighbourhood setting itself? Many writers promote the use of mixed situational, social, and developmental crime prevention strategies (Wikström and Treiber, 2017). Thus, increased securitisation of properties should be configured with an assessment of its impact upon social cohesion (Garland, 2002; Hope and Karstedt, 2003).

3.4.2.2 Neighbourhood design: small-area or micro-units fostering interactions

As stated, the influence of defensible space and street design in explaining neighbourhood crime rates is currently underspecified (Minnery and Lim, 2005). When integrating these effects alongside social processes within the setting - here chosen, collective efficacy - a number of potential pathways are revealed. Figure 6 hypothesises (i) that physical features of neighbourhoods influence the ability of residents to exercise social control effectively; (ii) that physical features, alongside socio-demographics, influence the level of neighbourhood social cohesion, which subsequently affects willingness to engage in acts of social control; or (iii) a concomitant influence of both. Thus, the effectiveness of collective efficacy as an explanatory mechanism may be shaped by the ecology of the residential neighbourhood environment; and this ecology could also shape neighbourhood collective efficacy, alongside social and demographic features of settings.

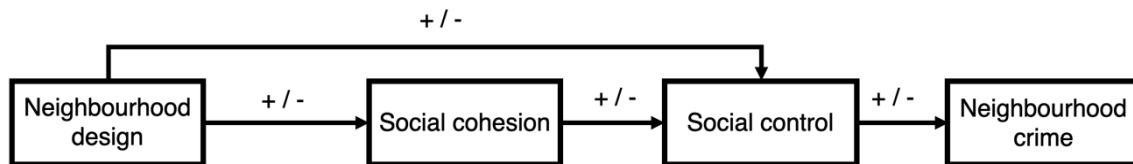


Figure 6: Pathway illustrating the purported influence of neighbourhood design on collective efficacy (social cohesion and social control) and social control directly

The extent to which a property is overlooked by others has been found to be relevant in explaining property victimisation (Armitage, Monchuk and Rogerson, 2010). Breaking this down further, observed measures of resident ‘surveillance opportunities’, such as an unimpeded view from properties onto the streetscape, have been outlined as one of the most significant predictors of guardianship intensity - that is to say, increased surveillance opportunities increase the likelihood of social control within the setting (Reynald, 2011b, 2011a).

Whilst such findings lend support to an aspect of the defensible space thesis, collective efficacy research shows that the level of social cohesion within the residential setting is also important in shaping the proclivity to engage in social control. Architects and urban planners moot the benefits of designing, through examples such as the school of ‘New Urbanism’, neighbourhoods that foster regular interactions as being beneficial to neighbourhood social cohesion (Zelinka and Brennan, 2001). Repeated interactions are also promoted by collective efficacy theory as a means through which communities can come to realise their shared, common values (Sampson, 2006a, p. 39). A systematic review found a significant relationship between the walkability of an environment and neighbourhood levels of collective efficacy and ‘acts of neighbouring’ (Soumya *et al.*, 2017, p. 5). Findings from the discipline of public health have furthermore identified that the level of street activity in a neighbourhood can come to shape the prevalence of community interactions within a locality, with street layout identified as a physical factor influencing residents’ proclivity to be active in community life (Bull, Giles-Corti and Wood, 2010, p. 113). This physical focus can further be seen in the number of projects which aim to enhance community cohesion, with built features serving as an anchor point whereby community interactions can be fostered without the need for dense social ties (Wickes, 2010; Wickes *et al.*, 2018). Resident-centred public land use, such as settings which

hosted schools and playgrounds, were also articulated as ‘social conduits’ related to increased measures of ‘neighbouring’ (Ruijsbroek *et al.*, 2017; Wickes *et al.*, 2018).

3.4.2.3 Neighbourhood design: limiting through-movement, but of whom?

The built environment may therefore stand to influence collective efficacy through design features which enhance shared use of urban space, encouraging social cohesion to resultantly enhance social control. Conversely, spaces which enhance sociality - by being busier, affording communal use - are also evidenced to be conducive to criminality (Brantingham and Brantingham, 1993; Taylor, 2002a) particularly where commercial and residential environments converge (Weisburd, Groff and Yang, 2012; Wikström *et al.*, 2012). CPTED promotes limiting the ‘through-movement’ of people in settings through access control, as a way to (i) restrict offenders’ access to neighbourhoods and (ii) encourage resident social control by challenging non-legitimate users of their neighbourhood space (Armitage, 2018, p. 264). How urban designs can both limit the access of would-be offenders, whilst also promoting neighbourhood sociality (Armitage and Joyce, 2019), is worth consideration when acknowledging collective efficacy’s role in deterring neighbourhood crime - especially when adaptations to restrict directional movement can be negated through short-cuts (Armitage, Monchuk and Rogerson, 2010). One empirical study combining surveys and observations of neighbourhoods in Penang, Malaysia, found moderate associations between coded observations of CPTED features and measures of neighbourhood collective efficacy (Abdullah, Marzbali and Tilaki, 2013). Such empirical assessments relating physical features to crime and collective efficacy however give limited consideration to the social factors which also shape these processes.⁴⁶ Whether street design, the collective efficacy of the context, or indeed both aspects combined deter would-be offenders has yet to be fully appraised (Figure 7).

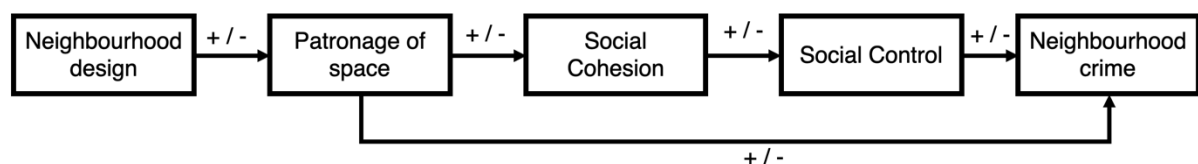


Figure 7: Pathway illustrating the purported influence of neighbourhood design on the patronage or neighbourhood space, consequently influencing crime directly and through collective efficacy

⁴⁶ Abdullah et al. (2013) considered the effect of respondents’ age in forming collective efficacy assessments.

However, as discussed, physical features of place can override the effectiveness of collective efficacy as an explanatory deterrent process (Wikström *et al.*, 2012, p. 337). St Jean's (2007) ethnographic work⁴⁷ on the situational dynamics of collective efficacy in neighbourhood street blocks found the effectiveness of collective efficacy to be augmented by the type of crime offenders sought to commit, and, in relation to this, the 'ecological advantage' settings conduced to each of these respective crimes. Busier street segments, with many passers-by, were favourable for drug dealing, as dealers were able to avoid suspicion by not being seen to be out of place (St Jean, 2007, p. 119). Furthermore, the presence of 'grocery stores, currency exchanges, fast-food restaurants' provided an 'ecological advantage' to robbery, with certain businesses drawing in patronage and potential victims with valuable items in their possession (St Jean, 2007, p. 162). Whilst low collective efficacy neighbourhoods meant less detection, the features of the setting, and indeed the social selection effects of the neighbourhood, failed to induce victims with valuable personal possessions to make the crime worthwhile (St Jean, 2007, p. 162). Conversely, quieter settings - such as parks - are observed to afford young people the ability to offend undetected, with less patronage reducing residents' ability to effectively monitor and control such settings (Wikström *et al.*, 2012, p. 337). In architectural literatures, the affordances within parks have been articulated by young people as a 'retreat', with them able to occupy space 'where no one else really bothers with' (Townshend and Roberts, 2013). Thus, the knowledge and experience of ineffective deterrence experiences (Wikström, 2008; Wikström, Tseloni and Karlis, 2011) can be shaped by physical features minimising the presence of social control from patrons. Not all settings within a measured neighbourhood or unit of aggregation are influenced by such social processes linearly.

3.5 Conclusion

This chapter has identified the potential influence of physical effects on the social processes of collective efficacy. By theoretically integrating socio-spatial and socio-physical explanations for neighbourhood crime, we observed that both disciplines proffer competing explanations accounting for the variation in neighbourhood crime rates. When bringing both domains

⁴⁷ Methodologies included interviews and surveys with offenders who often commit or had previously committed different types of crime in the area; interviews and a collective efficacy survey of selected 'neighbourhood experts'; and systematic social observations recorded with a car-mounted video camera. Recorded images were later coded to consider frequencies of disorder and dilapidated buildings.

together, we largely see that it is collective efficacy, through the process of neighbourhood social cohesion enhancing social control, which holds the clearest explanatory weight. By disentangling contributions, we observed that CPTED and physical features of space may however have a role to play at the small-area and micro level by (i) explaining property crimes in settings; and (ii) shaping the formation of social cohesion (alongside socio-demographics) encouraging neighbourhood interactions. Here, however, the extent to which one can encourage interactions, and yet limit access to the setting, is unclear. Whilst not the object of this thesis, further empirical work is arguably required to test these purported pathways in settings (Taylor, 2002b, 2018).

4 The situational social processes of collective efficacy – exploring assumptions through the role and relevance of guardians

In this chapter, we continue to analytically explore the small-area influences which can shape and attune collective efficacy's contextual effect on crime. As discussed in chapter 2, Situational Action Theory (SAT) uses the concept of collective efficacy (and empirical measures derived from it) as a measure of (i) the moral rules of a setting – that is, what is right or wrong to do in that environment; and (ii) the level of enforcement of those rules in that setting (Wikström *et al.*, 2012). Utilising collective efficacy in this manner – as integrated into a broader action theory of crime – permits us to analytically appraise the relevant social processes which underpin how collective efficacy may operate at the small-area, micro-place environment. In chapter 3, we considered the potential interaction between physical features of space on these social processes. In this chapter, I appraise the concept further by theoretically exploring analytical assumptions in relation to the role and relevance of individuals who may enforce acts of social control within those setting – known in criminology, more broadly, as neighbourhood guardians. Here, we observe that the importance of social control in explaining neighbourhood crime is somewhat attuned through SAT but nonetheless integral to collective efficacy's situational explanatory power. In being integral, there are a number of analytical assumptions which underpin this contextual effect: (i) that moral rules in settings are perceptible to individuals interacting with them; and (ii) that, when required, individuals will intervene to enforce those rules when observing a breach of them. Whilst acknowledged, there are few contributions in criminology – with the notable exception of St Jean's (2007) ethnographic work and others (Sampson, 2012, chap. 9; Volker *et al.*, 2016) - which seek to explore this further when explicitly studying collective efficacy theory (Wikström, 2007; Wikström *et al.*, 2012, p. 179).

The following section therefore lays the groundwork for the empirical aspects of this thesis in chapter 5 and 6, seeking to expand our methodological and theoretical knowledge of collective efficacy at the small-area and micro-level of settings. This will be facilitated through the use of an adapted Space-Time Budget (STB) – the first such use of this method in guardianship research. As I set out in chapter 5, the STB is an apt method to attempt to explore and expand

our understanding of collective efficacy when used as a measure of moral rules in settings, as, with some adaptations, it may permit astute observation of guardians' perceptions and willingness to intervene across a range of social settings interacted with as part of individual routine activity patterns. As we shall see, collective efficacy has relevance beyond the home neighbourhood as a measure of background rules and their enforcement within different settings.

Chapter 4 is structured as follows. Firstly, we consider the role and relevance of neighbourhood guardians in collective efficacy theory and when used within SAT, in order to make the analytical journey between collective efficacy as contextual causality (wider, area-level) to one used at the small-area level. After this, I discuss some of the assumptions which underpin how collective efficacy operates situationally within small-area or micro-level areas of study calling for further empirical insight and assessment. As outlined in previous chapters, there is an analytical imperative to pursue this assessment given the calls in criminology to develop policies which can increase neighbourhood collective efficacy to reduce neighbourhood crime (Ferrier and Ludwig, 2011; Sampson, Winship and Knight, 2013; Uchida *et al.*, 2015; Weisburd, Davis and Gill, 2015; Wikström and Treiber, 2017). Any increase in neighbourhood collective efficacy needs to result in an increase in social control as a situational intervention; evidence of this occurring, in practice, is however limited (Uchida *et al.*, 2015; Weisburd *et al.*, 2020). To connect these analytical dots, we therefore need to appraise the likely actions of guardians, within such settings, and their likely enforcement of social control (Oberwittler and Wikström, 2009; Groff, 2018).

Before we do so, a note on terminology. The terms 'guardians' and guardianship derive from a particular theoretical backdrop in criminology, notably routine activities theory, which explains crime events as the confluence of a suitable target, a motivated offender and the absence of capable guardians (no enforcement) (Felson and Boba, 2010; Felson, 2017). There have been advancements and refinements to the concept of guardianship in this formulation by criminologists, which provide fruitful analytical perspectives for our purposes (Reynald, 2009b, 2011a). Use of the term in this thesis refers, more simply, to those individuals within a setting who are willing to intervene and may prevent the breach of a moral rule in that setting. Use of the term guardians is for the sake of brevity - a pithier term than 'intervening social actors', for instance. The reader may wish to substitute if guardian lacks conceptual clarity.

Use of the term in relation to collective efficacy theory does not therefore carry base theoretical assumptions over to our study (such as guardianship being a control theory).

4.1 The role and relevance of neighbourhood guardians in collective efficacy

In this section, we consider how acts of social control form an important part of collective efficacy theory's explanatory power. Discussion begins by briefly outlining how social control, as a concept, has been integrated into a broad range of criminological theory and empirical studies. Then, we shall consider how the concept has been integrated into collective efficacy theory itself (Sampson, Raudenbush and Earls, 1997) and collective efficacy as a measure of moral rules and their enforcement within SAT (Wikström *et al.*, 2012). Doing so permits us to then explore some of the analytical assumptions which underpin how collective efficacy may operate in reality, by drawing from broader criminological theory and research evidence which sheds light on the role and relevance of social actors (guardians) in potentially enforcing such rules in settings. The relevance of this is important, given the limited evidence available that a successful policy increase in collective efficacy would consequently reduce neighbourhood crime. Communities – and indeed, individuals within those communities (Oberwittler and Wikström, 2009) – need to act in the hypothesised way in order for such social policies to have an effect.

4.1.1 The concept of social control in criminology

Environmental criminology, or the criminology of place, is a broad yet fragmented discipline, with extensive contributions with distinct theoretical underpinnings and, consequently, commitments to certain assumptions (see chapter 2, and also compare contributions in Bottoms, 2012; Wortley and Townsley, 2017; Bruinsma and Johnson, 2018; Wilcox, Cullen and Feldmeyer, 2018). One explanatory process which transcends a number of environmental crime theories is the concept of social control, although it has been conceptualised, defined and operationalised in different ways (Groff, 2018). The concept has a long intellectual lineage, deriving from social disorganisation perspectives, with certain neighbourhoods experiencing higher crime rates due to the lack of effective resident intervention to maintain common rules and standards in the setting (Kornhauser, 1978; Wikström, 2007; see also Bursik, 2015). As typically defined in criminology, acts of social control can include the informal surveillance of

setting activities and acts of direct intervention to prevent a crime (Greenberg, Rohe and Williams, 1981, referenced from Groff, 2018: p. 107).⁴⁸ Groff's (2018: p. 109) enlightening chapter in *The Oxford Handbook of Environmental Criminology*, highlights that a broad range of ecological crime theories either include, or have been adapted through various 'extensions' to include, the explanatory power of social control. We observe, for instance, the conceptual relevance of social control in routine activities theory, through the role of capable guardians intervening to prevent the commission of crime by motivated offenders (Hollis-Peel *et al.*, 2011; Leclerc and Reynald, 2017; Reynald, 2018). Taylor's (1988) theory of Human Territorial Functioning sets out a detailed assessment of situations when individual proclivity to engage in acts of informal social control will vary according to their relationship with different social environments. Despite this variation in definition and scope, put in the simplest of terms, acts of social control occurring in social environments are said to shape crime within a setting (Sampson, 1986; Innes, 2003; Reynald, 2009b, 2011a; Groff, 2015).⁴⁹

An *act* of social control can therefore be considered as an intervening mechanism in preventing crime or the breach of a moral rule. This can be through formal apparatus, such as state functions of control including the police and private security agents (Ruddell, Thomas and Pattern, 2011).⁵⁰ More commonly articulated, and explicitly studied, however, are acts of informal social control, with citizens in settings intervening to prevent an act of crime (Taylor, 1988; Warner, 2007; Reynald, 2011a). As such, the concept of social control has been operationalised and explained at both the community-level, with social control enhanced under conditions of mutual trust and cohesion (Sampson, Raudenbush and Earls, 1997), and at the

⁴⁸ A third dimension is also discussed here, that of 'movement governing rules', to be discussed later in this chapter.

⁴⁹ Although see (Wickes and Hipp, 2018). Social control as a concept has broad sociological definition. In criminology, the concept has also been operationalised as relating to individual's bond with conventional society, identified to vary over the life course. The stronger the bond to conventional society norms, the larger role social controls play in preventing offending (Laub, Rowan and Sampson, 2019).

⁵⁰ The study of policing in criminology forms distinct bodies of literature, which are rarely referred to as formal social control. Formal social control more broadly – that is, not as a specific intervening act – is frequently referred to in sociology, encompassing the state apparatus that controls citizen behaviours, e.g. the criminal justice system, the education system (Wikström, 2012). According to SAT research findings, however, individual moral rules are more influential than social controls and monitoring, such as from parents (Hardie, 2019; Hardie and Wikström, 2020).

individual level, with individual willingness to intervene varying person-to-person in relation to different setting factors – namely in the home neighbourhood (Reynald, 2009b, 2011a, 2018; Hollis-Peel *et al.*, 2011; Reynald and Moir, 2019) but also beyond (Taylor, 1988, 2015; Reynald, 2009b, 2011a; Fischer *et al.*, 2011; Wijaya, Roberts and Kane, 2021). Ultimately, however, there is some circularity in analytical thinking. A notion of social control measured at the neighbourhood level – a group-level property - must ultimately be put into practice by individuals within that setting (Oberwittler and Wikström, 2009). We arrive again at the issue of study aggregation when exploring neighbourhood effects.

4.1.2 The concept of social control within collective efficacy theory – collective efficacy theory and situational action theory

As identified, the concept of social control, and the actors who may enforce this, have an important role to play in criminological theory. Collective efficacy theory, as originally articulated, arguably places the process of social control central to its explanatory effect at the situational level.⁵¹ Sampson, Raudenbush and Earls's (1997) concept subsumes both measures of social cohesion and social control into a summary measure (collective efficacy) due to their high correlation perceived as tapping into related properties in the setting (Sampson, Raudenbush and Earls, 1997).⁵² However, despite this strong correlation, it is ultimately an act of intervening social control which will shape the opportunities for crime within the home neighbourhood setting (Morenoff, Sampson and Raudenbush, 2001). Social control is also said to play an important role through repeat enforcement and interactions, where individuals within the neighbourhood come to realise the common values of the community through observations (Sampson, 2006b, p. 39, 2012, p. 153). Thus, exercising social control is important in order to prevent the commission of crime, and to assert to residents of the neighbourhood the common socially-cohesive rules agreed over that locality, creating actionable expectations for the future (Sampson, 2006a, p. 39). According to Sampson (2006), social control can be 'informal', or involve the mobilisation of formal resources such as calling the police. Figure 8, below, summarises these pathways diagrammatically. At the home neighbourhood level, social

⁵¹ Collective efficacy theory is, in the main, considered to affect crime at the situational level; that is, the level of collective efficacy within a given neighbourhood affects the commission of, or opportunity for, crime to be committed in that very neighbourhood (Sampson, Morenoff and Raudenbush, 2005; Sampson, 2012, p. 159).

⁵² A finding also evidenced in earlier criminological research (see Taylor, Gottfredson and Brower, 1981).

cohesion increases the likelihood of individual acts of social control; these intervening acts therefore reduce neighbourhood crime (Sampson, Raudenbush and Earls, 1997; Sampson, 2006a).

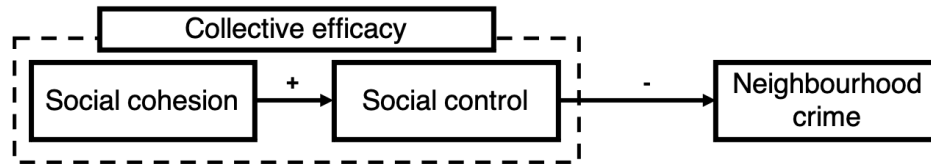


Figure 8: Diagram of Sampson, Raudenbush and Earls' (1997) conception of collective efficacy theory

This process of social control, whilst central to collective efficacy theory, does not always have a direct explanatory effect (see also chapter 2). St Jean's (2007) in-depth interviews with offenders and residents in Chicago neighbourhoods also revealed a number of themes pertinent to the impact of social control on criminal perspectives. With a research focus on crime hotspots, St Jean (2007) explored settings for different types of crime, and the nuances which shape offending patterns. Interviews with active robbers revealed that 'watchful eyes' in areas of high collective efficacy did have a deterrent effect on their offending. However, the fact that an area was particularly low in collective efficacy was not necessarily the most important consideration in attracting offenders; more prominent here was the weakness of an identified potential robbery victim (St Jean, 2007, pp. 209–209). For drug dealing, it appeared that levels of collective efficacy were somewhat uninfluential, with dealing spaces based on the ecological advantage of an area and the fertility of a profitable market, rendering the potential deterrent of intervention insignificant (St Jean, 2007, pp. 141–142).

Collective efficacy is conceived in a similar, yet distinct manner within SAT, that arguably recognises these nuances at the small-area or micro space level. As parsed in Figure 9, below, setting social cohesion is used as a measure of the content of moral rules in the setting – that which is considered right or wrong to do in that context. Social control represents the extent to which those rules are going to be enforced in the setting. Again, both concepts are highly correlated and tap into similar properties (Wikström *et al.*, 2012, p. 179).

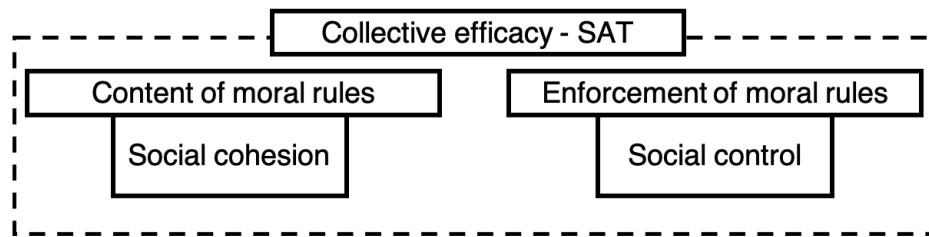


Figure 9: Illustration of Wikström et al. (2012) conception of collective efficacy theory within SAT

The centrality of social control in SAT is, however, attuned, given SAT's overarching focus on explaining crime events, or breaches of moral rules, as an interaction between individuals and social environments (settings). Here, an individual engaging in acts of social control when observing a breach of setting moral rules – or indeed, the perceived threat that such action would occur – serves to impact upon the perception-choice processes of those individuals with a high crime propensity. For those with a high crime propensity, their 'deterrence sensitivity' to the likelihood of sanction means they are less likely to offend (Wikström, Tseloni and Karlis, 2011). This 'deterrence sensitivity' may be formed through previous 'deterrence experiences', where acts of social control inform knowledge about the requisite level of collective efficacy within a neighbourhood, thus affecting the perception of viable action alternatives (Wikström, 2006, 2008; Wikström, Tseloni and Karlis, 2011). Conversely, a lack of having experienced or witnessed social control in an area of low collective efficacy may stand to support 'moral habits'⁵³ – that is, habitual offending, where 'moral perceptions' are not holistically thought through in a more considered manner as per the perception-choice processes (Wikström, 2006). Thus, the more frequent enforcement of moral rules in a setting (through high collective efficacy) may influence individual deterrence experiences and deter offending for such individuals (Wikström, 2008).

Within SAT, therefore, neighbourhood social control is an important mechanism in communicating the standard of agreed norms in a setting; but it may not explain crime purely through a deterrent or intervening effect for all individuals in a setting. For most individuals their own criminal propensity is low (their law-relevant morality is high, or if low their self-control compensates) and they do not consider crime to be an action alternative in the first place (Wikström, 2008) – even in, for instance, settings characterised by high levels of social disadvantage (Wikström and Treiber, 2016). This threat, or knowledge of the potential for,

⁵³ For a summary, see Wikström et al. (2012: pp. 19-22).

social control does not influence their decision to offend or not, but may serve to codify their assumptions of the content of moral rules that exist over the setting. Social control is not, therefore, the only aspect of collective efficacy which can explain variation in neighbourhood crime. If an individual's moral rules (content of moral rules) corresponds with those of the setting they are interacting with, they are likely to act in accordance with those rules (Wikström, 2010). Where these are law-relevant moral rules – that is, they correspond with moral rules as ascribed by law – then this agreement is suggested to lead to greater adherence and compliance with the law of a setting (country, county, state, etc). Thus, it may matter what I and others think in the setting – using collective efficacy here as a rule for compliance rather than enforcement (Sampson, 2013).

Figure 10, below, summarises these pathways for a setting of high collective efficacy.

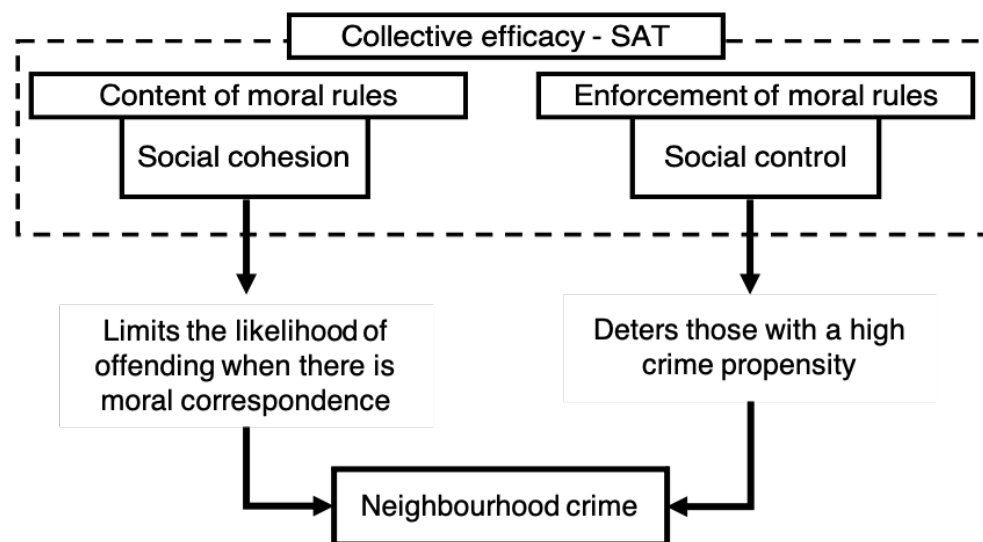


Figure 10: Diagram of collective efficacy's influence on neighbourhood crime when used as a measure of moral rules and their enforcement within SAT

Through both conceptions of collective efficacy, the role and relevance of guardians (specified to be those individuals likely to enforce moral rules, i.e., social actors) carries explanatory weight in explaining crime. Whilst social control is attuned in SAT, as being more influential to those with a high crime propensity, it nonetheless continues to have an important role – both through interventions, but also through the maintenance of moral rules in a setting. Despite the centrality of social control in collective efficacy research, however, the extent to which neighbourhood residents would actually intervene when called upon (when observing a breach of moral rules) has to be assumed (Wikström, 2007). There is little by way of empirical research

which has shed light upon this assumption (although see St Jean, 2007; Sampson, 2012; Volker *et al.*, 2016). There is an important need, therefore, to understand when social actors will actually intervene when called upon to do so, and the factors which may shape and influence this willingness within collective efficacy theory at the small-area level. This is especially so in light of policy interventions calling for the increase of neighbourhood collective efficacy to reduce neighbourhood crime (Uchida *et al.*, 2015; Wikström and Treiber, 2017).

4.1.3 The assumption of social control mechanisms

Whilst collective efficacy theory has broad empirical support in accounting for variations in neighbourhood crime, we see that a number of assumptions underpin how, exactly, social control operates in reality. The question remains that when residents say that their neighbours *would* intervene, that they *will* when required to do so. Whilst widely cited, little has been done to empirically explore these assumptions further in collective efficacy research (St Jean, 2007; Wikström, 2007, p. 340; Wikström *et al.*, 2012, p. 179; Sutherland, Brunton-Smith and Jackson, 2013; Volker *et al.*, 2016). In this section, I theoretically consider factors which question the likelihood that residents may actually intervene, as guardians, in settings of high collective efficacy.

4.1.3.1 The association between social cohesion and social control

In collective efficacy theory, increases in levels of neighbourhood social cohesion are said to foster acts of community social control (Sampson, Raudenbush and Earls, 1997; Morenoff, Sampson and Raudenbush, 2001; Sampson, 2006a). Collective efficacy theory unifies the concepts of social cohesion and social control owing to their high correlation observed in many empirical studies conducted around the world (Sampson, Raudenbush and Earls, 1997; Sampson and Raudenbush, 1999; Silver and Miller, 2004; Sampson and Wikström, 2008; Wikström *et al.*, 2012; Burchfield and Silver, 2013; Gerstner, Wickes and Oberwittler, 2019). Both concepts are considered to therefore tap into similar properties of settings relevant to explaining willingness to intervene.

Some empirical studies utilising community survey methods, albeit with moderately adapted survey scales of social cohesion and social control, have however found significant yet weak

correlations between these two concepts (Zhang *et al.*, 2002; Wickes *et al.*, 2013; Warner, 2014, p. 425; Uchida *et al.*, 2015, p. 57) leading some to conclude that both these factors – and their purported influence on crime – should be considered distinctly (Taylor, 2002b; Rhineberger and Carlson, 2012; Warner and Clubb, 2013; Gau, 2014; Groff, 2015, 2018). Gerstner, Wickes and Oberwittler (2019: p. 4) note how some scholars consider both of these concepts to be ‘shaped differentially by respondents’ experiences and perceptions and by social processes within communities’, demonstrating how the relationship between social cohesion and social control may operate distinctly at the individual and neighbourhood level of analysis. We observe evidence of this in existent literatures: by way of example, Warner (2007, p. 7) found that whilst measures of social cohesion and trust decreased ‘indirect’ individual informal social control, such measures had no significant effect on ‘direct’ social control - the former measuring the extent to which respondents would mobilise formal authority to deal with issues; the latter, where respondents would engage directly with a neighbour to resolve an issue. Furthermore, in their structural equation modelling of collective efficacy survey data from Seattle, USA, Matsueda and Drakulich (2016) identified that respondents’ assessments of neighbours’ willingness to intervene (in relation to scenario scales of children committing infractions) were associated with them having observed previous acts of child deviance in the past. The authors conclude this finding to be consistent with the ‘cognitive model of survey response’ – that is, when asked such questions, respondents think back to experiences of having witnessed such behaviours and the responses of their neighbours (Matsueda and Drakulich, 2016: p. 220-221).

Similar findings have confirmed an individual to neighbourhood level distinction, identifying neighbourhood social cohesion as unrelated to an individual’s own willingness to intervene, but nonetheless enhancing respondents’ perceptions that their neighbour would intervene (Gau, 2014; Wickes *et al.*, 2017). This may therefore shed light on the reasoning behind the typical strong correlation observed between the two variables. The type of crime respondents may intervene in to prevent within the home neighbourhood may also be of influence, with social cohesion related to interventions to control the behaviour of neighbourhood children, but not associated with interventions in response to violent crime (Wickes *et al.*, 2013).

This conceptual split questions whether conditions of social cohesion, at the home neighbourhood level, are therefore needed to encourage acts of informal social control at all (Groff, 2018). After all, the association between cohesion and control is a correlation which

does not, of itself, indicate a direction of causal influence (Hipp, 2016a). Longitudinal collective efficacy research has identified an enduring influence of collective efficacy over time, with perceptions of neighbourhood collective efficacy (unified concept) at one time period predicting willingness to intervene at another time period (Hipp and Wickes, 2018). That said, in this study no longitudinal effect between willingness to intervene and violent crime was observed, questioning if this perceived willingness to intervene translates into actual interventions on the ground (Wickes and Hipp, 2018).

The association between the two concepts is therefore empirically supported (in the main) but not yet fully understood. Scholars who consider the two concepts separately often identify neighbourhood social ties to be a more significant predictor (Taylor, 2002b; Mazerolle, Wickes and McBroom, 2010; Wickes *et al.*, 2017). In the task-specific instance of collective efficacy – to intervene and prevent crime – this however assumes that social ties are always pro-social in nature (Sampson, 2012). As identified above, within SAT, social cohesion is used to measure the content of moral rules within the setting. The theory does however accept that the association between cohesion and control means that the two concepts are interconnected (Wikström *et al.*, 2012, p. 179). This distinction may however be helpful to the relevance of social control in this relationship. Hypothetically, a neighbourhood with agreed moral rules may be more likely to intervene to enforce and maintain them; and this agreement as to the content of the rules is likely informed by some degree of mutual trust and social cohesion amongst residents (Sampson and Raudenbush, 1999). Social cohesion may, therefore, be a cause of a cause – a factor which predicts the formation of commonly agreed moral rules in the setting. Figure 11 illustrates this subtle distinction. Ultimately, an empirical measure of social cohesion may capture and represent the nuance of this point, but it is a relevant consideration when we assess social control and guardian action beyond the home neighbourhood context.

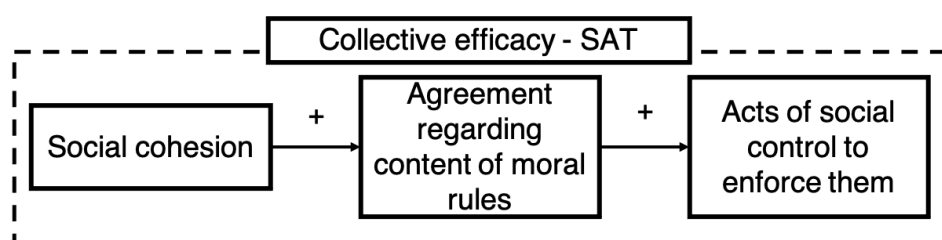


Figure 11: Illustration of the potential influence of social cohesion as a ‘cause of a cause’ in SAT’s use of collective efficacy

4.1.3.2 *The assumption that individuals will intervene, and how*

One assumption which underpins the social processes of collective efficacy theory is that when residents state that they would intervene (in the community survey) that they will actually do so (act as a guardian) when required (observing a breach of a moral rule) (Wikström, 2007; Wikström *et al.*, 2012, p. 179). As outlined above, the density and cohesion of social ties does not stand to prevent crime; rather, crime is prevented through the act of guardians exercising social control (Morenoff, Sampson and Raudenbush, 2001) or through individual moral rules corresponding with those of the setting (Wikström, 2010). Sampson (2008, p. 39) highlights how social control, as actioned through repeated neighbourhood interactions, assists individuals in realising and understanding what the common rules and values of the community are (Sampson, 2012, p. 153). Thus, exercising social control is important in asserting to guardians the common socially-cohesive rules agreed over that locality, which creates actionable expectation of their intervening behaviour in the future (Sampson, 2006a, p. 39). In other words, social control serves to convey to residents the content of moral rules, commonly agreed, over a locality.

It is interesting to note, however, how ‘repeated interactions’ and interventions said to enforce and realise common community values will be observed, when in neighbourhoods of low crime (and so high collective efficacy) they are admittedly not required (Sampson, 2006a, p. 40). Owing to the ‘fundamental unobservability of the capacity for control’, collective efficacy concepts tap into an expectation that neighbours will intervene when called upon to do so (Sampson, 2006a, p. 40; Wikström, 2007, p. 340). The empirical measure of collective efficacy therefore extrapolates from survey vignettes based around neighbours’ willingness to intervene in relatively minor infractions – such as when young people skip school, or someone spray paints graffiti – yet then goes on to explain variations in violent crime rates (Sampson, Raudenbush and Earls, 1997). As observed, the task-specific nature of collective efficacy interventions can vary by the breach of moral rules challenged (Wickes *et al.*, 2013). Scholars have therefore questioned whether those who live in low crime neighbourhoods (and so, high collective efficacy) are best placed to judge the potential response of their neighbours, without the experience of regularly having to tackle such crimes or breaches of moral rules (St Jean, 2007, p. 55; Hipp, 2016a). They may, for instance, lack feedback on the utility, or futility, of

their social control responses (Weatherburn and Lind, 2001; Bottoms, 2006, p. 268; Richardson, 2006; Steenbeek and Hipp, 2011). A point supported by the finding of reciprocal feedback effects of neighbourhood crime in suppressing collective efficacy (Sampson, Morenoff and Earls, 1999; Sampson and Morenoff, 2004; Sampson, 2006a, p. 159; Hipp and Wickes, 2018) – that crime can be challenging for communities to tackle and suppress.

Even within the context of strong neighbourhood social cohesion, judging the extent to which a neighbour may be willing to intervene is recognised as a difficult opinion to inform, (Warner, 2014), with neighbourhoods varying in the extent to which respondents agree on the level of collective efficacy itself (Brunton-Smith, Sturgis and Leckie, 2018). A misperceived notion of community moral rules and/or values can also hamper willingness to intervene: disparities between perceptions of community values and one's own values – for example, when residents' values actually coincide with their neighbours', but are misinterpreted not to – has been found to suppress respondents' own willingness to intervene in settings (Warner and Burchfield, 2011, p. 624). In conducting prior statistical testing on community survey data, Oberwittler and Wikström (2009, p. 49) found 'at best satisfactory' intraclass correlation coefficient (ICC) lambdas⁵⁴ of .61 for measures of 'informal social control', as compared with .75 'very good' lambda result for 'social cohesion/trust'. Resultantly, respondents within UK OAs were more likely to agree on the level of social cohesion within a neighbourhood as compared to their perceptions of neighbours' willingness to intervene through social control (Oberwittler and Wikström, 2009, pp. 49–50).

Given the noted difficulties, empirical research in this area has therefore sought to consider the distinction between perceptions of neighbour social control and acts of individual social control, as an insight as to what residents may do themselves as compared to their perceptions of neighbours (Warner, 2007; Warner and Burchfield, 2011; Gau, 2014; Groff, 2018; Hipp and Wickes, 2018; Moir *et al.*, 2019, 2021; Reynald and Moir, 2019). This therefore shifts the analytical focus from one of a neighbourhood effect (perceptions as to what neighbours would do) to one situated within individuals (what would one member of that neighbourhood, as a survey respondent, do). Such research has generally found that differences between perceptions of what neighbours will do as compared to what individual respondents would themselves do

⁵⁴ These lambdas refer to the results weighted by the number of respondents within an ecological unit (in this case, Census OAs).

when observing breach of neighbourhood rules (Warner, 2007; Warner and Burchfield, 2011; Gau, 2014). This indicates that people may not actually intervene in settings when required. Steenbeek and Hipp's (2011) study distinguished between the two types of social control measures as (i) feelings of responsibility for the neighbourhood and (ii) actual social control activity. Using a longitudinal sample of 37,637 respondents nested within 74 neighbourhoods over 6 community survey waves (1996, 1998, 2000, 2002, 2004, 2006), they observed that, notwithstanding neighbourhood cohesion, those respondents who said that they had engaged in action to improve the liveability or safety of the same neighbourhood were predicted to have a higher income and to be residing in a neighbourhood with low population turnover (Steenbeek and Hipp, 2011). Thus, individual acts of social control may be influenced by neighbourhood-level and individual-level factors.

Some scholars have sought to move beyond or supplement use of the community survey methodology (Sampson and Raudenbush, 1999) to assess willingness to intervene more distinctly. Reynald's (2009a, p. 4) conceptual development of a 'four-stage model of guardianship intensity' specifies the potential deterrent and intervening social processes which derive from guardianship activities. A small research team conducted systematic social observations of 814 properties in The Hague, Netherlands, between the hours of 09:00 and 18:00. This was done in order to determine differences between 'invisible', 'available', 'capable' (available, present, and capable of supervision) and 'intervening' neighbourhood guardians (willing to actively intervene). Direct interventions were coded in settings where a member of the research team was challenged or questioned when conducting observations (Reynald, 2009b, 2009a). They found that as guardianship intensity increased (invisible through to intervening) levels of police-recorded property crime decreased (Reynald, 2009b). Interestingly, however, the difference between the presence of 'capable' and 'intervening' guardians on crime was non-significant, indicating that the visual presence of residents acted to deter offenders before an active willingness to intervene was required (Reynald, 2009b). Similar supportive findings have further been found in comparisons with the USA (Hollis-Peel *et al.*, 2011), lending support to the idea that a willingness to intervene, rather than a direct intervention, can be sufficient in deterring crime.

Further support for the likelihood of guardianship behaviours derives from a number of lost letter experiments tied to collective efficacy neighbourhood research. Lost-letter experiments are a well-established method, used to explore a wide range of human responses and social

dynamics in social sciences (Sampson, 2012, p. 217). As typically employed, stamp-addressed envelopes are effectively ‘lost’ (dropped in neighbourhoods) forcing passers-by who notice the letter on the pavement to make a choice: either (i) ignore the letter and continue walking past; (ii) pick up the letter and keep it/dispose of it; or (iii) post the letter into a post box in order to send it on to the supposed recipient. The ‘recipient’, unbeknownst to the individual who picks up the letter, is the researcher. This then allows a ‘return rate’ (or posted-on rate) to be gathered, representing the proportion of letters dropped in pre-defined geographical areas (e.g., a street or neighbourhood) received back by the researcher. This ‘rate’ can then be utilised to explore a whole range of situational dynamics and processes. Namely, studies have used the technique to explore prejudices or viewpoints on certain groups by varying addressee or envelope details (Milgram, Mann and Hartner, 1965; Kremer, Barry and McNally, 1986; Levinson, Pesina and Rienzi, 1993; Bridges *et al.*, 2002; Ahmed, 2010), often finding no effect (Koopmans and Veit, 2013). In criminology, the method has also been used to consider the situational dynamics of theft, by including varying sums of money in envelopes (Farrington and Knight, 1979) or lost items such as keys or computer USB sticks (Lastdrager *et al.*, 2013).

In Sampson’s (2012) book, *Great American City*, he utilises this technique to explore a new neighbourhood social process - neighbourhood social altruism. Alongside CPR data, he uses the act of posting-on a lost letter as an indication of considerate, other-regarding community social processes in the setting (see also Holland, Silva and Mace, 2012; Sampson, 2012, pp. 210–223). These altruistic properties align with some of the survey vignettes in collective efficacy research, as to whether ‘people around here are willing to help their neighbours’ and if they ‘can be trusted’, with the act of returning a lost letter tapping into properties of neighbourhood social cohesion and social control in actively returning a letter (Sampson, 2012; Wikström *et al.*, 2012, p. 179). Sampson (2012, p. 231) suggests that individuals who ignore and do not return lost letters may be said to act under a ‘veil of ignorance’, and therefore hold a common disregard for agreed community values (in other words, non-enforcement of moral rules). PHDCN researchers therefore dropped a total of 3,300 letters throughout Chicago during the first interview wave in 1995. In later analysis, Sampson (2012, p. 231) observed a significant and moderate correlation between area-level return rates and the requisite level of collective efficacy within neighbourhoods ($r = .41, p < 0.01$).⁵⁵ Lost letter returns were both

⁵⁵ The correlation quoted was conducted using a mean collective efficacy scale from two waves of the community survey in 1995 and 2002 (see Sampson, 2012, p. 225).

significantly correlated with social control, at .32, and more notably with social cohesion, at .60, indicating neighbourhood social cohesion to be more directly related to letter returns than social control (Sampson, 2012, p. 225). Interestingly, a similar field experiment in the Netherlands with a substantially higher average return rate,⁵⁶ observed that expectations of social control were a stronger driver of letter return rates than measures of social cohesion across all settings studied (Volker *et al.*, 2016, p. 16).⁵⁷

Of course, intervening to post on a lost letter is qualitatively different to intervening to prevent an act of crime. Nonetheless, it represents an act which shores-up and maintains the moral rules of a setting – that is to say, it is the enforcement of a neighbourhood norm to be other-regarding, to look out for one's neighbours. The act may of course be from visitors to the settings, rather than residents. Nonetheless, the observational and field experiment findings from above support the idea that residents will intervene when required. This will likely vary however in specific instances. Further research is therefore required.

Even if residents do intervene when called upon, any policy prescriptions need to account for the type of social control response employed. Research has identified a preference of residents in areas of high collective efficacy to activate formal social control – such as calling the police, contacting local authorities - to achieve neighbourhood aims, seeking to distance themselves from active or direct involvement (Warner, 2007; Wickes, 2010). If there is a preference for public social control where the stakes of intervention are higher, then perceived legitimacy, quality, and responsiveness of the police has been shown not only to affect the willingness of residents to make calls for police services (Sampson and Bartusch, 1998; Carr, Napolitano and Keating, 2007; Zahnow *et al.*, 2017) but also to increase their willingness to intervene directly by exercising informal social control (Silver and Miller, 2004; Bottoms, 2006, p. 269; Kochel and Weisburd, 2012; Sargeant *et al.*, 2021). However, mobilising these more formal processes, as a means of control, seemingly depends on the resources available to neighbourhoods in the first place – resources, and the social capital to sustain those, more likely to be found in neighbourhoods with high collective efficacy (Weatherburn and Lind, 2001; Wikström and Sampson, 2003, p. 128; Myhill, 2012). One collective efficacy policy intervention which

⁵⁶ Around 70% of letters returned, compared to around 1/3 across Chicago.

