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HÄLSA OCH SAMHÄLLE

SITUATIONAL CRIMINOGENIC EXPOSURE DURING ADOLESCENCE

– A STUDY OF THE RELATIONSHIP BETWEEN
SITUATIONAL CRIMINOGENIC FEATURES
AND OFFENDING AND VICTIMIZATION

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EXPONERING FÖR KRIMINOGENA SITUATIONER UNDER TONÅREN

– EN STUDIE AV SAMBANDET MELLAN
KRIMINALITET, VIKTIMISERING OCH
SITUATIONELLA KRIMINOGENA FAKTORER

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Engström, A. Exponering för kriminogena situationer under tonåren. En studie av sambandet mellan kriminalitet, viktimisering och situationella kriminogena faktorer. *Examensarbete i kriminologi, 30 högskolepoäng*. Malmö högskola: Fakulteten för hälsa och samhälle, institutionen för kriminologi, 2015.

Denna studie syftar till att undersöka sambandet mellan kriminalitet, viktimisering och exponering för kriminogena situationer. Självrapporterad data samlades in vid tre tillfällen från 525 Malmöungdomar, varav 320 uppfyllde studiens inkluderingskriterier. Resultaten visar att mycket tid spenderad oövervakad, mycket tid ägnad åt ostrukturerade aktiviteter, mycket tid i sällskap med vänner samt alkoholkonsumtion samvarierar med brottslighet och viktimisering i varierande utsträckning. Sambanden varierar dock i förhållande till de båda utfallsvariablerna och deltagarnas ålder. Livsstils-rutinaktivitetsteorin kan förklara resultaten men behöver i framtiden ta större hänsyn till ålder. Studiens två slutsatser är att (1) brottslighet och viktimisering bör betraktas som två olika men klart relaterade företeelser i förhållande till exponering för kriminogena situationer och att (2) ålder måste tas i beaktande i forskning om exponering för kriminogena situationer eftersom sambanden mellan exponering och de båda utfallsvariablerna varierar från tidiga till sena tonår.

Nyckelord: Kriminalitet, kriminogena miljöer, livsstils-rutinaktivitetsteorin, situationer, space-time budget, tonåringar, viktimisering

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Engström, A. Situational criminogenic exposure during adolescence. A study of the relationship between situational criminogenic features and offending and victimization. *Degree project in criminology, 30 credits*. Malmö University: Faculty of health and society, Department of criminology, 2015.

This study aims to examine offending and victimization in relation to situational criminogenic exposure. Self-reported data was collected at three occasions from a sample of 525 adolescents in Malmö, of which 320 fulfilled the study's inclusion criteria. The results show that spending a lot of time unsupervised, pursuing unstructured activities, spending a lot of time with peers, and alcohol use, are associated with offending and victimization to various extent. However, the associations vary according to outcome and in relation to the participants' age. Lifestyle-Routine Activities Theory may explain the findings, but needs to consider age as an important factor in the future. The two conclusions from this study are that (1) offending and victimization should be treated as two different, yet related concepts in relation to situational criminogenic exposure, and that (2) it is important to add an age dimension to the study of situational criminogenic exposure because the associations between the exposure variables and the outcome variables vary from early to late adolescence.

Keywords: Adolescents, criminogenic exposure, Lifestyle-Routine Activities Theory, offending, situations, space-time budget, victimization

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INTRODUCTION

Criminologists have for a long time attempted to explain the spatial distribution of crime incidents. The classic work by Shaw and McKay (1942/1969) revealed that crimes are not equally distributed within cities, and this notion was later developed into studies and theories that try to explain why crime is concentrated in certain geographic areas. Kelling and Wilson's (1982) theory of broken windows points at social and physical disorder in different areas as a source of delinquency, while the somewhat more recent theory of collective efficacy (Sampson, Raudenbush & Earls, 1997) explains neighborhood variations in offending as a result of weak social cohesion and low level of informal social control. During the development of these and other spatial explanations of criminal acts, the temporal dimension of offending has generated increasing interest as scholars combine the spatial aspects of crime with the fact that crimes are not equally distributed over time.