⁵⁷ Other studies have observed that return rates tend to be higher in more affluent neighbourhoods (Leigh and Leigh, 2018).

sought to increase neighbourhood collective efficacy identified greater calls for police services during the intervention period, adding weight to the idea that residents may not directly intervene themselves but instead prefer to mobilise formal resources (Weisburd *et al.*, 2020).

From the discussion above, it is safe to say that the pathways through which social control are predicted to prevent crime may be affected by a number of considerations. We would suspect that the exercise of social control stands to prevent the commission of a crime; however, we know that in low crime neighbourhoods, such interventions are unlikely to occur due to the lack of need. This leaves a margin of ambiguity between what we perceive our neighbours to do, and both what they, and indeed we, would do if called upon to act. But if control is not necessarily required, how do would-be offenders perceive the propensity for intervention, which thus deters them from committing crime in such neighbourhoods, in the first place?

4.1.3.3 Willingness to intervene and temporal influences of space and time

The forgoing discussion has focused on acts of social control within survey respondents' home neighbourhoods. Respondents' assessments of home neighbourhood life provide 'informant' insights into the social life of that setting (Raudenbush and Sampson, 2002). Collective efficacy, in this context, represents the likely intervening social processes as and when they are required. Research in the guardianship field, which seeks to explore further the situational influences which shape interventions, also mostly focuses on the home neighbourhood setting as the context for action (Reynald, 2009b; Reynald and Moir, 2019). Collective efficacy research therefore represents a snapshot of the neighbourhood, treating the level of collective efficacy to be a static over a 24-hour period. The presence of individuals within a neighbourhood is not however constant; such settings are also influenced by the movement, or turnover of people within them (Sampson, Raudenbush and Earls, 1997; Wikström *et al.*, 2012, p. 294). We know, for instance, that a high resident population turnover in a neighbourhood can predict low collective efficacy (Sampson, Raudenbush and Earls, 1997; Sampson, Morenoff and Earls, 1999). Arguably, this is accounted for. However, residents themselves are not permanently in their homes – a guardian has to be 'available' to then intervene (Reynald, 2009a, 2009b). This could be through a neighbourhood guardian (resident of a high collective efficacy setting) leaving that setting for work, or to go to the supermarket; their presence in that setting could then be replaced by an individual from another neighbourhood coming into

that setting, walking their dog, or going for a run. Thus, as people vary in their routine activity patterns (Brantingham and Brantingham, 1981; Brown and Altman, 1981; Brantingham and Brantingham, 1993; Brantingham, Brantingham and Andresen, 2018) so does, as a consequence, setting collective efficacy, with different types of people ending up in different types of places (Wikström *et al.*, 2012). Whilst selection effects often place certain kinds of people in certain kinds of places (Wikström and Treiber, 2019), the point here is that collective efficacy may not be a static concept and may be influenced by the temporal features of other patrons in settings. Empirical evidence highlights that people often choose to avoid certain settings due to previous negative experiences, favouring areas with similar moral rules to their own (Anderson and Dobbie, 2008; Innes *et al.*, 2009, p. 107). Thus, the concept is measured at the neighbourhood level, but is ultimately dependent upon the people being within that setting to reinforce it.

When using collective efficacy within SAT, however, it is important for researchers to also consider the contextual effect of moral rules when interacting with different settings beyond the home neighbourhood. It has been suggested, for instance, that the routine activity patterns of residents visiting different settings can contribute to variations in willingness to intervene or appraise an area – for example, one can only be an influential guardian in a park (within a setting of high collective efficacy) if guardians regularly patronise such spaces (Wikström *et al.*, 2012, p. 294). Being within your home neighbourhood area is only one aspect of social life; we routinely make use of and visit different settings throughout our daily routines (Smith, Phillips and King, 2010). In some studies, the presence of ‘passive guardians’ has been used as a proxy measure for deterrence (Hipp, 2016b, p. 666), identifying some individuals within a setting as being a ‘guardian’ of it. Being present within a setting does not, however, mean one will be a guardian of place (Taylor, 1988). In fact, busier urban settings have been found to be more conducive to certain types of crimes regardless of area collective efficacy, offering an ‘ecological advantage’ to crime by legitimising the presence of a would-be offender so they do not look ‘out of place’ (St Jean, 2007). Not only does this finding question the constancy of collective efficacy, but also the variation in individual willingness to intervene across different settings patronised. In an Australian study of ‘incivilities’ (minor infractions, anti-social behaviour) as defined by survey respondents (their own definition of incivilities and, therefore,

a breach of their own moral rules) 64.6% of the sample⁵⁸ responded to say that they did not intervene in response (Smith, Phillips and King, 2010, p. 71). Hipp (2016b) sums up this point succinctly:

‘Less considered is that a person may vary in the degree to which he or she is willing to act as a guardian depending on location: Whereas a person may be very willing to act as a guardian near his or her home or neighbourhood, an individual may be less willing to do so at other locations (e.g. near work, at a shopping centre, or while on vacation). Given that theories such as collective efficacy also posit a contextual effect in which persons’ willingness to act as guardians will differ depending on their sense of the attitudes of others in the location, willingness to act as a guardian will not simply depend on one’s personal characteristics but also on the characteristics of the surrounding environment. Thus, the question is whether for any location and time will a person act as a guardian?’

Hipp (2016b, p. 665)

The use of collective efficacy as a measure of moral rules and their enforcement highlights the potential for a contextual guardianship effect. If those with a high crime propensity interacting with a setting are assumed to perceive the level of collective efficacy, then do potential guardians do the same? As we explored, some authors question whether social cohesion is in fact needed to foster acts of social control, considering the concept of social control to be more mechanistic than contextual (Groff, 2018). SAT posits that the ownership guardians feel over such space may influence intervening decisions – for example, whether public green space falls to others to safeguard in comparison to the immediate area closer to home, even if both fall within a respondent’s conception of their neighbourhood (Wikström *et al.*, 2012, p. 294). Alternatively, a potential contextual effect on guardianship practices may derive from individual perceptions of moral rules in the setting visited, and the likelihood that they will be enforced. It is currently unclear the extent to which these perceptions of moral rules, even if accurate, would then encourage respondents’ own willingness to intervene within that setting (Hipp, 2016b; Moir *et al.*, 2019). In a recent study, researchers found that the level of collective efficacy within a setting had no effect on the willingness of survey respondents to engage in

⁵⁸ Total sample 1621 Australian adults (Smith, Phillips and King, 2010, p. 16)

informal social control when witnessing a breach of COVID-19 regulations (Sargeant *et al.*, 2021). The novelty of this situation may not however represent the daily realities of moral rules enforcement, given that COVID-19 regulations were quickly introduced in many instances. Such rules were not long-standing norms unique to a particular setting, but implemented across contexts through national legislation (Galbiati *et al.*, 2021).

Research contributions in psychology and criminology do shed light on the extent to which individuals will intervene when interacting with different settings, identifying variation in approaches. A branch of psychology, known as bystander intervention research, often introduces social experiments on university students (in laboratory settings) to gauge the willingness of ‘bystanders’ to intervene in a specified situation (Darley and Latane, 1968; Latane and Darley, 1968; Brickman, 1971).⁵⁹ Such experiments and findings inductively produced a theory called the ‘bystander effect’, or the diffusion of responsibility thesis, arguing that as the number of bystanders in a setting increases the personal responsibility of individual bystanders to intervene decreases (Darley and Latane, 1968; Ross, 1971). Much of this work has faced a replication crisis, with more recent studies noting interventions to occur more frequently than previously articulated. A recent meta-analysis of 105 bystander intervention studies found willingness to intervene was attuned where situations were perceived to be dangerous, where perpetrators of acts were present in the setting, and where interventions required physical rather than non-physical intervention (Fischer *et al.*, 2011). New innovative methods, such as the assessment of CCTV footage have more recently been used to study bystander intervention process; these methodologies have been developed by the Video Violence Group, co-based at the University of Copenhagen and the Netherlands Institute for the Study of Crime and Law Enforcement (NSCR). The bulk of this research identifies that social interventions occur more frequently in practice than has previously been suggested. This research strand moots the benefits of ‘naturalistic observations’ in bystander research, as compared with previous experimental research designs, as a way to boost the empirical research evidence base (Liebst *et al.*, 2021). In one study assessing CCTV material in the UK, Netherlands, and South Africa, researchers found that in nine out of ten public conflicts occurring in a setting, at least one bystander, typically several, intervenes in that setting

⁵⁹ This has been popularised in the American TV show, ‘What would you do?’, where actors stage social experiments in different live settings to capture people’s reactions. See <https://abcnews.go.com/WhatWouldYouDo> (date accessed 12/03/2020).

(Philpot *et al.*, 2020). The presence of other bystanders in the setting was also associated with an increased chance of interventions, challenging previous research findings in this field (Liebst *et al.*, 2019, 2021; Philpot *et al.*, 2020). The risk of individual bystander victimisation, as a consequence of intervening, was also observed to be very low – of the 417 observed intervening bystanders, 3.6% were identified to have been physically harmed (Liebst *et al.*, 2021). Other contributions have considered the scope of what an ‘intervention’ may be in these social situations, expanding this to include acts which involve taking care of or shielding victims in violent encounters (Bloch *et al.*, 2018: p. 1065).

Whilst these studies support the notion that people will generally intervene when required, they fail to consider the broader contextual effect of moral rules that may exist within such settings. For instance, where the kind of behaviours which the researchers think should be challenged in the setting are not routinely challenged or not perceived to be a breach of moral rules in that setting. Thus, the focus on individual-level factors shaping intervention omits to consider a potential neighbourhood-level influence or effect shaping intervening practices (Gerstner, Wickes and Oberwittler, 2019).

An arguably under-researched area in criminology which considers this is the work of Ralph Taylor’s and his Human Territorial Functioning (HTF) theory (Taylor, Gottfredson and Brower, 1981; Taylor, 1988; Taylor *et al.*, 1995). In his book, Taylor (1988) sets out to examine how people ‘manage’ and ‘maintain’ rules in different locations which they either own, occupy, or use for different periods of time. In exploring the territorial cognitions and tendencies of people, he sets out a ‘Centrality Continuum’, specifying the likelihood of individual territorial functioning (i.e., likely willingness to intervene) across different settings. HTF is highest (i) within a household, then (ii) in a residential neighbourhood setting adjacent to one’s property. HTF then reduces for (iii) regular used, role-specific settings such as workplaces, and is finally lowest for (iv) transient, temporary settings such as (examples given by Taylor) a seat in a library, or in a restaurant (Taylor, 1988, p. 11). Thus, a ‘home range’ operates in estimating willingness to intervene outside of the home neighbourhood setting, with interventions reducing as one travels further away from their home neighbourhood where, through aspects of social cohesion, residents are more likely to intervene and feel attachment to place (Taylor, 1988, p. 97). Public settings – such as on public transport, post offices, shopping centres, etc – are therefore the focus of minimal HTF, with people having a spatially and temporally limited ‘claim’ when using such settings (Taylor, 1988, chap. 10). The most likely exercise of HTF in

such spaces may be through ‘co-protectors’ who are formally in charge of watching such spaces, represented by formal social control sources (Taylor, 1988, p. 238).

Taylor’s HTF therefore provides insightful theoretical analysis of the factors which may reduce individual willingness to intervene away from the home neighbourhood. Generally, acts of social control are considered to be less likely when individuals travel further away from home settings and interact with environments where they have a fleeting presence for certain designated activities. However, social environments vary not just in their relationship to the individual, but also with regards to the moral rules and their enforcement across these settings. As Hipp (2016) notes, variation in collective efficacy also provides a contextual effect which may influence these perceptions. This is a factor which is largely omitted in HTF and bystander intervention research when conducted outside of the home neighbourhood. Thus, rather than the nature of the setting itself (pertaining to the individual), might the moral rules of that environment also shape intervening practices? Figure 12, below, summarises the reduction in willingness to intervene by the type of setting, as set out in Taylor’s (1988) HTF framework.⁶⁰

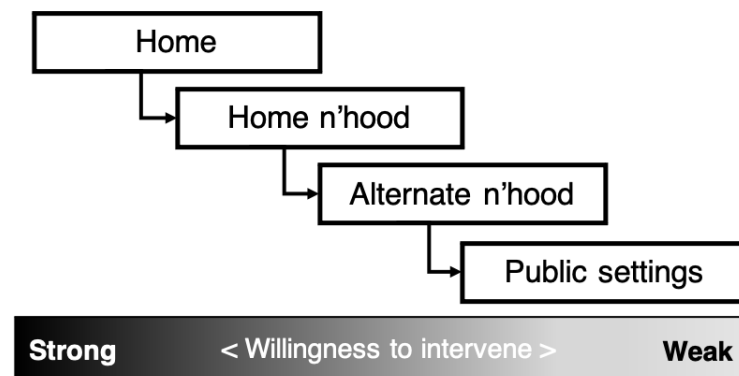


Figure 12: Illustration of how HTF explains variation in willingness to intervene across different settings

Figure 13 considers the same variation but puts setting collective efficacy (moral rules and their enforcement) central to the explanatory framework. Instead of the specific nature of the setting predicting willingness to intervene, the existing level of collective efficacy may, instead, have a conditioning effect on willingness to intervene – it mattering what I and others think in this context (Sampson, 2013). In order to interpret the moral rules, however, the

⁶⁰ This is a surface-level summary; the book is packed with analytical nuance. Hypotheses are not however tested, making it complex to relay in full here.

guardian must be able to perceive them. The dashed line therefore represents the guardian's perception of collective efficacy within that setting, which then shapes their willingness to intervene.

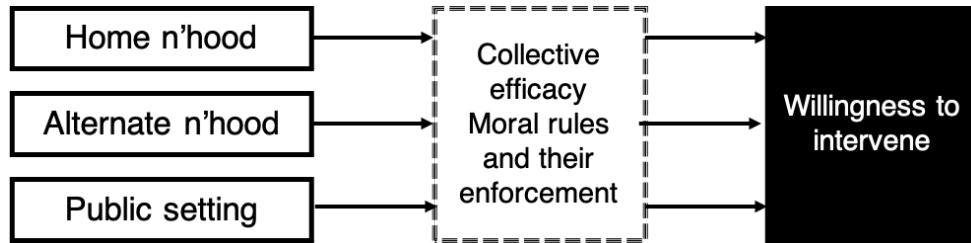


Figure 13: Illustration of how collective efficacy (within SAT) may explain variation in willingness to intervene across different settings

Given the limited scholarly contributions to interventions outside of the home neighbourhood, it is difficult to identify which model provides a more convincing account of guardianship practices. There are merits of both models which require further empirical exploration. It is plausible, for instance, that a personal connection be required with the setting in order to enhance one's guardianship over it; in other settings, however, knowledge of or a perception of the moral rules of that setting may be more influential in shaping intervention (Horne and Mollborn, 2020). In a setting with low collective efficacy, the costs of intervention may be higher to the individual, supressing this social process (Bottoms, 2006). Collective efficacy was found to have less of an explanatory effect on crime within city and local commercial centres (Wikström *et al.*, 2012), indicating that the moral rules in such settings may be less recognisable due to the turnover of people in these spaces.

Current explanations for interventions outside of the home neighbourhood are therefore unclear. However, I argue that collective efficacy theory as used within SAT may offer us an opportunity to explore the contextual influence of moral rules on intervening social processes further. In order to do so, however, we need to further understand how individuals can perceive setting collective efficacy – again, another assumption in how the theory currently operates.

4.2 The perception of moral rules shaping behaviour

If moral rules and their likely enforcement are informed by neighbourhood social cohesion and repeated interactions within the home neighbourhood setting (Sampson, 2006a, 2012) how do guardians perceive collective efficacy in settings where they perhaps have less familiarity? The

extent to which a visitor to a setting can perceive the level of collective efficacy is largely assumed and currently understudied in collective efficacy research, and ecological criminology more broadly (Wikström, 2007). For would-be offenders (those with a high crime propensity) these perceptions ultimately matter for shaping decisions to offend and setting deterrence. However, for individuals visiting a setting and potentially acting as a guardian, there is limited theoretical and empirical research to draw upon. Given the live and varied social dynamics of urban life, we therefore need to consider if neighbourhood collective efficacy can ultimately be perceived by other actors (potential guardians) within a setting.

4.2.1 Criminological insights – neighbourhood disorder

Much criminological work in this area uses the home neighbourhood as the locus of perceptions. A recent study has sought to tap into these individual-level perceptions of collective efficacy as compared to neighbourhood-level assessments. Its authors looked at the distinction and impact on individual offending, between what they termed subjective collective efficacy (that is, individual-level offender perceptions) and objective collective efficacy (that is, measures from community surveys) in respondents' home neighbourhoods (Chouhy and Unnever, 2020). The authors found that subjective collective efficacy predicted respondents' violent offending,⁶¹ rendering objective collective efficacy (at the neighbourhood level) non-significant (Chouhy and Unnever, 2020, p. 19). These perceptions were, however, based at the home neighbourhood level, and likely represent informant knowledge akin to the typical ecometric method rather than an inductive perception of a setting during an interaction. The findings are nonetheless insightful in shedding light on the assumption that collective efficacy can be perceived across age groups, albeit at the home neighbourhood level.

Visual cues about an area's collective efficacy are often focussed on facets of low collective efficacy. One example of this is the prevalence of neighbourhood disorder, an aspect of a setting which can be readily observed (physical presence of it in a setting). Disorder, as conceived, can be both 'social', such as a setting containing 'panhandlers, drunks, prostitutes, loiterers...', and/or physical, such as litter, graffiti, and even abandoned vehicles (Kelling and

⁶¹ 88% of which occurred within the home neighbourhood, indicating that these neighbourhood units were large in scale (Chouhy and Unnever, 2020, p. 17).

Wilson, 1982). The well-known ‘broken windows’ theory submits that the decline in urban environments from these visible infractions and incivilities accumulate to offer visual insight to would-be offenders about the relative carelessness and indifference of residents who inhabit these neighbourhoods (Kelling and Wilson, 1982; Skogan, 1990). Whilst the theory is largely now debunked, with findings that disorder does not directly precede crime (Sampson and Raudenbush, 1999, 2004; Taylor, 2001; Zimring, 2012) the notions explored are nonetheless informative from our perspective in attempting to understand how levels of collective efficacy (care/carelessness of the neighbourhood, through the enforcement of moral rules) may be indicated to and perceived by visitors to a setting. Empirical research findings generally reveal physical disorder to be associated with low collective efficacy. In their innovative study, Sampson and Raudenbush (1999) conducted a systematic visual analysis of over 23,000 street segments in 196 Census tract neighbourhoods across Chicago. Combining video camera footage along with records of direct social observations (by car), the research team compiled scales of both physical and social disorder, recording the presence of graffiti, garbage, needles and syringes, prostitutes, people drinking on the street (Sampson and Raudenbush, 1999, p. 644). Their findings revealed that neighbourhoods high in collective efficacy predicted lower levels of recorded disorder after controlling for concentrated poverty and mixed land use features (Sampson and Raudenbush, 1999, p. 637).⁶² Wikström et al. (2012, p. 198), using much smaller ecological units, further found a strong correlation between collective efficacy and their community survey measures of neighbourhood disorder ($r = .77, p = .000$). This finding was measured by residents’ own perceptions of disorder in the same community survey as their perception of neighbourhood collective efficacy (Wikström *et al.*, 2012, pp. 186–188). From a guardianship perspective this is interesting to note: residents acknowledged the presence of such incivilities, yet ultimately perceived a lack of willingness to challenge these in their own neighbourhoods.

Despite this association, scholars have sought to further theorise how individuals perceive social disorder in their home neighbourhood setting. Sampson (2009a, p. 14) develops a ‘social structure of perceiving disorder’ model, which argues that perceptions of disorder are informed by both ‘objective’ and ‘subjective’ insights: these can be visual cues of ‘trash, graffiti, abandoned cars and buildings’, etc, but also that the racial, ethnic, and class composition of

⁶² An average of 120 street segments were aggregated into each census tract neighbourhood.

neighbourhoods are relevant to individual respondents' perceptions of disorder (Sampson, 2009a, p. 16). In comparing their SSO of 'objective' assessments of disorder (Sampson and Raudenbush, 1999) with community survey data on perceptions of disorder and interview data with key community informants, they identified that a neighbourhood's racial, ethnic and class composition were more powerful predictors of perceived disorder as compared to their SSO measures (Sampson and Raudenbush, 2004). For example, white residents perceived more disorder than Black, Latino and Asian residents, even where they lived in the same neighbourhood (Sampson, 2009a, p. 19). The reasons for these differences in perceptions are not necessarily clear (Wikström, 2009) and therefore do not help us to understand how an individual interacting with a setting may observe disorder and perceive there to be low collective efficacy. As Wikström (2009, p. 60) observes:

'how, for example, do we explain the process through which the population composition of a neighbourhood (e.g. the fact that a neighbourhood has a concentration of a particular group) influences people's perceptions of the seriousness of disorder occurring in the neighbourhood (e.g., the seriousness of signs of vandalism or the potentially threatening behaviour of strangers)?'

What we can conclude, however, is that perceptions of low collective efficacy are perhaps more readily identifiable, or at least studied, and inferred to represent either weak informal social control, or weak moral rules where such behaviour is routinely permitted in a setting. This may be due, of course, to the fundamental unobservability of social control in action, having to infer from physical facets of settings instead about a lack thereof (Sampson, 2006a). Perceptions of low collective efficacy may therefore be more readily perceptible and prompt an internal reaction as compared to those of high collective efficacy for potential guardians, deterring their intervention when observing a breach. Martin Innes' work and development to the Signal Crimes Perspective speaks to this point. A 'signal crime' is interpreted to be one which has an effect on the individual. This perception is deduced in three parts: (i) the 'expression' being the crime or disorder itself; (ii) the 'content' of that expression, the connotation that signal conveys to the individual; and (iii) the 'effect' is has on the individual and the reaction it prompts (Innes, 2014, p. 9). In successive studies where residents are interviewed about local crime problems, respondents typically identify 'youth-related disorder' or young people hanging around as the most important signals of problems in their local area (OAs) (Bottoms, 2009; Innes *et al.*, 2009). For our purposes, this therefore again represents an interesting

distinction: identifying a breach of a moral rule (children hanging out on a street corner) and then potentially doing something or not about it. In their detection of signals, however, researchers noted a distinction between ‘high knowledge’ and ‘lower knowledge’ individuals, with those with more knowledge of different signals having spent a large amount of time in public spaces (Innes *et al.*, 2009, p. 104). Familiarity with the setting may therefore be an important consideration in shaping perceptions, where potential guardians draw upon previous knowledge and experience of the setting rather than their direct perception.

4.2.2 *The perception of setting norms*

Ultimately, the facets explored above provide an insight into the potential permitted behaviours within a setting. For guardians to intervene, they must first understand the content of the moral rules in the setting visited. Whilst the cues for weak moral rules are more readily studied in criminology (as above), can we perceive the presence of strong moral rules in the absence of having witnessed social control in that setting? For a moral rule to be enforced, it must first be perceived; the extent to which this is the case is currently unclear. One angle which may be informative is scholarship which considers the perception and enforcement of norms. Norms are a sociological concept, described as the ‘soft guardrails’ maintaining social order and behaviour (Levitsky and Ziblatt, 2019). The sociological study of norms therefore has a value akin to the use of moral rules – norms vary in content in relation to different places. As noted, some criminologists have therefore prompted the discipline to consider not just breaches of criminal law, but the everyday norms and rules which form part of social life (Bottoms, 2002; Wikström, 2010; Barton-Crosby, 2020).

It is evident that norms exist in social environments and vary even within micro-places: for example, one waits at the bar in a pub, but queues in a line at a supermarket till.⁶³ But

⁶³ As some asides: An interesting setting to observe where this becomes confused is at the Arts Picture House bar in Cambridge, UK. Here, I have witnessed some patrons choosing to queue in a line from the bar (like you would in a supermarket) whilst others stand at the bar (like you would in a pub). Individuals who chose to stand at the bar (as, I would argue, is typical) have been challenged to join the queue, but retorted that because it is a bar you stand at it and wait to be served. An interesting peculiarity demonstrating that social norms are unclear and not readily perceptible, even where we may consider there to be uniformity and agreement. An instance of perhaps some people following what others do in the setting, whereas others have their own idea about what the norms

nonetheless, there is limited research to help us understand how these norms, as a guide to behaviour, are actually perceived, or indeed perceptible in settings. Many sociological studies which consider the perceptibility of norms often focus on the perceptions of what others would do in such environments, conditioning appropriate public behaviour (Horne and Mollborn, 2020, p. 470). In instances where individuals do not have previous experience of the setting and are not aware of present norms in the setting (perhaps they cannot perceive them), research suggests that they are more likely to look to the behaviour of others as a social clue as to what they should do in that environment (Horne and Mollborn, 2020, p. 472). Furthermore, in this line of scholarship, the distinction between values (of individuals) and norms (of settings) are enforced distinctly: values are formed through individuals feelings of shame and guilt (see Trivedi-Bateman, 2019); whereas norms are enforced through social sanctions (Horne and Mollborn, 2020, p. 469).

One of the challenges in conducting such research on neighbourhood perceptions is being able to capture these as people interact with different settings. Nettle *et al.* (2014) adopted a distinctive approach to capturing perceptions of visited neighbourhood settings, by comparing these perceptions to those who live in those neighbourhoods (residents). The study, conducted across two neighbourhoods in Newcastle upon Tyne, U.K., recruited 52 student volunteers to visit two neighbourhoods; the visitors were then asked about their perception of the level of trust and paranoia, and ‘a general measure of mood’ (Nettle *et al.*, 2014: p. 6). These visitor measures were then compared to the same measures asked to a sample of residents in both neighbourhoods (akin to collective efficacy’s use of neighbourhood residents as ‘informants’ of the setting). A one sample T-test revealed that visitor perceptions of trust and ‘mood’ were not significantly different to those of neighbourhood residents, despite there being significant differences across measures between the two selected neighbourhoods (Nettle *et al.*, 2014: p. 10). Thus, the authors note there to be a measurable neighbourhood effect when interacting with, and consequently forming, perceptions of neighbourhood settings (Nettle *et al.*, 2014: p. 13).

are. Similarly, a close friend of mine, from Germany, was amazed to observe queuing norms in the U.K., such as waiting in a line to board a bus, or when waiting in one single line to use one of three cash machines in Birmingham city centre. Rather than picking one of three lines, people waited in one single file line and then used the next available cash machine when it became free.

The sum of this section points to a performative aspect of norms in settings. Strong moral rules may be perceived through witnessing acts to enforce them or the behaviours of others in the setting; weak moral rules may be perceived by the lack of enforcement, permitting disorders to occur and accrue in the setting. Whether the measurement of collective efficacy as a moral rule manages to capture these perceptions, is currently unclear.

4.3 Conclusion

In this chapter, I focused on the role and relevance of guardians in small-area and micro-setting, exploring how their willingness to intervene forms a central component of collective efficacy theory's explanatory power. In doing so, I observed that there are a number of theoretical assumptions which underlie how the social processes delineated by collective efficacy theory, and largely empirically supported in community survey research, may play out in reality. I further noted that the contextual effect of collective efficacy ultimately depends on individuals within settings to perform relevant intervening social processes, to prevent breaches or moral rules and maintain them. I further observed that the extent to which guardians will intervene in both their home neighbourhood (Sampson, Raudenbush and Earls, 1997) and in other settings visited (Hipp, 2016b) is currently assumed. In the former, and as originally conceived by collective efficacy theory, there is an assumption that those living in socially cohesive neighbourhoods are more likely to intervene. In the latter, I explored a number of different rationales and explanations for likely variation in intervention. I concluded by considering how perceptions of setting moral rules and their likely enforcement, as a contextual effect, may influence and shape guardianship propensity to intervene. This is a neglected aspect of scholarship, with a focus on the interaction and influence of such rules on those with a high crime propensity. The study of how guardians may interact and perceive settings is therefore needed to (i) explore the aforementioned analytical assumptions underlying collective efficacy theory; and (ii) contribute knowledge to the guardianship of places outside of the home neighbourhood. Whilst acknowledged, little empirical research has been done to explore the contextual effect of collective efficacy on guardianship social processes.

In assessing this further, Figure 14, below, highlights the importance and arguably overlooked relevance of setting perceptions in shaping guardianship practices. Here, we hypothesise that where the guardian can perceive the moral rules of the setting, they are more likely to intervene

when witnessing a breach of those moral rules. A guardian who enters a setting and is unable to perceive the setting moral rules is less likely to identify a breach of them, therefore suppressing their willingness to intervene; this is more likely to result in no intervention.

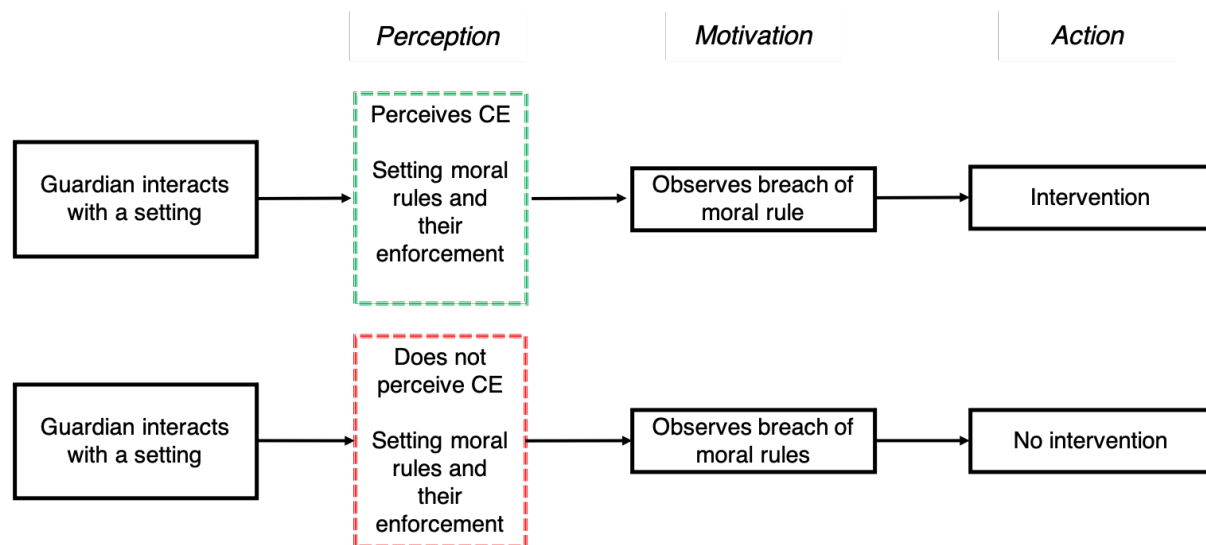


Figure 14: Diagram comparing guardian willingness to intervene where they can or cannot perceive the moral rules of the setting

Where a guardian can perceive the rules of the setting, the content of those rules may also shape their willingness to intervene. Figure 15, below, considers the contextual effect of collective efficacy in this context where perceptions of the setting have been formed by the guardian. Here, we can hypothesise that in settings of high collective efficacy there will be a perception of strong moral rules. With strong moral rules, breaches of these rules are clearer and identifiable, meaning the guardian is more likely to intervene. In settings of low collective efficacy and weak moral rules, breaches of these rules may be more difficult to identify, given the wider range of permitted behaviours in that context. Hypothetically, the guardian may not therefore intervene as such behaviours may be permitted in the setting (no breach); or, where they do observe a breach of some rules, they may not intervene due to their perception that others will also not intervene.

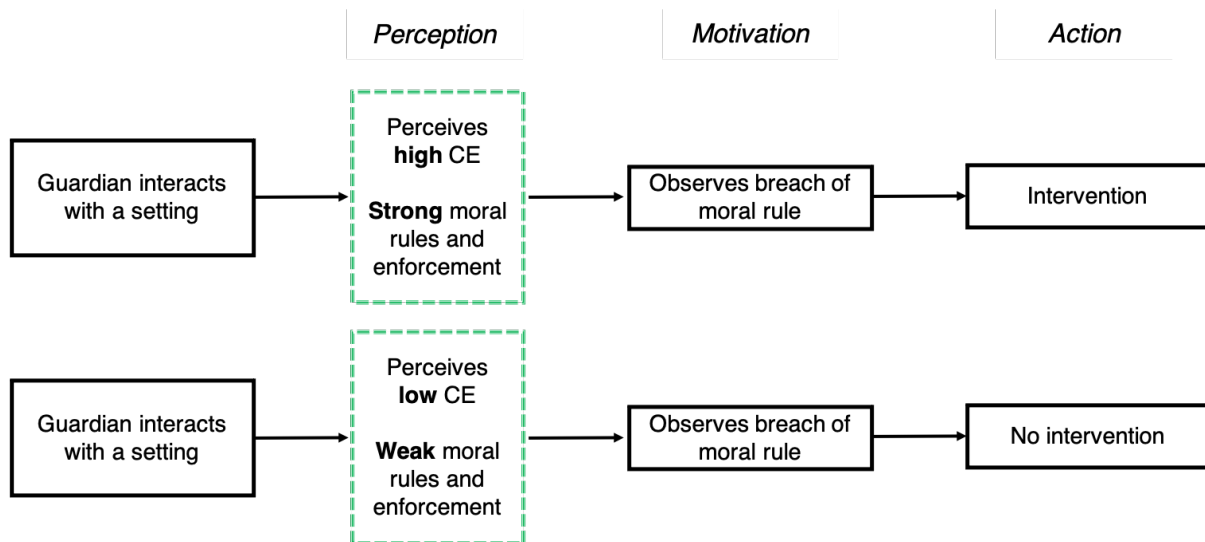


Figure 15: Diagram comparing guardian willingness to intervene where they can perceive setting moral rules but these rules are either strong or weak

The remaining chapters in this thesis set out to empirically explore these assumptions further. Answering these assumptions – or, at least, contributing to criminological knowledge on these – is an inherently difficult task. Such an exploration arguably requires methodological developments to build upon and complement the community collective efficacy survey data and other ecometric practices, to explore interactions with settings not just at the home neighbourhood level (Raudenbush and Sampson, 2002) but also outside of this (Hipp, 2016b; Nettle *et al.*, 2014).⁶⁴ Chapter 5 therefore sets out the rationale and development of the Peterborough Neighbourhood Guardians Study (PNGS) conducted in 2019, which employed an adapted Space-Time Budget methodology (Wikström *et al.*, 2010; Hardie and Wikström, 2020) in an attempt to tap into guardianship perceptions and social processes in settings that form part of people’s routine time use patterns. In chapter 5, I set out why the STB budget is an apt method of exploring some of the assumptions considered in this chapter, measuring interactions with settings over time. In chapter 6, I then seek to provide exploratory analysis of data derived from deployment of this method to conduct community interviews in a high collective efficacy area of Peterborough, UK. Empirical analysis in chapter 6 will be largely exploratory, given that this is the first time that the STB methodology has been used in collective efficacy and guardianship research. The following research questions, which tap into

⁶⁴ Such as, for instance, lost-letter social experiments (Sampson, 2012; Volker *et al.*, 2016)

proximate discussion from chapters 2, 4, and to a lesser extent, chapter 3,⁶⁵ will be explored in chapter 6:

- a. Can the level of collective efficacy be accurately discerned by visitors to a setting?
- b. Will individuals intervene and enforce social control when required to do so in these settings? Is their willingness to intervene related to the moral rules within the setting through their perception?
- c. What are the identifiable moral rules of city and local centres? And how are these enforced?
- d. How do routine activity patterns of home neighbourhoods influence the level of collective efficacy within that moral context?

Chapter 7 will then conclude our discussion, reviewing the use of the STB methodology in guardianship research, exploring the limitations of the PNGS 2019 study and how this could be adapted. Given that this thesis represents the first use of the STB method in this research contexts this chapter will aim to provide insight to future researchers about the utility of the method if further adapted.

⁶⁵ The socio-physical model developed in chapter 3 has not been operationalised or tested in this thesis. Relevant theoretical insight may however contextualise research findings.

Part 2

The Peterborough Neighbourhood Guardians Study

In the following part of this thesis, I aim to empirically assess the situational dynamics of collective efficacy as a measure of moral rules and their level of enforcement in settings for crime. As explored in chapters 3, 4 and 5, the situational study of collective efficacy - at ever smaller aggregation - reveals elements of the social environment (setting) which stand to disrupt the purported social processes of enforcing moral rules within neighbourhood environments (Wikström, 2007; Wikström *et al.*, 2012; Sutherland, Brunton-Smith and Jackson, 2013; Weisburd *et al.*, 2020). We observed that at this situational level, collective efficacy theory's explanatory effect on crime is underpinned by a number of assumptions; and that these assumptions involve the actions (or indeed, inaction) of neighbourhood guardians - those who are willing and able to enforce moral rules in neighbourhood settings. I argued that these assumptions - that (i) neighbourhood residents are indeed willing to intervene and enforce moral rules when they are required to do so; and (ii) that the level of collective efficacy within a setting can be discerned by visitors to that setting - are difficult to answer solely through the community survey method (Hardie and Wikström, 2020). We further observed that these assumptions are an important consideration when we seek to explain neighbourhood crime rates in causal frameworks such as Situational Action Theory, where collective efficacy is used as a mechanistic construct of moral rules and their enforcement across environments.⁶⁶ Further assessment of these pathways is therefore required.

In line with advancements in social ecological criminology, I submit that the approximate study and measurement of individual interactions with different social environments, as applied to the study of criminal events (Hardie, 2020; Hardie and Wikström, 2020), is a fruitful avenue of collective efficacy study. This is because such an approach offers the potential to tap into the dynamic explanation for behaviours which underpin the varied maintenance of neighbourhood moral rules and norms across setting, all whilst respecting the mobile dynamics of urban social life (Wikström, 2007; Taylor, 2015; Hipp, 2016b). In appreciating the

⁶⁶ Important, but not the only, consideration. As observed, Situational Action Theory is not a 'control' theory (Hardie, 2019; Barton-Crosby, 2020). The enforcement of moral rules in settings at the situational level matters in shaping the thought processes of those individuals who have low law-relevant morality and poor self-control.

importance of interactions with settings in explaining the actions of neighbourhood guardians, the following chapters present the development, deployment and analysis of an adapted Space-Time Budget (STB) methodology to the study of collective efficacy and guardianship. The Peterborough Neighbourhood Guardians Study was conducted in 2019, and interviewed 92 residents across eight very high collective efficacy neighbourhoods centred on the Longthorpe area of Peterborough, UK. Chapter 5 sets out the rationale, development and deployment of the method. Chapter 6 then sets out to analyse and explore data obtained through use of the method as an attempt to tap into perceptions of moral rules across settings beyond the home neighbourhood. At the time of writing, this is the first such study to utilise and adapt the STB methodology for use within collective efficacy and guardianship research. Findings discussed in chapter 6 are therefore exploratory in nature, and represent the first step in illustrating what the method can reveal about perceptions of moral rules in settings. Chapter 7 then summarises and discusses findings alongside limitations of the method (as employed) and how it can be adapted to better tap into these aspects of settings.

It is important to note that as initially conceived, the study was designed to include neighbourhoods across a range of collective efficacy settings, including participants residing in both high and low collective efficacy neighbourhoods. A number of factors – as discussed in Appendix A, and noted in the COVID impact statement – made this impossible. These factors were beyond my control, and given their impact on the study I sought to change approach to ensure sufficient data could be collected for this exploratory analysis. Whilst this limits my ability to address, in full, some of the research questions set out in this section, the final sample is nonetheless sufficient for exploratory analyses, being representative of home neighbourhoods sampled, and of the archetypal neighbourhood guardian (being resident in high collective efficacy neighbourhoods).

5 The Peterborough Neighbourhood Guardians Study 2019

5.1 Study Overview

This chapter sets out the development and deployment of the Peterborough Neighbourhood Guardians Study 2019 (PNGS). The purpose of the study was to explore some of the situational dynamics of collective efficacy when used as a measure of moral rules and their enforcement in neighbourhood settings through the participation of guardians. As explored in chapters 3 and 4, the explanatory framework of collective efficacy theory has been increasingly used to explain the occurrence of crime within highly localised settings. Despite empirical evidence identifying that collective efficacy and the enforcement of moral rules within settings operates as a more localised social process than initially described (Wikström *et al.*, 2012; Wikström, Treiber and Hardie, 2012; Gerell, 2015; Weisburd *et al.*, 2020; Weisburd, White and Wooditch, 2020) there are nonetheless a number of unanswered questions which underpin the assumed social process explaining this connection from the perspective of neighbourhood guardians. As considered, the most effective way in which to better understand the perception and enforcement of moral rules is to study neighbourhood guardians' interactions with settings (Wikström *et al.*, 2010; Groff, 2018; Hipp, Williams and Boessen, 2018; Hardie, 2019; Hardie and Wikström, 2020).

In order to therefore contribute knowledge as to the situational dynamics of collective efficacy theory, the Peterborough Neighbourhood Guardians Study (PNGS) was conducted between March and October 2019. Using an adapted Space-Time Budget interview methodology, I conducted interviews with 92 participants resident in a cluster of high collective efficacy neighbourhoods in Peterborough, UK. Each participant who took part in the study provided 96 hours of location and time use data, covering a four-day period; this provided a total of 8,832 hours of participant location and activity data. Crucially, within these hours, a total of 608 hour observation setting perception data were captured, with interviewees' perception of the moral rules and their level of enforcement within a setting recorded (settings visited as part of respondents' routine activity patterns). These perceptions were bounded within and related to a specific UK Census Output Area. The PNGS 2019 is therefore, to my knowledge, the first

such study to capture situational perceptions of collective efficacy across settings using a Space-Time Budget methodology.

In this chapter, I provide an overview of how this study was developed and deployed in Peterborough, UK. This chapter concludes with descriptive details about the final participant sample. Chapter 6 then explores data collected in response to the key research questions as formulated and outlined in chapter 4.

5.2 Rationale for method

5.2.1 Theoretical backdrop

As identified in chapters 2, 3 and 4, the explanatory effect of collective efficacy on crime within small neighbourhood units or micro-places depends on a number of key assumptions. At the situational level of explaining crime within settings, we observed that those individuals who enforce moral rules within settings, often referred to as ‘guardians’ by criminologists,⁶⁷ have an important, but not universal role in preventing crime within settings. Their willingness to intervene when observing the breach of a moral rule within a setting (likely committed by an individual with weak moral rules and low self-control in response to a temptation/provocation) has the ability to prevent the commission of or opportunity for crime within a setting.⁶⁸ However, this key process is underpinned by an assumption that moral rules can be perceived, and will therefore be requisitely enforced in different settings (Wikström, 2007; Wikström *et al.*, 2012).

As noted, community survey data provides empirical support for the idea that neighbourhood residents are more likely to enforce moral rules within their home neighbourhoods (settings) where they cohesively agree with one another as to their content (Sampson, Raudenbush and Earls, 1997; Raudenbush and Sampson, 2002; Sampson, 2006a, 2012; Wikström *et al.*, 2012). But as we come to study these social processes at smaller aggregations, it is necessary, and worthwhile, to capture further features and nuance of settings which may attune the role of rule

⁶⁷ Noting that ‘guardianship’ derives from a distinct theoretical backdrop in criminology known as the routine activity approach.

⁶⁸ Where the moral rules are those as ascribed by the criminal law.

enforcers in this process – thus adapting collective efficacy’s explanatory effect (Taylor, 2015, 2018). This is especially apparent when we consider that using collective efficacy as a measure of moral rules and their level of enforcement within a setting, as per SAT, highlights that people interact with a range of different settings as part of their daily routines (Wikström *et al.*, 2012). The extent to which, therefore, people outside of their home neighbourhood will shape and enforce these norms is not fully considered in collective efficacy research (St Jean, 2007; Hipp, 2016b).

Research contributions within the guardianship and Human Territorial Functioning domain assist in identifying the temporal, spatial (Taylor, 1988) and individual-level features of guardians themselves that shape their willingness to intervene in urban settings (Reynald, 2009b, 2011a, 2018). However, such studies have yet to reconcile these findings with considerations of how the pre-existing rules and norms within the settings – determined by those who are either resident within them, or if they are likely to patronise them – are perceived and then shape guardianship practices (Wikström, 2007; Wikström *et al.*, 2012; Hipp, 2016b; Hardie, 2019). The challenge, then, is to find or develop a methodology that is able to tap into these perceptions (if perceptible) as a consequence of interactions with settings, to determine likely behavioural outcomes of social control (Wikström, Treiber and Hardie, 2012; Groff, 2018; Hardie, 2019; Hardie and Wikström, 2020).

5.2.2 A method for capturing interactions with and perceptions of settings

5.2.2.1 Methods tapping into setting interactions and perceptions

The measurement of neighbourhood collective efficacy is typically undertaken through community surveys, which use residents’ perceptions (likely informed by experiences) to understand moral rules and their enforcement within a setting. Within the PNGS 2019, we require a method which can utilise these scales, but in application to different settings visited. Thus, we need to track and measure interactions across city settings. Research in ecological criminology has advanced a number of methods which attempt to tap into the dynamic nature

of setting social life.⁶⁹ Whilst many of these methods use proxy and theory-guided calculations of urban activity patterns, they cannot provide us with insights into temporal interactions (Hardie, 2020). In order to therefore tap into the active perception of moral rules across a range of settings, we require a methodology which can (i) record individual interactions with settings (their locations); (ii) measure their perceptions of those settings; and (iii) understand their likely responses to a breach of a moral rule in that setting. These responses need to be related to the setting visited.

As Hardie (2020) identifies, there are limited research methods in criminology that can facilitate this endeavour. The growth of ‘big data’ in criminological research presents opportunities for capturing broad patterns of urban movements; however, such data is not typically attuned to the nuanced mechanisms and social processes we seek to study here (Snaphaan and Hardyns, 2019). Technological advancements present opportunities to track individuals’ locations through a range of mediums, and better specify these potential social processes. Examples include using smartphone location data (Geyer, Ellis and Piwek, 2019); the varied locations of individuals’ ‘tweets’ sent through the social media platform, Twitter (Phillips *et al.*, 2019; Levy, Phillips and Sampson, 2020; Sampson and Levy, 2020), as some limited examples. Where CCTV footage is available, other studies have sought to code instances of bystander interventions, although this speaks to aspects of social control rather than perceptions of settings (Liebst *et al.*, 2021; Liebst *et al.*, 2019).

Whilst many such methods offer an increased number of observations to the researcher, they do not appear appropriate for measuring and capturing situational perceptions. There have however been a number of insightful developments which sought to use smartphone devices to tap into perceptions of safety (Engström and Kronkvist, 2018; Ruiter and Bernasco, 2018; Kronkvist and Engström, 2020). The STUNDA smart phone application, developed by researchers at the University of Malmö, Sweden, attempts to measure respondents’ fear of crime at different intervals throughout the day using an experience sampling method (ESM).

⁶⁹ ‘Egohoods’, for instance, have been conceptualised as overlapping neighbourhood boundaries in order to cater for the confluence of people in settings diffusing into other settings (Hipp and Boessen, 2013; Kim and Hipp, 2019). Similarly, statistical models have been used to calculate the radius of an ‘activity node’ – that is, areas considered to be where offenders will likely spend most of their time – estimate likely setting interactions (Van Sleeuwen, Ruiter and Steenbeek, 2021).

An application is downloaded onto the research participant's phone, and throughout the day notifications are sent to the device containing survey questions eliciting the participant's response (Kronkvist and Engström, 2020). These questions pertain to respondents' perceptions of safety at different points of the day, tapping into the influence of location and time use on fear of crime (Engström and Kronkvist, 2018). In employing the method with a sample of university students, researchers observed significant variation in the response rate of the sample; just because individuals downloaded the app, did not mean that they responded to survey prompts sent to them (Kronkvist and Engström, 2020). The application did, however, permit measurement of safety perceptions in relation to different time points (three blocks of time) in different locations, so long as the timing of the request sent to smartphones coincided with these different locations.

The STUNDA application presents an interesting methodology for attempting to measure features and facets of settings. The PNGS could have utilised such an approach, by adapting push notification survey questions to capture perceived setting collective efficacy. However, we know that individual routine activity patterns and interactions with settings vary considerably (Wikström *et al.*, 2012; Hipp, 2016b; Brantingham, Brantingham and Andresen, 2018; Wikström and Treiber, 2019). As such, respondents would need to enter their perceptions in the mobile device for each setting they interacted with, rather than being requested to do so at set time periods. This method could present the benefit of tapping into temporally instant perceptions of the setting; however, the extent to which participants would strictly adhere to such a request is questionable. When 'popping to the shops', for instance, or visiting a train station to travel elsewhere, would participants remember to complete the survey as required? Furthermore, the extent to which this method could be employed across a neighbourhood without substantial investment and recruitment are uncertain, given that the trial of the STUNDA method was with a sample of university students (Kronkvist and Engström, 2020). Not all respondents in a community setting have a smartphone device, nor might they have the technological knowledge to operate such devices when prompted. Recording individual locations, or indeed tracking them via such a device provides highly personal and sensitive data. A more personable interview method allows the researcher to build trust and engagement with the participant to facilitate their participation.

5.2.2.2 *Space-Time Budgets*

One methodology which befits our research purpose is the Space-Time Budget (STB) (Wikström *et al.*, 2010, 2012, chap. 7; Wikström, Treiber and Hardie, 2012; Hardie, 2020; Hardie and Wikström, 2020). STBs expand upon time budgets (also known as time diaries) by recording the spatial location of activities as part of a respondent's day (Anderson, 1971; Farrall *et al.*, 2014; Hardie and Wikström, 2020). The STB has been used as part of the Peterborough Adolescent Development Study (PADS+) to test core components of SAT by recording individual and environment interactions (Wikström *et al.*, 2012; Hardie and Wikström, 2020). When used in this context the method has, over the last decade, amassed data on 500 acts of crime committed by interviewees (Hardie and Wikström, 2020). Thus, it has allowed researchers to consider how interactions with settings may predict individual offending behaviour (Wikström *et al.*, 2012; Wikström, Mann and Hardie, 2018; Hardie, 2019).

The method helps facilitate a structured interview with participants exploring their time use, activities, and locations at hourly intervals over four days (96-hours of data per participant). This is done by using codes to specify the participant's location (in the U.K., Census Output Area codes which are unique to each small-area location), along with a code sheet recording individual activities and who they are with in the setting. This data can then be supplemented alongside other sources, such as community survey data, to further enrich and explore the situational dynamics of interactions with settings (Hardie and Wikström, 2020). Typically, the method has been used to study the individual-level and environmental-level influences which explain participants' action or inaction (offend or a lack of offending) in a setting. The STB therefore represents a viable method for our research purposes, providing the systematic structure to facilitate data capture in relation to guardians' activity patterns.

5.3 Development and deployment of the PNGS 2019

This next section sets out how the STB method was developed and deployed in the PNGS 2019, forming the central methodology underpinning data collection in 2019. As identified in Figure 15, in this thesis we are seeking to primarily explore perceptions (collective efficacy) and their likely influence on behaviour (intervene / not intervene) in a setting. The STB, as conceived, allows us to capture environment exposure of neighbourhood guardians, their time

use, and micro-level location data pertaining to their purpose in the setting and whom they are with. The methodology was therefore supplemented to further obtain residents' perceptions of setting moral rules and their likely enforcement. Previous studies have demonstrated that survey scales can be a useful tool in capturing visitors' perceptions of settings (Nettle *et al.*, 2014). This is the first study to adopt this approach in guardianship research and it therefore aims to provide exploratory insights as to (i) what data such a method can capture; and (ii) if this can tap into assumptions discussed in chapters 2 and 4. The sampling of respondents and the final sample achieved is explored further below.

Ethical approval for the study was granted by the Ethics Committee of the Institute of Criminology, University of Cambridge in June 2018. After a small pilot of the study, sample recruitment began in early 2019.

5.3.1 Study context

The PNGS 2019 was conducted in Peterborough, U.K. Peterborough is a medium-sized city, with the latest Census data from 2011 UK reporting it to have a district-wide population of 183,600.⁷⁰ Latest available population estimates for the year 2018 note that the city's population is likely to have increased by 9%, growing the total population to around 203,600 people (Cambridge County Council, 2018). Much of this population growth is concentrated in certain districts of the city resulting from large residential development, with wards such as Stanground South, Hargate and Hempsted witnessing an estimated increase in population of 31.9% and 22.9% respectively (Cambridge County Council, 2018, p. 11).

As a settlement, the area dates back to Roman times, although much of the city which stands today was developed during the 20th Century (Davies, Habeshaw and Robinson, 2001, pp. 8–9).⁷¹ Peterborough's most substantial period of urban growth began during the 1960s, when the area was dedicated for development as a 'New Town' (Davies, Habeshaw and Robinson, 2001, p. 27).⁷² Many suburbs of the city were planned to accommodate the modern-day proliferation

⁷⁰ Data from the 2021 UK Census was collected in March 2021.

⁷¹ See Appendix B for development maps of the city over time

⁷² For a summary of the 'New Town' development philosophy's impact upon Peterborough, see Wikström *et al.*, 2012a: p. 164-165.

of the motor car, with pedestrian walkways and subways built away from roads (Davies, Habeshaw and Robinson, 2001, p. 27); this serves to give the city an arguably distinct urban character, in comparison to many British cities which grew in a somewhat haphazard fashion as a product of the Industrial Revolution (for example, Birmingham and Manchester).

Peterborough has been the research setting for PADS+ as well as its pilot, the Peterborough Youth Study (PYS) (Wikström and Butterworth, 2006). Peterborough was also the setting for the seminal work *Breaking Rules* (Wikström *et al.*, 2012). Whilst medium-sized, the city is host to many internally diverse neighbourhoods, and is notable for having extremes of both high and low levels of deprivation (Wikström *et al.*, 2012, p. 172). This is represented in data from the 2005 and 2012 Peterborough Community Survey (PCS), from which collective efficacy data were drawn as a measure of the ‘moral context’ in testing SAT. The diversity of neighbourhood environments within Peterborough, along with its relatively compact size, makes the city an ideal location to explore holistic variations in neighbourhood social processes.

5.3.2 *The Peterborough Community Survey 2012*

Peterborough, as a city, also provides one of the most detailed accounts of neighbourhood collective efficacy in the U.K. aggregated to the small-area level, further highlighting it as an ideal context to explore small-area level perceptions of collective efficacy. A second Peterborough Community Survey was conducted across the city in 2012, providing collective efficacy data for all 595 OAs within the city (an increase from the 2005 wave of 518 OAs, due to boundary changes). This data set was used to sample and analyse findings of this study, and was provided to me by the Centre for Analytic Criminology, University of Cambridge. Similar to methods employed for the 2005 PCS, (Wikström *et al.*, 2012, pp. 97–100) sampling frames were derived from the UK electoral register comprising 33,545 households, from which 15,049 respondents (one per household) aged 18 and over were sampled.⁷³ Sampling was evenly spread across census output areas (OA)⁷⁴ to ensure a robust number of responses (22 households per OA, with deprived areas oversampled with 33 households) with a total of 6,

⁷³ To clarify – this description refers to how the PCS 2012 data was implemented by PADS+ researchers.

⁷⁴ In 2005, OAs comprised, on average, 300 residents and 125 households.

838 households responding. The survey response rate was 45%, and was reasonably spread across the city. Collective efficacy scores were then created for each OA from residents' responses on the social cohesion and informal social control scales, (Wikström *et al.*, 2012, p. 144) taking into account respondents' characteristics (Oberwittler and Wikström, 2009).

5.3.3 PNGS 2019 Sampling

Criminology's typical focus on 'bad areas' does not allow us to generalise about social processes across setting (Smith, Phillips and King, 2010, p. 21).⁷⁵ In the PNGS 2019, I therefore sought to sample study participants from neighbourhoods at the extremes of PCS 2012 collective efficacy scores. This was so as to recruit participants who lived in both very high collective efficacy settings and very low collective efficacy settings, with the aim of comparing their different exposure to and perceptions of settings across the city. Ideally, this would have been done through sampling a number of OAs from each collective efficacy quintile category. This would not, however, have been feasible within the context of limited PhD research funds. The Space-Time Budget is already identified to be a costly method to employ (Hoeben *et al.*, 2014); participant sampling therefore needed to be restricted, yet capture the desired effect. PCS 2012 collective efficacy data was therefore split into quintile distribution and mapped using MapInfo software (see Appendix C). This provided a visual illustration of the quintile distribution across the city, by OA.

5.3.3.1 Original study scope

Before we discuss how the study was sampled, a note of clarification and direction is necessary. The original sampling frame for this research was broader, and included a selection of OAs from both the highest collective efficacy quintile (as included in analysis in chapter 6) and the lowest collective efficacy quintile situated nearby (not included in analysis). Participant recruitment in the lowest collective efficacy quintile neighbourhoods was, however, very low to non-existent. Many residents responded to say that they would like to be explicitly excluded from sampling and not contacted again. This result occurred despite oversampling, as per Wikström *et al.* (2012, pp. 97-100) suggestions and experience in conducting community

⁷⁵ *Breaking Rules* being an exception.

survey research in Peterborough (around 30% oversampling for areas of low socio-economic status). The reasons behind this low response rate, and the rationale for changing the scope of the study presented here are explored in Appendix A, which highlights how the political turmoil endured as a consequence of Brexit hampered the response rate.

As explored in Appendix A, given the political turmoil that was focussed on the city of Peterborough – and its residents – I decided to focus energies on developing the high collective efficacy sample in 2019 (who were receptive and responsive to the study). Re-sampling of the low collective efficacy area was planned for 2020, with added flexibility and a telephone interview option included explicitly in initiations to garner participation from those who may not want the presence of a criminology researcher in their house. Previous research has demonstrated that in areas characterised by low collective efficacy, residents may not intervene to prevent crime out of fear of reprisal (Bottoms, 2006); steps were planned to avoid this potential influence affecting participation. Ultimately, however, this plan in 2020 became frustrated by the COVID-19 pandemic. The nature of the study, seeking to explore perceptions across different settings, would reflect activity patterns during COVID-19 national lockdowns and would not therefore be representative of typical activity patterns (Sickle and Felson, 2020; Nivette *et al.*, 2021) nor the drivers of social interventions on behalf of neighbours (Sargeant *et al.*, 2021).

Whilst attempts were made to mitigate against these factors in 2019 during participant recruitment, their impact was ultimately beyond my control. As such, I sought to enhance the recruitment of participants from the highest collective efficacy neighbourhoods as a sample of individuals more likely to be ‘active’ guardians when required to intervene. The discussion that continues below therefore focuses on the methodology employed in the eight identified OAs within the highest collective efficacy quintile (80% - 100%) that formed the final sample. Whilst it should be recognised that this is a biased sample, in that study participants resided and spent time in some of the highest collective efficacy neighbourhoods in Peterborough, these individuals nonetheless provided informative insights into the social processes which underpin collective efficacy in different settings that vary by their typical moral rules and level of enforcement. Given that residents in these selected neighbourhoods have stated that they were likely to intervene when observing breaches of moral rules (residing in settings with high PCS 2012 scores), the final sample are more likely to represent ‘guardians’ as has been articulated in criminological research. The extent to which these kinds of people would

however do so in settings beyond the home neighbourhood is nonetheless unclear in criminology. Thus, whilst this final sample is biased towards the typical ‘guardian’ this bias is not necessarily problematic for this research study given the focus on variation in guardianship properties in relation to settings interacted with. Whilst a limitation of the study – to be discussed further in chapter 7 – findings are arguably not invalidated by this sample bias.

5.3.3.2 PNGS 2019 sampling – final study

Neighbourhoods sampled in the study were targeted based on two factors: (i) their collective efficacy quintile score from PCS 2012 data (highest); and (ii) their proximity to city and local centres in Peterborough. The rationale for considering proximity to commercial settings was so as to obtain enough cross-perceptions of these settings (different people in the sample visiting the same settings) to consider further the temporal dynamics of these environments and their impact upon participants’ perceptions. Commercial settings are identified to be more susceptible to the ebb and flow of people within them given the turnover of people using such spaces. The rationale for sampling neighbourhoods within a reasonable proximal distance to such spaces hinged on the idea that participants would frequently use such spaces and provide informed perceptions of them.

Using the OA collective efficacy map in Appendix C, I identified a cluster of eight very high collective efficacy neighbourhoods for sampling in the Longthorpe area of the city. Figure 16, below, maps the targeted neighbourhood cluster of OAs and their proximity to two key commercial settings in Peterborough: (i) the Bretton Centre; and (ii) the city centre. The sampled neighbourhoods are roughly two miles from both sites when measuring from the Longthorpe Tower, a local landmark which centres the district.

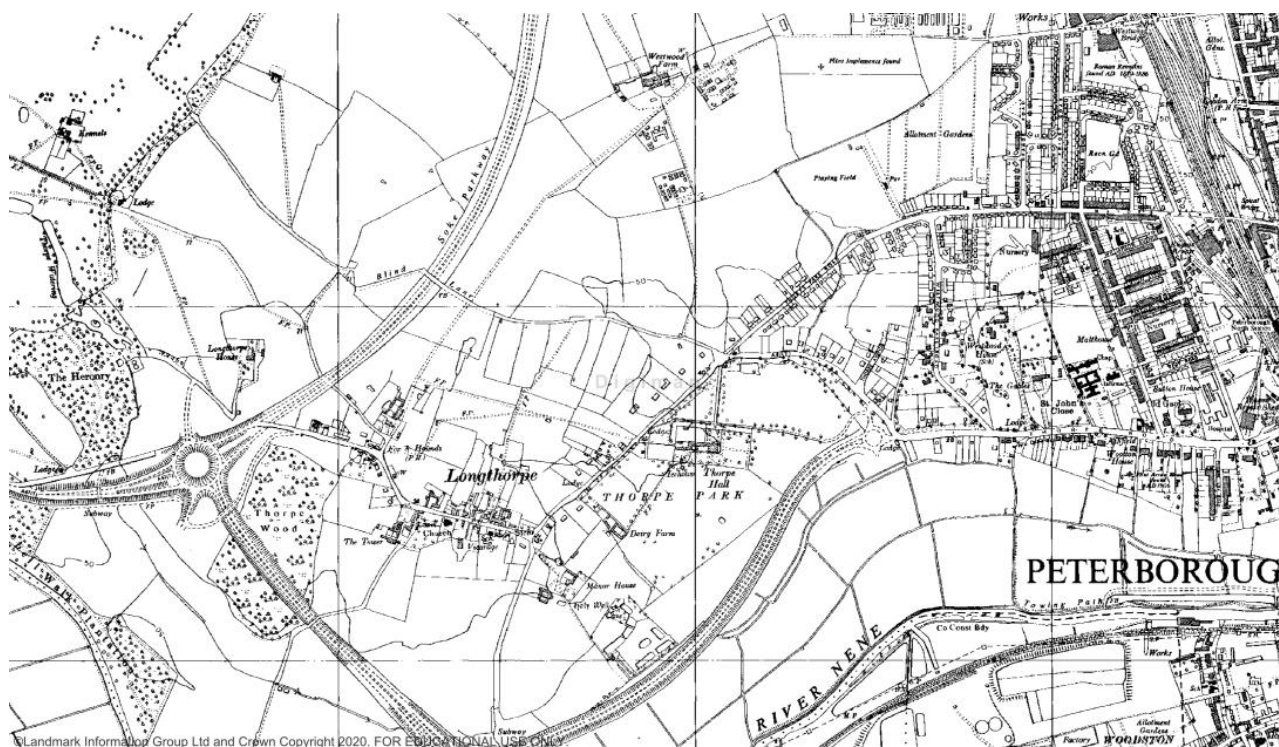


Figure 17: Map of Longthorpe area of Peterborough, circa 1970s (Source: Digimap.ac.uk)

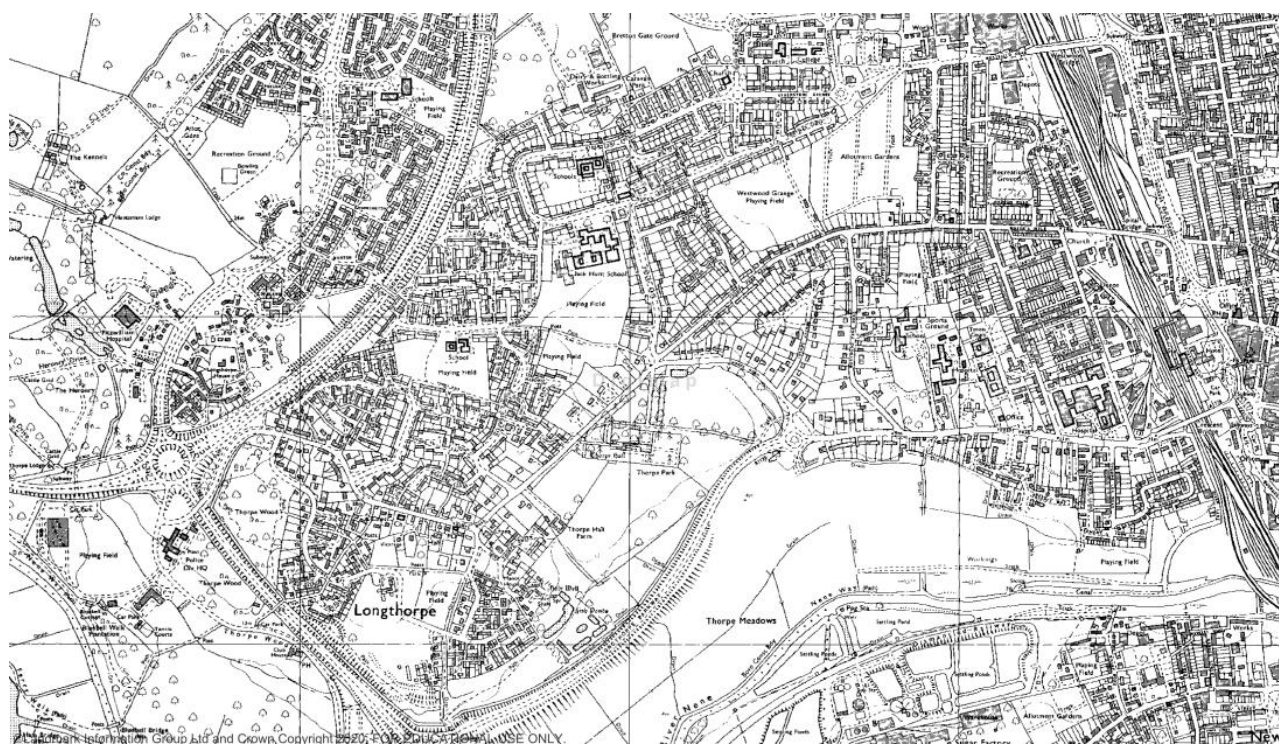


Figure 18: Map of Longthorpe area of Peterborough, circa 1980s (Source: Digimap.ac.uk)

Using OA maps, Google Maps, Google Street View, and the Royal Mail Postcode Finder⁷⁶ a list of addresses was compiled for sampling. This was done by carefully dividing up the eight chosen OAs by street, and then using a random number generator set to the parameters of available street numbers to select addresses for participation. Such a method was suitable for small-scale neighbourhood research with targeted neighbourhoods for study. The method further avoided the limitations associated with using address sampling frames such as the edited electoral register (EER), a database of names and addresses available for researchers to purchase but which does not represent the whole population of an OA.⁷⁷

OAs typically contain around 150 residences. In order to achieve a target of 13-15 participants per OA (to represent the activity patterns of residents in the setting) (Oberwittler and Wikström, 2009) an initial total of 25 addresses were sampled per OA and targeted for participation. This was later increased to 35 addresses per OA when changing the focus of the study to focus on higher collective efficacy neighbourhoods, and when receiving explicit no responses from some residents. Given the final sample included 92 interviewees, this represents a total response rate of 32% (for the final high collective efficacy areas sampled), which is lower than that achieved in previous Peterborough Community Surveys.⁷⁸ The final sample also includes five participants from a small pilot study conducted in one high collective efficacy output area. As such, the final response rate is slightly reduced to 31%. This response rate is nonetheless comparable, especially for a first-time study garnering participation.

5.3.4 *Building the sample*

The participant sample was developed through a door-knocking approach in targeted neighbourhoods in accordance with the pre-determined sampling frame created above. This is a similar method to that employed in other community survey or interview methods, allowing the researcher to be seen and known in the neighbourhood (Sampson, 2012; Moir *et al.*, 2021). Where a resident answered the door, I introduced myself to them and explained the purpose of

⁷⁶ <https://www.royalmail.com/find-a-postcode>

⁷⁷ Since 2002 only an edited electoral register (EER) has been available for research purposes in the UK. Residents can opt out of appearing on the EER. In 2005 30% of eligible voters in Peterborough opted out of the EER, and in 2012 this increased to more than 50%.

⁷⁸ PCS 2005 having a response rate of 53% (Wikström *et al.*, 2012, p. 99) and 45% in PCS 2012.

the study. I then handed them a letter setting out further specific details of the study and my contact details (Appendix D). Where residents were interested, I booked an interview with them on the same day; where they wanted more time to consider taking part, I offered to speak to them again a week later. Interviewees also had the option to complete an online form expressing interest and outlining their availability to take part.

Participants from households were selected either through being (i) the first person to open the front door – both during initial and return visits; or (ii) the first respondents to contact me after I had posted an invitation to the property. The only requirement (as per ethical approval) was that the participants be over 18 years of age. Thus, this was a study of adult guardianship, a befitting approach most likely to capture reliable informant perspectives on settings visited.

In order to legitimate my affiliation with the University of Cambridge and encourage participation, I enhanced my online academic profile and printed official university business cards which were attached to study initiations. This business card and study invitation letter highlighted that data collection was part of a PhD study. This was done with the purpose of personalising the study and to garner participation, as compared to a large-scale market research approach. In order to incentivise participation, and as a thank you for their time, interviewees could enter a competition to win a £100 supermarket voucher from a store of their choice after interviews were completed. Interestingly, around three quarters of those who entered the competition opted for a Sainsbury's supermarket voucher – located at the nearby Bretton local centre.

This ground-up approach to developing the sample was adopted given the distinct nature of the study seeking to collect time use and location data. Building the sample took time, through being present in the neighbourhood settings and available to discuss the research with potential participants.⁷⁹ By its nature, a study seeking to gather time use data is somewhat intrusive;

⁷⁹ Interestingly, I was never overtly challenged by residents of these settings or questioned as to what my purpose was in the neighbourhood. Wearing my University of Cambridge lanyard may have given the impression I was in the settings for some official purpose. In Reynald's (2009a) observations of guardianship, an intervention was coded where researchers were directly challenged in the neighbourhood, which there did occur with some frequency. One interviewee did, however, inform me that neighbours had spoken about me posting a letter to one participant.

activity and location patterns are highly personal information. It was therefore vital that I legitimate the study and its associations with the University of Cambridge to garner participants' trust. Aggregating responses to the OA neighbourhood level also formed part of the study ethics approval, to ensure that the highly personal data collected could not be identified to individual participants.

5.3.5 Conducting STB interviews

Participants were interviewed either at their home address, workplace, or in a public place that was convenient to them (e.g. coffee shop, supermarket café – though only in a few instances). Two interviews also took place within the Institute of Criminology, University of Cambridge, where participants either worked near Cambridge or passed the city on their way home to Peterborough. In order to secure participation, I offered to be as flexible as possible; using a car to attend interviews, I was able to travel to areas that were preferable to interviewees. Some STBs were completed over the phone ($n = 12$). Whilst there is an advised preference to conduct STBs in person – to make use of available maps in-person to garner necessary details of settings visited – when interviewing adults, it became apparent that they were able to be very specific in describing their visited location. Thus, the quality of STB data derived from telephone interviews in this context was not affected.

Before the interview date, I requested that participants note down their whereabouts and activities specified to a reference period of four days. This reference period varied depending upon the day of the interview, in line with Wikström et al.'s (2012, p.71) recommendations for STB interviews. The previous Fridays and Saturdays were always included given that these days are likely to have different more unique activity patterns and exposure to different settings.

5.3.6 Development of adapted STB methodology

The following data was collected during STB participant interviews. STB data is collected for each hour of the day over four days. Resultantly, for each interviewee, 96 hours of STB data were collected. STB days are however measured and analysed differently to calendar days. In

order to optimise data recording to capture variation in activities, STB interview days begin at 06:00 hours, and run until 05:00 the following day.

Table 2, below, provides an overview of typical STB data variables supplemented with some additional measures for the PNGS study. Within this study, I therefore collected the following data for each hour of each interviewee's days. This data was coded in accordance with a detailed coding framework, which adapted the original STB framework to be more suitable for adults.

Table 2: Summary table of variables collected across 4-day period in PNGS 2019

Data Collected	Description	Method	Recording level
Output Area Location	This location data is recorded using UK Census OA codes. Each neighbourhood unit of the UK has a unique location code, referring to a small area of around, on average, 150 residences.	Interviewees were asked to specify their location. In order to assist in identifying specific locations, a tablet device with offline Google Maps software was used to zoom into and identify accurate locations visited. Settings within Peterborough were coded with specific Output Area codes; settings visited outside of the city were recorded, and distance from home location (miles) was calculated.	Small-area location data (units of around 150 households)
Location type	The type of location visited.	This was specified to relate to the participant's purpose in the OA, rather than an objective description of that setting. For instance, a respondent visiting neighbourhood OA code E00171268 may visit the train station (transport infrastructure) or Waitrose supermarket (retail).	Micro-level Individual level – purpose in setting
Activity	Description of the activity undertaken in that setting	Interviewees were asked to specify the activity undertaken in the specific setting. For instance, visiting a local centre may be for domestic purposes (food shopping), an education purpose (visiting a library to undertake a course) or for entertainment (visiting a theatre).	Micro-level Individual-level activity in the setting.
Who with	Account of who the interviewee was with at the time in that setting.	Interviewees were asked to specify who they were with in the specific setting visited. Rather than a description of who was in the wider setting, interviewees were asked to specify those they were directly engaged with. For example, visiting a setting with another member of the household (shopping with partner); or visiting someone's home as a nurse (with a client).	Micro-level Individual-level activity in the setting.
Times visited	Understanding of participants' familiarity with the setting	Interviewees were asked to specify how many times in the last month they had visited this setting.	Individual-level

In line with the aims of this study, however, I further adapted the STB methodology to capture interviewees' perceptions of the social environment and also their own individual willingness to intervene as a (potential) consequence. Therefore, in addition to these base variables, for each new location the interviewee visited, an adapted collective efficacy scale methodology was used to capture participants' perceptions of moral rules and their level of enforcement within the specific setting visited. These additional questions utilised existing collective efficacy scales as employed in the PCS 2012. Questions pertaining to setting social control asked the likelihood that (i) the respondent would intervene, and (ii) the respondent's perception that others in that neighbourhood would intervene, in relation to the four social control scenario items.⁸⁰ Perception of setting social cohesion was recorded by using the 5 item collective efficacy scenario scale, with a slightly adapted version of this scale to record perceptions in city and local centres (non-residential).⁸¹ These interview questions were asked in accordance with a pre-specified recording protocol (Figure 19). Further details can be found in Appendix E.

In this context, and akin to other approaches (see Nettle *et al.*, 2014), I supplemented the STB method with collective efficacy hypothetical scale survey items to tap into respondents' perceptions of setting moral rules and their likely enforcement (Wikström *et al.*, 2012, chap. 8; Pauwels, 2018). These survey items were the same as those used in the PCS 2012, to ensure comparability of data and internal consistency of measures. This permits us to consider (i) respondents' perceptions of moral rules of the setting; and (ii) their perceived responses if witnessing a breach of those moral rules. PCS 2012 data can further supplement this – aggregated to OAs visited – as a background measure of collective efficacy at the OA level perceived. Despite the temporal miss-match of these data sources, collective efficacy has been empirically found to be a stable concept over time (Sampson, 2012, p. 168). Table 3 provides an overview of the additional variables collected by adapting the STB in this way. This is the first time that the STB methodology has been adapted in this manner. This does not therefore represent a validated approach; rather, this is exploratory.

⁸⁰ (1) Observing children skipping school; (2) children spray-painting graffiti; (3) observing a fight breaking out with someone being beaten or threatened; (4) a child being disrespectful to an adult.

⁸¹ Perceptions that (1) people in the setting would help each other; (2) were close-knit; (3) could be trusted; (4) get along with each other; (5) and share the same values.

Table 3: Summary table of STB variables collected during PNGS 2019 STB interviews measuring perceived moral rules and their enforcement in the setting

Data Collected	Description	Method	Recording level
Perception of setting social cohesion (residential)	Perception of the levels of social cohesion in non-commercial settings	Participants asked for their agreement on 5 item scenario scale. Measures the perceived level of social cohesion in a setting or content of moral rules at certain time of day	OA-level
Perception of setting social cohesion (commercial settings)	Perception of the levels of social cohesion in non-commercial settings	Participants asked for their agreement on an adapted 5 item scenario scale. Questions adapted to tap into the people in the setting at the time of observation. Measures the perceived level of social cohesion in a setting or content of moral rules at a certain time of day	OA-level
Perception of setting social control	Perception of the willingness of others in the setting to intervene when confronted with certain crimes or incivilities	Participants asked for their agreement on 4 item scenario scale. Measure the perceived level of social control in the setting, or willingness of people in the setting to enforce moral rules. Social control could encompass informal social control or the mobilisation of formal resources	OA-level
Individual willingness to intervene in setting	Perception of participant's own willingness to intervene	Participant asked for their agreement on 4 item scenario scale in relation to their own willingness to intervene in the setting or enforce moral rules. Individual social control could encompass informal social control or the mobilisation of formal resources	OA-level Individual-level
Individual method of intervention	If intervening, the type of social control that would be undertaken	Participants who 'strongly agreed' or 'agreed' that they would individually intervene in the setting were asked how they would do so, with 4 different categories of intervention.	OA-level Individual-level

These additional questions, tapping into perceptions of the setting, were asked in accordance with an interview protocol as illustrated in Figure 19 (immediately below). Rather than asking for interviewees' perceptions of setting collective efficacy for each hour of the day (as would be typical of an STB method) I designed the protocol to ensure that relevant perceptions were gathered in a systematic manner, avoiding unnecessary duplication and fatigue of the interviewee. I considered that it would be time consuming and ineffective to ask for respondents' perceptions of a setting for each hour of the day. Elements of the protocol were therefore designed to elicit new relevant situational dynamics as they arose, as considered in chapter 4. For example, in using this protocol, where an interviewee visited their workplace on Monday and Tuesday, one observation of the setting would be recorded – provided there was no change in their activities and individuals they were with. Whereas, for an individual who

visited the train station in the morning (08:00) and then returned in the evening (20:00), two observations would be recorded, at different hours, owing to the temporal shift in daylight conditions. Thus, protocol questions were specified in order to best capture moral rule perceptions where there was perceived material change in OA situational context, alongside considerations of interviewee's time.

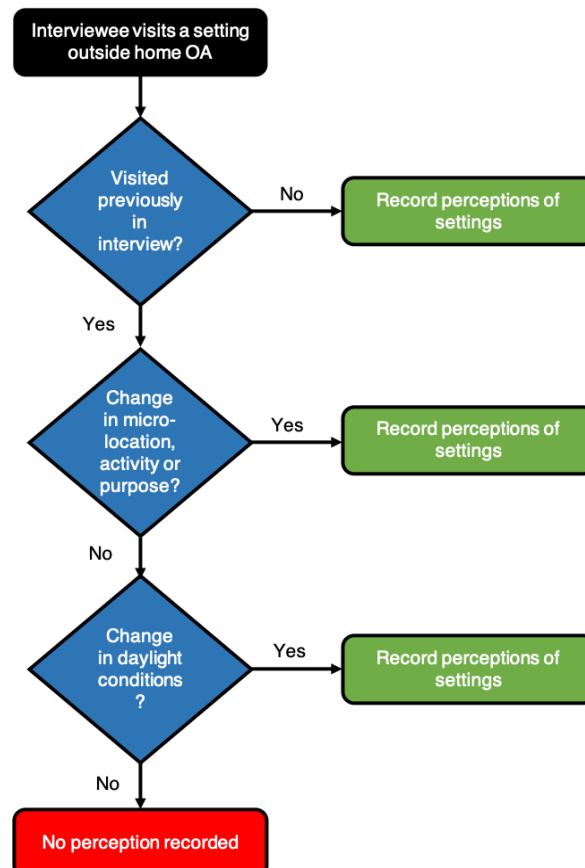


Figure 19: Flow diagram illustrating interview protocol process for recording perceptions of collective efficacy when participant visited a setting in STB

Interviewees were asked to provide their perception of the setting and their hypothesised response as they had interacted with it. This was so as to tap into their interaction with the setting. A limitation of this approach, as will be discussed, is that it is difficult to determine if the methodology captured a temporal perception of the setting (in the moment) or if interviewees drew upon past experience (previous knowledge of the setting). It is likely to have been a mixture of both, given how previous experiences of settings shape our use and perception of them (Wikström, 2008; Innes *et al.*, 2009; Hirtenlehner and Wikström, 2016). A measure of frequency of use was collected after each set of perception questions in order to obtain a more objective measure of familiarity with the setting. Asking respondents how

familiar they were with the setting beforehand may have resulted in them responding based on past experience in the setting rather than their immediate perception of it.

Interviews lasted for around one hour but varied depending upon participants' interactions with different settings. Prior to the start of the interview, participants were asked to complete a short participant survey to obtain demographic information. This was completed on a tablet device. Where respondents either could not see the device (such as during phone interviews) or preferred not to use it, I entered details on their behalf.

5.4 Final sample

5.4.1 Key demographics

The final sample was comprised of 92 participants spread over the eight highest collective efficacy areas sampled. This resulted in an average of 10.8 residents per OA, which is slightly lower than small-area community survey recommendations (Oberwittler and Wikström, 2009) but nonetheless a sufficient level to tap into the social dynamics of settings with regards to residents' likely routine activity patterns.⁸² In one OA sampled (E00079348) only four participants took part. This may have been due to the small number of households within this OA (123 households, slightly lower than the average of 150 households per OA).

The mean age of participants in the PNGS 2019 was 54.4, but with a large standard deviation representing a good diversity of ages in the study ($SD = 15.5$). According to 2011 UK Census data, the mean age of residents who live in OAs sampled is 47.2; this figure includes all residents, including those under the age of 18. Given that this study sought to sample adults (those over 18) PNGS 2019 can be considered representative of adults in the neighbourhood by age.

Table 4, below, provides an overview of PNGS 2019 sample characteristics as compared with the eight OA Census areas sampled (average across the eight). As observed, PNGS 2019

⁸² Ecometric scholars have recommended an average of 20-30 respondents to measure neighbourhood-level characteristics but when using much larger neighbourhood units than Census OAs (Sampson and Raudenbush, 1999).

participants were broadly representative of OAs sampled (as recorded in 2011), albeit with a higher proportion being highly educated or having qualifications as compared with the OA population. This may represent a selection effect given that the study was posited as being part of a PhD thesis. The demographics comparison supports the idea that routine activity patterns explored in chapter 6 are representative of the social dynamics occurring within and across these selected neighbourhood settings.

Table 4: Key demographics of PNGS 2019 participants as compared with 2011 Census data for OAs sampled

		PNGS 2019		Census 2011	
Construct		N	% of sample	N	% of areas
Sex	Female	48	52.1	1259	50.7
	Male	43	46.7	1225	49.3
	Other	0	0	--	--
	Missing	1	1.1	--	--
Ethnicity	White	80	86.9	2044	83.6
	Asian	10	10.8	332	13.6
	Black	1	1.1	30	1.2
	Mixed	0	0	38	1.6
	Missing	1	1.1	---	---
Highest education level (or equivalent)	University degree	42	45.6	838	41.6
	A levels (college)	25	27.2	306	15.2
	GCSEs (compulsory school)	20	21.7	567	28.2
	No qualifications	4	4.4	303	15
	Missing/Unknown	1	1.1	---	---
Employment	Full-time employed	34	37	781	44.7
	Part-time employed	16	17.4	334	19.1
	Full-time education	1	1.1	46	2.6
	Housewife/husband	9	9.8	51	2.9
	Retired	27	29.3	465	26.6
	Unable (medical)	3	3.3	31	1.8
	Unemployed	1	1.1	39	2.2
	Missing	1	1.1	---	---

5.5 Conclusion

Having outlined the development and deployment of the PNGS 2019, discussion will now turn to chapter 6, where I provide further detail regarding data collected and include some exploratory analysis in relation to our research questions.

6 Situational perceptions of collective efficacy: findings and discussion

In this chapter, I aim to empirically assess the situational dynamics of collective efficacy as a measure of moral rules and their level of enforcement in settings for crime. In line with advancements in social ecological criminology, I submitted that the study and measurement of individual interactions with different social environments, as applied to the study of criminal events (Hardie, 2020; Hardie and Wikström, 2020), is a fruitful avenue of collective efficacy study, as it offers (i) the potential to tap into dynamic explanation for behaviours underpinning the varied maintenance of neighbourhood moral rules and norms across setting; and (ii) captures and reflects the mobile dynamics of urban social life of those settings (Wikström, 2007; Taylor, 2015; Hipp, 2016b). This chapter therefore presents analysis from the deployment of an adapted Space Time Budget (STB) methodology within the Peterborough Neighbourhood Guardians Study (PNGS 2019). Given that this is the first such use of this methodology in guardianship research, findings discussed in this chapter represent an exploratory assessment of the data collected alongside validated sources such as the Peterborough Community Survey 2012 (PCS 2012). The aim of such exploratory discussion is therefore to contribute to empirical and methodological knowledge and prompt further scholarly interest as to the relevance of perceiving and enforcing moral rules in settings beyond the home neighbourhood.

This chapter is divided into two main components:

1. A review of data collected during the primary research phase in the PNGS, and the analytical rationale used in this chapter.
2. Exploratory analysis of this data alongside data derived from the PCS 2012 in response to the key research questions guiding this empirical study. These questions seek to answer some of the assumptions which underlie the situational explanations for collective efficacy's relationship with neighbourhood crime, through the lens of neighbourhood guardianship practices.

Chapter 7 will then focus on reviewing the suitability of the STB methodology in guardianship and collective efficacy research, recommending proposed adaptations to use of the methodology and outline pathways for future research to supplement PNGS 2019 findings. Chapter 8 will then conclude this thesis, summarising key findings and contributions across chapters.

6.1 Data Overview

6.1.1 Peterborough Community Survey 2012 – background moral rules

In line with existing principles of person and environment situational analysis, this chapter seeks to answer research questions through the combined analysis of different ecological or ecometric data sources (Raudenbush and Sampson, 2002; Wikström *et al.*, 2012; Hardie, 2020). As observed, the situational dimension of collective efficacy is not readily captured through community survey data, which reflects informants' (that is, residents') observations regarding the perceived moral rules and their level of enforcement within the home neighbourhood setting (Wikström *et al.*, 2010; Hardie, 2020; Hardie and Wikström, 2020). Collective efficacy community survey data provides a reliable measure of the backdrop of moral rules in the setting: the continuity of rules and their likely enforcement as interpreted by those most likely to understand and observe this – neighbourhood residents. In this study, I have therefore sought to utilise available situational data and supplement this with my participants' perceptions of moral rules within settings interacted with. Thus, in this analysis, the PCS 2012 provides background data on the general moral rules of the setting, as collected from neighbourhood residents; the situational perception of moral rules data collected as part of the Peterborough Neighbourhood Guardians Study (PNGS, 2019), provided by visitors to a setting (interviewees in this study), therefore taps into their interpretation of those social and physical cues within such settings.

Answering research questions by analysing these variables together in a cross-sectional study such as this does present analytical challenges – some of which are unique to this study, and some which are more general to the STB methodology employed (as discussed by Wikström, Treiber and Hardie, 2012; Hardie, 2020). Interview data collected for this study derives from a specific time (hour of the day, day of the week, month of the year, and year) at a specific place (OA location) whilst undertaking a specific activity, with specific people. As to be

expected, there is both a temporal and situational gap between data collected in the PNGS 2019 and PCS data collected from neighbourhood residents' perceptions in 2012. The situational aspects of the setting captured in the PNGS 2019 are informative in supplementing PCS 2012 findings – for example, with interviewees' perceptions of settings in 2019 providing a richer, contextual account of these settings at certain times of the day.

However, in order to ascertain whether visitors to settings accurately perceive the moral rules of a setting, analysing PNGS 2019 perceptions against those derived from the PCS 2012 creates a temporal gap in setting perception. PCS 2012 collective efficacy data is highly representative survey data of residents within OAs studied; and furthermore, perceptions are aggregated to small-area neighbourhood units, meaning that variation in perceptions across neighbourhoods are captured and represented, rather than being lost in mean calculations for larger neighbourhood units (Oberwittler and Wikström, 2009). But whilst the PCS 2012 is the most apposite source of comparable data to answer research questions, there is a risk that the level of neighbourhood collective efficacy (and so moral rules and their level of enforcement) may have changed between 2012 and 2019.