The importance of conducting studies that combine spatial and temporal aspects of crime is well illustrated by Bernasco, Ruiter, Bruinsma, Pauwels and Weerman (2013) in the introduction to their study of crime in relation to situational criminogenic features:

Even the most active offenders do not commit crimes around the clock. Most of the time they abide by the law without getting involved in any criminal activity. Theories of crime must account for this phenomenon: If crime varies over time, so must at least some of its causes. Therefore, offending must have proximal causes that fluctuate over time much more quickly— from hour to hour rather than from year to year—than the more distal causes that are attributed to relatively stable characteristics of individuals and their social environments. (p. 896).

In other words, Bernasco et al. (2013) highlight the importance of focusing on situational causes of crime and their respective temporal fluctuations. Importantly, this does not imply that the situational aspects of offending do not vary on the individual level, or that individual characteristics do not play a part in the selection processes that may put different individuals in different settings. The main point made by Bernasco et al. (2013) is that the situational causes of crime should not be reduced to differences in individual characteristics. Still, studies that examine the situational characteristics of offending (e.g. Wikström, Ceccato, Hardie & Treiber, 2010; Wikström, Oberwittler, Treiber & Hardie, 2012) found that individual characteristics, such as criminal propensity, are important for understanding which individuals that are mostly affected by situational criminogenic influences. However, this study adopts the view by Osgood, Wilson, O'Malley, Bachman and Johnston (1996), and their proposition that “we do not assume that everyone is equally receptive to the temptations of situations conducive to deviance, but neither do we assume that exposure to them is relevant only to a small group of ‘motivated offenders’.” (p. 639). Thus, situational influences on criminal behavior are important for understanding criminal actions, regardless of possible individual motivations that may be present in different situations. Although this study does not claim that individuals are passively affected by situational features, it certainly takes the position that most (if not all) individuals' actions are, to some extent, affected by environmental cues.

Consequently, there is a need to examine the associations between various situational features and crime.

A somewhat challenging aspect of most criminological studies that examine situational exposure to criminogenic features is their exclusive focus on offending as an outcome of exposure. There is rarely a focus on victimization as an outcome of criminogenic exposure, which has resulted in a lack of knowledge of how situational features affect criminal victimization. It may be argued that the situations in which crimes are committed are identical to those in which people are victimized by criminal acts, but the question remains whether people spending more time in situations with criminogenic features are more likely to have experienced not only offending but victimization as well. This is not to say that the same individuals are both perpetrators and victims (although this connection is well-established within criminology, see Wolfgang, 1957, on victim precipitation and Averdijk & Bernasco, 2015, for a recent example of the relationship between offending and victimization), but it is important to examine whether exposure to criminogenic situations is related to higher risks of offending as well as higher risks of victimization. Moreover, it is essential not to presume that offending and victimization are just two opposites of the same phenomenon. Exposure to criminogenic settings must be studied in order to examine whether offending and victimization should be studied as two related, yet very different, concepts or if they are more alike than one might initially think.

Exposure to criminogenic settings may also vary over time, in terms of both frequency and character. Thus, when studying criminogenic exposure, one must not overlook the potential fluctuations over time, especially during periods when individuals radically change their behavior (e.g. adolescence). Therefore, studies of situational criminogenic exposure should examine both offending and victimization as outcomes of individual differences in exposure, and, if the design allows, examine how longer temporal fluctuations (e.g. years) affect the relationship between situational criminogenic exposure, and offending and victimization.