Steps have been taken in constructing this analysis to mitigate such risks. Firstly, it is important to note that collective efficacy research has often noted the stability of the concept – and so its social process – over time. In Sampson's revisiting of Chicago neighbourhoods as part of the PHDCN study, he observed collective efficacy to be a stable concept between two waves of community survey data in 1996 and 2002 - despite shifts in the socio-demographic makeup of neighbourhoods considered (Sampson, 2012, p. 170). He therefore notes that collective efficacy has an 'enduring effect' on crime over that period (Sampson, 2012, p. 170). Similarly, in Peterborough, UK, we see that between two PCS waves conducted as part of the PADS+⁸³ longitudinal study, mean collective efficacy was stable between PCS 2005 ($M = 3.21$, $SD = 0.27$) and PCS 2012 ($M = 3.31$, $SD = 0.26$) waves.⁸⁴ This stability is, however, drawn from comparisons of cross-sectional data conducted at different time points. Longitudinal models, assessing specified change in collective efficacy's explanatory power over time have however

⁸³ Previously known as the Peterborough Youth Study (Wikström and Butterworth, 2006)

⁸⁴ Note however a statistically significant increase between the two means. A paired sample t-test which was run using a matched set of OA ($n = 518$) revealed a significant increase in OA collective efficacy over this time period ($t(495) = 11.5$, $p < .001$).

found strong reciprocal relationships between collective efficacy and neighbourhood social disadvantage – a spiral effect suppressing collective efficacy over time (Hipp and Wickes, 2017). This finding nonetheless indicates that collective efficacy is likely to be a relatively stable concept in settings where social factors such as neighbourhood disadvantage and population turnover are also stable.

Noting the potential for collective efficacy’s ‘enduring effect’, it is nonetheless important to mitigate any potential shift in collective efficacy over time which may affect any comparisons drawn with PNGS 2019 data. Thus, OAs which saw significant urban development between 2011 and 2019 were excluded from analysis in this study. In Peterborough, new development and expansion has and continues to be largely confined to the South of the city in the Hampton district, which lies between the city of Peterborough and the neighbouring village of Yaxley. Exclusion of observations in these neighbourhoods (12 hours) did not substantively impact upon the final number of observations derived from PNGS 2019 data. This time lag will, however, be duly noted and explored when interpreting results considered below.

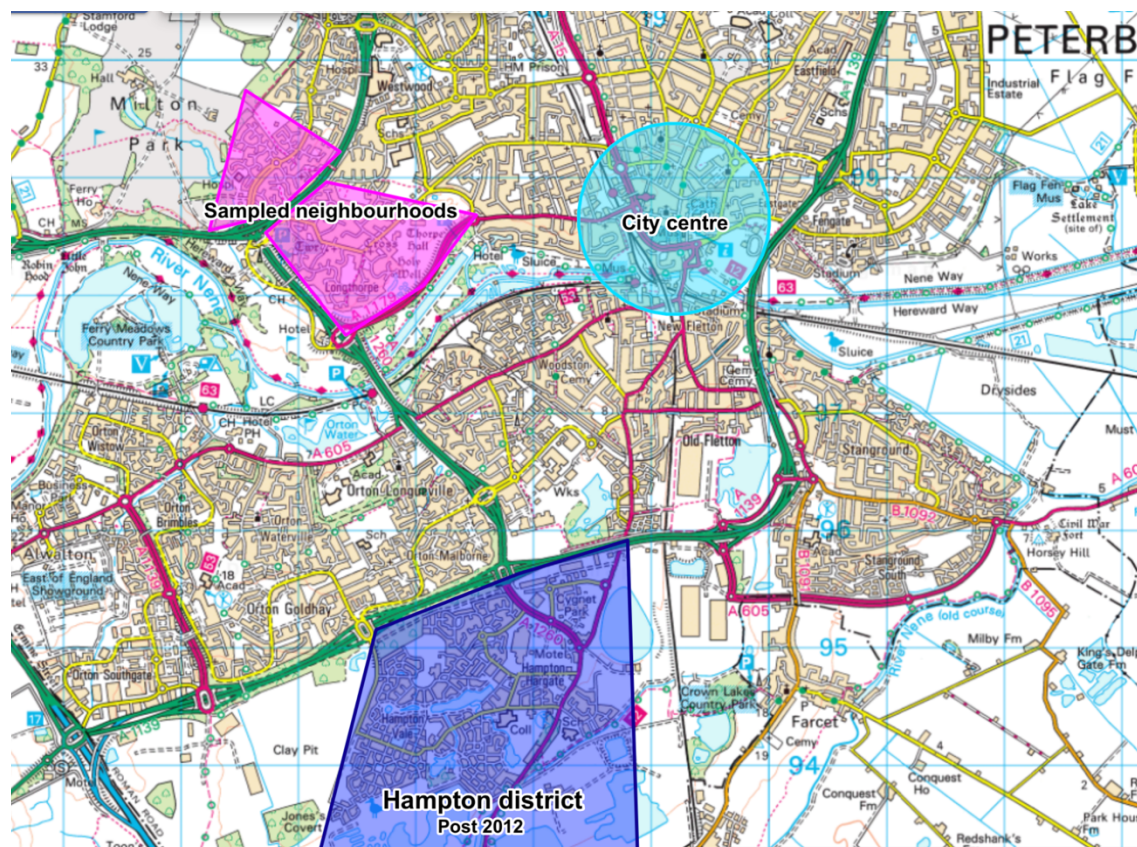


Figure 20: Map illustrating location of the Hampton district of Peterborough in relation to the city centre and sampled neighbourhoods

Source: Map created at Digimap.ac.uk

Having noted these shortcomings, the PCS 2012 nonetheless provides arguably the most detailed and accurate account of aggregated collective efficacy data in the UK.⁸⁵ Given the small-area level of aggregation of this data, variation in the minutia of moral rules within place are more accurately captured and therefore represented across the city (Oberwittler and Wikström, 2009). This data therefore represents the most appropriate available collective efficacy data for comparing and assessing perceptions of collective efficacy at the situational level. Analysis here seeks to build upon this detailed and reliable account of setting moral rules with additional perception data across a range of OA settings in Peterborough, UK.

6.1.2 Peterborough Neighbourhood Guardians Study 2019 - Situational Collective Efficacy Measures

Table 5, below, summarises descriptive statistics for the main variables collected and utilised within this analysis chapter. The sample of 92 interview participants provided 608 hour observations of collective efficacy within settings visited. Of this, 454 hours of perception data were collected within residential OAs; and 154 hours were collected for city and local centres, using the adapted moral rules scale. The full interview schedule and collective efficacy scale items used can be found in Appendix E. Standard deviations were generally higher for social control perceptions as compared to social cohesion, both for individual willingness to intervene and perceptions that others would intervene (enforcement of moral rules) in the setting.

Interviewees' hour observations of setting social cohesion and setting social control were highly correlated in both residential ($\rho .774 p < .001$.) and non-residential settings ($\rho .758 p < .001$), which continues to support the notion of combining measures to form the latent concept of collective efficacy (Sampson, Raudenbush and Earls, 1997; Sampson and Raudenbush, 1999; Silver and Miller, 2004; Sampson and Wikström, 2008; Wikström *et al.*, 2012; Burchfield and Silver, 2013; Gerstner, Wickes and Oberwittler, 2019). Thus, perceptions of moral rules are strongly associated with their perceived level of enforcement in settings visited.

⁸⁵ Sutherland *et al.*'s (2013) studies utilising collective efficacy data in London, UK, aggregated responses to Lower Super Output Areas, made up of around 4-6 OAs representing an average population of 1,500 people. These are, however, smaller than PHDCN Chicago neighbourhood units of around 4,000 people.

Table 5: Summary table of PNGS 2019 situational collective efficacy measures (perception hours)

Variable	Method	Mean	SD	Number of hour observations
Perceived moral rules - <i>residential</i>	Mean score across 5 social cohesion scenario scales	2.78	.531	454
Perceived moral rules - <i>city and local centres</i>	Mean scores across 5 adapted social cohesion/moral rules scenario scales	2.15	.462	154
Perceived enforcement of moral rules	Mean scores across 4 social control scenario scales ⁸⁶	2.44	.736	608
Perceived collective efficacy - <i>residential</i>	Latent variable of perceived moral rules in residential settings and perceived enforcement	2.61	.597	454
Perceived collective efficacy – <i>city and local centres</i>	Latent variable of perceived moral rules in city and local centres and perceived enforcement	2.10	.495	154
Individual willingness to intervene	Mean score of 4 item scale asking if interviewees themselves would intervene in that setting	2.33	.670	608

As explored in chapter 5, existing collective efficacy scales were used to tap into the situational perceptions of neighbourhood collective efficacy (see Appendix E). For analysis, response scales were reverse coded so that high means equated to higher perceived collective efficacy. This is a preferred approach by some collective efficacy researchers to align mean scores with other psychological measures, ensuring a consistent positive correlation can be more easily interpreted, avoiding error. This also aligns PNGS 2019 coding with that of the PCS 2012 collective efficacy data.

⁸⁶ For perceptions of social control on a Saturday, or after school-time hours, three items were included in the mean calculation. This is because one of the social control scenarios asks if respondents think residents would intervene if ‘children were skipping school’. It became clear in the small pilot study that the temporal nature of this scenario is relevant, in the UK at least, between 08:30 and 15:30, Monday to Friday. This highlights that respondents, when completing collective efficacy community surveys, may use a daytime reference period when making their determination of whether neighbours will intervene. The two social cohesion means calculated using 4 items ($M = 2.31$, $N = 486$) and 3 items ($M = 2.28$, $N = 122$) were comparable.

Owing to the structure of the data observations being aggregated to different settings visited, (see Figure 21) and the exploratory nature of analysis, perceived collective efficacy scores represent the raw means rather than those adjusted to reflect participant's characteristics which may influence such perceptions (e.g. age, social class) (as in Wikström *et al.*, 2012, p. 103). That said, analysis of collective efficacy survey data has often found assessments to be largely independent of respondents' age, gender and socio-economic status (Oberwittler and Wikström, 2009; Janssen, Oberwittler and Gerstner, 2019). Given that the raw perception scores considered here were also derived from an interview protocol (Figure 19) designed explicitly to record variation in situational factors (purpose in setting, time, etc.) this adds credence to the argument that these scores captured perceptions and features of the settings observed rather than of the respondents themselves. Given the small and relatively homogenous sample analysed here, the influence of such individual-level factors on perceptions is not fully explored. As shall be discussed, participant's age (being 50 and over) did appear to suppress perceptions of collective efficacy (lower means observed). The reasons for this and its implications on the use of the method will be duly considered in the proceeding discussion and chapters.

Data for this chapter was first cleaned and compiled in Microsoft Excel, before being imported and analysed in SPSS version 27 (for Mac). STB data is imported into SPSS in a distinct manner. In a typical social science study each data row in SPSS represents a participant of a study (Field, 2009). Within STB data, however, each row represents an hour of the day; thus, data in columns is repeated where relevant (e.g., participant ID, date etc) across the 96 hour period. Binary variables were used to identify and select relevant cases for analysis.

6.1.3 Distribution and structure of STB Data – identifying appropriate analytical methods

6.1.3.1 Data structure

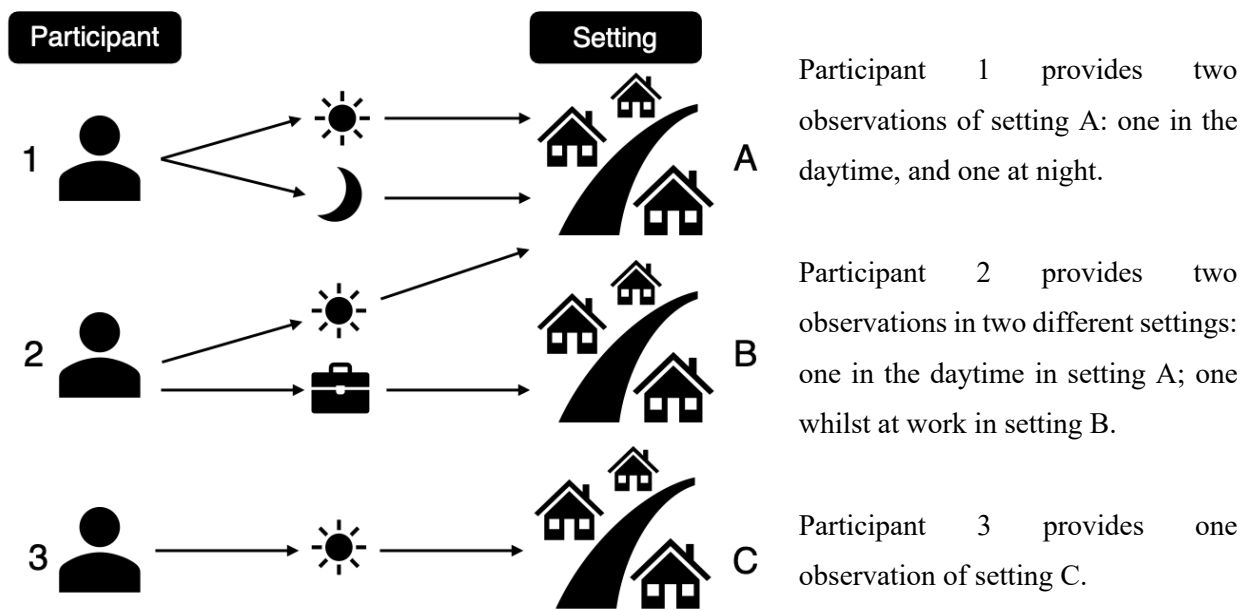
STB data collected in this study has been constructed to enable analysis of different aspects pertaining to guardians' interactions with settings. As outlined in chapter 4, STBs record 96 hours of data, capturing the participant's location (in an OA), activities, and who they were with for each hour of the day within this period. For the PNGS 2019, I supplemented this

structure with additional collective efficacy questions, obtaining data on respondents' perceptions of moral rules and their enforcement within individual OAs. Thus, analysis can be conducted on both the time use patterns of the sample (96 hours per person), or through their perception of collective efficacy in the setting, which I term 'hour observations' in this study. As noted, this was separated using a binary code for those 608 hours that contained a collective efficacy observation in line with the interview protocol illustrated in Figure 19.

Collective efficacy hour observations in this study are associated with (i) a specific time; hours of the day; and (ii) a specific location: OAs. Thus, their analysis is not nested within individual study participants. This is distinct for collective efficacy research. Typically, community survey respondents provide perceptions of collective efficacy within their home neighbourhood; depending upon the research question, each individual's assessment is then aggregated and combined to provide a measure of collective efficacy for that neighbourhood. At the small-area level, an average of 13 respondents per OA has been recommended as a reliable number of home neighbourhood assessments (Oberwittler and Wikström, 2009). Lambda calculations and multi-level models are used to verify if respondents have reliably captured an environmental characteristic, not one which is shaped by individual-level properties (as noted, age and social class) (Sampson, Raudenbush and Earls, 1997; Oberwittler, 2001, 2004; Oberwittler and Wikström, 2009; Gerell, 2015).

In this study, however, participants provided perceptions of collective efficacy within settings they visited as identified through the STB. These were recorded in line with the interview protocol in Figure 19, which sought to ensure that data captured was systematic and able to collect relevant information about the setting that may shape perceptions. Figure 21, below, illustrates the unique structure of PNGS 2019 data and the rationale for nesting this exploratory analysis within relevant hours and settings, rather than within people. The following is a hypothetical example which demonstrates how individual perceptions are linked to settings and variables used in analysis across the sample.

Figure 21: Illustration of PNGS 2019 data structure



The purpose and point of analytical interest in this study are perceptions of specific settings (within observation hours). Individual-level factors are likely relevant in the explanation of perceptions and willingness to intervene, as shall be discussed; however, the purpose of this study is to explore the suitability of the STB method as applied to guardianship in different contexts. The use of the method is therefore new and, as such, focusses on its ability to capture environment-level perceptions. In order for analysis to be nested within individuals, a much larger and diverse sample would be required, where the likelihood of overlap in settings could produce a number of hour observations suitable for multi-level modelling. Using hours (or in this case, hour observations) as the variable unit of analysis is a technique that has been employed in the analysis of STB data by a number of criminologists, who have used fixed effect models for hourly observations nested within individuals in a sample (Bernasco *et al.*, 2013; de Jong, Bernasco and Lammers, 2019). The appropriateness of a fixed effects model within this study is however less clear, given that observations, and perceptions of willingness to intervene, are analysed at the OA-area level within a specific hour of the day. Some settings will have more perception data; others will have less, owing to the smaller than anticipated sample size. As Hardie (2020) notes, such an approach does not record a person and environment interaction per se, but does permit us to use the STB to gather perception data from outside of the home neighbourhood.

6.1.3.2 *Data distribution*

Hardie (2020) highlights that in analysing time use data, the researcher is confronted with the challenge of managing a range of different types of data with varying distributions. Such varying distributions and units of analysis means there are not – as yet – agreed steadfast analytical rules to follow; rather, researchers may need to make use of a range of analytical approaches, guided by principles of best practice (Hardie, 2020). Resultantly, Hardie (2020: p. 57) recommends ‘use multiple methods, encourage replication, and conclude with caution’.

Owing to the routine skew of time-use data in relation to specific study populations, STB researchers have sought to either log-transform data (such as with crime frequency) (Wikström *et al.*, 2012) or utilise nonparametric analysis methods (Hoeben and Weerman, 2014; Hoeben *et al.*, 2014). Given the overlay of data sources within this study, this next section assesses data distributions in key relevant variables central to our research aims. This will be done in order to consider the suitability of analytical methods for responding to overarching research aims and research questions below.

6.1.4 *Exposure to settings*

6.1.4.1 *Exposure by PCS 2012 data - total hours*

One important method of distribution is to consider where interviewees were exposed to settings within Peterborough. Utilising PCS 2012 collective efficacy data offers us an ambient measure of interviewees’ exposure to settings which contain different moral rules and their level of enforcement. For guardians, this may be of importance for better understanding how selection effects – that is, a skew of time spent in settings with stronger moral rules – may shape perceptions of rules.

Table 6, below, summarises interviewees’ exposure to settings by PCS 2012 collective efficacy quintile. Of the total time (including hours asleep in a setting) spent within the city of Peterborough, around 80% of the sample’s time was in settings with the highest levels of collective efficacy (top 80-100% of PCS 2012 collective efficacy distribution). This skew is to be expected, given that 67% of their time was spent within their home neighbourhood, which

were sampled on the basis of their high collective efficacy as well as their spatial proximity to city and local centres (see section on PNGS 2019 sampling).

Table 6: Number of hours exposed to different settings in Peterborough by a quintile distribution of collective efficacy data – total hours

Collective Efficacy PCS 2012 Quintile	Number of hours inc. home neighbourhood	Number of hours exc. home neighbourhood
0-20%	223	223
21-40%	406	406
41-60%	253	253
61-80%	531	531
81 – 100%	5770	358

Figure 22, below, illustrates the proportion of total time spent in settings by PCS 2012 collective efficacy quintiles across hour of the day. This helps us to consider where the variation in exposure to settings (Table 6) was observed. Variation in exposure to different settings largely occurred between the hours of 07:00 and 19:00, before reducing in the evening. Between the hours of 01:00 and 06:00, around 97% of the sample’s time was spent in settings with the highest level of PCS 2012 collective efficacy (80-100% quintile, in pink). This reflects being asleep at home.

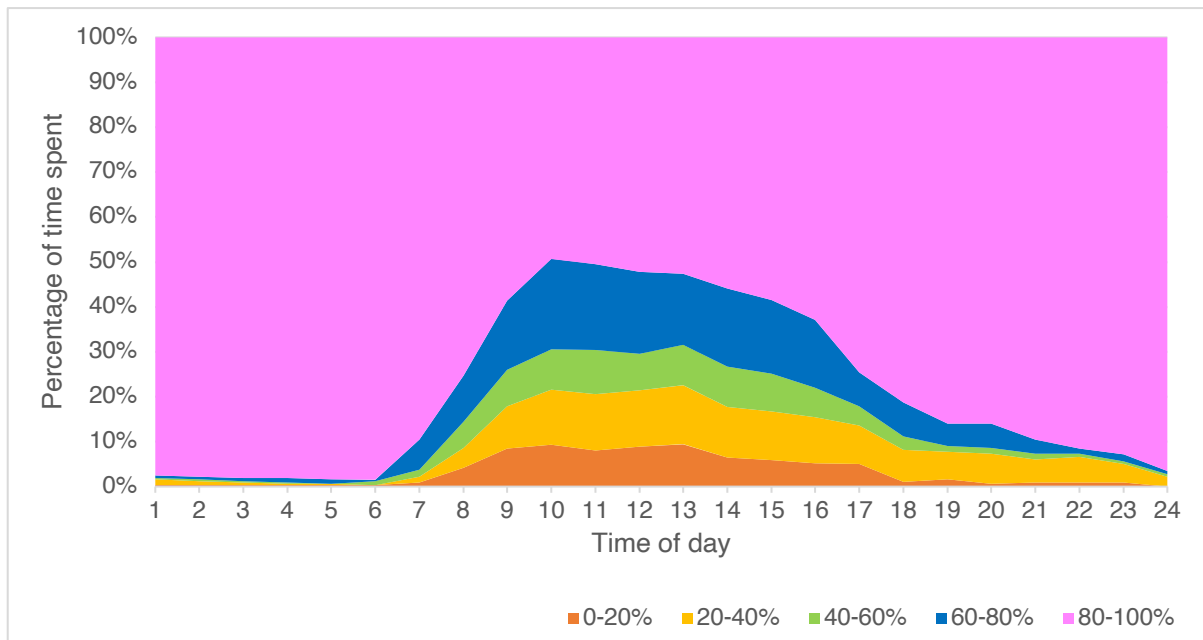


Figure 22: Area graph illustrating the sample exposure (percentage of time spent) in settings by PCS 2012 quintile – total hours.

6.1.4.2 Exposure by PCS 2012 data – excluding time spent within home neighbourhoods

Figure 23, below, illustrates the number of hours that the sample spent in settings by PCS 2012 collective efficacy quintile score when *excluding hours* within the home neighbourhood (but including hours asleep and awake). Here, we observe that between the hours of 06:00 and 18:00, the sample is exposed to a range of different levels of collective efficacy (different moral rules) across settings patronised. During the evening (between the hours of 18:00 – 24:00) we observe that outside of the home OA the sample were mostly exposed to settings with lower collective efficacy (20-40% score, yellow). Thus, exposure and time spent in settings by collective efficacy score varied by the time of day considered. It is important to note that this exposure relates to PCS 2012 scores, not interviewees' perception of collective efficacy within that area.

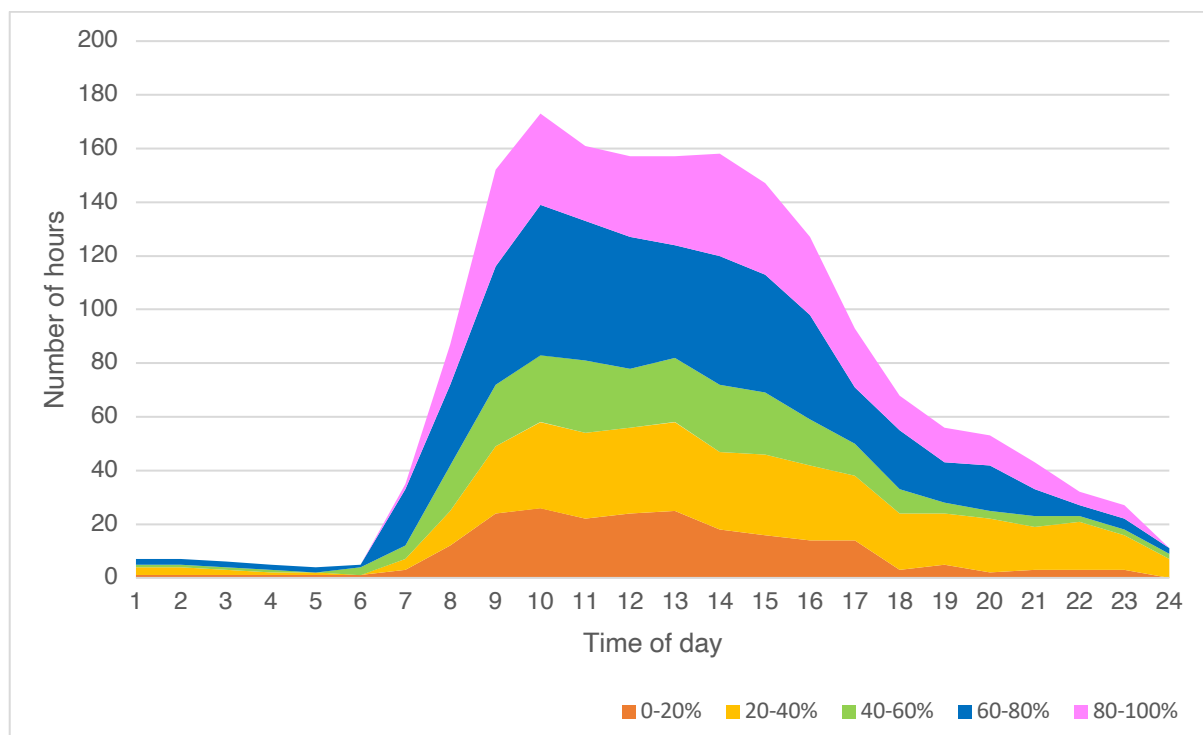


Figure 23: Graph illustrating the sample exposure (number of hours spent) in settings by PCS 2012 quintile - excluding hours spent within the home neighbourhood.

Figure 24, below, illustrates the distribution of PCS 2012 collective efficacy scores for settings visited by participants also excluding their home neighbourhood. On the face of it, we observe a relatively normal distribution by PCS 2012 collective efficacy exposure. There are however

notable peaks, likely representing repeat visits from different participants to the same OA setting across the sample (one of these being the Bretton Centre).

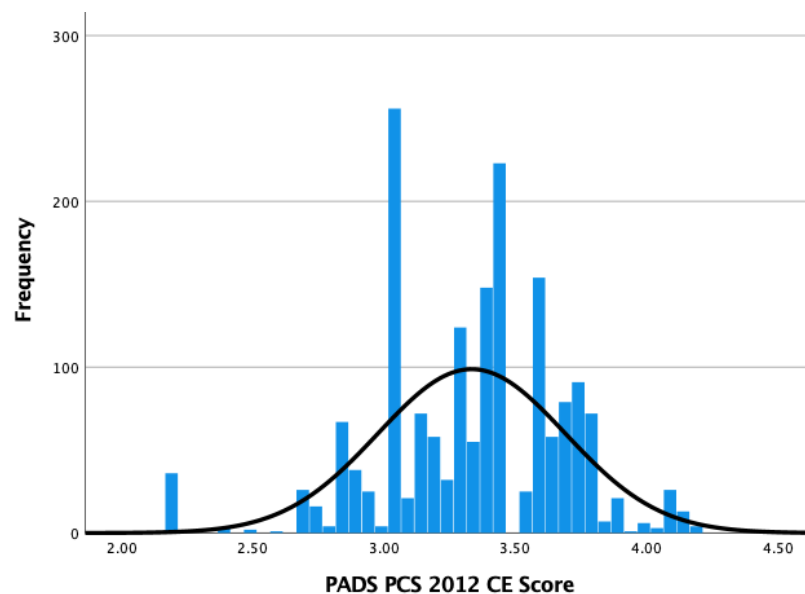


Figure 24: Histogram illustrating the number of hours spent in settings by their level of collective efficacy (PCS 2012) excluding time spent at home location. Note: 'frequency' refers to number of hours.

From the above, it appears that when excluding time spent (hours) within the interviewee's home neighbourhood, PNGS 2019 participants were exposed to a range of different moral rules across settings. This arguably allows us to explore how interviewees may have perceived these moral rules when visiting those settings. These differences are also evident when we consider the skew and kurtosis in PCS 2012 collective efficacy scores by exposure (time spent in these settings). Table 7, below, summarises some of the descriptive statistics for exposure to settings with different levels of collective efficacy. When including all hours spent in OAs across the sample, the data is, as anticipated, highly skewed. However, the distribution of time spent in settings outside of the home OA is more even, with a reduction in skew (to $-.448$) and kurtosis ($.845$). Despite an improvement in the distribution centred around traditional statistical parameters, these figures highlight that exposure to settings collective efficacy to be leptokurtic (Field, 2009). When using time-use data this is largely to be expected, given the potential for repeat observations (Hardie, 2020). In this study, we would expect that certain popular settings will have repeat visits from across the sample, as likely evidenced in the large spikes in time spent in a setting from across this sample, one of which represents the Bretton local centre (as anticipated in sampling locations).

Table 7: Descriptive statistics for participants' exposure to level of collective efficacy (PCS 2012)

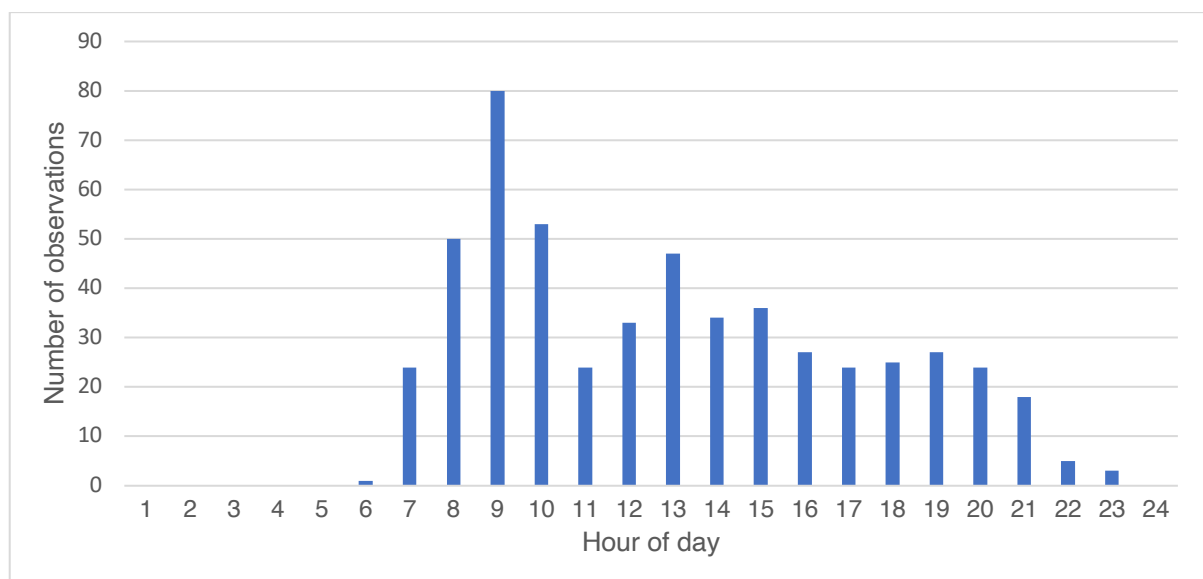
	Mean	SD	Skew	Kurtosis
PCS 2012 CE - Inc. home OA	3.67	.282	-1.922	4.959
PCS 2012 CE - Exc. home OA	3.33	.357	-.448	.845

N (number of hours) = 7205

6.1.6 Distribution of perceived collective efficacy data

We observe from the above a skew in exposure to different moral rules of settings. However, given that our focus in this thesis is to consider how collective efficacy is perceived, we also need to consider setting perception data gathered during the PNGS 2019. Assessing the distribution of the sample's perception of collective efficacy (hour observations) will provide a different, complementary consideration as to the appropriate analysis to be adopted in relevant tests. To begin with, the number of collective efficacy observations (hour observations) made at different times of the day were graphed (Figure 25). For those hours, excluding any observations made within the home OA, we observe that the most observations were made in the morning (09:00), with increases at lunchtime (13:00) before settling in the evening. This morning spike in observations (09:00) was somewhat driven by presence in workplace settings – 36.5% of observations during this hour were during work activity, 27.5% were leisure or recreational activity, and 22.5% being domestic activity (chores, grocery shopping). This roughly aligns with exposure data in Figure 23, indicating that the observation recording protocol (Figure 19) was adhered to in the interview process.

Figure 25: Graph illustrating the number of collective efficacy hour observations made within an OA by time of day (excluding observations outside home OA).



Across residential neighbourhood settings, we observe a relatively normal distribution of collective efficacy hour observations (PNGS 2019) across settings visited, centred around the mean of 2.61 (Figure 26).

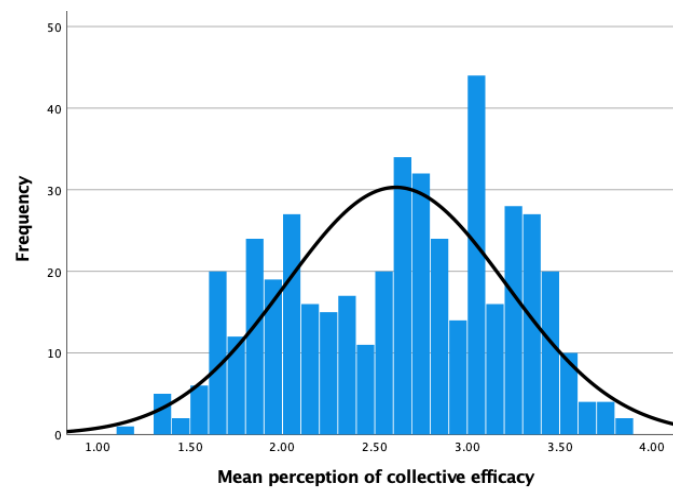


Figure 26: Histogram illustrating the distribution of perceived collective efficacy scores across residential setting – including home OA

Again, the plot of this distribution improves when assessments of collective efficacy made within home neighbourhoods are excluded from the histogram (362 hour observations; $M = 2.48$, $SD = .672$). As summarised in Table 8, below, this further improved the skew of the data; however, high kurtosis remained. This indicates that outside of time spent within home OAs, respondents perceived a range of stronger and weaker moral rules.

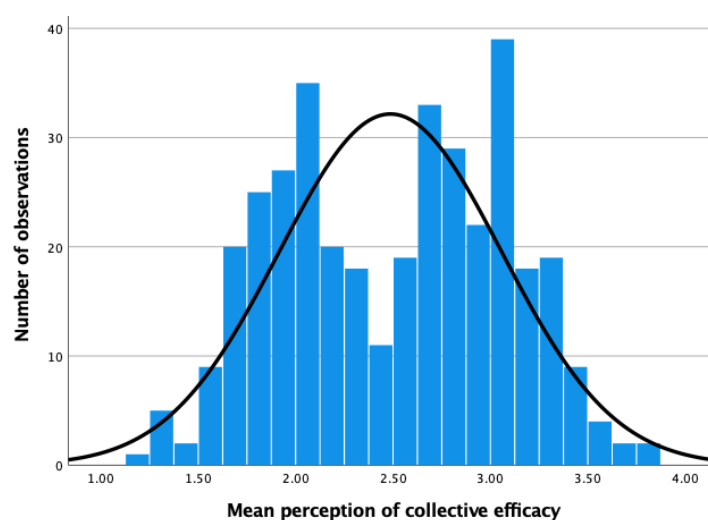


Figure 27: Histogram illustrating the distribution of perceived collective efficacy scores across residential settings - excluding observations in home OAs

A similar normal distribution is evidenced for perceptions of collective efficacy in city and local centres (Figure 28) which used an adapted scale of moral rules perceptions.

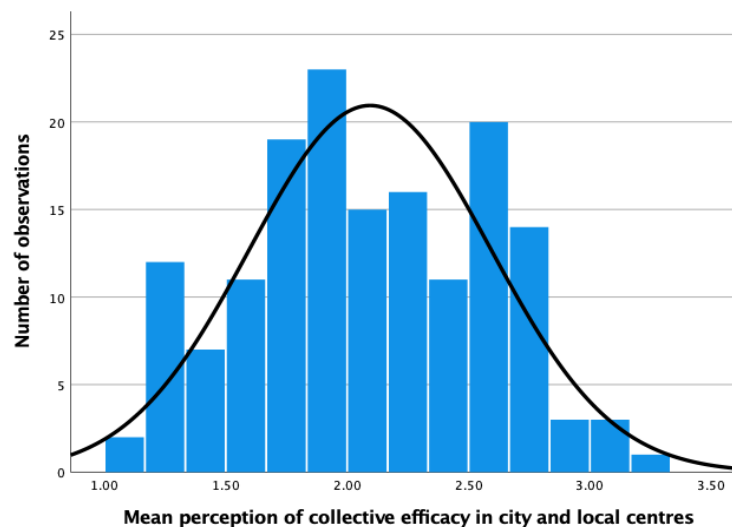


Figure 28: Histogram illustrating the distribution of perceived collective efficacy across city and local centres (adapted scale)

Whilst histograms display a normal distribution, it is evident that perceptions of collective efficacy in residential settings continues to be skewed (-.210), and with high kurtosis (-.887). This improves however when we exclude perceptions of collective efficacy made in the home neighbourhood, to a low skew -.012, but again, high kurtosis -.790. With time use data and perception hours across settings, high kurtosis is to be expected where there are repeat visits to popular settings which may have similar levels of perceived collective efficacy. Interviewees who decide to go for a walk in the local park, for instance, might visit a different OA, but one which, by its proximity and social patronage, mirrors that of their home OA. Thus, this high kurtosis likely represents the social selection effects of the study sample, despite their differential assessment of perceived collective efficacy evidenced in the normal distribution (low skew) of the setting perception data.

Whilst city and local centre perceptions are more normally distributed, it is important to note that these calculations derive from a smaller number of observations ($n = 154$ hours) and further an adjusted moral rule (social cohesion) scale.

Table 8: Summary table of PNGS 2019 mean collective efficacy perception scores in residential and non-residential settings

Collective efficacy perception hours	N	Mean	SD	Skew	Kurtosis
Residential settings – inc. home OA	454	2.61	.597	-.210	-.887
Residential settings – exc. home OA	362	2.48	.672	-.012	-.790
City and local centre	154	2.09	.498	-.042	-.623

6.1.7 Analytical Strategies

There is a dominant skew and kurtosis evidenced in PCS 2012 exposure data and high kurtosis in PNGS 2019 perception data, favouring the use of non-parametric methods for analysis. However, given that this methodology, and therefore analysis, is exploratory in the field of collective efficacy research, parametric tests will supplement analysis when using PNGS 2019 perception hours in instances where (i) home OA perceptions are excluded. The high kurtosis evidenced in this data arguably relates to the sample population measured; we anticipate, for instance, that they are likely to socially and self-select into settings with shared perceptions of collective efficacy. However, as advised when interpreting STB data, caution will be exercised in reaching final conclusions (Hardie, 2020).

Attempts to log transform data here would be inappropriate, given that PNGS 2019 data derives from a situational perception of settings visited. Any transformation applied could serve to smooth variations in these perceptions, and would affect the validity of observations analysed. Conducting nonparametric calculations is not necessarily problematic, given the precision with which these scenario methods had been adopted and aggregated to micro-settings. Descriptive statistics will also therefore be used to highlight relevant patterns and nuance to explore beyond what community survey data can provide.

- Main findings -

The following section uses the abovementioned data sources to respond to key research questions of this thesis. Each question will be considered in turn. In chapter 7, these findings will be conglomerated in discussion as to how the STB methodology can enhance the study of collective efficacy and guardianship social processes, whilst also reviewing how the PNGS 2019 STB approach and methods should be adapted for future research, in light of limitations identified.

6.2 Perceptions of collective efficacy across settings

6.2.1 *Can the level of collective efficacy be accurately discerned by visitors to a setting?*

As outlined in Chapter 4, one of the key assumptions underlying collective efficacy's explanatory effect on crime is that the level of collective efficacy within a setting can be accurately discerned. Questions around this perception have largely been considered from the standpoint of offenders (St Jean, 2007; Chouhy and Unnever, 2020), through the deterrence experiences of those with a high crime propensity (Wikström, 2008; Wikström, Tseloni and Karlis, 2011; Wikström *et al.*, 2012). Little attention has however been given to the consideration that those that may come to enforce moral rules within settings – as expressed, neighbourhood guardians – can also perceive the collective efficacy of a setting (Hipp, 2016b). Within guardianship research – which is more aligned with the Routine Activity Theory tradition – the existing moral rules of setting visited are largely ignored in explanations as to what moves individuals to intervene in preventing crime (Reynald, 2009b, 2018); rather, there is a strong situational focus on facets of the immediate setting, rather than the background perceptions of maintained rules and their enforcement. Yet, as I outlined in Figure 14 and Figure 15, the perception of setting moral rules may provide guardians with social cues not only for compliance (moral correspondence) but also to foster necessary interventions when observing a breach of identified moral rules. Given the live nature of patronage across urban spaces, this perception outside of the home neighbourhood potentially matters for the enforcement and maintenance of moral rules across settings, beyond that of neighbourhood residents (Taylor, 1988, 2015; Hipp, 2016b).

In order to consider if visitors to settings are able to discern the level of collective efficacy within a visited setting, I correlate interviewees' perceptions of collective efficacy (PNGS, 2019 hour observations) with those measured in the PCS 2012. Nonparametric correlational techniques have been used to validate the accuracy of STB methods against other methodologies and data sources across time points (Wikström *et al.*, 2012; Bernasco *et al.*, 2013; Bruinsma *et al.*, 2013; Hoebe *et al.*, 2014; see also Nettle *et al.*, 2014). Noting limitations here (to be discussed) this analysis is therefore validated (Hoebe *et al.*, 2014) and appropriate in responding to this research question.

6.2.1.1 Perceptions of settings – Collective Efficacy

(i) Can moral rules be discerned?

Across residential settings, there was a significant and moderate correlation observed between PCS 2012 collective efficacy and PNGS 2019 collective efficacy hour observations in relation to settings visited ($\rho .530, p < .001$). Given that data here is aggregated to small neighbourhood units of around 150 residences, this is arguably a strong finding in support of the notion that participants could interpret and perceive the moral rules of a setting accurately; furthermore, that collective efficacy as a measure consistently taps into the rules and their enforcement of settings.

The above correlation does however include observations of collective efficacy within interviewees' home neighbourhoods. In line with the basis of the community survey method, it is submitted that residents' perceptions of collective efficacy here are likely to be more accurate, given the extended time spent and experience of home neighbourhood social dynamics (Raudenbush and Sampson, 2002). In order therefore to tap further into the situational perception of moral rules for those participants visiting different settings, correlations were repeated by excluding home OA hour observations. The resultant correlation was weaker ($\rho .413, p < .001$) but nonetheless significant. Given that interviewees provided a situational measure of the moral rules of the setting within a micro-context, this correlation nonetheless supports the notion that residents were able to discern the moral rules and their likely enforcement within a setting.

Interestingly, residents' perceptions of situational collective efficacy were more accurate in high collective efficacy settings as compared to low collective efficacy settings. This was determined by collapsing quintile categories of PCS 2012 collective efficacy scores into strong moral rules (60-80%, 80-100%) and weak moral rules (0-20%, 20-40%, 40-60%).⁸⁷ In settings with strong moral rules, interviewees' hour observations of collective efficacy ($n = 288$) were significantly and moderately correlated with PCS 2012 measures ($\rho .421, p < .001$). In settings

⁸⁷ Previous unpublished collective efficacy research by the author of this thesis identified the potential for a threshold effect for social control above to the 60-80% quintile. That is, interventions became significantly more likely in settings with the highest quintiles (60-80% and 80-100% of PCS 2012 CE data).

with weak moral rules ($n = 166$), there was a weak but significant correlation between interviewees' perceptions of moral rules and PCS 2012 measures ($\rho .156$ $p < .001$). This indicates that interviewees were more able to accurately perceive setting collective efficacy that was stronger (high collective efficacy) rather than weaker (low collective efficacy).

Table 9: Summary table of correlations between PCS 2012 collective efficacy measures and PNGS 2019 collective efficacy observations

	PNGS 2019 Situational Collective Efficacy			
	All hours	Exc. home OA	Settings with high CE	Settings with low CE
PCS 2012 Collective Efficacy	$\rho .530^*$	$\rho .413^*$	$\rho .421^*$	$\rho .156^*$

*Significant at $< .001$. N (observation hours) = 454

The analysis above reveals that correlations between PCS 2012 collective efficacy data, and PNGS 2019, are stronger in settings with high collective efficacy as compared with those of low collective efficacy. In the context of our research question, this means that the moral rules in setting with low collective efficacy may not be as discernible (at least to this sample) as compared to in high collective efficacy settings. This comparison with PCS 2012 data relates to assessments made by neighbourhood residents within those OA; as such, these perceptions will likely therefore be more accurate in reflecting the social life of those contexts, given the stronger familiarity with them. In low collective efficacy neighbourhoods ($n = 166$) mean perceptions of moral rules were substantially lower in PNGS 2019 ($M = 2.11$, $SD = .562$) as compared to PCS 2012 observations ($M = 3.06$, $SD = .227$) across the same settings. A Mann-Whitney test identified this difference to be highly significant ($U = 23.7$, $p = < .001$). This means that neighbourhood residents in PCS 2012 considered their neighbourhoods to have higher levels of collective efficacy as compared to visitors to those same settings in the PNGS 2019.