Once again, it is important to underline that by adopting an exclusive situational focus, it is not suggested that situational factors are sufficient to explain individual offending and victimization. In fact, there are good reasons to assume the opposite regarding individual characteristics and offending (e.g. trait based theories of offending, such as the self-control theory by Gottfredson & Hirschi, 1990), but also for victimization as Schreck, Wright and Miller (2002) found that both situational and individual factors are important for explaining individual levels of victimization. Consequently, this thesis takes an exclusive situational perspective, but does not claim it to be the sole important perspective on offending and victimization. Still, if we know more about the situational aspects of offending and victimization, there may be greater chances to develop successful situational crime prevention initiatives which could be beneficial for the society in general and victims of crime in particular.

The data in this study derives from the Malmö Individual and Neighbourhood Development Study – a research project on adolescent behavior, where the sample of individuals is studied from early to late adolescence. This study attempts to make great use of the longitudinal design of the research project, by adding an age dimension to situational criminogenic exposure, and by examining both offending

and victimization as different outcomes of situational exposure. These ideas are further developed in the following section.

Aims and research questions

The main purpose of this study is to examine the associations between exposure to different situational criminogenic features, and offending and victimization. The study focuses on five situational features which are examined independently, including time spent unsupervised, time spent pursuing unstructured activities, time spent with peers, time spent in areas with low collective efficacy, and alcohol use. These are all described in detail in subsequent sections. Although combinations of different situational criminogenic features are common in other studies similar to this one (e.g. Wikström et al., 2012), there are still studies (e.g. Bernasco et al., 2013) that stress the importance of examining situational criminogenic features independently. Thus, this study rests on a solid foundation for its exclusive focus on the independent effect of different situational criminogenic features.

While previous studies have generally focused on explaining offending and other deviant behaviors in relation to criminogenic exposure (e.g. Wikström et al., 2012; Bernasco et al., 2013), this study also includes the situational aspects of victimization. Moreover, this study employs the Lifestyle-Routine Activities Theory as it provides a framework for explaining both offending and victimization from a situational perspective. Furthermore, the relevance of this study, in addition to its somewhat unusual focus on both offending and victimization, should be viewed in light of the cultural context in which it is carried out. No published study has so far revealed the situational features of both offending and victimization by employing a space-time budget methodology (see subsequent sections for an explanation), among Swedish adolescents. This study also has the advantage of using data collected at different points in time, making it possible to add an age dimension based on three different data collection waves during the participants' adolescent years. Thus, the main purpose of this study is twofold: first, it examines the somewhat understudied research field of exposure to criminogenic settings, and its effect on both offending and victimization; second, it examines whether exposure to criminogenic features has a different association with offending and victimization when individuals go from early to late adolescence.

It is also important to mention that despite the aim to focus exclusively on situations, the situational dimension is not related to any specific geographic locations (e.g. addresses). The definition and character of exposure at specific geographic locations is a different phenomenon and comes with its own set of issues (see Ratcliffe, 2012, for an example of the difficulties of measuring the dispersion of geographic exposure,). The situational concept in this study is aimed at solely examining whether individuals who spend much time in exposure to criminogenic features, regardless of their geographic locations, are more likely to report offending and victimization.

There are two main research questions, based on the aims of this study:

- Are individual differences in exposure to situational criminogenic features related to variations in individual offending and victimization?

- Does the relationship between individual differences in exposure to situational criminogenic features, and individual offending and victimization, change as individuals go from early to late adolescence?

The research questions will be answered by showing similarities and differences among the two outcome variables (offending and victimization) in relation to individual criminogenic exposure.

The exclusive focus on situations

This study is only focused on examining the associations between exposure to *situational* criminogenic features, and offending and victimization. Therefore, it is important to address the main limitations not comprised by the aims of this study. First, individual propensity and other important criminological features are not examined in this study. Second, *all* situational criminogenic features cannot be included in this study, resulting in the decision to only include situational criminogenic features that are commonly used in previous research (e.g. Osgood et al. 1996; Wikström et al. 2012; Bernasco et al. 2013). Third, it is not the intention of this study to explain the potential selection processes that may result in differential exposure. Fourth and final, it is important to remember that this study focuses on situational criminogenic features in their simplest form, and not as complex constructs, which is frequent in other studies (e.g. Wikström et al., 2012).

Disposition

Based on the described aims and research questions, the following section describes the situational perspective and presents research on the situational criminogenic features that will be tested. Then, the theoretical framework is presented, a description of the current study's methodology and results is presented, followed by a discussion and some concluding remarks.

Background

This section is dedicated to the central concepts of the study of situational criminogenic features in relation to offending and victimization. It starts with a brief description of the situational perspective on offending and victimization, followed by an explanation on why the situational features that are included in this study are related to offending and victimization. The section is concluded with the theoretical framework from which this study aims to explain the potential associations between situational criminogenic features, and offending and victimization.

The situational perspective within criminology

Although this study's aim is not to problematize the use of situations as a concept (see Pervin, 1978, for a thorough description of different definitions of situations), it is still important to briefly describe the situational perspective within criminology. The importance of understanding behavior from a situational perspective has become increasingly evident as theories, such as Situational Action Theory (Wikström et al., 2012), have become influential within criminology. Still, the situational approach within criminology is perhaps most commonly associated with earlier work, such as Cohen and Felson's (1978) Routine Activities Theory.

The situations in which people act are often called “settings” or “behavior settings”. In this study, however, these two terms will be used interchangeably along with the simpler term, “situation”. Wikström et al. (2012) define a setting as a part of a wider environment, which is accessible through the individuals’ senses, and it contains certain features, such as people, objects and events. This is similar to the definition by Pervin (1978) who claims that a situation “is defined by who is involved, what is going on, and where the action is taking place” (p. 80) and this definition is central in this study, as well as in other situational studies (e.g. Averdijk & Bernasco, 2015). Felson (2006) finds three features that make behavior settings an important part of understanding human behavior. First, there is a temporal dimension that makes it possible for one geographic location to host different behavior settings as these vary temporally. Second, unstructured activities usually follow a certain structure in that they take place at the same locations (i.e. unstructured activities on one day often recur at the same locations the next day). Third, although there may exist a turnover in which people are involved in certain activities, the behavior settings persist. These three notions are crucial to the study of situational criminogenic features. As for these to be studied, one must assume that temporal variations exist, that there are regularities in the unstructured activities (these are often described as criminogenic, see subsequent sections), and that the situations are not dependent on specific individuals. Thus, by accepting Felson’s (2006) description of situations, it is possible to actually study situations as an existing phenomenon. It may also be relevant to mention that Felson (2006) suggests that a setting favorable to criminal acts contains “A good crime target, the absence of a guardian against a crime, easy access and regress.” (p. 97). There is no reason to believe that the same circumstances are not also important for understanding situations in which victimization occurs.

Situational exposure is often measured through time spent in a certain setting. Wikström et al. (2012) use the number of hours spent in a certain setting as a measurement of exposure to that particular setting. Exposure may thus be defined as the temporal limits (hours) of a setting in which an individual is located. This definition of exposure is clearly situational; exposure takes place during one or several hours and is not constant. Although this study adopts the view by Wikström et al. (2012), it should be mentioned that exposure does not always have the same connotations. For instance, other studies may be less specific in how exposure is measured, as they use somewhat more blunt measurements, such as “a few times every year” (Osgood et al. 1996, p. 653). There is also a possibility of defining exposure as something more long-lasting (e.g. being exposed to child maltreatment during several years). Although this may be interesting to investigate further, it lies beyond the scope of this study, in which the focus is exclusively on situational, and temporally constrained, exposure.