It is important to note that splitting the data by PCS 2012 quintile categories creates a restriction in variance; this is an atypical method of analysis, but permits some exploration in perception differences across OAs visited. As such, despite using Spearman's Rho, the resultant correlations between PCS 2012 and PNGS 2019 data, and mean differences reported are split by the distribution of PCS 2012 data, which likely resulted in boosted covariance between the stronger CE measures. This is demonstrated in Figure 29 ('high' CE perception hours) below,

which shows stronger covariance of measures as compared to Figure 30 ('low' CE perception hours).

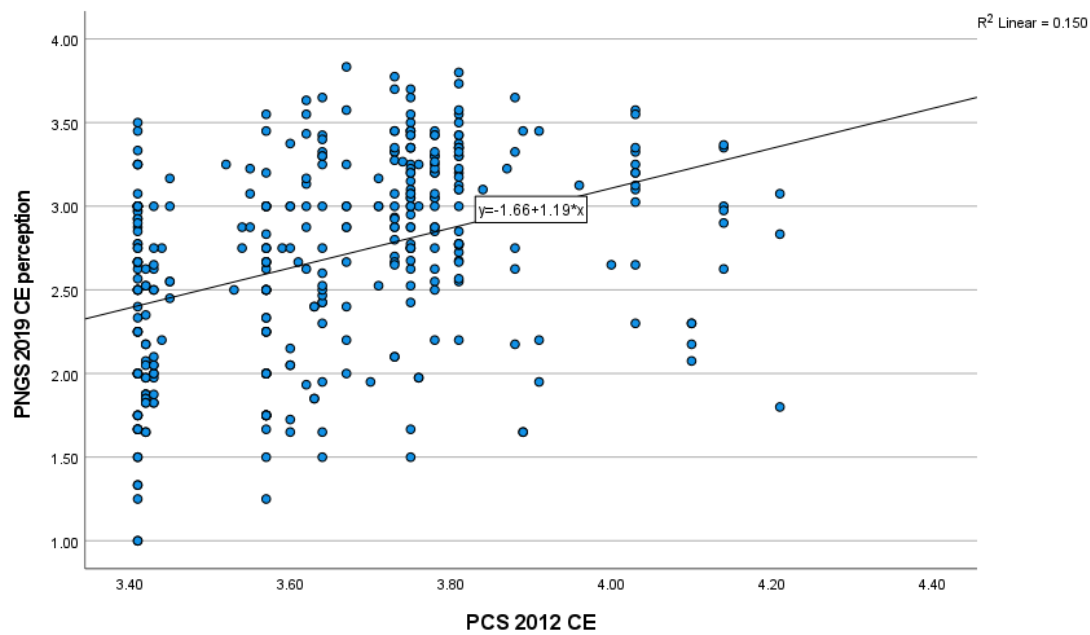


Figure 29 Scatterplot illustrating the relationship between PCS 2012 CE and PNGS 2019 perceptions of CE – in PCS 2012 'high' CE settings

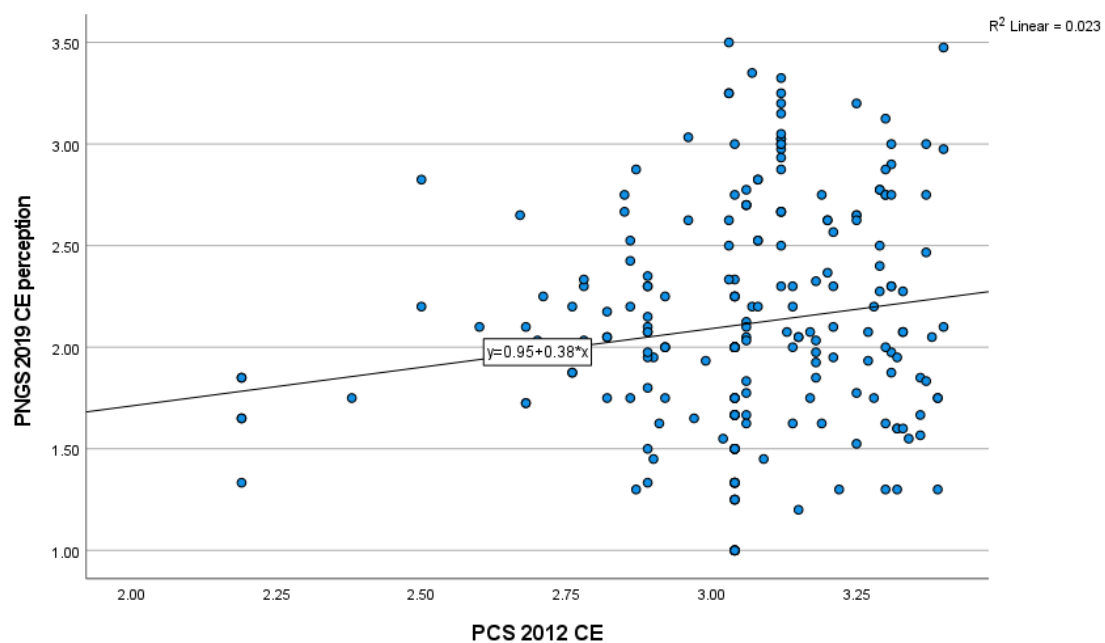


Figure 30 Scatterplot illustrating the relationship between PCS 2012 CE and PNGS 2019 perceptions of CE – in PCS 2012 'low' CE settings

Whilst this analysis artificially restricts variance in the perception data, the weaker correlation between PCS 2012 and PNGS 2019 in ‘low’ CE settings is nonetheless interesting to theoretically explore further, especially in light of perception studies finding visitors to accurately perceive settings (Nettle *et al.*, 2014). The reasons for this disparity may further relate to:

A. Changes in collective efficacy over time.

As stated, there is a seven year gap between PCS 2012 collective efficacy observations and PNGS 2019 collective efficacy perceptions. The observed weak correlation in low collective efficacy settings may be due to changes in the level of collective efficacy within low collective efficacy neighbourhoods over this time period (those observed to have weak moral rules in 2012). Given the broader socio-political context in the UK that has developed since 2012, it is plausible to consider a reduction in collective efficacy within certain settings during this period, thus reflected in PNGS 2019 observations. Since 2010, some UK governments have adopted what have been termed ‘austerity’ policies, reducing public sector spending within government and state functions (Toynbee and Walker, 2020). Local authorities saw the most substantial reduction in budget as compared to other state functions between 2010 and 2016; English local council spending budgets, in real terms, were reduced by around 50% (Gray and Barford, 2018). This average was not evenly distributed, but the city of Peterborough nonetheless saw a 25% reduction in council service spending over this period (Gray and Barford, 2018, p. 557). Such services relate to, amongst other things, social care, education, housing provision, and rubbish collection. Thus, reductions in the provision of services were acutely felt by communities who were more reliant upon them, already experiencing neighbourhood disadvantage (Gray and Barford, 2018). Whilst contemporary Census data is not yet available,⁸⁸ available metrics highlight a likely increase in experiences of social disadvantage during this period: as compared with 2013, 600,000 more children are now classed to live in relative poverty across the UK (Social Mobility Commission, 2020).

⁸⁸ Latest available UK Census data being 2011. The Census for England was conducted on 21 March 2021, although data is not available at the time of writing. Scotland chose to postpone the Census due to the ongoing COVID-19 situation.

As discussed, previous research identifies a link between levels of social disadvantage and neighbourhood collective efficacy – where social disadvantage is higher within a neighbourhood, collective efficacy is typically lower (Sampson, Raudenbush and Earls, 1997; Wikström *et al.*, 2012). Whilst we do not yet have contemporary Census data to validate a potential increase in neighbourhood social disadvantage reducing neighbourhood collective efficacy, the broader socio-political situation over the last seven years makes this a distinct possibility affecting PNGS 2019 perceptions.⁸⁹

B. Perceptibility of high as compared to low collective efficacy

Given that the PNGS 2019 sample resided in settings of high collective efficacy, and indeed, by hour, spent the majority of their time in high collective efficacy settings (67% of hours were spent in areas of the highest collective efficacy, including time within their home neighbourhoods) interviewees likely have greater familiarity with the similar social cues of strong moral rules as compared with weak moral rules. As outlined in chapters 3 and 4, there are said to be distinct visual cues which settings provide and convey which are linked to high collective efficacy, such as being tidy, well-kept and maintained, with less disorder (Sampson and Raudenbush, 2004; Reynald, 2011a). The moral rules of our sample's home neighbourhood settings may correspond with settings of similarly high levels of collective efficacy, being more easily recognisable and interpretable due to their similar content of moral rules and likely relevance in law.

Conversely for this study population, social and physical cues related to low collective efficacy (weak moral rules) may be interpreted as a 'signal' of the potential for other crimes and disorders permitted in the setting (Sampson and Raudenbush, 2004; Reynald, 2011a; Innes, 2014; Hardyns *et al.*, 2021). Previous research identifies that perceptions of physical disorder (as an indicator of the setting moral rules) varies across populations (Janssen, Oberwittler and Gerstner, 2019); these perceptions may ultimately relate to one's own values or tolerances of

⁸⁹ During interviews, some respondents remarked on the number of HMOs – houses of multiple occupation – that had appeared in neighbourhoods. A HMO is defined as a typical dwelling, say a house, being converted into separate self-contained flats. Thus, a house for a family of four may house eight individuals in separate rooms. This was said to have impacted upon neighbourhood cohesion, with friction created due to the number of additional cars now parked in the area.

certain behaviours in settings (Sampson and Raudenbush, 2004; Sampson, 2009a; Janssen, Oberwittler and Gerstner, 2019) - a moral rule through individual perception filters (Wikström, 2007). Thus, those less familiar with these social cues (by generally spending less time in such settings) may conflate the signals of weak moral rules. The image does not conform to their own (high) moral rules and may therefore be misinterpreted to indicate weaker moral rules as compared to those perceived by actual residents of those settings (PCS 2012).



Figure 31 Google Streetview images from a sampled high collective efficacy neighbourhood (top - <https://goo.gl/maps/35JxXhZAEbGxMhEr9>) and a low collective efficacy neighbourhood visited

(bottom - <https://goo.gl/maps/J2MBHYYnXXKMR2Z29>) in Peterborough, UK. (Source Google Streetview).

The two Google Streetview images above represent a high collective efficacy neighbourhood (top) where some interviewees in this study resided, and a low collective efficacy neighbourhood which they visited (bottom). From a disorder perspective, the moral rules in the interviewee's neighbourhood appear to value maintained gardens, no litter or graffiti. Given these agreed moral rules in the first setting, their perception of evidence against these norms in the low collective efficacy neighbourhood (spilt paint on the pavement, graffiti, litter) may stand out to that individual as stronger or more noticeable norm violations, thus explaining the lower mean perceived collective efficacy scores (PNGS 2019) in this study.

C. The age of participant observers

Whilst participants' age can predict home neighbourhood collective efficacy (alongside other neighbourhood level variables) (Duncan *et al.*, 2003), age does not necessarily influence survey perceptions of collective efficacy within one's own neighbourhood (Oberwittler and Wikström, 2009; Janssen, Oberwittler and Gerstner, 2019). However, older age has nonetheless been found to influence perceived fear of crime and the interpretation of different 'signals' of disorder (Innes *et al.*, 2009; Innes, 2014). This is especially so when comparing older and younger group perceptions of those resident in more affluent neighbourhoods as compared to when both ages groups reside in socially disadvantaged settings (Köber, Oberwittler and Wickes, 2020). In more affluent environments, perceptions have been found to be more heterogenous with older residents having greater fear of crime than younger (Köber, Oberwittler and Wickes, 2020). Given the bias of participants in this sample residing in high collective efficacy neighbourhoods (associated with lower levels of social disadvantage), age may therefore matter in shaping respondents' perceptions of social environments interacted with.

Due to the small number of participants in the study, participant's age around the mean (54.5) was used to create two comparison groups: those aged 50 and over, and those aged under 50. This was so as to ensure sufficient comparative number of hour observations to analyse in both groups. Table 10, below, considers the effect of the respondents' age on their mean perceptions of collective efficacy in settings visited. This revealed that those aged 50 and over recorded moderately lower collective efficacy scores overall as compared with those aged over 50. A

Mann Whitney U test revealed that the difference between perceptions of those aged under 50 ($Mdn = 2.815$) and those aged 50 and over ($Mdn = 2.53$) to be statistically significant ($U = 30332$, $P = <.001$).

Table 10: Group difference between participants by age and mean perceptions of collective efficacy

		N hour observations	Mean	Median	SD
Participant age	Under 50	286	2.71	2.81	.367
	50 and over	168	2.44	2.53	.571

In order to consider the extent to which this difference may be explained by a selection effect of people aged 50 and over into lower collective efficacy settings, PCS 2012 collective efficacy quintile data was used to restructure mean age comparisons into low and high collective efficacy setting groups. Table 11, below, sets out (i) the number of observation hours for each age group; (ii) their mean collective efficacy perceptions of the setting; and (iii) the standard deviation of those mean observations. The comparison of means revealed that those aged over 50 perceived lower levels of collective efficacy across settings compared to those aged under 50. Interestingly, the largest mean difference was reported in the higher collective efficacy settings. Whilst both groups provided more observations in the highest PCS 2012 quintiles, those aged under 50 nonetheless provided substantially more observations. Given the mean age of participants to be 54.4, this indicates that older participants interacted with fewer settings when compared with those aged under 50 in this study.⁹⁰

Table 11: Group difference between participants by age and mean perception of collective efficacy in settings by PCS 2012 quintile.

PCS 2012 Quintile	Under 50s			50 and over		
	N observation hours	Mean	SD	N observation hours	Mean	SD
Low CE	99	2.30	.519	67	2.12	.380
High CE	187	2.92	.510	101	2.65	.527

Whilst variation has been observed by age groups in the sample, observations of collective efficacy are nonetheless in the hypothesised direction – that is, settings measured to have strong collective efficacy (PCS 2012) also have higher collective efficacy observation means across

⁹⁰ Those aged under 50 spent 1,414 hours outside of their home neighbourhood, compared to those aged 50 and over who spent 1,188 hours away.

the two groups. This supports the notion that both age groups constructed here were able to perceive differences in moral rules across settings. However, the two age groups nonetheless perceived different levels of moral rules in similar settings, indicating that their perceptions of the social and physical cues offered by those settings were interpreted slightly differently – albeit in the right direction (lower settings being perceived as such).

In order to consider respondents’ ‘accuracy’ in perceiving settings outside of the home neighbourhood (i.e. with less familiarity) Table 12, below, correlates PNGS 2019 hour observations with PCS 2012 collective efficacy OA scores. These correlations suggest that that respondents aged under 50 were more reliable observers of their wider social environment than those aged 50 and over (assuming no change in collective efficacy across settings between 2012 and 2019). The findings in Table 12 indicate that the weaker correlation observed between PCS 2012 and PNGS 2019 perceptions of collective efficacy (noted earlier in Table 9) may be driven by certain participants in the study – that is, those aged 50 and over. This lends credence to the idea that *actual* collective efficacy (as would be reported in a 2019 collective efficacy community survey of Peterborough in its entirety) was stable between 2012 and 2019; and so, therefore, was accurately perceived by those respondents aged 50 and under. This is an interesting finding when we consider how different individuals may perceive different settings. Rather than controlling for such a factor (as per the econometric method) it is important in this exploratory study of the methodology to identify this variation as something to note when utilising STB to capture collective efficacy perceptions.

Table 12: Summary table of correlations between PNGS 2019 perceptions and PCS 2012 CE, by participant age group

		PNGS 2019 Perceptions – Under 50		PNGS 2019 Perceptions – 50 and over	
		All hours	Exc. home OA	All hours	Exc. home OA
PCS	2012				
Collective Efficacy		ρ .538*	ρ .452*	ρ .484*	ρ .314*

*Significant at <.001. N (observation hours) = 454

(ii) are the differences in moral rules perceptible?

Despite the overarching finding above – that low collective efficacy settings being perceived to have weaker moral rules (PNGS 2019) as compared to residents’ perceptions (PCS 2012),

the perception was nonetheless in the right direction – that is to say, perceived to be low rather than high. We can therefore infer that variation in moral rules was perceptible to interviewees in PNGS 2019 data across age groups. In order to explore this further, the results of a one-way ANOVA test⁹¹ are included, below. The test shows a statistically significant difference between PNGS 2019 perceptions of collective efficacy as compared to those perceptions made in the highest rated OA (as rated in PCS 2012) ($F = 21.803, p < .001$). This analysis may therefore demonstrate that interviewees were able to perceive differences in the moral rules of different types of setting visited outside of their home neighbourhoods. Table 13 summarises findings from post-hoc tests, identifying that the bulk of this variance occurred between perceptions of collective efficacy in the highest PCS 2012 quintile (80-100%) and the lowest three quintiles (0-20%; 20-40%; and 40-60%). When interpreting this analysis, it is, however, important to note that the significant differences observed are also a product of their being a higher number of hour observations ($N = 103$) in the highest CE quintile category (PCS 2012, 81-100%) compared to other quintile categories. As outlined in section 6.1.4.2, exposure to settings by PCS 2012 was skewed, with high kurtosis (leptokurtic). Thus, the significant differences, whilst interesting to note, are likely driven by the larger sample size for the high CE observation comparator.

Table 13: Tukey least significant difference post-hoc test between mean perceived collective efficacy (PNGS 2019) by collective efficacy quintile (PCS 2012)

PCS Quintile	2012 OA	CE	81-100% PCS 2012 CE Quintile OA		Number of observation hours
			Mean difference	Significance	
			Perception hours		
			PNGS 2019		
0-20%			.6860	.000	52
21-40%			.3660	.000	63
41-60%			.5661	.000	53
61-80%			.1601	.182	91

N (observation hours) = 362

⁹¹ This test was applied to hours excluding home OAs, which was more normally distributed. Whilst there is some kurtosis in this data, Field (2013) reports that the one way ANOVA is nonetheless a stable test for such distributions.

Figure 32, below, illustrates a threshold operating from the 40-60% and below quintiles, where perceived mean collective efficacy (PNGS 2019) declines significantly in those settings (although note adjusted scale on the y axis).

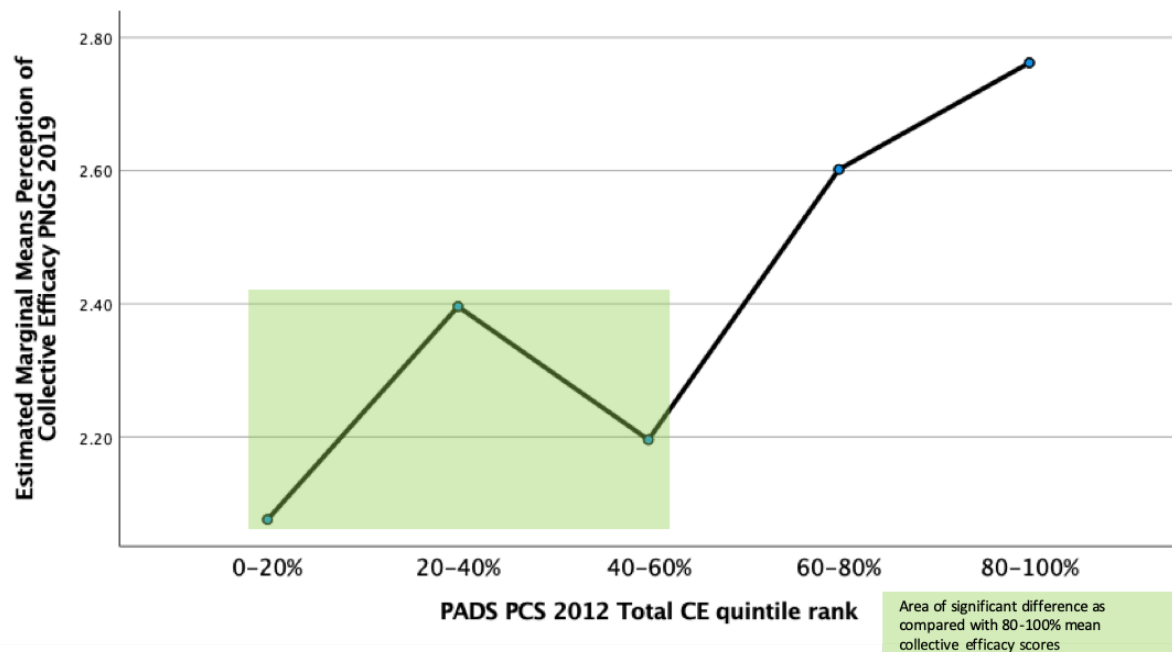


Figure 32: Line graph of variation between perceived collective efficacy (PNGS 2019) and quintile rank of collective efficacy in setting visited (PCS 2012)

6.2.1.2 Perceptions of Settings – Social Cohesion

Whilst collective efficacy is a unified concept, when used to measure the moral context within SAT, the concepts of social cohesion and social control tap into distinctive features of neighbourhood settings. Social cohesion is used as a measure of moral rules within the setting – that is, the content of rules setting out what people should and should not do within a setting. Social control is then further used to tap into the level – or likelihood – of such rules being enforced within that setting. Thus, whilst the two concepts are highly correlated, and therefore routinely combined to form the summary measure of collective efficacy, within SAT they provide different cues about settings visited.

Perceptions of social cohesion and perceptions of social control were highly correlated for residential hour observations, excluding those in the home neighbourhood setting ($\rho .774$ $p <$

.001.).⁹² This accords with previous collective efficacy survey findings; although, what this correlation conveys about the causal link between these concepts, at the situational level, is unclear (Hipp, 2016a). Whilst Sampson (2012) argues that the correlation identified that social cohesion enhances conditions of social control, SAT submits that whilst these represent similar properties, social cohesion communicates the content of moral rules and social control conveys whether they are enforced. It seems, at least, that from perception data across Peterborough, that perceptions of strong moral rules relate to perceptions of their likely enforcement in settings.

As summarised in Table 14, across the sample of residential observation hours, perceived social cohesion (PNGS 2019) was significantly and moderately correlated with measures of social cohesion and social control in PCS 2012 data. Perceptions of social cohesion (PNGS, 2019) were more strongly correlated with PCS 2012 measures of social cohesion (ρ .445, p <.001) as compared to respective perceptions and measures of social control (ρ .435, p <.001), although the variation is slight in any substantive sense.

Table 14: Correlation matrix of PNGS 2019 collective efficacy measures compared with PCS 2012 measures

		PNGS 2019	
		Perceived Social Cohesion	Perceived Social Control
PCS 2012	Social Cohesion	ρ .445	ρ .427
	Social Control	ρ .393	ρ .435

All significant p < .001. N (observation hours) = 454

Perceived social cohesion - tapping into the content of moral rules in the setting - was made up of five items used in previous collective efficacy research in the UK (Wikström *et al.*, 2012). In order to consider the extent to which the measure effectively captured the variance in setting moral rules, internal consistency calculations were conducted. The internal consistency of this measure across settings was excellent (α = .797), indicating that the social cohesion scenario scales reported consistency in perceptions of setting moral rules. High internal consistency was also reported in areas measured to have low collective efficacy (PCS 2012), with perceptions here also having good to excellent consistency (α = .728). Table 15, below, reports that no item

⁹² This correlation was similar across the two age groups analysed. Under 50: ρ .734, p <.001; 50 and over ρ .801, p <.001).

scored higher than the overall Cronbach's Alpha, meaning that all items provide a coherent tool for measuring interpretations of setting moral rules.

Table 15: Summary table demonstrating the variance if social cohesion perception item was deleted from scale

Social cohesion scale (PNGS 2019)	Scale variance if item deleted	Corrected item total correlation	Cronbach's Alpha if item deleted
People are willing to help their neighbours	4.596	.582	.760
This is a close-knit neighbourhood	4.061	.564	.767
People in the neighbourhood can be trusted	4.142	.591	.755
People in the neighbourhood generally get along	4.638	.578	.762
People in the neighbourhood share the same values	4.223	.604	.750

N (observation hours) = 454

When thinking about perceptions of social cohesion, Table 15 highlights that the content of moral rules in settings follows a similar trajectory. That is to say, when interviewees strongly agreed that people in the setting were more likely to help their neighbours, they also perceived the community to be close-knit, and perceived that people there could be trusted – and so on. Internal consistency across both high and low collective efficacy settings (PCS 2012 measures) was good, indicating linearity in the relationship between scale measures. As such, residents were able to reliably perceive variance in setting moral rules using the collective efficacy social cohesion scales outside of their own neighbourhood setting.

6.2.1.3 Perceptions of social cohesion – fixed effects agreements

Findings above derive from STB perception hours containing observations across the PNGS 2019 sample. Thus, the observations and statistics explored above are nested within settings, rather than within individuals. In order to further assess the perceptibility of moral rules in settings, researchers have considered the level of agreement across raters (participants) who potentially rated the same settings – such as factors such as age, as discussed (Oberwittler and Wikström, 2009; Brunton-Smith, Sturgis and Leckie, 2018). When using the community survey method to calculate neighbourhood collective efficacy scores, individual survey responses are aggregated to the respondents' home neighbourhood. Existing small-area criminological research has determined that small neighbourhood units can be represented with an average of around 13 respondents per OA and provide a reliable account of neighbourhood

collective efficacy (Oberwittler and Wikström, 2009). Using this threshold as a guide, I identified those OAs where there were ten or more hour observations made by different participants (PNGS 2019).

Appendix F contains summary tables of the mean and number of CE observations by OA in Peterborough. As identified in Table 27, for those perception hours outside of the home neighbourhood, only seven settings had ten or more CE observations from different or repeat observers. Interestingly, in these settings, standard deviations were low (all below one) indicating that different perceptions of the same setting did not deviate substantially from the mean. With this limited number of repeat hour observations, it was difficult to perform any further meaningful analysis. This is likely a reflection of the relatively small sample size for advanced quantitative analysis. A larger sample size would likely improve the possibility to examine perceptions across participants that could be aligned on setting factors (e.g., hour observations in the daytime only, or night time only).

6.2.1.4 Conclusion

The above analysis reveals that visitors to a setting were able to both discern and observe variation in setting moral rules and their level of enforcement. Correlated observations were stronger in settings with high PCS 2012 collective efficacy compared with low collective efficacy; and those aged 50 and under were able to discern more accurately setting collective efficacy in line with previous community survey assessments. However, identified variation in perceptions across the sample was in the right direction – that is to say, that lower collective efficacy settings (PCS 2012) were perceived to have low collective efficacy in PNGS 2019. In other words, settings with weak moral rules (and poor enforcement) were perceived to have weaker moral rules in the PNGS 2019 by the study sample (compared to high PCS 2012 collective efficacy neighbourhoods). These findings therefore partly support the assumption that the level of collective efficacy in a setting can be accurately perceived by visitors to that setting: for this sample of high collective efficacy resident guardians, settings which have a similar level of moral rules and enforcement of those rules were accurately perceived. This finding likely represents the bias resulting from the study sample being from collective efficacy neighbourhoods (Oberwittler, 2004).

6.3 Willingness to intervene when observing a breach of moral rules

6.3.1 *Will individuals intervene when required to do so?*

As explored in chapter 4, an important assumption which underlies collective efficacy's explanatory power at the situational level centres on the mechanism of social control – or, as per SAT, the enforcement of moral rules within a setting. Residents' willingness to intervene can prevent the commission of or opportunity for crime to occur within a neighbourhood setting (Wikström and Sampson, 2003). Whilst the centrality of social control within SAT is attuned by a consideration of the type of people in different types of places, it is nonetheless an important explanatory mechanism for (i) deterring those individuals with a high crime propensity (Wikström, Tseloni and Karlis, 2011) and (ii) for maintaining the moral rules of that neighbourhood setting (Oberwittler, 2004; Sampson, 2006a; Wikström, 2012).

Despite this causal importance of social control in explaining the relationship between high neighbourhood collective efficacy and low crime, the extent to which residents will actively intervene when required is largely assumed in collective efficacy research (St Jean, 2007; Wikström, 2007; Wikström *et al.*, 2012; Sutherland, Brunton-Smith and Jackson, 2013). Whilst acknowledged, little has been done to empirically test these assumptions within the collective efficacy research domain.⁹³ There are, however, insights from the guardianship research field, which help us identify some of the micro-level situational and individual-level influences which may shape the enforcement of social control and willingness to intervene within home neighbourhoods (Reynald, 2011a, 2018; Reynald and Mihinjac, 2019; Reynald and Moir, 2019; Hardyns *et al.*, 2021; Moir *et al.*, 2021) and other settings aligned within individual routine activity patterns (Taylor, 1988; Hipp, 2016b; Moir *et al.*, 2019). Given collective efficacy's conceptual journey from one of 'contextual causality' to being used to explain crime within small-areas or micro-places (Wikström *et al.*, 2012; Gerell, 2015; Weisburd, White and Wooditch, 2020), there are new opportunities to consider these situational influences on guardianship practices within collective efficacy research. This is arguably an important consideration, given the backdrop of moral rules that pre-exist in neighbourhood settings is not

⁹³ St Jean's (2007) work being an ethnographic exception. See also Volker *et al.* (2016) lost letter test of collective efficacy in the Netherlands. Warner (2007) has also used community survey data to consider the type of social control in settings.

often considered as a relevant situational factor affecting the exercise of social control outside of the home neighbourhood (Hipp, 2016b).⁹⁴

In seeking to interrogate this assumption further, I use PNGS 2019 perception hours to consider participants' own willingness to intervene across settings patronised. Alongside questions about participants' perceptions of social cohesion and social control (perceptions that others will intervene) within a setting visited, participants were asked the extent to which they themselves would intervene within that setting, and their mode of doing so (see Appendix E).⁹⁵ Attempts to use parametric analysis within this section derive from PNGS 2019 hour observations which (i) occurred within residential settings; and (ii) contained observations outside of the respondents' home neighbourhood. Despite higher kurtosis, these observation hours are normally distributed, and regression models included below demonstrated good dispersion.

6.3.1.1 Individual willingness to intervene – home neighbourhoods

Collective efficacy research at the home neighbourhood level posits that high levels of social cohesion will encourage residents to intervene to prevent crime when required (Sampson, Raudenbush and Earls, 1997). Using collective efficacy as a measure of moral rules operationalises these concepts somewhat differently, but observes their combination into a combined measure of collective efficacy due to their high correlation. Thus, whilst social cohesion represents the content of moral rules in the setting, and social control represents enforcement of those rules, the two concepts tap into similar properties (Wikström *et al.*, 2012). Within the home neighbourhood, therefore, it is conceived that the more likely we think it is that our neighbours would intervene, the more likely it is that we will also do so when called

⁹⁴ Reynald's (2011) neighbourhood measures of social context were derived from a mixed true/false postcard survey of seven items ($\alpha.78$) tapping into aspects of social cohesion and social control. These items are distinct from collective efficacy scale items, but represent similar properties for measuring willingness to intervene within the home neighbourhood.

⁹⁵ With four response categories akin to the collective efficacy scale: (1) very likely; (2) likely; (3) unlikely; (4) very unlikely. Scores were reverse coded so that high means denote being more likely to intervene. An 'intervention' in this study encompassed informal and formal social control. Individual willingness to intervene was normally distributed with hours excluding home observations included (skew .109; kurtosis -.364).

upon (where there is a breach of the moral rule in the setting). Empirical findings have questioned the strength of this relationship (Warner, 2007; Gau, 2014), with inaccurate or mixed perceptions within a neighbourhood found to suppress willingness to intervene when required (Brunton-Smith, Sturgis and Leckie, 2018).

When using observations made within the home neighbourhood ($N = 92$), PNGS 2019 perceptions of neighbourhood collective efficacy were significantly and moderately correlated with PNGS 2019 individual participants' willingness to intervene ($\rho.516$, $p = <.001$).⁹⁶ The correlation between perceived social control and individual willingness to intervene was stronger ($\rho.517$, $p <.001$) as compared with between perceived social cohesion and individual willingness to intervene ($\rho.336$, $p <.001$).

These correlations provide some support (hampered by sample size) for the notion that high collective efficacy in the home neighbourhood encourages individual neighbourhood residents to intervene when required. However, we see that what may drive this individual willingness is not that residents are in agreement as to the content of moral rules (social cohesion) but that neighbours would enforce rules within the setting (social control). Ultimately, data here derives from individual perceptions of what respondents would do; without conducting observations, (Reynald, 2009b, 2011a) or attempting to test what would happen if a moral rule is breached in the setting (Volker *et al.*, 2016), we are unable to ascertain if they actually would intervene if required to do so.

A further dimension of home willingness to intervene can be considered through the type of intervention (Warner, 2007; Gerstner, Wickes and Oberwittler, 2019). Within the home neighbourhood setting, we see variance in the type of social control that might be used to intervene and prevent different breaches of moral rules. Here, individuals are more likely to directly intervene when a child is disrespectful to an adult and when a child spray paints graffiti on a local building in the setting (Table 16, immediately below) as compared with interventions outside of the home neighbourhood (see Table 20, in sections below). However, the motioning of public social control is still the preferred option for the graffiti and violence offences. Interestingly, only 11 participants stated that they would intervene where a child was

⁹⁶ This data is highly skewed due to the sampling of high collective efficacy neighbourhoods only.

disrespectful to an adult.⁹⁷ This could indicate that respondents do not consider this to be a breach of a moral rule within the setting; that such a thing does not happen often in the setting, and so they would be unable to judge their own response; or that it is someone else's responsibility – e.g. perceived to be a personal matter. These findings generally accord with those of previous social control studies, noting a preference of home neighbourhood respondents to intervene via calling the police (Warner, 2007; Gau, 2014).

Table 16: Type of individual willingness to intervene by scenario scale within home OA settings

Method of intervention	Children skip school ⁹⁸	Spray painting graffiti	Fight – someone beaten	Child disrespects adult
Directly intervene – physical	0%	0%	1.5%	0%
Directly intervene – verbal	64.3%	30.4%	8.8%	90.9%
Public social control – call the police	35.7%	65.9%	89.7%	9.1%
Monitor	0%	0%	0%	0%
Number of ‘interventions’ ⁹⁹	64	82	68	11
Percentage of respondents intervening	70%	89%	74%	12%

Due to the high sample skew, regression analysis was not conducted on home OA observations to predict individual willingness to intervene within these settings.

6.3.1.2 Individual willingness to intervene – outside of home neighbourhoods

A recurrent question in guardianship and socio-spatial research is the extent to which individuals will intervene to prevent crime outside of their home neighbourhood environment (Taylor, 1988; Hollis-Peel *et al.*, 2011; Hipp, 2016b; Moir *et al.*, 2019). This consideration is pertinent to collective efficacy research, when the concept is utilised as a measure of moral rules and their enforcement across different settings. Use of the STB in this research context means being able to capture participants' interactions with a variety of settings outside of their home neighbourhood, and consider their perception of and the guidance conveyed by setting

⁹⁷ A ‘willingness to intervene’ here meaning those that were (1) highly likely and (2) likely to intervene. These respondents were then asked how they would intervene if required.

⁹⁸ This item was not asked during Saturdays and outside the hours of 08:00 and 15:30 – when the majority of schools in Peterborough are closed.

⁹⁹ Where the respondent stated they were ‘highly likely’ or ‘likely’ to intervene.

moral rules (see Figure 14 and Figure 15) - that is, not just abiding by the rules of the context, but also enforcing them.

6.3.2 Descriptive statistics

Table 17, below, provides the mean scores of the PNGS 2019 individual willingness to intervene scale, as compared with participants' perceptions of social control (others' willingness to intervene). As anticipated, individual willingness to intervene (PNGS 2019) was higher in settings with high collective efficacy compared with low collective efficacy.¹⁰⁰ Perceptions of others' social control (PNGS 2019) were also higher in settings of high collective efficacy (PCS 2012) as compared to an individual's own willingness to intervene within that setting. However, in settings of low collective efficacy, participant perceptions were lower than own individual willingness to intervene. This may reflect the sample's own individual moral rules enhancing their willingness to intervene (not analysed in this thesis, but considered in chapters 7 and 8).

Table 17: Summary table of mean and standard deviations of PNGS 2019 individual willingness to intervene scores, by setting category (PCS 2012).

	All hours		Exc. home OA		Settings with high CE		Settings with low CE	
	M	SD	M	SD	M	SD	M	SD
PNGS 2019 <i>Individual social control</i>	2.41	.654	2.29	.712	2.40	.587	2.25	1.72
PNGS 2019 <i>Perceived social control</i>	2.44	.736	2.33	.657	2.52	.684	2.01	.639

N (observation hours) = 454

Interestingly, mean individual willingness to intervene varied not only by PCS 2012 OA collective efficacy, but also across the different scenario scales (scales contained in Appendix E). Table 18, below, summarises the mean and standard deviations reported for each scenario question. Variance in mean scores here was not attributable to the background moral rules of the setting, indicating that the different content of the hypothesised scenarios prompted

¹⁰⁰ Setting category of collective efficacy deduced from PCS 2012 collective efficacy distribution not PNGS 2019.

participants to consider their individual willingness to intervene. We see from Table 18 that participants were least likely to intervene in the scenario of ‘a child being disrespectful to an adult’ across both low and high collective efficacy settings. Participants often articulated (unprompted) that they would not intervene in that instance as it was a personal matter ($n = 7$)¹⁰¹ – indicating that they interpreted that the child was being disrespectful to a parent or guardian. This variation accords with previous research, identifying variation in willingness to intervene in relation to the task (breach of moral rule) at hand (Wickes *et al.*, 2013).

Table 18: Summary table of mean and standard deviations for each individual willingness to intervene scale item by setting category (PCS 2012)

Scenario question – Individual willingness to intervene	Total OAs		High CE OAs		Low CE OAs	
	M	SD	M	SD	M	SD
<i>If a group of children were skipping school here...</i>	1.89	.905	1.88	.824	1.90	.999
<i>If some children were spray-painting graffiti on a local building here...</i>	3.26	.806	3.34	.750	3.15	.862
<i>If there was a fight and someone was being beaten or threatened here...</i>	2.66	1.11	2.80	1.07	2.49	1.14
<i>If a child was being disrespectful to an adult here...</i>	1.44	.750	1.45	.682	1.43	.825

N (observation hours) = 454

Despite this variation, the internal consistency of the individual willingness to intervene measure was good ($\alpha = .712$) across OA perceptions (Table 19). No item scored higher than the Cronbach’s alpha if deleted, indicating that all item scales contributed to the individual willingness to intervene measure across settings visited.

¹⁰¹ I made a systematic effort to record comments made by participants that were unprompted and of relevance to the study.

Table 19: Summary table demonstrating the variance if individual willingness to intervene item was deleted from scale

Individual social control scale (PNGS 2019)	Scale variance if item deleted	Corrected item total correlation	Cronbach's Alpha if item deleted
Group of children skipping school	4.327	.504	.646
Children spray-painting graffiti	4.605	.555	.625
Fight and someone being beaten or threatened	3.724	.501	.663
Child being disrespectful to an adult	4.796	.472	.667

N (observation hours) = 454

6.3.3 Type of social control

In revisiting collective efficacy theory, Sampson updated the notion of informal social control to also encompass the ‘mobilisation of formal resources’ such as calling the police (Sampson, 2006a). This logical development has been embodied further by policy attempts to increase collective efficacy through community policing interventions (Uchida *et al.*, 2015; Weisburd, Davis and Gill, 2015; Rinehart Kochel and Weisburd, 2019). Arguably, this change permits further bandwidth to capture actual interventions when interacting with settings outside of the home neighbourhood, where resort to public social control is a more likely and permissible solution in that context (Taylor, 1988). Thus, in this study, participants’ individual willingness to intervene captured both direct and indirect methods. As with home neighbourhoods, those participants who stated that they were either ‘likely’ or ‘highly likely’ to intervene in the specific OA were classed as *intervening*. These individuals were then asked how they would intervene, based on four categories of intervention listed in Table 20, below.

Table 20: Type of individual social control by scenario scale item outside of home OA settings

Method of intervention	Children skip school	Spray painting graffiti	Fight – someone beaten	Child disrespects adult
Directly intervene – physical	0%	.7%	.5%	0%
Directly intervene – verbal	56.3%	14.1%	8.7%	80.8%
Public social control – call the police	43.7%	85.3%	90.8%	15.4%
Monitor	0%	0%	0%	3.8%
N = Number of ‘interventions’	71	306	218	26

In settings outside of the home neighbourhood, we observe that willingness to individually intervene was far more frequent for children spray-painting graffiti and a fight breaking out as compared to children skipping school or a child being disrespectful to an adult. When

comparing interventions within the home neighbourhood, we see that there is far greater difference between these scenario scales. This may indicate that net of the moral rules within a setting, interventions outside of the home neighbourhood also vary by the type of crime one is intervening to prevent. This was supported by systematically recorded interviewees' comments and reflections: for a child being disrespectful to an adult, some respondents referred to previous experiences in the setting giving inference of permitted behaviours ($n = 12$) or again, the scenario being interpreted as a private matter ($n = 17$). For children skipping school, some respondents expressed hesitancy about being able to recognise if children were skipping school in the first place.

Figure 33, below, illustrates variation in the type of response to each scenario graphically. For those 'interveners', the majority would do so by mobilising formal sources of social control, such as calling the police or a security guard. Use of public social control was highest for intervening to prevent someone from being beaten or threatened (90.8% of observations) and to stop children spray-painting graffiti (85.3%). Conversely, interventions when a child disrespects an adult were more likely to be direct through a verbal intervention (80.8%). A split of interventions was observed for instances of children skipping school, with 56.3% directly intervening (verbal) and 43.7% preferring public social control. This figure should be considered in light of the number of observations where individuals would intervene (Table 20).

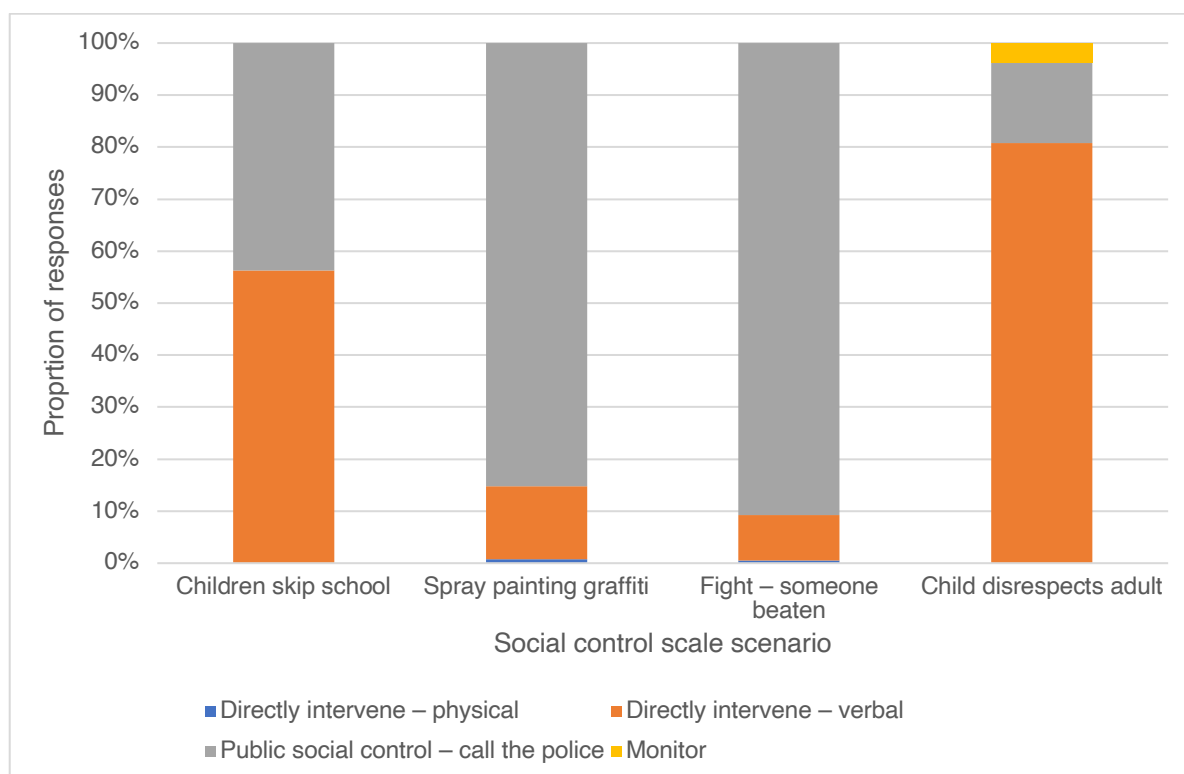


Figure 33: Bar graph illustrating intended method of social control for observations of individual willingness to intervene

Oftentimes, communitarian policy logic argues that increasing neighbourhood cohesion results in increased social control, meaning that communities become self-sufficient and self-regulating of neighbourhood disorder (Crawford, 1999). What the findings above illustrate is that in most instances, this sample preferred to intervene via more public routes of social control, be that through calling on the police or other state persons or security guards. This is an interesting consideration and aligns with previous findings considering the mode of intervention in collective efficacy research (Warner, 2007). The Brooklyn Park collective efficacy study, for instance, observed an increase in calls to police during the intervention period (Weisburd *et al.*, 2020). Increasing collective efficacy, therefore, may increase demand on policing resource to resolve local issues, dependent upon the community's relationship with the police (Kochel and Weisburd, 2012). The nature of the PNGS 2019 sample, being resident in high collective efficacy environments, may be associated with more positive perceptions of the police (as has been observed, see Myhill, 2012) increasing willingness to involve the police where there is a breach of moral rules in a setting (Sampson and Bartusch, 1998; Myhill, 2012). With a more diverse sample, we may observe a suppression of willingness to intervene based on (i) a reliance on having to intervene directly to resolve disputes, due to fractured relationships and perceptions of the police (Sampson and Bartusch, 1998; Carr, Napolitano and

Keating, 2007); and (ii) feedback effects of these experiences on willingness to intervene when experiencing a negative outcome or reprisal (Bottoms, 2006; Hipp, 2016a).

6.3.4 Predicting individual willingness to intervene outside of home neighbourhood

As evidenced above, the extent to which participants in this study were willing to intervene outside of their home neighbourhood varied moderately by the collective efficacy of the setting visited and the type of crime / incivility hypothesised. The next step in our analysis aims to understand factors which may predict individual willingness to intervene (likelihood would intervene, rather than actual interventions) across settings patronised. In order to do so, I develop a series of OLS regression models¹⁰² to consider how these different observed situational factors may explain individual willingness to intervene alongside consideration of the existing moral rules and their level of enforcement within that context.

As outlined in chapter 4, this is an important consideration that is somewhat overlooked in guardianship research to date, in that settings vary in the type of rules that are valued and therefore enforced within that context. Accurate perception of this may, therefore, shape individual willingness to intervene in that setting – in other words, does it matter what I and others think in this context? (Sampson, 2013, p. 20). Existing micro-level contributions in this area of research sometimes conflict with collective efficacy’s reasoning: for instance, bystander effect research previously supported¹⁰³ an inductive notion that there was a diffusion of responsibility thesis – if others are in the setting and are perceived to intervene then individuals are less likely to act themselves. Collective efficacy research to date posits the opposite, with the willingness of others to intervene enhancing our own likelihood of also intervening.¹⁰⁴ The extent to which this therefore applies to settings outside of the home neighbourhood, as utilised in SAT, is unclear.

¹⁰² Such models are considered to be the most reliable and robust methods of analysis for STB data (Hardie, 2020).

¹⁰³ Not reflected in more contemporary findings (Fischer *et al.*, 2011).

¹⁰⁴ Technically, social cohesion is said to enhance conditions of social control (Sampson, Raudenbush and Earls, 1997). However, given the high correlation of the two concepts, they are considered to tap into similar properties. Use of collective efficacy within SAT uses social control to measure the enforcement of rules within settings, which, for purposes here, is analytically akin to the notion of a perception that others would also intervene within that setting.

Regression analysis in this section was performed using hour observations nested at the OA level which (i) excludes observations within participants' home neighbourhoods; and (ii) relates to residential settings – that is to say, those OAs not predominately made up of a city and local centre (commercial space). Taking hours as the unit of analysis is a technique that has been employed in the analysis of STB data by a number of criminologists, who have used fixed effect models for hourly observations nested within individuals in a sample (Bernasco *et al.*, 2013; de Jong, Bernasco and Lammers, 2019). The appropriateness of a fixed effects model within this study is however less clear, given that observations, and perceptions of willingness to intervene, are analysed at the OA-area level within a specific hour of the day. As the variable unit of analysis we have, therefore, one perception, within one hour, of one setting; not 96 hours of analysis nested per participant, as considered in other studies (Bernasco *et al.*, 2013).

As Hardie (2020: p. 84) notes, analysing STB data by hour 'assess[es] the impact of specific setting features on outcomes at the hour level, and therefore does not assess person-environment interaction'. In exploring the use of the STB in the context of guardianship practices outside of the home neighbourhood, we are not considering the extent to which an individual did actually intervene;¹⁰⁵ rather, we consider the extent to which the setting may influence their perception that they would be likely to intervene. This is not therefore a known outcome (e.g., did the person intervene; did the person offend) but rather perceptions as to likelihood of intervening within a specific setting (location). Here, the STB budget provides us with a perception of what individuals would do within that setting, and seeks to consider whether the features of that setting shape this perception. We therefore seek to enhance guardianship research by centring interactions and perceptions as relevant to explaining social control, but do not strictly analyse an interaction to predict an observed outcome.

The exploratory regression model was guided by our interaction and perception hypothesis developed in Figure 14 and Figure 15. First, we explore what relevant factors may predict individual willingness to intervene, drawing upon theoretical observations from collective efficacy and guardianship research. Then we seek to consider what may have influenced such

¹⁰⁵ A technique used to explore actual interventions, by asking respondents if they witnessed any rule breaking in a setting and intervened as a repose, did not yield any responses during the pilot study. In order to ensure interviews were within one hour, this questioning was not used in the final study.

perceptions in the setting. The STB has the ability to record various facets of small-area and micro-area environment as relevant to users of those settings. Many of these elements may be relevant in explaining an individual's willingness to intervene; however, we first need to have a theoretical basis for their relevance in this explanatory link. Rather than using a correlation matrix across items, each model was developed iteratively, using existing theoretical and empirical contributions as guidance. Given the limited research evidence to date in this area, I seek to deductively incorporate and explore different explanations that have been advanced as to how guardians may act when interacting with different settings as part of the routine activity patterns. This more rigid approach ensures that spurious interactive associations can be limited (Hardie, 2020) and that variables imputed can be duly considered and justified in line with existing research knowledge.

6.3.4.1 *Dependent variable*

Mean scale score of individual willingness to intervene within OAs visited.¹⁰⁶

6.3.4.2 *Research hypotheses*

Existing criminological research helps us to formulate the following hypotheses:

Model 1 – perceptions of ambient moral rules (Wikström, Treiber and Hardie, 2012; Sampson, 2013; Chouhy and Unnever, 2020).

1. Interpretation of strong setting moral rules (high collective efficacy) will *increase* individual willingness to intervene (Figure 14 and Figure 15).

Model 2 - relationship with the micro-setting (Brown and Altman, 1981; Taylor, 1988; Hipp and Boessen, 2013; Hipp, 2016b).

1. Settings with a personal connection to a participant will *increase* individual willingness to intervene
2. Presence in work and education settings will *increase* willingness to intervene

¹⁰⁶ This was normally distributed (skew, .294; kurtosis -.171).

Model 3 – time of day (Taylor, 1988; Welsh and Farrington, 2009; Innes, 2014; Thompson and Coupe, 2018).¹⁰⁷

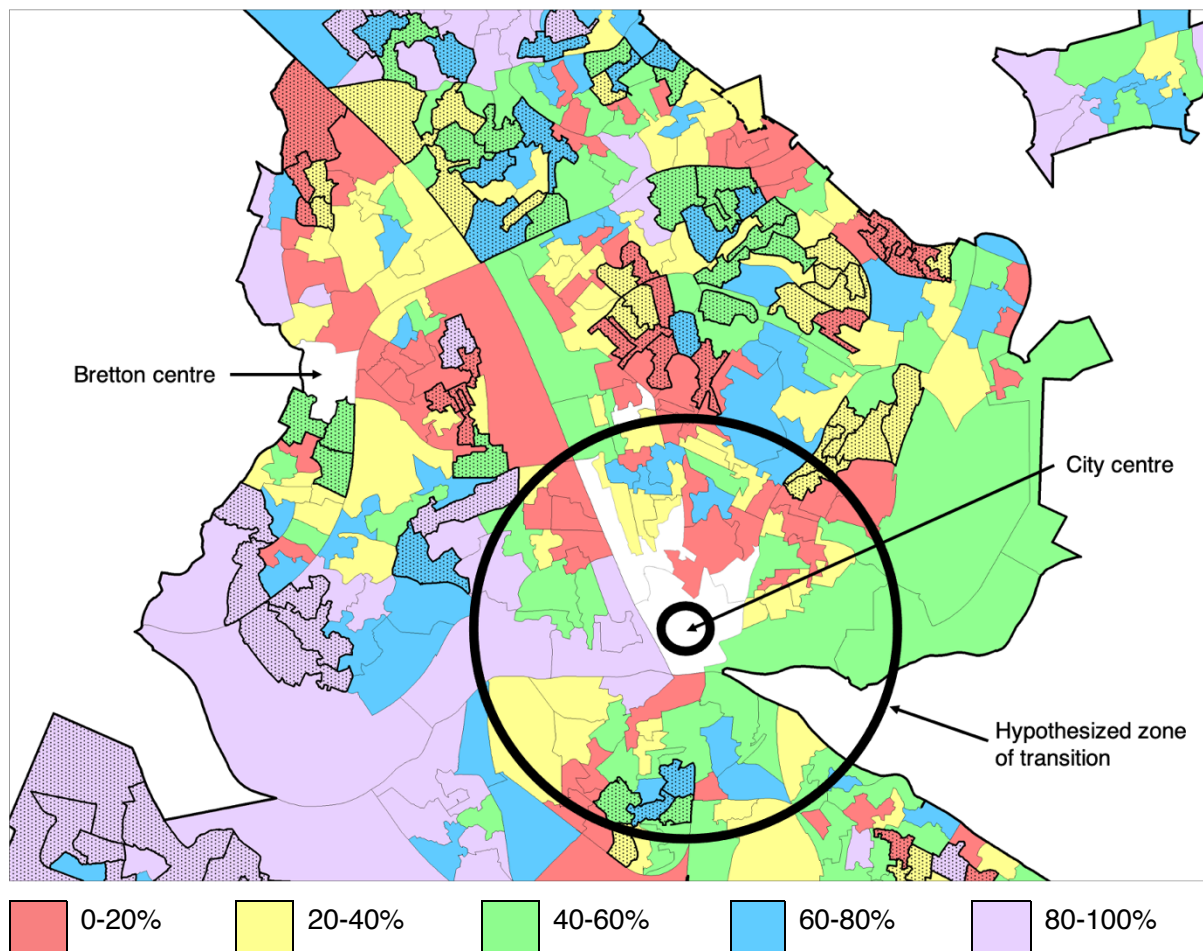
1. Being present in a setting at night will *decrease* individual willingness to intervene

A fourth model also considered whether the respondent being on their own within the setting, and a fifth model assessed if the respondent being aged over 50 also influenced individual willingness to intervene. Adding these dummy variables did not influence willingness to intervene and failed to reach statistical significance. This was not therefore included in the final model discussion below, but will nonetheless feature in further exploratory discussion.

One element of current socio-spatial literature which was not modelled in this instance was the notion that distance from the home neighbourhood or proximity to a city centre reduced willingness to intervene (Taylor, 1988; Reynald, 2011a; Moir *et al.*, 2019). In neighbourhood research, such a measure is often considered in regression models (Reynald, 2011a); the rationale for doing so appears to be based in zonal hypothesis literatures, with close proximity to the city centre representing the well-know ‘zone of transition’ where moral rules may be less well-established (Park and Burgess, 1925). Consideration of such a spatial factor within this study context is not of relevance to explaining willingness to intervene with the contexts studied. PCS 2012 data, and PNGS 2019 perceptions of setting collective efficacy, arguably provide us with a more accurate reflection of moral rules and their enforcement, as compared to proxy considerations of distance to infer such variation. To illustrate, Figure 23, below, maps PCS 2012 collective efficacy quintile scores by OA of Peterborough. Overlaid with a hypothesized ‘zone of transition’ measuring one mile outside of the city centre, we see a range of high and low collective efficacy OA fall within this perimeter.

¹⁰⁷ Welsh and Farrington (2009) identify an experimental effect of improving street lighting in a setting, thus reducing crime. They articulate that this physical element of the setting may encourage use of space where individual feel safer. The potential links identified in the model will be appraised in discussion below.

Figure 34: OA Map of Peterborough illustrating PCS 2012 collective efficacy quintile scores



As Taylor (1988) articulates, ‘home range’ may matter in supressing intervening processes, but micro-location features and our relationship to them are ultimately more relevant in explaining this variation. Here, we supplement this existing consideration by also understanding how existing moral rules within the setting may influence intervening behaviours.

6.3.4.3 Regression Models

Model 1 – setting moral rules

Table 21: Regression 1 - small area level factor predicting willingness to intervene

Explanatory variables	Standardised β coefficients	Adjusted R^2
Perceived moral rules PNGS 2019	.514*	.264

* $p < .001$

Model 1 significant $p < .001$. N (observation hours) = 362

Given the observed associations between PCS 2012 and PNGS 2019 variables, I first modelled PNGS 2019 perceived collective efficacy with PNGS 2019 individual willingness to intervene.¹⁰⁸ In this model, perceptions of moral rules represent the participants' interpretation of the existing moral rules and their enforcement within the setting. This model was highly significant ($p = <.001$) with this one latent measure explaining around 26% of the variance in individual's willingness to intervene within settings. This supports the idea that when visiting different settings participants in this sample considered both the likely rules and accepted behaviours of others within that setting; and that this consideration somewhat influenced their own propensity to intervene when observing a breach of those inferred rules. For every one unit increase in perceptions of collective efficacy, there was a 50% increasing in respondents' willingness to intervene, supporting hypotheses for model 1. Of course, tapping into such a perceived process is inherently difficult to do, given that, in real time (that is, if participants would actually intervene in the setting) this would be an unconscious decision. Whilst, upon reflection, their perception of the type of setting moral rules and enforcement influenced willingness to intervene here, this does not necessarily mean that people would reflect on such perceptions in the spur of the moment – it would likely be a split-second decision.

Figure 35, below, illustrates this relationship in a scatterplot. It is interesting to note the number of observation hours which are outliers, to the top centre-left of the plot. This small cluster of hours represents those individuals who considered that they would be highly likely to intervene in settings where they perceived there to be lower collective efficacy. These observations were provided by two male participants, one in his 20s, and the other in their 60s. These individuals may be classed as 'interveners', regardless of the moral context in which they are situated.

¹⁰⁸ PCS 2012 collective efficacy was not included in the model due to their moderate correlation and potential covariance. We observed that PCS 2012 collective efficacy likely influences perceptions of collective efficacy in PNGS 2019.

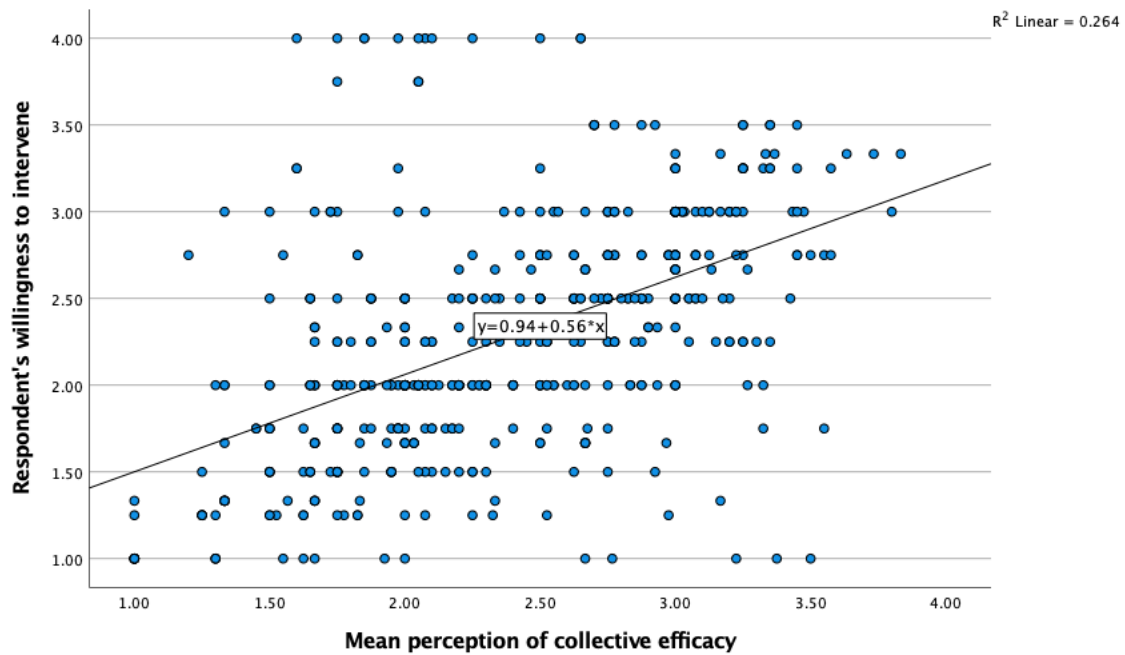


Figure 35: Scatterplot predicting individual willingness to intervene by mean perception of collective efficacy in OAs.

Model 2 – relationship to the setting

Existing theoretical contributions to guardianship research identify that individuals may be less willing to intervene outside of their own home neighbourhood where they lack a personal connection or responsibility to that setting (Brown and Altman, 1981; Taylor, 1988; Moir *et al.*, 2019). Taylor's theoretical contributions in developing the concept of Human Territorial Functioning (HTF) notes that territoriality reduces from this 'home range', but that certain micro-settings and our relationships with them – such as workplaces, education settings – can also increase our willingness to intervene in pockets (Taylor, 1988, chap. 9). Further explained variance in our model may therefore relate to the relationship individuals have with that setting, in addition to their perceptions of moral rules within it. These are features of the micro-setting within the OA visited.

In order to consider this insight on attachments to varied places, I use STB location code data to create a series of dummy variables to capture the relationship of the setting to participant observers. These dummy variables are not mutually exclusive – that is, they leave vacant observations within the number of hours used in the model. Instead of distance from the home,

the following dummy codes were created to consider the relevance of ‘home range’ influence on willingness to intervene:

- *Personal attachment to place* – represents a setting where the participant (i) is visiting another person’s home; and (ii) they are a family member or friend ($n = 184$)
- *Workplace* – represents a setting where the participant is in the setting for the purpose of (i) working or (ii) education.¹⁰⁹ ($n = 96$)
- *Recreation* – represents a setting where the participant is there for the purpose of leisure or recreation ($n = 151$).

Table 22: Regression 2 – relevant small-area and micro-level factors predicting willingness to intervene

Explanatory variables	Standardised β coefficients	Adjusted R^2
Perceived moral rules PNGS 2019	.537*	.293
Workplace micro-setting	.180*	

* $p < 0.01$,

Model 2 significant $p < .001$. N (observation hours) = 362

The only coded micro-level factor which shaped individual willingness to intervene was being present in a setting for work or education. Being present in a setting with a personal association (other’s home) or a recreation setting was non-significant, and did not change the amount of explained variance in the model. These factors were not therefore considered as relevant in shaping intervening processes. Within this study, we observed a skew of time spent in personal settings which are within the higher PCS 2012 quintiles, indicating that the moral rules of those settings (being high) may be of more explanatory relevance in explaining intervention here.¹¹⁰

Model 2 therefore shows that, in addition to the moral rules of the setting, being present in an environment for work or education purposes served to slightly increase participants’ willingness to intervene within a setting. With these two variables, the explained variance in

¹⁰⁹ This is not just a workplace, but also includes when a visit to someone else’s home is for the purpose of work (e.g. as a community nurse, police office).

¹¹⁰ Total number of hours (not observation hours) per quintile spent in settings with a personal association (total hours excluding time spent at home): 0-20% = 67 hours; 20-40% = 134 hours; 40-60% = 42 hours; 60-80% = 148 hours; 80-100% = 128 hours.

the regression model increased from 26% (model 1) to 29% (model 2). This proportion of variance aligns with previous guardianship research predicting interventions within the home neighbourhood, with scale measurements of a range of potential setting features (Reynald, 2011a). However here, we observe that from just two variables in the STB, 29% of the variance can be explained. Perceptions of setting moral rules therefore continue to be influential in shaping willingness to intervene.

Model 3 – time of day

Ecological crime research often connects presence in darker settings or at night with a decrease in perceived safety by community survey participants (Welsh and Farrington, 2009; Innes, 2014). In previous STB studies however, time of day (night time hours) was not found to predict individual offending of young people, with individual criminal propensity and the moral rules of the setting playing a more influential role (Wikström, Mann and Hardie, 2018). What mattered, therefore, were the type of people in different places at different times shaping those rules and social processes.

Whilst the temporal nature of the setting may not predict offending, per se, it may nonetheless predict guardians' willingness to intervene by influencing their perceptions of safety within the setting (Innes *et al.*, 2009; Innes, 2014). Within this sample, we observed that the majority of time spent outside of the home neighbourhood occurred between the hours of 08:00 – 18:00 hours with such exposure reducing from 18:00 – 22:00 hours (see Figure 23).

Table 23: Regression 3 - relevant small-area, micro-level, and temporal factors predicting willingness to intervene

Explanatory variables	Standardised β coefficients	Adjusted R ²
Perceived moral rules PNGS 2019	.500*	.312
Workplace micro-setting	.156*	
Night-time	-.146*	

* $p < 0.01$,

Model 3 significant $p < .001$. N (observation hours) = 362

Model 3 demonstrates that night time perception hours (between 20:00 and 06:00)¹¹¹ in settings served to slightly reduce willingness to intervene in specific settings. The explanatory power of setting moral rules reduced slightly, indicating a direct influence of night time settings reducing willingness to intervene. Adding this variable also increased the amount of variance explained to 31% (small percentage increase from Model 2).

No observed multicollinearity was observed between these predictor variables; tolerance and VIF statistics were all well-within acceptable parameters; the model was also well dispersed.¹¹²

6.3.5 Discussion

From including three small-area level and micro-level factors in our model, we were able to explain 31% of the variance in perceived likelihood of intervening within the setting. This is a similar level to previous empirical assessments conducted within home neighbourhoods of willingness to intervene, using a much broader set of physical, social, and individual level factors (Reynald, 2011a). As theoretically considered, our model demonstrates that collective efficacy of a setting held direct explanatory weight in shaping willingness to intervene outside of the home neighbourhood. Of the factors considered, our model supports the notion that perceptions of setting moral rules therefore matter most in shaping intervening social processes. The influence of stronger setting moral rules – it mattering to guardians what others think and would do within that setting – served to increase individual willingness to intervene. Whilst these findings lend support to the notion that individuals will intervene when required (observing a breach of moral rules within a high collective efficacy setting) it is evident that these interventions may not occur in settings where they matter most – that is, in low collective efficacy settings with empirically higher crime rates (Sampson, Raudenbush and Earls, 1997; Wikström *et al.*, 2012, p. 203).

The models also identified that being in a setting at night served to slightly reduce willingness to intervene and that being in a setting for work or education purposes served to increase the likelihood of interventions. Both of these factors slightly increased the explained variance of

¹¹¹ In the month of June, sunset in Peterborough would occur later, peaking on 21 June at 21:30 BST. 20:00 to 06:00 hours is therefore a general average across the PNGS 2019 study period. See www.sunsettimes.co.uk

¹¹² Around .950 for tolerance and around 1.0 for VIF.

our model, and so were seemingly relevant in this explanation. The dominance of perceived setting moral rules does, however, call for us to consider this finding further. In this section, we seek to delve deeper into this finding to understand these links, and better represent their effects on willingness to intervene by focusing on how these factors may feed into perceptions of setting moral rules, as explored in chapter 4.

6.3.5.1 Can time of day have a direct explanatory effect?

Existing criminological literature identifies that night time environments, and consequently, darker settings, serve to reduce feelings of public safety (Welsh and Farrington, 2009; Innes, 2014). Direct interventions to tackle this perception, by improving street lighting and therefore making places better lit, have been shown to be an effective physical measure that can reduce neighbourhood crime (Welsh and Farrington, 2008, 2009). One reason advanced for this shift is that better-lit spaces may encourage citizens to feel more comfortable patronising spaces at night (Welsh and Farrington, 2009, p. 120). This may result in certain kinds of people (with a low crime propensity) being more willing to frequent such settings if they are well-lit and therefore perceived to be safe.

With this in mind, it is plausible to consider that settings themselves vary by moral rules and their enforcement at different times of the day (St Jean, 2007); and it is this variation which may be captured through the perceptions of collective efficacy in the PNGS 2019 study. Collective efficacy community surveys – using residents as informants of a setting (OA) - capture one perception of that environment which is not temporally adjusted. Being in that setting at night, as some participants of the PNGS 2019 were, may mean we observe a change in collective efficacy during that period. It may be this which therefore explains the reduced individual willingness to intervene, rather than directly.

With this in mind, I decided to switch the model to consider if the same setting factors which predicted willingness to intervene may instead predict perceptions of collective efficacy within that setting. Given the previous finding deduced above that those aged 50 and over perceived lower collective efficacy across settings compared to those under 50, I also added this dummy variable to the model to control for this potential influence. Table 24, below, demonstrates that being in a setting at night negatively predicted the level of perceived collective efficacy within

the setting, as did the participant being 50 and over. We can observe, therefore, that whilst being older did not reduce individual willingness to intervene, it did negatively shape perceptions of settings – thus explaining this link more directly. Interestingly, being in a workplace setting also decreased perceptions of collective efficacy – the opposite to which we found for willingness to intervene.

Table 24: Regression 4 – micro-level, temporal, and individual factors predicting perceptions of collective efficacy

Explanatory variables	Standardised β coefficients	Adjusted R ²
Workplace micro-setting	-.133*	.113
Night-time	-.240*	
Participant age 50 or over	-.193*	

Dependent variable: Perceptions of CE, PNGS 2019

Model significant * $p < .001$. N (perception hours) = 362

Given the low accounted-for variance of this model (11%) I then added PCS 2012 collective efficacy to represent the background moral rules of that setting (Table 25). This increased the explained variance to 25%, slightly reducing the beta coefficients for other variables. However, a significant negative effect remained, indicating that perceived collective efficacy may reflect a reduction in the strength of moral rules and their enforcement during night time hours; and, as identified, that those aged over 50 perceived lower levels of collective efficacy. This will be considered further in the sections below, where we look at the effect of time on collective efficacy within the home neighbourhood setting.

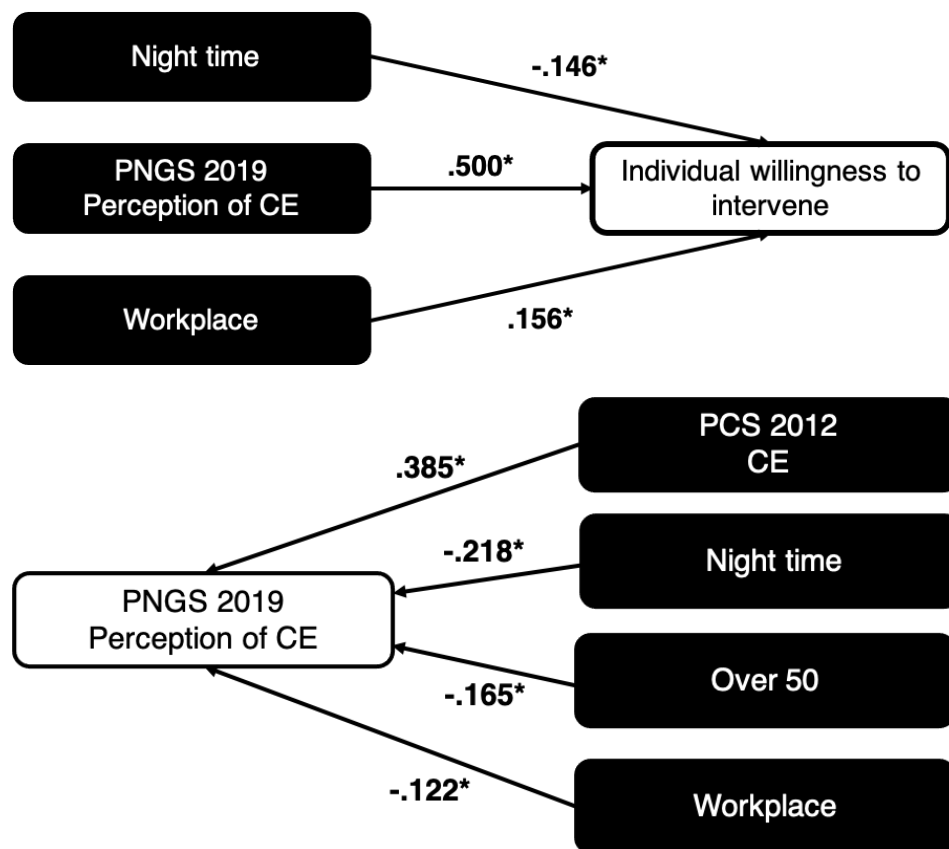
Table 25: Regression 5 – small-area, micro-level and temporal factors affecting perceptions of collective efficacy

Explanatory variables	Standardised β coefficients	Adjusted R ²
Workplace micro-setting	-.122*	.250
Night-time	-.218*	
Participant age 50 and over	-.165*	
PCS 2012 CE	.385*	

Model significant * $p < .001$. N (perception hours) = 362

Figure 36, below, illustrates both model 3 (predicting willingness to intervene in settings) and model 5 (predicting perceptions of collective efficacy in settings). Observing these together, we see that the night time effect may operate through perceptions of collective efficacy. Yet, the influence of the workplace on both variables varies: it positively influences willingness to intervene, yet negatively predicts perceptions of collective efficacy. Without some form of PATH modelling, it is difficult to determine the direct nature of these effects. However, comparing the models as illustrated below highlights that the micro-place influence of being in a setting, at work, is more likely to have a direct effect on willingness to intervene.

Figure 36: Summary of regression models 3 (predicting willingness to intervene) and model 4 (predicting perceptions of CE)



6.3.5.2 Exploring the effect of work

The finding that being at work within a setting may directly increase willingness to intervene provides support to previous theoretical work in HTF (Taylor, 1988). Because employment

settings are regularly used, they may enhance individual territorial functioning and willingness to intervene over that space (Taylor, 1988, chap. 9). Alternatively, the individual's role may foster an element of intervention: for example, in commercial settings, employees have also been empowered to act as 'place guardians' to prevent crimes such as thefts from their employer (e.g. a shop) (Sampson, Eck and Dunham, 2010; Kennedy, 2016). These contributions often consider the relevance of work to be a set place – an office, retail area - where the moral rules of that setting are considered less influential in explaining neighbourhood crime (Wikström *et al.*, 2012). In order to consider this further, we therefore need to look at the distinction between 'working in a setting' and 'being at work'. For some participants in the STB sample, their work involved interacting with a range of settings, providing us with an opportunity to consider the interaction of setting moral norms and the responsibility of work.

In total, there were 76 observations of collective efficacy during work hours that occurred outside of city and local centres across the sample. A correlation between perceived collective efficacy and individual willingness to intervene using these hour observations was weak and non-significant ($\rho = .154$, $p = .185$) indicating that perceptions of moral rules are less relevant in explaining individual willingness to intervene during work hours.

The process of being at work in a setting may therefore confer additional responsibilities on individuals to intervene within settings, regardless of the moral rules within that context and their enforcement. Rather than being associated with participants' familiarity with the setting (Taylor, 1988) such a finding may represent the nature of the participants' job role: for example, being a community nurse, travelling to different OA locations as part of your work in the community; or being a police officer, where the mandate of your role empowers you to intervene.¹¹³

¹¹³ I say 'empowers', rather than mandates, as most guidance and regulations which apply to police decision making are discretionary in England & Wales (Brown, 2020).

6.3.6 Conclusion

In this section, we have identified support for the ideas motioned in chapter 4 that perceptions of existing setting moral rules may shape guardians' willingness to intervene within settings. Perceptions of setting moral rules explained around 26% of the variance in individual willingness to intervene, supporting the idea that where stronger moral rules are interpreted and identified that they can shape guardianship practices. It also appears that, in addition to age, certain temporal features may shape this perception of moral rules, especially where there is a temporal shift in setting observations between the day and night. Being in a work setting appears to have a direct effect on willingness to intervene, given the opposing influences observed on perception of moral rules (negative) and willingness to intervene (positive).

Whilst we have centred perception of moral rules into our interaction model explaining willingness to intervene, around 60% of the variance remained unaccounted for. In chapter 8, I explore further how individual-level factors – such as a person's individual moral rules – may likely explain further variance in willingness to intervene.

6.4 The role and relevance of moral rules in city and local centres

In the PADS+ study in Peterborough, city and local centres were found to account for (and predict) the majority of young people's self-reported offending (Wikström *et al.*, 2012, p. 203). When aggregating data to small-area OAs and accounting for the presence of city and local centres, this finding reduced the explanatory power of collective efficacy as originally conceived – settings of low collective efficacy were the second strongest predictor of self-reported and police-recorded crime (Wikström *et al.*, 2012, p. 203). Thus, the role and relevance of moral rules and their enforcement within these settings appears to be of less worth in explaining the amount of crime variation within such settings (see also St Jean, 2007). Ecological criminology often cites the 'law of crime concentration at places' – that is to say, that crime is highly concentrated in certain areas of urban space (Weisburd, Groff and Yang, 2012; Weisburd *et al.*, 2016, pp. 22–41).

The reasons behind this finding are unclear. Within PADS+, and as adhered to within this study, city and local centres (in Peterborough) were identified by the density of commercial

and entertainment space within them (Wikström *et al.*, 2012, p. 203). Thus, they are not populated, or dwelled in the same way as areas categorised as ‘residential’ can be.¹¹⁴ Within ‘residential’ contexts, we observe attachment to place (Taylor, 2002a) and a need for social cohesion underlying the maintenance of moral rules within the neighbourhood (Sampson, Raudenbush and Earls, 1997; Raudenbush and Sampson, 2002). City and commercial settings are more likely to experience a turnover of visitors to those settings at different times of the day, according to patrons’ purposes and needs. For instance, a visit to the library, to a café for a cup of tea, or a trip to the supermarket for groceries, likely involves temporary and time-specific interactions with these types of settings. The appeal of these environments, to different individuals and age groups, therefore varies (Wikström *et al.*, 2012).

The moral rules here may therefore be less clear, with a high turnover of patrons reducing the likely development of commonly agreed rules within such settings. Furthermore, it has been articulated that such unstructured formation of moral rules may affect enforcement (social control) when people are confronted with breaches of those rules (Wikström *et al.*, 2012, p. 204). Their responsibility to intervene in such settings may be weaker, given that patrons largely interact with strangers in such setting (Felson and Boba, 2010). However, as we have observed, PNGS 2019 participants were able to perceive moral rules in residential settings which they encountered (rather than dwelled) throughout their routines. The stronger the setting collective efficacy, the more likely it seems that people would also exercise informal social control within those settings. Just because, therefore, people may not have a specific attachment to place, does not necessarily mean that they will not intervene in those settings, provided that there are strong and perceptible moral rules over that environment. Whilst non-residential settings still have some form of norms over them (Horne and Mollborn, 2020), interventions in such public contexts appear to be weakened regardless (Smith, Phillips and King, 2010; Zahnnow *et al.*, 2021).

¹¹⁴ Peterborough has a somewhat distinct urban structure with a clear separation between commercial and residential settings. PADS+ researchers identified that most OAs in Peterborough do not have shops within them; rather, such settings are concentrated with designated local centres (Wikström *et al.*, 2012, p. 204). In a comparative sense, Peterborough could be characterised as being ‘suburban’ rather than ‘urban’ (Burgoine *et al.*, 2017). Thus, the American analogy of a ‘street block’, or urban setting with mixed residential and commercial use of space, is of less analytical relevance here.

Thus, it is likely that city and local centres do have their own moral rules and enforcement pattern, but because of the flux of visitors to those settings, such rules may be attuned by the users of that space at different times of day. Contributions in ecological criminology have highlighted that other social actors, such as ‘place managers’ can also shape the permitted rules and behaviours in these settings. These can include owners of businesses, or individuals at work, whose role may require them to enforce public acts of social control, such as security guards (Welsh, Mudge and Farrington, 2010). These ‘place managers’ can vary in their willingness to intervene, or the type of establishment they wish to upkeep (Eck, 2002; Madensen and Eck, 2008; Sampson, Eck and Dunham, 2010). The point being that such settings likely have agreed rules and principles over them, but that they may be routinely maintained by different social actors.

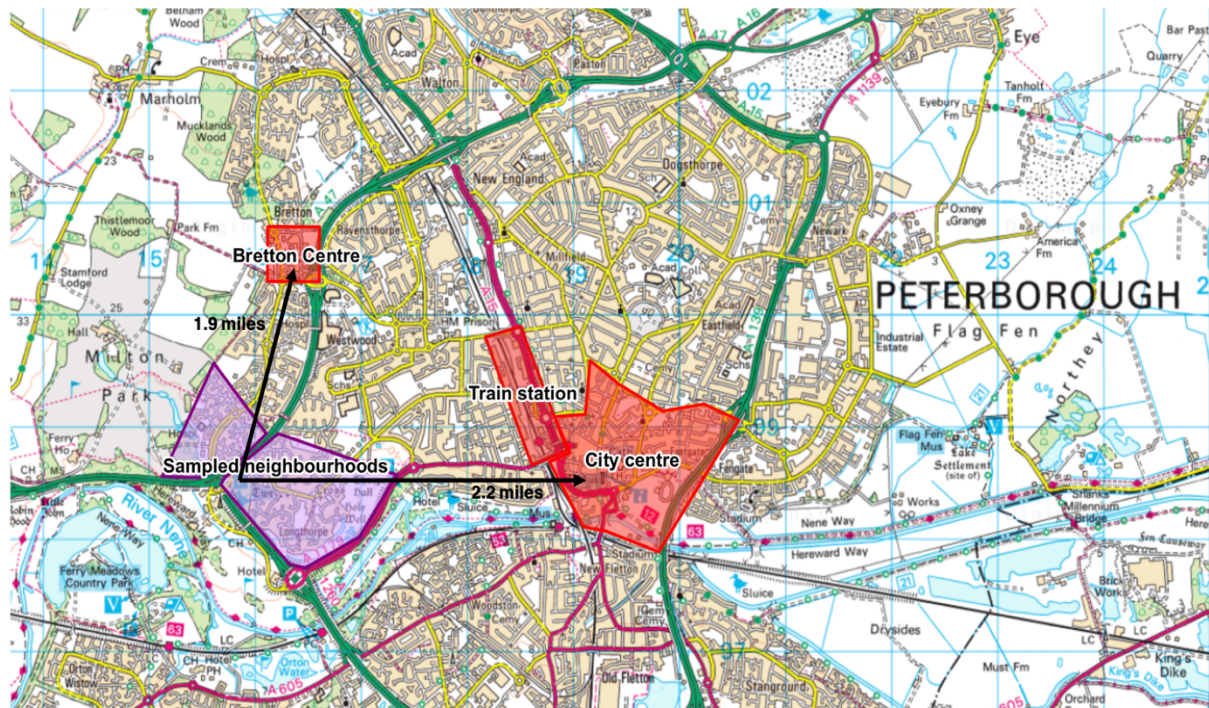
In this next section, we use PNGS 2019 Space-Time Budget data to consider how participants interacted with and perceived the moral rules in three distinct commercial settings in Peterborough. Participants’ time use and observations of these settings will be used to infer the likely moral rules of those settings and the extent to which participants’ perceive themselves willing to intervene and enforce rules in the setting where prompted. The aim here is to further understand the role and relevance of moral rules in city and local centres, and consider if these matter in participants’ individual willingness to intervene.

6.4.1 Time spent in key city and local centres

As set out in chapter 5, sampling of participants for this study was based upon both the level of collective efficacy of neighbourhoods (PCS 2012 – highest quintiles) and the anticipated direction of routine activity patterns in interacting with proximate city and local centres. As anticipated, residents in the sampled cluster spent a total of 412 hours in three of the closest non-residential settings (around two miles away): (i) the Bretton Centre; (ii) Peterborough city centre; and (iii) the train station area. This represented the majority of time spent in city and local centres, and will therefore be the focus on this section.¹¹⁵

¹¹⁵ Other areas where notable time was spent include the Werrington Centre to the North of the city (27 hours) and the Lincoln Road shopping area towards the city centre (15 hours). Despite time spent in these setting, there were a limited number of moral rule observations, hence they are not discussed in this section.

Figure 37: Map illustrating the three most popular city and local centres (OAs) visited in comparison to home neighbourhoods sampled (Source: Map created on Digimap.ac.uk)



Each of these local centres have distinct features which may be relevant to their routine use.

(i) Bretton Centre

The Bretton Centre, or ‘Bretton Shopping Park’, is a local commercial centre in the Bretton area of Peterborough. The centre contains a range of retailers, including a large Sainsbury’s supermarket,¹¹⁶ Aldi, and Iceland (grocery stores), Boots pharmacy, Costa Coffee, and miscellaneous stores such as Peacocks, Sports Direct (clothing), Laura Ashley (homewares), and Pets at Home (pet goods). The centre is also home to The Cresset (theatre), Bretton library, two pubs and a YMCA. The OA represents the closest commercial centre to sampled neighbourhoods. Participants spent a total of 76 hours in this OA.

¹¹⁶ Bretton was developed as one of the first townships when Peterborough expanded during the 1970s. Thus, according to the We Love Peterborough website, this Sainsbury’s was the first large supermarket to be built in the city. See <https://www.welovepeterborough.co.uk/listing-items/bretton-shopping-park/>

(ii) Train station

The train station OA contains, as one would anticipate, Peterborough train station. However, in more recent years the OA also includes a Waitrose supermarket, opened in 2014.¹¹⁷ During interviews participants cited the Waitrose supermarket to be a particular pull into the area. Waitrose supermarket has the most affluent consumer profile compared to other UK supermarket chains.¹¹⁸

(iii) Peterborough City Centre

This is the historic centre of Peterborough, home to mixed venues such as retail (large shopping centre), dining venues, theatres and workplaces. The centre is also home to Peterborough Cathedral, said to be ‘one of the finest Norman cathedrals in England’.¹¹⁹

Figure 38, below, illustrates the total number of hours that the sample spent across these settings, with the sample living around two miles away from each OA. The activity patterns illustrated here do not therefore represent all potential users of these local centres; rather, that individuals within this sample used these settings at certain times of day.

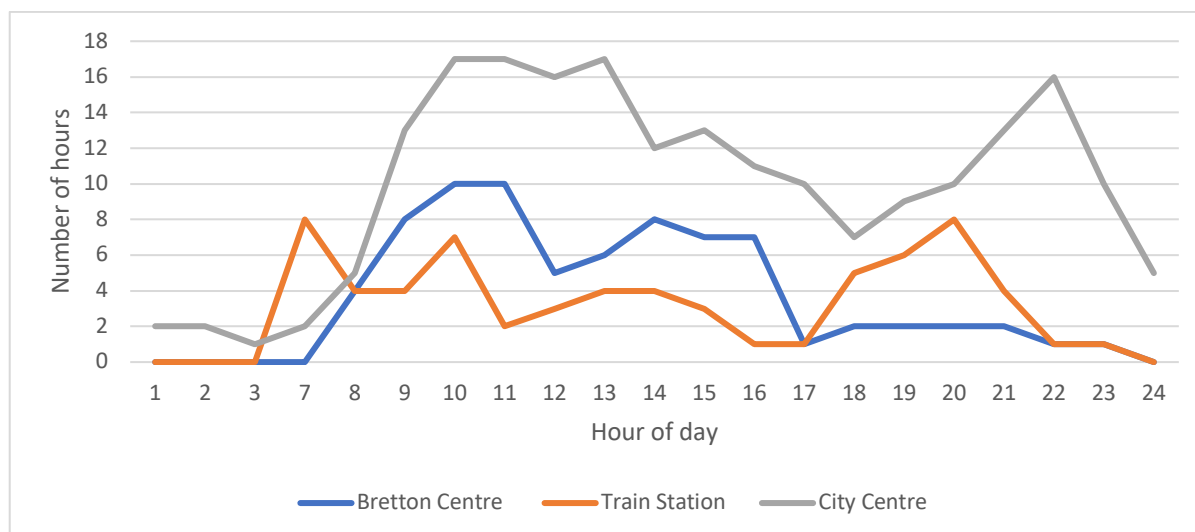
- Time spent at the Bretton Centre mainly occurred between the hours of 09:00 and 16:00, before reducing to a smaller level (two hours across the sample, per hour of the day) until 22:00.
- Time spent at the train station (which includes a Waitrose supermarket) peaked during routine commuter times, at 06:30 in the morning, and again at 19:00 – 20:00 hours in the evening. There was a lower level of use in the daytime period.
- Time spent in Peterborough city centre peaked between the hours of 10:00 and 13:00, before reducing in the afternoon. The number of hours then increased again between 21:00 up until 22:00, until reducing sharply until midnight. Much of this evening pattern was evident in Friday and Saturday hours only.

¹¹⁷ See <https://www.thegrocer.co.uk/the-grocer-33/waitrose-peterborough-cambridgeshire-grocer-33-store-of-the-week/653908.article> (date accessed 17/04/2021).

¹¹⁸ http://www.designintelligence.co.uk/consume/sample_site/pages/retailer_info/waitrose_info_sample.htm (date accessed 17/04/2021).