Situational criminogenic features

Out of the seemingly endless number of features that exist in a setting, some are thought to have an impact on the criminogeneity of a setting. In other words, if some features or combinations of features are present in a given situation, it is more likely that a crime will be committed and/or that someone will become victimized. The situational criminogenic features listed below are presented individually, but it should be noted that there are overlaps between all of these features. For instance, being unsupervised may in many cases also include an unstructured activity. Despite the many similarities, each of these criminogenic features can be described as focusing on different aspects of a situation:

unsupervised, is centered on the absence of people who may exert control (i.e. adults); *unstructured activities*, is related to the kind of activity that is being pursued; *presence of peers*, is focused on the presence of other people; *low collective efficacy*, describes the neighborhood context; and finally, *alcohol use*, refers to a physical or bodily situational feature. This great diversity of situational aspects have, to various degrees, been related to offending and to victimization in previous research. It should be noted that fewer studies have examined the situational aspects of victimization than the situational aspects of offending, which explains the overrepresentation of studies on offending presented here. The research presented in this section provides examples of studies that confirm the relevance of this study's use of its five situational criminogenic features.

Unsupervised. Situations in which an individual is unsupervised by a person who may intervene against or report delinquent behavior (e.g. parent, teacher) are often defined as criminogenic (e.g. Osgood et al., 1996). Several studies have found a relationship between being unsupervised and offending, such as Osgood et al. (1996), who found that the risk of offending increases if authority figures are absent as this results in a lack of social control. In a recent study, Wikström et al. (2012) concluded that most adolescent crimes are committed when the offender is unsupervised. Similarly, Bernasco et al. (2013) found a positive relationship between the absence of authoritarian figures and offending. When examining the situational aspects of victimization, Averdijk and Bernasco (2015) revealed that the absence of authority figures is common in situations in which adolescents are victimized. The importance of guardianship, regarding the occurrence of both offending and victimization, is a central feature in several studies within the lifestyle-routine activities perspective (see McNeeley, 2015, for a review) which constitutes this study's theoretical framework (see subsequent sections). Still, regardless of theoretical origin, research in general has found that being unsupervised seems to have an impact on offending as well as victimization.

Unstructured activities. Being involved in unstructured activities is often argued to be related to offending. Osgood et al. (1996) claim that unstructured activities do not involve individuals that exercise control over the persons involved in that activity. Although Osgood et al. (1996) acknowledge that there is no absolute division between structured and unstructured activities, they argue that activities that do not have a certain purpose are more criminogenic than others. Osgood and Anderson (2004) found that mean levels of unstructured socializing, is a strong predictor of offending. However, Miller (2013) argues that his findings indicate that there is need for further refinement of which activities that are associated with offending. For instance, Miller (2013) found that different routine activities are related to different offenses, suggesting that the relation between crime and unstructured routine activities may only be true for some offenses and not offending overall. Moreover, Maimon and Browning (2010) found that the level of unstructured activities varies between neighborhoods, resulting in a potential need to incorporate unstructured activities in a more complex multilevel understanding of its relation to offending. Nevertheless, the existing research (e.g. Osgood et al., 1996) provides reasons for including unstructured activities per se as a situational criminogenic feature. In terms of criminal victimization, Maimon and Browning (2012) found that unstructured socializing is most definitely related to violent victimization. Thus, activities that do not have a certain purpose or goal seem to be related to both offending and victimization.

Presence of peers. The influence of peer relations on offending has been examined in several studies, and is usually included in studies on situational aspects of offending (e.g. Osgood et al. 1996; Wikström et al., 2012) and victimization (e.g. Averdijk & Bernasco, 2015). It is often argued that peers exert a criminogenic influence in a situation, but some scholars claim that peer involvement is only criminogenic if the peers are delinquent themselves. The various views on criminogenic peer influence are discussed by Warr (2002) as he tries to explain the many ways in which peers affect behavior. Warr (2002) provides some examples of peer influence on offending, including, but not limited to, co-offending as necessary to commit certain criminal acts, committing crime to impress the peer group, and how group importance vary for different offenses. The latter refers to the different types of criminal acts that exist and how these vary in how common it is for people to commit certain kinds of crimes together. Warr (2002) argues that shoplifting is the least group-based offense, while drug use is a typical group-based delinquent behavior. Yet, the importance of peer relations for overall offending is rather clear, as shoplifting is still committed in groups in 45-55 percent of cases (Warr, 2002). Osgood et al. (1996) were among the first scholars to examine the effect of peers on offending from a situational perspective, and they found that spending time with peers is related to offending. Importantly, Osgood et al. (1996) argue that peers are not necessarily present when offending occurs (i.e. offending may occur without the direct presence of peers). However, they do argue that peers may facilitate criminal acts (e.g. help each other if a fight occurs) and make those acts more symbolically rewarding (e.g. there is an audience).

Aside from the influential work by Osgood et al. (1996), other scholars have also examined the role of peers in relation to offending. Svensson and Oberwittler (2010) found that delinquent friends have a stronger effect on offending on someone who spends more time doing unstructured routine activities. Moreover, Svensson and Oberwittler (2010) found that simply spending more time with friends does not have a strong effect on offending. In another study on the involvement of peers in relation to offending, Weerman, Bernasco, Bruinsma and Pauwels (2013) found that spending time with peers is related to offending, however, when examining peer influence in more depth, they found that the influence is only independently related to offending if it is combined with other situational factors, such as being unsupervised, being in public, or simply socializing. Thus, the influence of peers, regarding offending, may at a first glance be rather straightforward, but when studied further, it appears to possibly be contingent on other situational features, and not solely on the time spent with peers. Nevertheless, Haynie and Osgood (2005) found that peer influence has a criminogenic effect, regardless of the peers' own delinquency. Thus, peer involvement per se may be a situational criminogenic factor that needs to be considered when studying peer influence on offending.

Moving over to peer influence on victimization, a study by Schreck, Fischer and Miller (2004) showed that involvement with delinquent peers has a direct, although weak, relationship with violent victimization. They argue that the weak connection is explained by the fact that the peer involvement effect on violent victimization is conditioned upon different positions in peer networks (e.g. popular individuals are less likely to become victims of violent crimes). Maimon and Browning (2012) found that peer involvement is negatively associated with violent victimization if the peers have conventional beliefs. Although spending

time with deviant peers increases the risk of violent victimization, these relationships seem to be mediated by the level of collective efficacy in the neighborhood (Maimon & Browning, 2012). However, Averdijk and Bernasco (2015) found that peer involvement in general, is present in situations in which adolescents become victimized. Thus, peer involvement is relevant to include in a study of the situational aspects of both offending and victimization.

Low collective efficacy. Different from the previously mentioned situational features, collective efficacy may seem less “situational” and perhaps more “contextual”. The complexity of the role of community influence on offending has been acknowledged by Wikström and Sampson (2003):

The basic idea of most ecologically oriented approaches to the study of crime and pathways in criminality is that the community’s structural characteristics affect the conditions for social life and control in the community and that this, in turn, has some bearing on (1) how people who grow up in the community will develop their individual characteristics relevant to their future propensity to offend and their lifestyles that shape pathways in criminality (ecological context of development), and (2) how people who live in the community will behave in daily life, including involvement in acts of crime (ecological context of action). (p. 126).

In this study, collective efficacy, as a part of the community context, is likely to best be related to the second form of community influence on offending and victimization (ecological context of action) as it is the kind of influence that is mostly related to the situational concept. Sampson, Raudenbush and Earls (1997) developed a measurement of collective efficacy which has often been employed in subsequent studies. The measurement consists of two elements that together represent the full concept of collective efficacy: informal social control and social cohesion. The former refers to the likelihood of citizens to intervene when disorderly behavior occurs, and the latter refers to the level of cohesion between residents in a neighborhood. Wikström et al. (2010) claim that areas with weak collective efficacy are morally weak contexts, as the residents of these areas tend to not intervene when moral rule breakings occur.