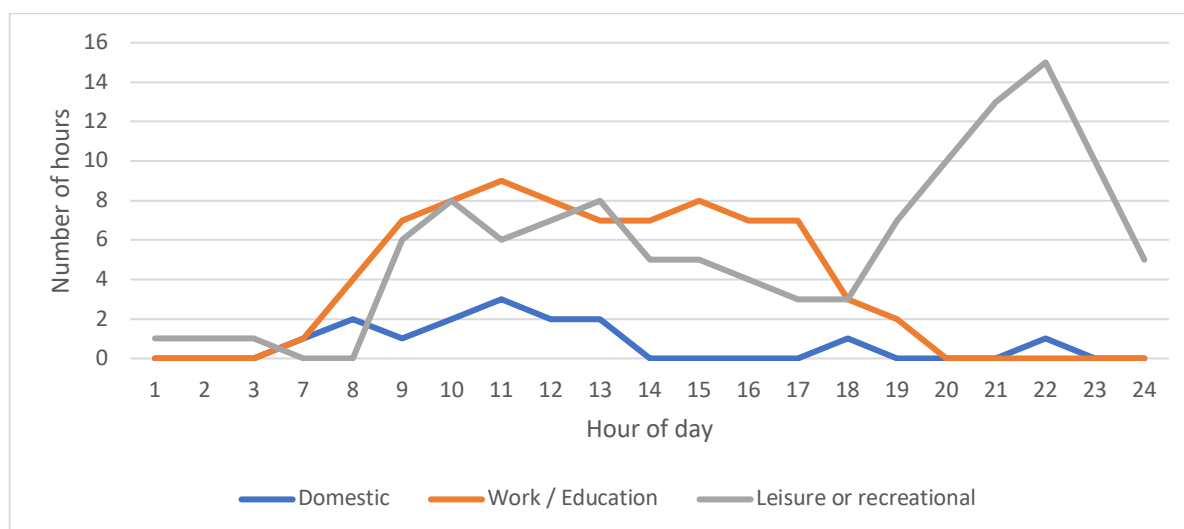
¹¹⁹ <https://www.peterborough-cathedral.org.uk/history.aspx> (date accessed 17/04/2021).

Figure 38: Graph illustrating number of hours spent in three city and local centres in Peterborough, by time of day



The sample's use of settings varied not only by time of day, but also by activity undertaken. Figure 39, below, illustrates the sample's time use for three different types of activity recorded in Peterborough city centre. Here, we observe an increase in leisure or recreational use of the city centre, starting from 19:00 hours, before peaking at 22:00 and reducing until midnight. Presence in the city centre for work or education aligns with a typical 09:00 – 17:00 daily working patterns. Presence in the city centre for domestic activities (e.g. grocery shopping instead of shopping for leisure purposes) was lower overall.

Figure 39: Graph illustrating number of hours spent in Peterborough city centre by time of day and type of activity.



6.4.2 Perceptions of city and location centres

The PCS 2012 contains survey measures for the level of collective efficacy in these city and local centres, derived from the small number of residences present in these settings. However, these perceptions were not found to explain crime in these settings (Wikström *et al.*, 2012, p. 185). A correlation between PADS 2012 collective efficacy measures and PNGS 2019 perceived collective efficacy was weak but significant ($\rho = .284$, $p < .001$). As denoted by Table 26, this may be due to the temporal variation of people in these settings. For example, mean observations of collective efficacy in these settings were lower in the night time than in the daytime. There was a moderate, negative correlation observed between night time hours and perceptions of collective efficacy in these settings ($\rho = -.554$, $p < .001$). Standard deviations of perceptions were larger during night time observations at the Bretton Centre and in the City Centre, indicating that there was more disagreement amongst participations with regards their perceptions during these hours. The city centre was perceived to have weaker moral rules during the daytime than the Bretton Centre and the Train Station.

Table 26: Table comparing mean perceived collective efficacy by time of day within three commercial settings

		N of perception hours	Mean	SD
Bretton Centre	Day	35	2.28	.356
	Night	5	1.76	.818
Train Station	Day	34	2.79	.356
	Night	16	1.69	.393
City centre	Day	29	1.92	.364
	Night	22	1.52	1.78

Perception of moral rules across these settings were, however, highly correlated with individual willingness to intervene ($\rho = .717$, $p < .001$). Surprisingly, this correlation was stronger than evidenced in residential settings, indicating that perceptions of moral rules in this context produced greater variation in individual willingness to intervene. Individual willingness to intervene was more strongly associated with perceptions of social control ($\rho = .721$, $p < .001$) as compared with social cohesion ($\rho = .601$, $p < .001$).

As considered within residential settings, moral rules (through a slightly adapted scale) were perceptible to study participants. Their perceptions of them were, however, generally low, with the exception of those at the Train Station. Some participants commented during interviews that they enjoyed shopping at Waitrose supermarket in this OA, noting the people (other customers and staff) to be pleasant. This finding was borne out in moral rules perception data by micro-location: for those in this OA visiting the railway station, mean perceptions of collective efficacy were lower ($M = 2.03$, $SD = .430$) than for those visiting Waitrose supermarket ($M = 2.47$, $SD = .399$).¹²⁰ This indicates that perceptions of moral rules in Waitrose – shaped by the type of people in that place – were perceived to be stronger, driving the higher observed means in this setting. This again illustrates that even within small-areas (OA), micro-places can function with different moral rules, as maintained by different people in these places.

6.5 The influence of routine activity patterns on home neighbourhood moral context

In this section, we briefly consider the extent to which the routine activity patterns of this sample may attune the level of collective efficacy, and indeed its explanatory effect on crime, within the home neighbourhood. As we have discussed, collective efficacy community survey questions capture a general snapshot of the moral rules and their enforcement within a neighbourhood setting - residents offer their insights and perceptions relevant to their home neighbourhood, serving as an informant of that setting. As evidenced, however, throughout daytime and night-time hours, there is likely to be a shift of different people interacting with different settings (St Jean, 2007; Wikström *et al.*, 2012). Whilst we have observed that their interaction with different setting may also potentially shape that moral context – where collective efficacy is stronger – a question remains about who may maintain moral rules within the home neighbourhood.

6.5.1 Temporal influences shaping maintenance of moral rules

¹²⁰ There are no other supermarkets in this OA, hence a code of being in a retail setting for domestic purposes meant that the participant visited Waitrose.

Reynald's enhanced measures of neighbourhood guardianship identify that in order for neighbourhood social process to explain its crime rate, guardians must be at least present (available) within the home neighbourhood setting (Reynald, 2009b; Reynald and Moir, 2019). This conceptualisation of availability is relevant to high collective efficacy neighbourhoods, for residents in these settings are more likely to intervene when required (Sampson, Raudenbush and Earls, 1997). The residents, therefore, are more likely to be 'capable guardians' to the extent they are present in the setting. Arguably, such temporal considerations are less relevant to low collective efficacy settings; individuals could always be available, but are theorised to be less likely to intervene and enforce breaches of moral rules in those settings.

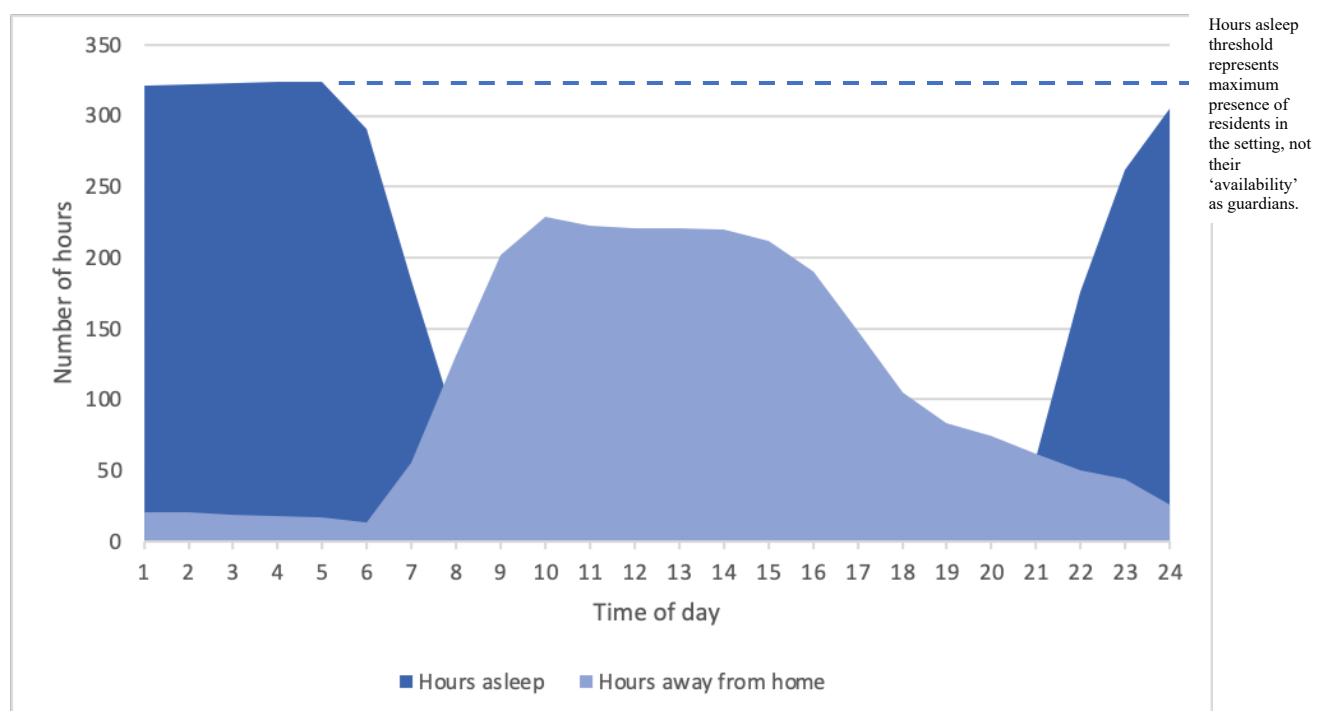
There are, of course, routine periods of time where guardians are not 'available' in the home neighbourhood setting. As observed from PNGS 2019 STB data, residents in this sample spent around one-third of their time outside of their home neighbourhood. For these residents, leaving the home neighbourhood setting may cause a change to the level of collective efficacy, or indeed the concept's ability to explain neighbourhood crime within these home neighbourhoods. Thus, the moral rules are more likely to be influenced (maintained) by (i) those residents who remain in the setting; and (ii) visitors to that setting (if conditioned by the high moral rules).

As outlined in chapter 3, pertinent maintenance of moral rules also depends upon residents' 'eyes on the street' – a presence within a property which views a potential breach of a moral rule in a setting (Newman, 1972; Hillier and Shu, 2000; Reynald, 2011a; Cozens and Davies, 2013; Reynald and Moir, 2019). Net of physical influence such as the design of the properties or streets (not measured in this study) a simple activity which prevents this availability is residents being asleep. Residents in the PNGS 2019 study spent 38% of their time asleep (3058 hours), hampering potential interventions unless residents are woken. During this period therefore, certain physical security features may be more relevant to explaining property crimes (for example, burglary) than neighbourhood collective efficacy (Tseloni *et al.*, 2004, 2017; Wilcox, Madensen and Tillyer, 2007).

Figure 40, below, illustrates these two theorised reduced availability periods using PNGS 2019 time-use data. The white areas of the graph illustrate time periods where this sample were more likely to be 'available' to shape the moral rules in the setting. Hours asleep gives us a ceiling threshold from which to compare participants' availability within the setting: all of the sample

spent time asleep, whilst not all of the sample spent time away from home. The graph does not, of course, represent the activities of all residents within OAs; they represent the activities of individuals sampled who live within those setting, within specific households. Remaining members of their households could, therefore, be present in the home (and so neighbourhood) during the hours that they are away from home. Given the general representativeness of the data (as compared with 2011 UK Census data) we can infer that the activities portrayed reflect aspects of the social life of those settings (prior to COVID-19 lockdown measures).¹²¹

Figure 40: Graph showing number of hours asleep and hours away from home by time of day across PNGS 2019 sample



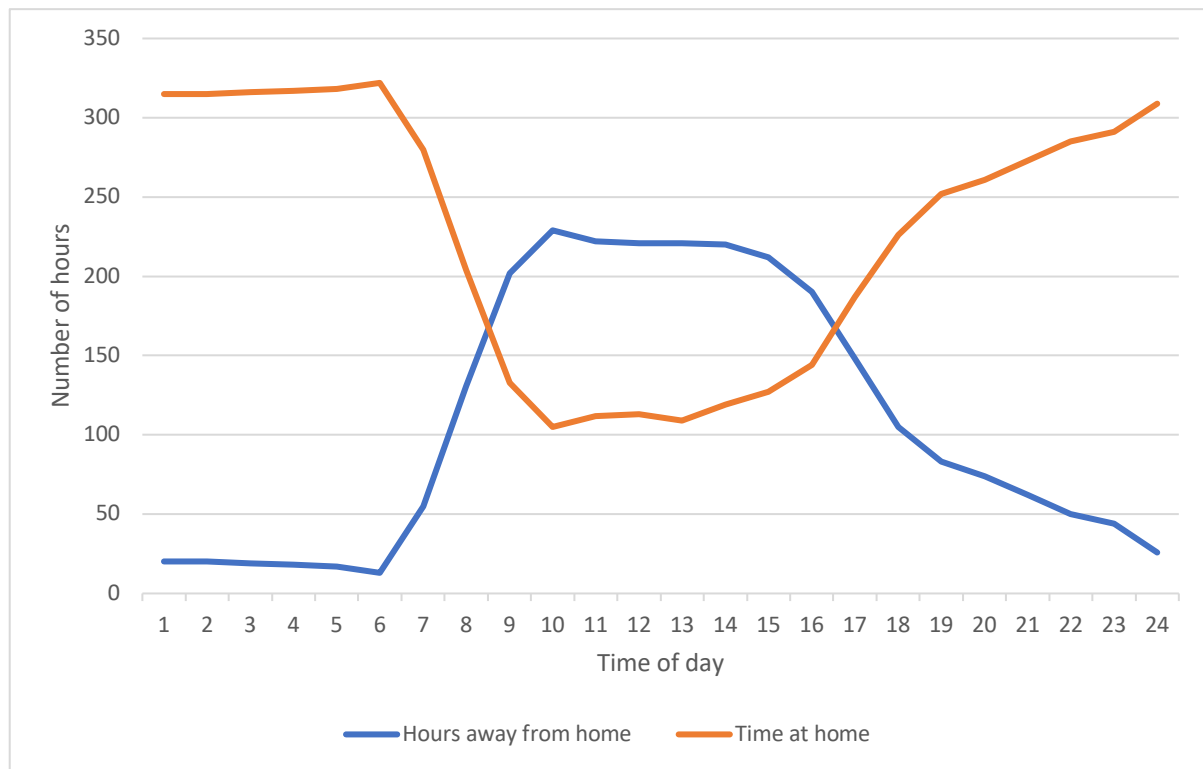
From the graphical illustration above, we see that the moral rules of sampled neighbourhoods may be shaped by the majority of neighbourhood residents at around 08:00 hours (awake) and again in the evening between 18:00 and 22:00 hours (awake and returning home) – periods where interventions are more likely (interventions whilst asleep may entail getting out of bed, making them less likely). Furthermore, the maintenance of moral rules between the hours of 23:00 – 06:00 the next day depends upon residents being woken up by a breach of moral rules within that setting. Situational collective efficacy may therefore be of limited explanatory

¹²¹ These ‘availability periods’ will have increased due to COVID-19 lockdown restrictions when in place in 2020 and 2021 (Nivette *et al.*, 2021).

influence between these hours. Here, we may rely on a deterrent effect of strong moral rules, dissuading visitors with a high crime propensity (Wikström, 2008; Hirtenlehner and Wikström, 2016); and/or, the strength of home security devices inhibiting opportunity for those individuals to offend in committing certain property crimes (Tseloni *et al.*, 2017; Wortley and Tilley, 2018).

Between the hours of 09:00 – 17:30, the sample spent more time in settings outside of the home neighbourhood. The moral rules within this period may therefore be shaped (i) by those other residents of the setting who remained within the neighbourhood; and (ii) visitors to those settings. It is unclear whether a minimum number of residents are required to be within the home neighbourhood setting to maintain these moral rules, and be capable neighbourhood guardians as required (Reynald, 2011a). Key informant analysis techniques have specifically sampled residents whose ‘work position assumes an above-average knowledge of social processes in neighbourhoods studied’ (Hardyns *et al.*, 2021), indicating that those who are at home during these periods continue to enforce and shape these neighbourhood moral rules. Figure 41, below, attempts to illustrate this for home OAs. We observe a reduction in the presence of residents sampled between the hours of 08:30 and 17:00. The moral rules here are therefore shaped by those hours, represented by the orange line, of residents who stay at home.

Figure 41: Graph comparing sample hours spent at home with sample hours away from home



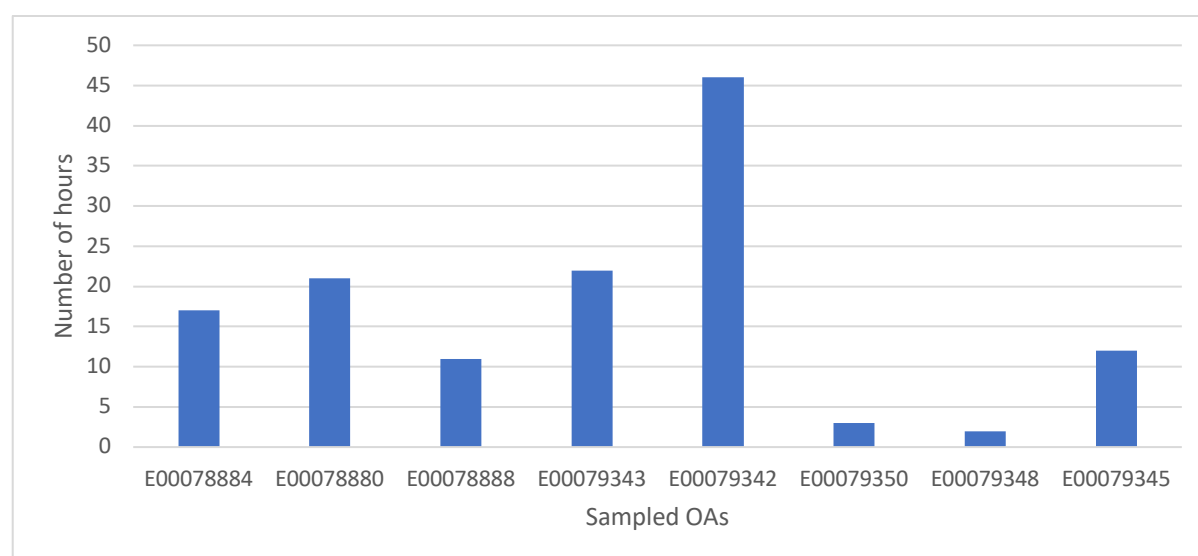
6.5.2 The presence of proximate guardians – from neighbouring high collective efficacy settings

As for visitors to the setting, we observed above that perceptions of high setting collective efficacy did influence participants' willingness to intervene in that setting. Individual factors not considered here may, however, explain further observed variance. This study sampled a cluster of eight high collective efficacy neighbourhoods (PCS 2012). Given the small-area nature of OAs, there is likely to be residential cross-over and use of space across this cluster of neighbourhoods at certain times of the day. In order to capture this likely crossover of residents into proximate neighbourhood units, researchers such as John Hipp have utilised a method called the 'egohood', which adds a layer of between neighbourhood boundaries to represent the likely cross-over of setting social life (Hipp and Boessen, 2013). Using the STB, we are able to calculate time residents spent in neighbouring areas within the cluster sampled.

Figure 42, below, shows that the number of hours participants spent in proximate OAs varied by setting. The largest amount of time – 46 hours - was spent in OA E00079342, which runs

along the Thorpe Road through the neighbourhood of Longthorpe. This road contains a number of neighbourhood amenities, including a pub, shop, church and a site of historic interest.¹²² A main road also passes through the area linking to the city centre. Next were OAs E00079434 and E00078880, which contain recreational areas such as woods and parkland.

Figure 42: Graph showing number of hours participants spent in settings proximate to their home OA within neighbourhood cluster sampled



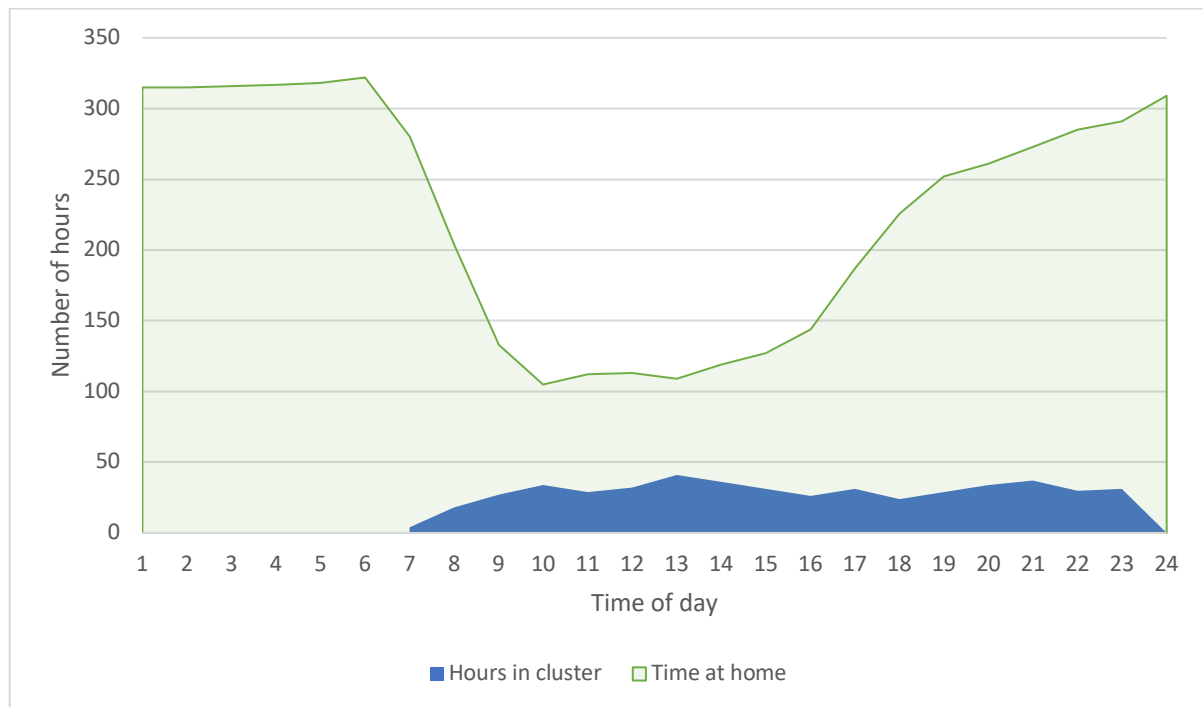
In comparison, 2479 participant hours were spent in other settings outside of this cluster. Thus, where participants left the home neighbourhood, a comparatively small amount of time (5.1% of it) was spent within proximate neighbourhood settings. This may represent a limitation when using an ‘hour’ as a set period of activity and location time. As mentioned, the STB recording protocol was adapted to consider exposure to a setting rather than a proportion of time spent; however, a five-minute walk to a local shop may not have registered in respondents’ minds when recalling their whereabouts and activities on a certain day.

Figure 43, below, illustrates that proximate residents in this sample may shape the moral rules of settings visited between the hours of 10:00 and 15:00, where there is a dip in the presence of residents at home. The additional number of hours is, however, small, increasing the time spent by people in the area by around 40 hours during this period. Interestingly, the presence of proximate residents in these neighbourhoods is fairly limited and consistent throughout the

¹²² Longthorpe tower is a stone tower built between 1290 – 1300 AD. The site is owned by English Heritage. See <https://www.english-heritage.org.uk/visit/places/longthorpe-tower/history/>

day and evening, indicating that use of proximate neighbourhood space occurs with some regularity throughout the day.

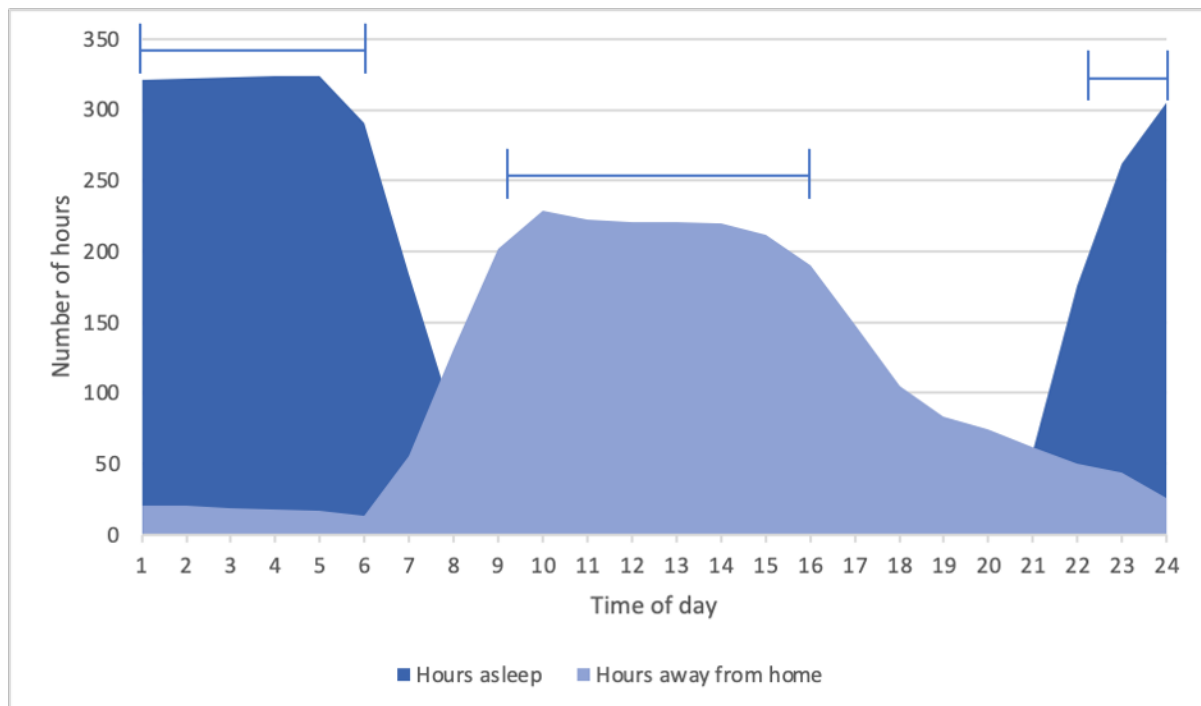
Figure 43: Graph comparing number of hours spent at home and number of hours spent within neighbouring clusters across the sample



6.5.3 The presence of individuals with a high crime propensity within these settings

Factors considered above centre around the potential opportunity structures that may shape neighbourhood social processes and their theoretical influence on crime at certain times of the day. However, SAT informs us that opportunity is not the only factor which ‘makes the thief’; rather, crime events are more likely to occur through a confluence of individuals with a high crime propensity acting in response to a motivation in settings of low collective efficacy (Wikström *et al.*, 2012). Certain periods may however create opportunities by residents being asleep, or spending time away from the home neighbourhood, which adjust the high level of collective efficacy in our sampled neighbourhoods. And the extent to which these moral rules are challenged depends upon the likely presence or residence of individuals with a high crime propensity within those settings during the availability periods (Wikström *et al.*, 2012). Figure 44, below, adapts our original figure to illustrate this point.

Figure 44: Graph showing potential weaker enforcement of moral rules in home OA settings where an individual with a high crime propensity visits setting at certain times of day



Blue bars denote hypothesised vulnerability time periods to enforcement of moral rules where individuals with a high crime propensity interact with the setting.

With these theoretical additions, we observe that:

- high collective efficacy OAs may be more vulnerable to crime where individuals with a high crime propensity are present within settings between the hours of 23:00 and 06:00 (the following day) when residents are asleep.
- Vulnerability is less clear between the hours of 10:00 and 17:00 hours, when certain OA residents may be less likely to be present in the setting, but a background level of residents remain in the setting to enforce moral rules if required.

Previous offender and crime propensity data collected in Peterborough observed that the Longthorpe neighbourhood – as sampled in this study – was home to the largest number of young people sampled with a low or medium crime propensity (Wikström *et al.*, 2012, p. 235). Thus, any likely interactions from individuals with a high crime propensity more occurs when people visit the setting from elsewhere in Peterborough or beyond.

6.6 Conclusion

In this chapter, I conducted exploratory analysis on PNGS 2019 STB data in order to (i) assess the method's utility in this research space; and (ii) to respond to key research questions derived from scholarship seeking to explore collective efficacy's social processes in small-area or micro-places. I doing so, I observed the following key findings:

1. That participants generally (when analysed at the hour level) were able to discern significant differences in moral rules and their likely enforcement across settings patronised.
2. That perceptions of setting moral rules have a part to play in shaping participant's willingness to intervene, explaining around 26% of the variance in general willingness to intervene across settings. Many other explanatory influences derived from HTF and guardianship scholarship did not have any influence in explaining this across the STB perception hours, but for participants being at work in the setting.
3. That city and local centres vary temporally in their moral rules, as perceived by the sample. Again, these are associated with participants' willingness to intervene.
4. That participants' routine activity patterns mean their general presence in the home neighbourhood (to be an available guardian to enforce moral rules) vary at different points of the day. Collective efficacy, as measured in community surveys, is therefore a temporally specific concept, which represents the enforcement of moral rules when all residents are in the home neighbourhood.

7 Methodological reflections

This study represents one of the first attempts to utilise a Space-Time Budget methodology to better enhance knowledge regarding guardianship practices underpinning collective efficacy's enforcement in settings. Despite our exploration into the assumptions which underlie these social processes being guided by theoretical and empirical contributions, empirical analysis of the method was rather more exploratory. This is perhaps to be expected, so as to denote what further insights the STB method, as adapted, can provide when exploring aforementioned assumptions. In this chapter, I begin to conclude this thesis by exploring how the STB, as I adapted it, befitted the research purpose of the study. To begin, I identify the added value that the method brought to guardianship research, highlighting new empirical contributions and methodological approaches which helped assist our study of OAs and its social environment. I then move on to consider the limitations of the approach, before concluding with recommendations as to how the method should be adapted for future use.

7.1 The added value of the STB to guardianship research - implications

7.1.1 *Enhancing the study of guardian interactions outside of the home neighbourhood*

Arguably, the key benefit and insight which the adapted STB methodology brought to the study of collective efficacy was a consideration as to how people may interpret and interact with settings outside of their home neighbourhood. The notion of collective efficacy having a contextual effect in settings has been explored from the offenders' perceptive, or from those with a high crime propensity (St Jean, 2007; Wikström *et al.*, 2012) but less so from the perspective of individuals whom may enforce moral rules, such as neighbourhood guardians (Hipp, 2016b).

By being able to interview and explore participants' temporal and spatial activity patterns, observation hours of settings were tied to their direct interactions with places (Hardie and Wikström, 2020). This is arguably a more befitting approach than one measuring situational perceptions at set time periods (Engström and Kronkvist, 2018; Kronkvist and Engström, 2020), for it allowed perceptions to be obtained as they relate to relevant and specific locations. This permitted analysis against other data sources (for example, collective efficacy survey data)

where available, to both validate and explore location perceptions further. Arguably, the data recording protocol, as outlined in Figure 19, systematically structured data collection to tap into theoretically relevant micro-level situational factors shaping perceptions and willingness to intervene. However, in order for this approach to have yielded greater analytical opportunities (such as fixed effects models) a much large sample size would be required.

As theorised, the STB method did highlight the importance of perceiving setting moral rules, and so answered calls in criminology to shed light on the potential contextual effect of collective efficacy on guardianship practices (willingness to intervene). Arguably, aspects of guardianship and Human Territorial Functioning scholarship had not been able to duly consider this factor, owing to methodological limitations.¹²³ The adapted STB and analysis gleaned from it in this thesis has contributed in some way to this knowledge trajectory, by identifying the importance of perceiving setting moral rules and the influence these have on willingness to intervene. As noted, other temporal factors, such as time of day, may feed into this perception, identifying this as key to enhancing study in this area.

7.1.2 Using collective efficacy scales to tap into perceptions

The above analysis reveals that visitors to a setting were able to both discern and observe variation in setting moral rules and their level of enforcement. Correlated observations were stronger in settings of high PCS 2012 collective efficacy as compared with low collective efficacy. However, identified variation in perceptions across the sample was in the expected direction – that is to say, that ‘low’ collective efficacy settings (PCS 2012) were perceived to have low collective efficacy in PNGS 2019. In other words, settings with weak moral rules (and poor enforcement) were perceived to have weaker moral rules in the PNGS 2019 by the study sample (from high collective efficacy neighbourhoods). These findings therefore partly support the assumption that a relevant level of collective efficacy in a setting can be perceived by visitors to that setting: for this sample of high collective efficacy resident guardians (particularly those aged under 50) settings which have a similar level of moral rules and enforcement of those rules were more accurately perceived.

¹²³ That is, beyond the home neighbourhood setting. Reynald’s (2011) work has considered the relevance of social ties on guardian propensity.

Chapter 6 identified that the collective efficacy scenario scales were able to provide a reliable method of tapping into perceptions of settings beyond the home neighbourhood. Aspects of setting social cohesion could therefore be interpreted by participants through their interaction with a setting. This demonstrates the use of social cohesion - as a proxy measure for the content of moral rules in a setting - is appropriate in broader collective efficacy scholarship. Social cohesion, and perceptions of it, do not appear to be tied to 'home' neighbourhood settings, and are perceptible as a moral rule in other contexts. Social control scenarios (enforcement) were further interpretable by participants, who could imagine such events (potential breaches of moral rules) occurring in settings they interacted with. Notably, however, the question pertaining to children 'skipping school' has a temporal limit, and is only relevant to certain hours of the day.

The direction of perceptions followed a similar pattern to PCS 2012 collective efficacy data, in that high PCS 2012 collective efficacy settings were perceived by PNGS 2019 participants to have stronger moral rules and enforcement than low collective efficacy settings. The correlation between PCS 2012 collective efficacy and PNGS 2019 perceptions was, however, weak in low collective efficacy settings, pointing to either a change in setting moral rules during this time period or a bias in the nature of the sample (age, home collective efficacy), interpreting potential disorders as signals of lower collective efficacy (Innes *et al.*, 2009; Innes, 2014). I suspect that a combination of the two reasons may have influenced this observation. UK Census data released for 2021 and a third PCS wave may be able to confirm these assumed explanations.

In adhering to PCS 2012 collective efficacy measures, interviewees could not respond to say that they 'did not know'. This therefore forced participants to make an assessment in relation to the setting. Recent scholarship has identified that where 'don't know' options are not provided for participants, they tend to respond more cautiously, or more negatively on a survey scale (Gerstner, Wickes and Oberwittler, 2019). Furthermore, some scholars have empirically considered that, for many people, 'don't know' responses may provide a more accurate account of their knowledge of social cohesion within a setting (Shen *et al.*, 2019). Removing such an option, as was the case in this study, may therefore bias results observed (Shen *et al.*, 2019). As noted in chapter 4, norms undoubtedly exist and vary over micro-settings, but our perception of them can be challenging to understand (Horne and Mollborn, 2020). Providing a

‘don’t know’ response in the PNGS 2019 study may not have encouraged participants to think carefully about the nature of the setting and their perception of it. Ultimately, through our interactions with social environments, we form instinctive opinions and sentiments about places. Offering a ‘don’t know’ may have meant interviewees did not reflect on that as much as they were required to when this was not an option.

7.1.3 Tapping into social processes in small-area and micro-setting

The STB method, with its OA-level and micro-level focus, enhances the study of collective efficacy social processes within highly localised settings, adding support to findings that collective efficacy is a live dynamic that occurs within highly localised settings (Wikström *et al.*, 2012; Sutherland, Brunton-Smith and Jackson, 2013; Gerell, 2015; Weisburd, White and Wooditch, 2020). By studying an individual’s presence within a setting, we were able to tap into the relevance of the setting on guardianship propensity as it was perceived by individuals. Aggregating these perceptions to OA settings arguably provides a more accurate account of that specific social environment interpreted. This is further represented with data collated to understand the micro-place relevance of the setting on the individual – e.g., presence in the setting for work, at someone else’s home, etc.

7.1.4 Temporally contextualising collective efficacy’s explanatory effect within home neighbourhood units

The STB method further permitted a nuanced study of the routine activity patterns of home neighbourhoods. In a community survey method, home neighbourhood settings are surveyed about the general level of collective efficacy in a setting. As observed, questions appear to tap into properties of the setting in the daytime mid-week, and outside of school holidays, given one of the scenarios asking about children skipping school. Each scenario may be temporally adjusted in the respondents’ mind, given that other scenarios ask about children spray-painting graffiti, also perhaps skipping school in this context. In any case, the point being that, as explored, home neighbourhood settings are unlikely to be static in their level of collective efficacy throughout the day given the movement of people out of the neighbourhood. Some residential settings, with a greater turnover of people, have been theorised to interrupt

neighbourhood social processes but nonetheless foster vitality in urban social life (Jacobs, 1961).

Such an approach may add supplementary value to future community survey research, with survey respondents asked to specify how much time they spend away from the home neighbourhood across a week. This could provide insight as to the potential availability of neighbourhood guardians within the home neighbourhood, a factor identified to be of importance in explaining neighbourhood crime (Reynald, 2009b; Reynald and Moir, 2019). We may observe, for instance, in high collective efficacy settings, that residents spend more time away from their home neighbourhood; conversely, in low collective efficacy settings, residents may have a shorter ‘home range’. Whilst in this study we did not compare these patterns with participants from a low collective efficacy neighbourhood, the STB nonetheless identified that the sample spent around one third of their total time outside of the home neighbourhood. Even where they were within the setting, the extent to which they shaped the moral rules and enforcement of it is questioned by the fact that they were asleep. As such, the crime rate in those neighbourhood is explained also by the type of people (or absence of them) visiting those neighbourhood settings (Wikström *et al.*, 2012).

7.2 Limitations

These limitations refer to use of the STB in the PNGS 2019 study, and therefore pertain to methodological decisions taken relevant to this project, rather than broader reviews of the STB methodology (see Hoebe *et al.*, 2014; Hardie, 2020; Hardie and Wikström, 2020). In noting these limitations, I follow this section with recommendations to assist future research in making the most of this innovative methodology.

7.2.1 The exploratory nature of empirical findings hampered by sample size

The empirical research outlined in chapter 6 suffers from a number of limitations given its exploratory form. As discussed, the structure of the STB perception data lends itself to analysis at the hour level, but only for those hours where observation data had been collected. Thus, perception analysis was conducted using a set number of hours dependent upon parameters chosen (e.g., excluding home OAs, including city and local centres, etc.). Whilst this approach

permits appropriate data distributions to be chosen, it nonetheless departs from the requirements of validated collective efficacy methodological approaches. For instance, the use of the Lambda parameter to validate that respondents' perceptions of home neighbourhood collective efficacy represent the setting and not features of the individual neighbourhood population (Sampson, Raudenbush and Earls, 1997; Oberwittler, 2001; Raudenbush and Sampson, 2002; Wikström *et al.*, 2012; Gerell, 2015; Gerstner, Wickes and Oberwittler, 2019; Janssen, Oberwittler and Gerstner, 2019). These multi-level approaches represent longstanding and appropriate methodological conventions to validate data used. In this study, perceptions aggregated to settings varied considerably, reflected by participants' activity patterns. In order to consider Lambda, ICC and fixed effect approaches – to assess the internal consistency of OA perceptions – far more observations nested within the same settings would be required. This represents a challenge for use of the STB in this context, given the probability that adult participants will spend time in a diverse range of settings with limited cross-over (as evidenced here). Whilst this study used only raw collective efficacy mean scores, data was collected with much greater temporal and situational specificity than is typically the case with collective efficacy community survey methods. As I shall outline below and in chapter 8, there are however individual-level factors, such as participants' own moral rules, which may shape and influence these perceptions.

7.2.2 The distinction between situational perceptions and previous experiences

Whilst the STB sought to tap into interviewees' temporal perceptions of setting moral rules, it is ultimately unclear if their assessments derived from (i) a perception as a product of their interaction with the setting; or (ii) recall of previous experiences within the setting. This is noted as being difficult to capture (Hirtenlehner and Wikström, 2016). Past frequency of use, as an objective measure of interviewees' familiarity with the setting, did not significantly influence collective efficacy perceptions in a particular direction. Furthermore, the STB method guides interviewees to consider the temporal and spatial elements of a setting pertaining to their interaction with it. Ultimately, however, some background knowledge of the setting – be that informed through previous experience or through a general perception informed through other sources (the news, gossip etc) – likely played a role. There are ad-hoc comments from interviewees, especially in relation to interactions with city and local centres, that attest to this. This is not necessarily problematic, given that a perception based upon past

experience, or frequent use of a setting, may accurately reflect the social life and norms of that environment.

As such, the factors which shaped these perceptions – and the variation across them – are important consideration for collective efficacy scholars. Factors which shape individual perceptions of collective efficacy or setting moral rules have largely been approached from the offenders’ perspective – with offenders’ experiences of social control (sanction) seemingly more important for shaping deterrence than initial visual perceptions (St Jean, 2007; Wikström, 2008; Hirtenlehner and Wikström, 2016). As mentioned, visual cues as to a setting’s collective efficacy often centre on attributes of physical and social disorder, giving an indication of the permitted behaviours within that setting (Wikström *et al.*, 2012; Hardyns *et al.*, 2021). However, in interpreting these cues there is an individual interactive component – as considered, how we perceive and interpret these aspects of a setting varies by population studied. In recognition of bias in this sample, by home collective efficacy residences (Taylor, 1999) and the lack of objective systematic social observations to compare interpretations (Raudenbush and Sampson, 2002), we have been unable to further disentangle this perception point. It is evident, however, that such factors likely shape perceptions which matter for individual willingness to intervene in these settings.

7.2.3 *Assumption of participants as ‘guardians’*

Throughout this thesis, I have used the term ‘guardians’ as a short-hand reference to those individuals who are considered more likely to intervene in settings. A more appropriate term may be ‘social actors’, as it removes the assumption that individuals in a space may be a guardian over it; rather, they are actors or participants in a setting. The sampling of this study (from a high collective efficacy neighbourhood) and the nature of the study invitation letter itself (Appendix D), likely meant that those with a propensity to more readily intervene in settings, or indeed, an interest in challenging crime and disorder, may have self-selected into the study. This selection effect is arguably useful for study purposes, for if individuals are already more likely to intervene in a setting, and this varies in relation to settings visited (as observed) we can identify a contextual effect.

Guardianship, as a criminological concept as centred in the Routine Activity Theory approach, has been enhanced and better specified, namely in relation to the actions of guardians in either being present or intervening in a setting (Reynald, 2009b, 2009a). Despite this re-specification, there is nonetheless an assumption that certain people in a setting act as guardians, and that certain people act as offenders (Felson and Boba, 2010; Felson, 2017). It is unclear whether one can also be a guardian in some contexts, but also an offender in others. For example, one might intervene to stop children spray painting graffiti outside of their school (guardian) but then drive past the same school above the speed limit (offender).

7.2.4 The method did not study interactions

As noted by Hardie (2020) in order to study individual and person environment interactions, one has to combine measures of both ‘features’ in STB analysis. In this study, we utilised the STB framework in order to capture perceptions as a product of interactions and subsequent perceived willingness to intervene. There were initially no observations of actual participant interventions (as originally asked in the pilot study) seemingly because of a lack of need in the specific interactions with settings studied. Given the limited data provided, and the length of time taken to conduct STB interviews, the decision was taken to streamline the STB and focus on perceptions only, through the collective efficacy survey vignettes.

With a larger and more diverse sample the STB may have been able to record actual incidents of participants having witnessed breaches of moral rules and, consequently, participants’ response to those breaches in action. This would, as Hardie (2020) explains, ensure that the STB would be used in its fullest analytical capacity. This would then permit us to consider not only what participants think they would do, but also what they actually did do in such contexts. As such, these social processes are still somewhat assumed in this context. Within the exploratory scope of PhD study, however, this first-time application of the method to collective efficacy and guardianship research represents a useful contribution to methodological knowledge.

7.3 Recommendation for future use

As identified, the STB methodology as used in this research context arguably provided insightful observations to the scholarship of collective efficacy theory and guardianship, by identifying the contextual effect of moral rules on individual's willingness to intervene. In order to expand on use of the methodology, I recommend that researchers make the following adaptations when seeking to use the method in guardianship or collective efficacy research contexts. These recommendations pertain to my construction and deployment of the wider study, rather than the integrity of the STB method.

7.3.1 *Streamline the sampling approach to reduce costs*

The STB method is recognised as being costly and resource intensive to administer (Hoeben *et al.*, 2014). It was certainly the case that deploying an STB in the framework of a community survey sampling approach was resource intensive. However, a sizeable proportion of study resource went into developing the study sample, rather than administering the methodology in the field. The average length of STB interviews was one hour, with some concluded in less time owing to participants' reduced routine activity patterns. Alternative sampling approaches could therefore be adopted, in order to tap into relevant informant insights. As outlined in Appendix A, the original scope of this study sought to include both high and low collective efficacy residents; but, there were difficulties in garnering participation from the low collective efficacy neighbourhoods (not part of final analysis). Ultimately, therefore, this signals a limitation of adopting a door-knocking approach in low collective efficacy settings, which often require further over sampling (Wikström *et al.*, 2012).

Key informant analysis techniques may represent a more cost-effective solution to this issue in attempting to obtain perspectives on neighbourhood collective efficacy (St Jean, 2007; Pauwels and Hardyns, 2009; Gerell, 2015; Hardyns *et al.*, 2021). Use of the key informant analysis techniques has been shown to produce comparable data to that derived from more costly large scale community surveys (Hardyns *et al.*, 2021). Rather than seeking to sample residents randomly across a setting, key informant techniques target specified residents in a neighbourhood for study. These individuals are theorised, and now empirically understood, to provide a reliable account of social life in settings (Pauwels and Hardyns, 2009; Gerell, 2015;

Hardyns *et al.*, 2021). These ‘key informants’ can be identified and categorised in different ways: in one recent study, key informants were identified as those whose ‘work position presumes an above-average knowledge of social processes’ (Hardyns *et al.*, 2021). Whilst this represents a useful approach for perceptions within a neighbourhood, it may not be as effective in the context of STB research, given the need to explore routine activity patterns and interactions with settings. The extent to which an individual could be a key informant across a number of setting would relate to their frequency of use, which may be difficult to ascertain as a sampling strategy.

Adopting such an approach in the PNGS 2019 would therefore exclude the sampling of roughly one-third of participants in the PNGS 2019, who regularly spent time away from home and the city of Peterborough. Is it therefore the case that their perceptions of home neighbourhood collective efficacy are less valid? Or, that due to their routine absence in the setting, they are less likely to be an active participant in the maintenance of those rules in the setting? Perhaps the key informant technique could be used for those whom, across the sample, were identified to spend most of their routine time within the city of Peterborough. 31 participants in this study spent more of their time away from home and outside of the city of Peterborough as compared with other participants.¹²⁴ Thus, for certain individuals, their routine lifestyle patterns take them far beyond the home neighbourhood and the city boundaries, limiting their individual ability to shore-up the moral rules of the home neighbourhood setting. Even within this sample of individuals who left the city of Peterborough, there are different patterns of time use away from home: regular travel to work was 45 miles (hours = 229; SD 25.857)¹²⁵; for recreational activity, slightly further mean distance of 51 miles was travelled (hours = 167; SD 29.42). How and why one would choose to exclude these individuals from analysis is unclear, given that their absence from the setting also represents a feature of setting social life. This may be tricky to employ such a technique in practice.

Conducting STBs by phone or video call also represents a cost-effective way in which to conduct the research. For the limited number of STBs conducted by phone, I did not observe

¹²⁴ This number was determined by implementing a threshold of over eight hours (one day) spent outside of Peterborough over the four-day period.

¹²⁵ Maximum distance of 97 miles. Peterborough train station to London St Pancras / London Kings Cross is a distance of 75 miles.

any difficulties in administering the interview or identifying specific OA locations. This may reflect the adult study population being more confident and able to describe their location accurately, as compared to younger populations. In fact, phone STB interviews were easier to conduct as compared to those in public settings (e.g. Costa coffee at the request of some participants) given the range of distractions and interruptions that can occur in such public places.

One approach which may benefit future scholars is rather than to randomly sample targeted neighbourhoods, to instead recruit from a centralised location. The Bretton Centre, as an example, is located in the centre of OAs that vary by their PCS 2012 collective efficacy score. Sampling from the Bretton Centre itself, by, for instance, approaching people randomly to take part in the study, may tap into this neighbouring diversity of settings. This approach assumes, of course, that users of the Bretton Centre are local to surrounding OAs. This may represent a more effective way of garnering recruitment. Alternatively, as was considered for low collective efficacy neighbourhoods, a snowball sampling approach could be adopted, whereby residents recommend other neighbours in the setting to take part. This would likely skew the sample to be those vested and interested in crime and disorder, but so too does a letter inviting you to take part in such a study. Such participants are also identified, again, to be ‘key informants’ of these social environments (St Jean, 2007; Innes *et al.*, 2009; Pauwels and Hardyns, 2009; Hardyns *et al.*, 2021).

7.3.2 Utilise participants as informants of a setting

As residents interacted with these settings, the STB method could be adapted so as to tap into broader relevant observation of these environments. For instance, one could ask about the patronage (business) of the setting; perceptions of safety in the setting. These additions do, however, add time and repetition to the method, so should be balanced against relevant study aims.

8 Conclusion

‘One English characteristic which is so much a part of us that we barely notice it, and that is the addiction to hobbies and spare-time occupations, the privateness of English life. We are a nation of flower-lovers, but also a nation of stamp-collectors, pigeon-fanciers, amateur carpenters, coupon-snippers, darts-players, crossword-puzzle fans. All the culture that is most truly native centres round things which even when they are communal are not official – the pub, the football match, the back garden, the fireside and the “nice cup of tea”. The liberty of the individual is still believed in...It is the liberty to have a home of your own, to do what you like in your spare time, to choose your own amusements instead of having them chosen for you from above. The most hateful of all names in an English ear is a Nosey Parker.’

George Orwell (1941)

This thesis has sought to contribute theoretically, methodologically, and empirically to the study of collective efficacy theory when used in small-area and micro-place settings. In this brief final chapter, I review how this thesis has sought to contribute to this scholarship, before setting out a path for future theoretical and empirical study in light of study findings. I also conclude by considering further the specific context of the study, within a medium-sized British and English city. Appendix A also considers that the study was conducted at a time of significant constitutional and political change in the lead up to the United Kingdom’s withdrawal from the European Union (Brexit). As has been considered, there is evidence of a cultural aspect to collective efficacy theory, suggesting that the concept may be better at explaining social processes in some countries as compared to others (Sampson, 2012; Burchfield and Silver, 2013; Wilcox, Cullen and Feldmeyer, 2018; Gerstner, Wickes and Oberwittler, 2019). As alluded to in the (somewhat dated) observation above (Orwell, 1941), the ‘privateness’ of English life, as has been more recently evidenced, may mean collective efficacy is an ideal method of tapping into setting social life in the absence of social ties. I therefore briefly conclude that collective efficacy theory is an apposite concept for the study of British neighbourhood social processes.

8.1 Recap and main findings

In chapter 1, I set out the proposition that the study of collective efficacy as a large area, contextual effect on crime, is distinct from study at the small-area neighbourhood level, owing to the nature in which social processes operate through individuals (Oberwittler and Wikström, 2009; Wikström *et al.*, 2012; Gerell, 2015, 2017). I illustrated this by briefly considering how collective efficacy may explain crime as an interaction between individuals and their social environments as denoted by Situational Action Theory. This discussion assisted us in traversing between collective efficacy theory, as a broader contextual concept, to one which, as research has identified, can also be considered to be contextual but also highly localised. This then set out the scope of this thesis, seeking to bridge the gap between these two scholarship domains, both theoretically, in part 1 of the thesis, and empirically in part 2, heeding from ecological criminology's contributions to date.

Chapters 2, 3 and 4 formed part 1 of the thesis, providing a detailed theoretical appraisal of collective efficacy theory in neighbourhood research. In chapter 2, I set out to explain the background to collective efficacy, from its theoretical and empirical development through to subsequent deployment in field studies. This chapter championed collective efficacy's explanatory reach in accounting for variations in neighbourhood crime, as a powerful social process connecting neighbourhood composition with its crime rate (Pratt and Cullen, 2005; Wikström, 2007; Warner and Sampson, 2015). We observed that typically, concepts such as social cohesion and social control are highly correlated; and that where neighbourhood collective efficacy is high, crime is consequently lower in a neighbourhood setting (Sampson, Raudenbush and Earls, 1997; Sampson, 2012). However, as collective efficacy is studied and aggregated to smaller neighbourhood units, its explanatory power, whilst nonetheless relevant, reduces (Wikström *et al.*, 2012; Sutherland, Brunton-Smith and Jackson, 2013; Gerell, 2017; Weisburd, White and Wooditch, 2020). I argued, on the basis of existing scholarship, that this may be due to the interruption of social processes as they operate within small-area and micro-places, attempting to bridge the theoretical gap between the meso and micro level effect of collective efficacy in action (Wikström *et al.*, 2012; Taylor, 2018). I used the example of collective efficacy's limited effective influence on social and crime policy to further this point, despite theory driven policy formulations operationalising key aspects of the concept (Kochel and Weisburd, 2012; Uchida *et al.*, 2015; Weisburd, Davis and Gill, 2015; Rinehart Kochel and Weisburd, 2019). Ultimately, for a policy to be of effect, the social processes hypothesised

– that social cohesion enhances conditions for social control – need to occur in practice. There is limited evidence of this occurring as the product of an experimental intervention, with mixed findings identified (Uchida *et al.*, 2015; Rinehart Kochel and Weisburd, 2019; Weisburd *et al.*, 2020). Thus, an eye to the direction of social processes in small-area and micro-setting places may help us to appraise this gap in thinking.

In chapters 3 and 4, I attempted to bridge this gap by exploring both physical and socio-spatial influences on collective efficacy's explanatory influence on crime. In chapter 3, I focused on the potential relevance of the physical, built-form features of settings, and sought to interrogate competing causal explanations for variations in neighbourhood crime. As observed, it is reasonable to assume that, in micro-places, the social processes which operate within collective efficacy may be attuned by the physical features of that setting (St Jean, 2007). However, scholarship which links physical aspects (built form) of settings to neighbourhood crime does so without duly considering how such features interact with setting social processes (Taylor, 2002a, 2018; Ekblom, 2019), resulting in a cache of competing mechanisms and under-specified explanations (see Saville and Cleveland, 2008). In this chapter, I therefore developed a socio-physical framework to explain neighbourhood crime, by parsing out current explanations and empirical findings and organising them through their interaction with neighbourhood collective efficacy. Doing so revealed competing explanatory effects which should be disentangled in future empirical research. The most probable causal link between physical effects and crime was, however, found in relation to property crimes, where physical home defences may be of more use in halting offending than neighbourhood collective efficacy; nonetheless, such a conclusion needs to also consider the type of people in those types of settings. Whilst not empirically tested in this thesis, I further argue that the socio-spatial model can be operationalised and tested to parse explanatory effects in future cross-sectional study.

After considering the potential for physical influences, chapter 4 explores some of the theoretical assumptions which underpin the social processes within collective efficacy theory. This was done by comparing how the theory has been operationalised within Situational Action Theory, as a measure of setting moral rules and their level of enforcement within settings (recognising the high correlation of the two concepts). In utilising the concept in this way, I considered scholarship which has questioned the nexus between social cohesion and social control, identifying the exercise of social control to be a more perfunctory process within home

neighbourhood settings related to the nature of specific crime events (Warner, 2007; Anderson and Dobbie, 2008). Given the dynamic realities of setting social life, this assessment also led us to consider the relevance of individuals intervening in other settings outside of their home neighbourhood, where they may lack the tethered interest in the social life of that setting (Sampson, 2006b, 2006a), but may be conditioned by the moral rules of the setting to intervene if called upon (observing a breach of moral rules). Here, we observed that in broader scholarship, such as in Human Territorial Functioning (Taylor, 1988), the type of setting interacted with may serve to condition the likelihood of setting interventions. Such scholarship was however found to neglect the study of pre-existing norms (moral rules – collective efficacy) that exist over such settings (Hipp, 2016b). With this in mind, I then considered an interaction model, explaining guardian willingness to intervene with the idea that perceptions of setting moral rules (that pre-existing in a setting) may condition an individual's willingness to intervene.

Noting the importance of setting perceptions and their potential to shape guardianship practices, in part 2 of the thesis, I sought to develop, deploy and analyse data derived from a method which could tap into setting perceptions formed through interactions. In chapter 5, I set out the development of an adapted Space-Time Budget methodology (Wikström, Treiber and Hardie, 2012; Hardie and Wikström, 2020) in order to capture residents' perceptions of collective efficacy as a moral rule and its likely level of enforcement in settings encountered. In testing this method, during what was its first application to collective efficacy and guardianship research, I recruited a sample of 92 residents from some of the highest collective efficacy neighbourhoods in Peterborough, UK. This was done with the aim of exploring their routine use of the city, their interactions with settings, their perceptions of its moral rules and a consideration of their own willingness to intervene within the city context. This sample, whilst comparatively small in quantitative terms, nonetheless provided a rich and highly contextualised account of adult time use (social and self-section patterns) and 608 hour observations of setting perceptions.

In chapter 6, I then sought to conduct exploratory analysis on this data, to (i) assess the method's utility in this research space; and (ii) to respond to key research questions derived from scholarship seeking to explore collective efficacy's social processes in small-area or micro-places. In doing so, we observed that participants generally (when analysed at the hour level) were able to discern significant differences in moral rules and their likely enforcement

across settings patronised. When using background PCS 2012 collective efficacy data, we observed moderate correlations between 2012 resident perceptions and PNGS 2019 visitor perceptions of collective efficacy. However, these were notably weaker in settings with low levels of collective efficacy (as designated by PCS 2012) as compared to higher ones; and older participants in the sample further perceived lower levels of collective efficacy, albeit in the right direction. Thus, the visual insights that a setting offers to participants in this sample may have elicited perceptions of a setting having weaker moral rules than is actually the case (Sampson and Raudenbush, 2004; Innes, 2014; Janssen, Oberwittler and Gerstner, 2019).

With the idea that the measure was able to tap into varied perceptions across settings, I then sought to centre this on explanations of individual willingness to intervene. Here, we observed that participants' general assessment of setting moral rules (at the hour level) explained around 26% of the variance in general willingness to intervene across settings. Many other explanatory influences derived from HTF and guardianship scholarship did not have any influence in explaining this across the STB perception hours, but for participants being at work in the setting. This is an interesting finding; whilst the effect was small, it nonetheless boosted the explained variance of our willingness to intervene model. Whilst not assessed empirically, I considered that such an effect may relate to the nature of someone's role in the setting rather than the contextual influence of setting moral rules on their intervention decisions.

We also observed shifts in mean perceptions of collective efficacy in commercial contexts such as city and local centres, confirming findings that these settings are more dependent upon the type of people temporarily patronising them than any residents that may live in them. In Peterborough, local centres are largely distinct entities, with limited residential dwellings. There is, however, inclusion of some residences within these OAs. In these settings, willingness to intervene was largely through mobilising other resources than through direct intervention.

Finally, we concluded by noting that whilst measured as stable entities in collective efficacy research, home neighbourhood levels of collective efficacy may change at different times of the day. We noted, theoretically, that collective efficacy's explanatory effect on crime may be weaker during night time hours (for certain property crimes) where residents are largely asleep in these settings. Furthermore, during the day there are time periods where neighbourhood have greater levels of occupancy, and are therefore dependent upon residents who remain in the

setting (or perhaps those who visit the setting) to shore up the moral rules of that context. One may identify these individuals as ‘key informants’ of those neighbourhood’s social life (Hardyns *et al.*, 2021).

Chapter 7 concluded by focussing on the methodological merits of the STB as operationalised and used in this thesis, identifying the method to be an effective tool for measuring the routine activity patterns of adults in relation to settings patronised (distinct from findings in Hoebe *et al.*, 2014). On the basis of exploratory analysis, I also concluded that the use of collective efficacy community survey concepts to be apt for the study of setting perceptions; although the extent to which the study tapped into a perception as compared to previous experiences in a setting is unclear. Chapter 7 also noted the limitations of the methodology that I employed, in producing an insufficient number of observations for the same OA to conduct more thorough multi-level analyses. This meant that the individual-level influence on these intervening social processes was studied in a limited exploratory sense.

8.2 The individual moral rules of social actors – the missing link?

Our final model of individual willingness to intervene outside of the home neighbourhood managed to account for 31% of the observed variance. This model identifies an important contextual effect of setting moral rules (as perceived), and produced a comparable account of willingness to intervene as has been identified in other ecological guardianship studies (Reynald, 2011a). This nonetheless leaves around 60% of the variance still unaccounted for.

In reappraising my initial interaction model in Figure 14 and Figure 15, I argue that future research should consider the role of individual moral rules in shaping intervening practices. As identified in successive SAT studies, people vary by their own individual moral rules in consideration of what is right or wrong to do in a given context (Sampson, 2006b; Wikström and Treiber, 2009, 2017; Wikström, 2010; Wikström and Svensson, 2010; Wikström, Tseloni and Karlis, 2011; Hardie, 2019). This propensity is formed in development and exposure to different agents such as family home life, being at school, and being present in different settings (as they vary by collective efficacy) (Wikström, 2012; Wikström and Treiber, 2019). Thus, if individual moral rules are influential in shaping young people’s decision to consider crime an action alternative, can a similar conception apply to the enforcement of such rules?

In order to consider this further, I reappraise my initial conception of willingness to intervene by incorporating individual moral rules into the model. In Figure 45, below, an individual interacts with a setting and perceives the moral rules of that context. Here, the perceived moral rules of the setting correspond with those of the individual – they perceived the rules and agree with their content. I hypothesise in this instance that the individual, upon witnessing a breach of these moral rules, is likely to intervene. They have acknowledged the rules in the setting, agree with their content, and therefore enforce them. Thus, the social context and their own morality drive intervention.

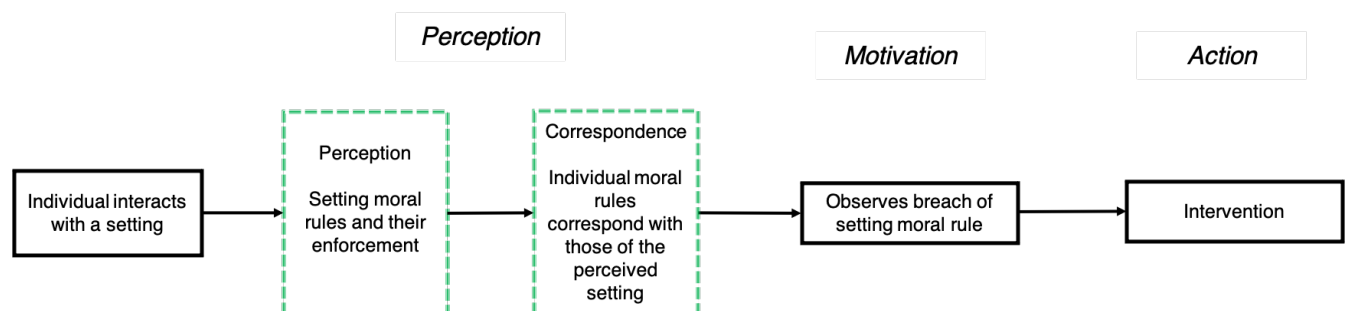


Figure 45: Diagram setting out individual willingness to intervene where there is moral correspondence

Figure 46, below, considers a different situation. Here, again, an individual interacts with a setting and perceives the moral rules of that setting. However, their individual moral rules differ with those of the setting (no correspondence). Where their individual moral rules are stronger (higher) than those of the setting, this may drive their willingness to intervene regardless of the moral context. However, where their own individual moral rules are weaker (lower) than the setting, this may suppress their willingness to intervene. In these instances, individual moral rules override consideration of setting moral rules – or, of course, may be considered in conjunction (see Figure 14 and Figure 15).

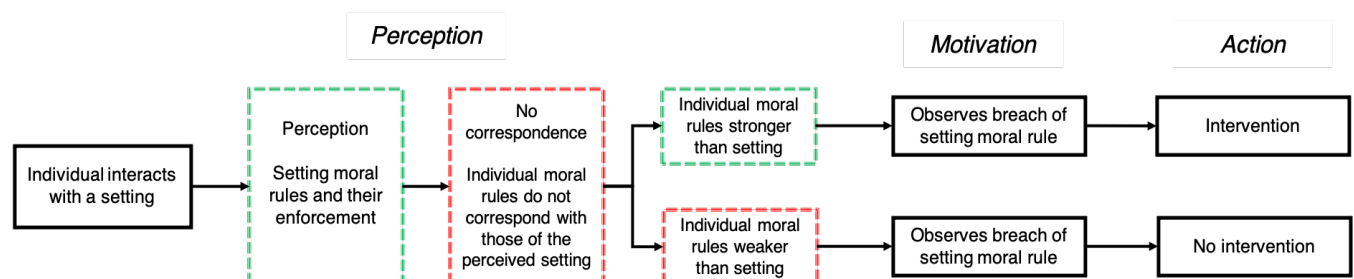


Figure 46: Diagram setting out individual willingness to intervene where this is not moral correspondence

In this conception, however, we may also observe an effect of setting moral rules, or the perception of them, boosting willingness to intervene, as observed in this study. With a more diverse sample displaying a diversity of moral rules, we could consider this interaction in connection with different settings patronised. I submit that this would likely account for increased variance in individual willingness to intervene, representing both individual and environmental influences on the exercise of social control.

8.3 The cultural attenuation of collective efficacy – befitting English notions of neighbourliness

As the collective efficacy econometric method has been replicated across different continents, scholarship on the influence of cultural understanding or conceptions of the concept has grown (Sampson, 2012; Burchfield and Silver, 2013; Wilcox, Cullen and Feldmeyer, 2018; Gerstner, Wickes and Oberwittler, 2019). Consideration of the broader context within which the concept is used – particularly as a tool of crime prevention – is an important consideration. Just as neighbourhoods vary in the rules and social norms which govern them, so do countries (Hart, 1961). Sociological scholarship identifies the potential influence of what has been termed ‘meta norms’ that may guide and shape the implementation of behaviour norms as applicable across neighbourhood settings (Horne and Mollborn, 2020). As observed in this study, small-area settings vary in accepted behaviours and the extent to which deviation from this standard is prevented.

Despite this, however, there is a question as to whether the concept of collective efficacy itself has a normative bias, due to its origins in urban America – in the city of Chicago (Sampson, 2012). And if so, is it applicable and attuned to represent settings beyond this context. Shifting away from a focus on social ties, the theory adopts a more contemporary assessment of neighbourliness and neighbouring – interactions being fleeting, infrequent, but with residents nonetheless able to come together and enforce common rules and standards when these are challenged (Sampson, 2012; Wilcox, Cullen and Feldmeyer, 2018). Despite this focus, there is a perceptible yearning to renew a dense standard of ‘community’ and drive social capital, evident in the popularity of sociological best sellers, which, in the American context at least, have documented the demise (Putnam, 2000) and localised rise (Putnam and Feldstein, 2004; Sampson, 2012) of communitarian models of achieving social change. Topically, media

coverage of the COVID-19 pandemic has brought the value of community ‘spirit’ to the fore, above the need of individualised self-interest (Morgan, 2020; O’Rourke, 2020).

But arguably, there is a balance to be struck. In England, at least, the more pragmatic, or even perfunctory view of neighbourliness as articulated by collective efficacy, has been long present. Jon Lawrence’s recent social history of England identifies that despite a persistent narrative of longing for a parochial community and neighbourliness, ‘the English have always sought ways to reconcile individualism and community in their lives; they have not become individualist in the last few decades’ (Lawrence, 2019, p. 235). In reviewing top-down community building initiatives, such as the Good Neighbour and Neighbourhood Watch schemes, the idea that policy experts can ‘plan community’ into people’s lives have often been least effective where they social need was most desired (Lawrence, 2019). Thus, he observes:

‘The vital lesson for the future is that any new politics of community has to enhance, rather than erode, the personal autonomy and independence that the majority of people have fought hard to secure for themselves and their families.’ (Lawrence, 2019, p. 235).

The adaption of collective efficacy theory - as a measure of moral rules and their likely enforcement - arguably represents just that.

Appendices

Appendix A – PNGS 2019 as an adapted study

The original scope of this research was to sample targeted high (80% - 100%) and low collective efficacy neighbourhoods (0 – 20%) across a quintile distribution of PCS 2012 collective efficacy data in Peterborough. The broader aim was to explore, as Hipp (2016b) has raised, whether home neighbourhood collective efficacy effectively ‘travels’ – i.e. do we carry our low home neighbourhood collective efficacy with us, making us less likely to intervene even where the moral rules of the setting encourage such acts.

This original aim was subsequently curtailed and refined, in response to a number of critical political events that affected Peterborough in 2019, and then later in 2020 the COVID-19 pandemic, which further frustrated planned data collection. In 2019, whilst participation from high collective efficacy neighbourhoods was strong, it became evident that for low collective efficacy neighbourhoods there were larger blockers to resident participation than just engagement with the research. Oversampling of residences, and continued attempts to build participation on the doorstep within these neighbourhoods, were ultimately unsuccessful. The tone of response also hardened – with residents responding to make clear that they should be left alone. I have concluded that one of the key barriers here was the socio-political situation focussed on Peterborough at the time. I explore each of these key events below, and how I perceive that they impacted upon engagement with the study.

1) 2019 Peterborough by-election – April – June 2019

A controversial by-election to determine Peterborough’s Member of Parliament (MP) was held in 2019. The previously elected Labour MP for the city, Fiona Onasanya, was, in 2018, convicted of perverting the course of justice in relation to a speeding ticket she had received in 2017. Onasanya claimed that someone else was driving the car at the time; but a court determined otherwise, and she was found guilty. Because she had served a custodial sentence for this crime, a by-election for Peterborough’s MP was automatically triggered under the Recall of MPs Act 2015.

The legal case and the by-election put Peterborough in national news headlines, largely because the by-election was to be held in the context of ongoing bitterness and drama in relation to the UK's exit from the European Union (Brexit). At this point in time, the UK Parliament had not approved a Brexit transition agreement (discussed further below). Peterborough residents voted by 60.9% to leave the European Union. In response to the perceived annoyance that the Brexit vote of 2016 had not been delivered in this predominately leave-voting city, a newly-established political entity called The Brexit Party - headed by the well-known Brexit supporter and MEP, Nigel Farage – stood a candidate in this by-election. If successful, the candidate would have been the Party's first MP, and may have signalled the result of any future election in the UK.

Given the controversy around this by-election, all political parties canvased for votes in the city. The Brexit Party heavily targeted areas of low socio-economic status, attempting to gain the support of those who they saw would typically have voted for the Labour party – living in neighbourhoods of high social deprivation, with low incomes, and who voted to leave the European Union and were therefore perceived to be frustrated and at the political deadlock to deliver Brexit. Media coverage of the Brexit vote nationally has often typified these such neighbourhoods as 'left behind' and 'disenfranchised', with the vote representing a rebellion against the status quo.¹²⁶ During my attempts to canvas support and participation in my study, at the same time as the political campaigning, I observed that those residents in low collective efficacy neighbourhoods were saturated with political canvassers and national press. Seemingly tired of persistent door-knocking my own method of participant recruitment was likely lost amongst the many other flyers and door-knocking strangers. This was an issue specifically within the low collective efficacy neighbourhoods targeted, revealing how they were profiled and targeted specifically for their perceived protest vote against mainstream political parties. Whilst the Brexit vote is a complicated political issue, some academic studies have revealed that the narrative of a leave-voting 'Left Behind Britain' to be flawed in some urban areas. In Peterborough, at least at the time, such neighbourhoods were of national focus. And the end result was also close – Labour won the seat with (30.9%) of the vote, down 17.2 percent; the Brexit party came second, with 28.9% share of the vote. The Brexit Party's

¹²⁶ <https://www.theguardian.com/commentisfree/2017/nov/05/brexit-theresa-may-economic-austerity-leave-voting> (date accessed 17/02/2021).

campaigning was seemingly therefore more effective than my own in canvassing participation in this research!

2) The European Parliament Elections 2019

The Brexit-infused context of this by-election carried forward to the European Parliament Elections in June 2019. These elections were again controversial: the Prime Minister, Theresa May, had committed to leaving the European Union before these elections were held; but, members of the UK parliament continued to vote against her Brexit transition agreement with the EU. The end result was that, because the UK had not yet left the Union, EU Parliament Elections were held. This became a bitter and propagated political spectacle, with the Brexit Party fielding MEP candidates throughout the country as a protest alternative to mainstream parties. So again, in Peterborough and other leave-voting constituencies, canvassing for votes on the doorstep continued. At this point the canvassing started to affect the response rate in both high and low collective efficacy neighbourhoods. Due to this doorstep saturation, I therefore paused participant recruitment until after the elections passed.

It was at this point that I shifted my recruitment focus to selected neighbourhoods with high collective efficacy. Given the bitter politics of the time, I decided to focus on those neighbourhoods where response and interest had been strongest. This was to ensure a sufficient representative sample could be achieved, rather than spreading the participant base too thinly over more neighbourhoods.

Thus, whilst comparable study between high and low collective efficacy neighbourhood residents' perceptions is not permitted with data presented, the population targeted and sample achieved are arguably representative of resident neighbourhood guardians, in so far as: (i) they reside in a high collective efficacy neighbourhood; and (ii) responded to an initiation to take part in research looking at their experiences of living and interacting with the wider city of Peterborough. Thus, the final sample and the method developed and employed permits us to explore some of the assumptions underlying neighbourhood collective efficacy's use as a moral rule shaping guardianship practices.

Appendix B - Development maps of Peterborough, UK



Figure 47: Map of Peterborough circa 1960s. Source: Digimap.ac.uk

Longthorpe.

In the 1960s this formed a village on the outskirts of Peterborough.



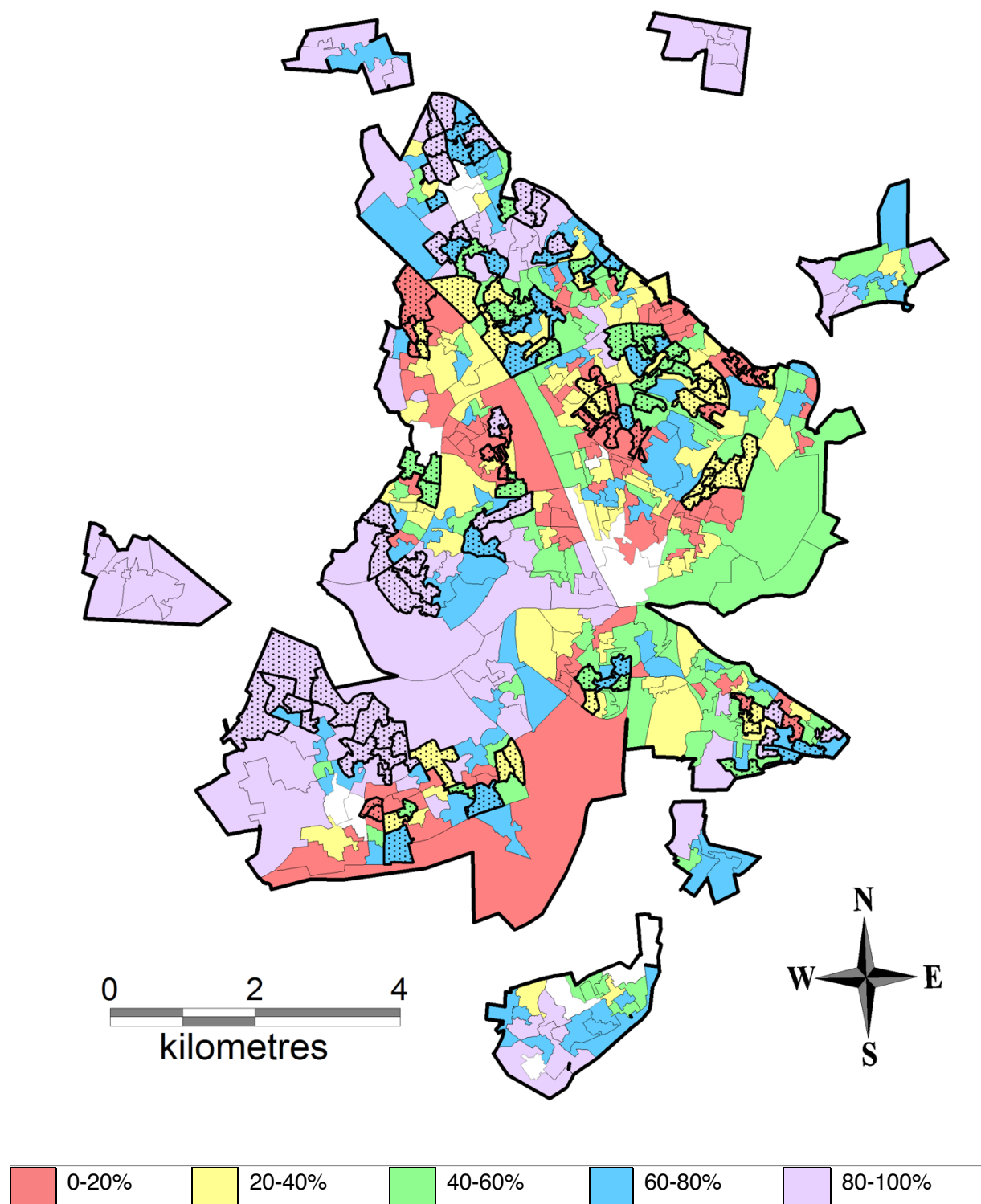
Figure 48: Map of Peterborough in 2020. Source: Digimap.ac.uk

Longthorpe today.

Continues to be described as a ‘village’ due to its historic association with Peterborough, but more clearly demarcated as suburb of Peterborough.

Appendix C – Map of PCS 2012 CE quintile distribution data

Colours denote quintile of collective efficacy data (red lowest, purple highest scores). White areas represent city and local centres.



Appendix D – Invitation letter to participants



UNIVERSITY OF
CAMBRIDGE

Contact details redacted

Dear Peterborough resident,

I am a PhD student based at the Institute of Criminology, University of Cambridge.

As part of my PhD research, I'm currently interested in understanding how communities experience and manage crime and disorder.

Your household has been **randomly selected** to take part in this study. Your participation would therefore be warmly welcomed.

This would require around one hour of your time to conduct a 'Space-Time budget' interview, where I shall seek to understand your local experiences of crime, disorder, and sense of community you encounter in your daily life.

Interviews can take place at a venue most convenient to you – home, work, or elsewhere in Peterborough.

I am happy to answer any questions. Please do not hesitate to contact me at my office on Contact details redacted, or email me at Contact details redacted

Further information and instructions on how to take part are contained on the back of this letter.

Those who participate will be entered into a prize draw to win one £100 supermarket voucher, randomly drawn after conclusion of the study. The lucky winner can choose between either Tesco, Sainsbury's, ASDA or Morrison's.

Thank you for your time, and I look forward to hearing from you.

With kind regards
Sam

Funded by the Economic Social Research Council



Q&A

What is the purpose of this study?

The purpose of this study is to learn more about how residents use, experience, and perceive places they visit across their city.

My research hopes to better understand how people potentially challenge or respond to crimes and disorder both in their local neighbourhoods and elsewhere.

What will I have to do?

This requires around one hour of your time. I shall conduct what is called a 'Space Time Budget' interview, which serves as a time diary of your activities over 4 days. Throughout your routine, I shall ask about your perceptions of safety across different environments you visit.

Your experiences and opinions are therefore very important.

Why me?

Your household has been randomly chosen to take part. Sampling is currently taking place across Peterborough.

Will my responses be identifiable to me?

No. Your answers are strictly confidential and anonymous. No personal, identifiable data will be collected. Nobody will know how you responded.

This research has been approved by the Ethics Committee of the Institute of Criminology, University of Cambridge, and adheres to the new General Data Protection Regulation (GDPR).

Contact details redacted

Again, thank you for your interest and I look forward to hearing from you.

Appendix E - Research tools and questions asked

Adapted Space-Time Budget

Questions numbers for social cohesion and social control measures correspond with those listed below. Social cohesion in non-residential settings was asked as a set of (b) questions added to the STB protocol.

Monday					Social control												Social cohesion				
Hour	Geo	Place	Activity	Who	(4a)	(4b)	(4c)	(5a)	(5b)	(5c)	(6a)	(6b)	(6c)	(7a)	(7b)	(7c)	8(a)	9(a)	10(a)	11(a)	12(a)
6																					
7																					
8																					
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4																					
5																					

Perception of Social Control – Individual and others

(4a) If a group of children were skipping school and hanging out on a street corner here, how likely is it that you would intervene?

- 01 Very likely
- 02 Likely
- 03 Unlikely
- 04 Very unlikely

(4b) If you were to intervene, how would you do so?

- 01 Directly intervene - physical
- 02 Directly intervene – verbal
- 03 Public social control – call police etc.
- 04 Monitor

(4c) and how likely is it that others would intervene

- 01 Very likely
- 02 Likely
- 03 Unlikely
- 04 Very unlikely

(5a) If some children were spray-painting graffiti on a local building here, how likely is it that you would do something about it?

- 01 Very likely
- 02 Likely
- 03 Unlikely
- 04 Very unlikely

(5b) If you were to intervene, how would you do so?

- 01 Directly intervene - physical
- 02 Directly intervene – verbal
- 03 Public social control – call police etc.
- 04 Monitor

(5c) And how likely is it that others would intervene?

- 01 Very likely
- 02 Likely
- 03 Unlikely
- 04 Very unlikely

(6a) If there was a fight and someone was being beaten or threatened, how likely is it that you would break it up?

- 01 Very likely
- 02 Likely
- 03 Unlikely
- 04 Very unlikely

(6b) If you were to intervene, how would you do so?

- 01 Directly intervene - physical
- 02 Directly intervene – verbal
- 03 Public social control – call police etc.
- 04 Monitor

(6c) And how likely is it that others would intervene?

- 01 Very likely
- 02 Likely
- 03 Unlikely
- 04 Very unlikely

(7a) If a child was being disrespectful to an adult, how likely is it that you would tell off/scold the child?

- 01 Very likely
- 02 Likely
- 03 Unlikely
- 04 Very unlikely

(7b) If you were to intervene, how would you do so?

- 01 Directly intervene - physical
- 02 Directly intervene – verbal
- 03 Public social control – call police etc.
- 04 Monitor

(7c) And how likely is it that others would intervene?

- 01 Very likely
- 02 Likely
- 03 Unlikely
- 04 Very unlikely

Perception of Social Cohesion (non-commercial)

(8a) People here are willing to help their neighbours

- 01 Strongly agree
- 02 Agree
- 03 Disagree
- 04 Strongly disagree

(9a) This is a close-knit neighbourhood

- 01 Strongly agree
- 02 Agree
- 03 Disagree
- 04 Strongly disagree

(10a) People in this neighbourhood can be trusted

- 01 Strongly agree
- 02 Agree
- 03 Disagree
- 04 Strongly disagree

(11a) People in this neighbourhood generally get along with each other

- 01 Strongly agree
- 02 Agree
- 03 Disagree
- 04 Strongly disagree

(12a) People in this neighbourhood share the same values

- 01 Strongly agree
- 02 Agree
- 03 Disagree
- 04 Strongly disagree

Perception of Social Cohesion (commercial)

(8b) People here are willing to help their each other

- 01 Strongly agree

- 02 Agree
- 03 Disagree
- 04 Strongly disagree

(9b) This is a close-knit neighbourhood

- 01 Strongly agree
- 02 Agree
- 03 Disagree
- 04 Strongly disagree

(10b) People in this area can be trusted

- 01 Strongly agree
- 02 Agree
- 03 Disagree
- 04 Strongly disagree

(11b) People in this area get along with each other

- 01 Strongly agree
- 02 Agree
- 03 Disagree
- 04 Strongly disagree

(12b) People in this area share the same values

- 01 Strongly agree
- 02 Agree
- 03 Disagree
- 04 Strongly disagree

Appendix F - Summary tables of PNGS 2019 CE perception hours

Table 27 Summary table of total means and number of perception hours by OA visited, excluding home OA observations (N = 362)

OA perceived	Mean	Number of hour observations	Std. Deviation
E00078852	1.45	1	
E00078853	1.45	1	
E00078855	2.53	1	
E00078856	2.43	1	
E00078860	1.93	1	
E00078865	1.98	3	0.18764
E00078868	3.45	1	
E00078870	1.63	1	
E00078873	2.17	2	0.18856
E00078876	2.45	2	0.07071
E00078879	2.05	11	0.24684
E00078880	2.98	10	0.31552
E00078881	2.85	3	0.69597
E00078884	2.75	8	0.46997
E00078885	2.81	2	0.50676
E00078886	2.30	1	
E00078887	2.53	2	0.31820
E00078888	3.05	3	0.30000
E00078892	2.25	1	
E00078896	2.09	2	0.33588
E00078899	2.20	1	
E00078902	2.47	1	
E00078908	2.75	1	
E00078910	1.55	1	
E00078911	1.95	1	
E00078916	2.20	1	
E00078919	2.37	1	
E00078923	1.75	1	
E00078924	1.63	1	
E00078927	1.91	2	0.40659

E00078935	1.65	1	
E00078939	1.30	1	
E00078947	2.53	3	0.61426
E00078952	2.01	4	0.18071
E00078956	2.65	1	
E00078957	2.25	3	0.56513
E00078962	1.93	1	
E00078965	2.23	4	0.26680
E00078969	2.05	1	
E00078972	2.61	3	0.28868
E00079017	2.05	1	
E00079081	2.88	11	0.55411
E00079082	1.55	1	
E00079092	1.95	1	
E00079095	2.05	2	0.00000
E00079100	3.15	2	0.10607
E00079106	2.00	2	0.10017
E00079112	2.03	1	
E00079115	3.23	1	
E00079117	3.27	1	
E00079119	2.55	4	0.67175
E00079120	3.13	2	0.18856
E00079121	2.25	3	1.03923
E00079133	3.04	6	0.28297
E00079137	3.17	1	
E00079141	3.13	1	
E00079142	3.14	7	0.35760
E00079145	2.20	1	
E00079148	1.93	1	
E00079159	1.53	1	
E00079160	2.74	2	0.05303
E00079161	2.00	2	0.04125
E00079163	1.78	1	
E00079169	2.70	2	0.00000
E00079171	2.71	2	0.05893
E00079172	2.16	8	0.43255
E00079175	2.10	1	
E00079176	1.98	2	0.31820
E00079177	2.68	4	0.17321

E00079208	1.67	1	
E00079211	1.73	2	0.00000
E00079214	2.09	2	1.11369
E00079218	1.75	1	
E00079220	1.92	6	0.20134
E00079222	2.51	2	0.44194
E00079225	2.01	4	0.28677
E00079227	2.20	1	
E00079231	2.15	1	
E00079235	1.63	1	
E00079238	2.63	2	0.00000
E00079240	2.83	2	0.28874
E00079241	1.70	3	0.22913
E00079242	2.53	1	
E00079252	2.75	1	
E00079254	2.08	1	
E00079255	2.63	1	
E00079259	1.20	1	
E00079265	2.88	1	
E00079269	2.63	1	
E00079273	1.60	3	0.25981
E00079277	2.47	6	0.68404
E00079279	2.05	1	
E00079280	1.76	2	0.12964
E00079283	3.35	1	
E00079284	1.61	4	0.26575
E00079290	2.08	1	
E00079291	3.13	1	
E00079292	2.81	2	0.08839
E00079294	2.75	1	
E00079301	2.10	1	
E00079309	3.43	1	
E00079325	2.65	1	
E00079326	2.80	1	
E00079328	2.92	3	0.14434
E00079329	2.67	1	
E00079330	2.50	1	
E00079333	3.10	1	
E00079339	2.08	2	0.17678

E00079340	2.50	1	
E00079342	3.04	20	0.42406
E00079343	2.98	5	0.28668
E00079344	2.18	1	
E00079345	2.60	1	
E00079346	3.00	1	
E00079347	2.21	4	0.10897
E00079348	2.81	2	0.26517
E00079349	3.08	8	0.30688
E00079350	3.20	1	
E00079351	2.92	17	0.27551
E00079353	2.57	3	0.67723
E00079354	2.93	18	0.24386
E00079355	2.00	18	0.27339
E00079356	2.43	5	0.08262
E00079359	2.20	1	
E00079360	2.13	4	0.31754
E00079362	2.00	1	
E00079363	2.17	5	0.69808
E00079364	2.78	4	0.27942
E00079366	2.70	3	0.25981
E00171247	2.84	3	0.27424
E00171259	1.75	1	
E00171279	1.57	1	
E00171331	3.25	1	

Table 28 Summary table of means and number of perceptions by home OA (N = 92)

OA perceived	Mean	Number of hour observations	Std. Deviation
E00078880	3.1317	15	0.33078
E00078884	3.2295	11	0.35809
E00078888	3.1604	12	0.31935
E00079342	3.2250	12	0.27859
E00079343	3.0950	15	0.30417
E00079345	3.2667	9	0.25830
E00079348	3.1813	4	0.39125
E00079350	3.1857	14	0.34941

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