The relationship between collective efficacy and offending has been examined in several studies. Sampson, Raudenbush and Earls (1997), and Morenoff, Sampson and Raudenbush (2001) found that neighborhoods with higher levels of collective efficacy are related to lower levels of violent offending. Collective efficacy has also been found to, at least partially, have a mediating role between, for instance, neighborhood deprivation and level of violence (Sampson, Raudenbush & Earls, 1997). Moreover, Sampson and Raudenbush (1999) found that high collective efficacy is negatively correlated to robbery, burglary, and homicide. Still, other studies have not found a direct relationship between the level of collective efficacy and offending. For instance, Sutherland, Brunton-Smith and Jackson (2013), argue that “it is unlikely that there are simple deterministic relationships between neighbourhood characteristics and criminal acts.” (p. 1065). Thus, the relationship between low collective efficacy and offending seems to be rather complex and, therefore, needs to be studied further.

In terms of victimization, Maimon and Browning (2012) found that neighborhoods with a high level of collective efficacy are related to a reduced risk of individual violent victimization. According to Maimon and Browning (2012), their study is the first to connect the neighborhood level of collective efficacy to the individual level of victimization, while previous studies have rather focused on the neighborhood level of victimization. Thus, collective efficacy seems to be relevant to examine as a measurement of neighborhood context and as a situational feature that has an association with offending and victimization.

Alcohol use. Alcohol use is often discussed as a cause of offending and predominantly violent offending. However, there is some debate on the definition of alcohol use as a cause of offending. While Osgood et al. (1996) argue that alcohol use is a deviant behavior which is a result of criminogenic exposure, others (e.g. Bernasco et al., 2013) define it as a situational feature – a measure of exposure rather than an outcome due to exposure. Although neither of these positions may be fully correct (i.e. causes and outcomes may not always be fully separated), it is obvious that there are situations in which intoxicated individuals do act differently (e.g. more violent) than if they were sober. Felson and Staff (2010) showed that alcohol intoxication is related to higher levels of offending, predominantly to offenses involving direct contact between the offender and the victim. Bernasco et al. (2013) also found that alcohol use is directly related to offending among adolescents. In regards to victimization, Browning and Erickson (2009), and Averdijk and Bernasco (2015) examined alcohol use and agree that it is directly related to higher risks of victimization, thus highlighting the importance of examining not only offending, but also victimization in relation to alcohol use.

The relationship between situational features. Although this study adopts the view by Bernasco et al. (2013) that situational criminogenic features need to be examined independently, it is important to briefly mention some views regarding combined measurements. Many scholars argue that the interaction between several criminogenic features is crucial in order to understand the situational dynamics of offending (e.g. Osgood et al., 1996; Wikström et al., 2012; Janssen, Dekovic & Bruinsma, 2014) and victimization (e.g. Browning & Erickson, 2009; Maimon and Browning, 2012). A typical example regarding offending is the influential study by Osgood et al. (1996), in which three situational aspects were found to be criminogenic. Their operationalization of criminogenic settings is defined as situations in which someone: (1) pursues an unstructured activity, (2) is in the presence of peers, and (3) is without adult supervision. In terms of victimization, Browning and Erickson (2009) found that the neighborhood level of disadvantage may mediate the effect of alcohol use on victimization, as drinking alcohol was less associated with victimization in neighborhoods with less disadvantage. Similarly, Maimon and Browning (2012) argue that the level of neighborhood collective efficacy may mediate the relationship between different situational criminogenic features, such as peer involvement and violent victimization. Thus, the relationship between different situational features has frequently been examined in previous studies, and there is no reason to doubt that combinations of features or mediating effects of different variables may provide a more complex and rich picture of the situational aspects of offending and victimization. Nevertheless, in this somewhat exploratory study, it is suitable to include situational features in their simplest form, leaving room for future similar studies to refine the various measurements by combining situational features.

Theoretical framework

The Routine Activities Theory (RAT) is perhaps the one criminological theory that takes the purest situational perspective on offending and victimization and does not (or did not originally) seek any explanations by incorporating individual characteristics. The Situational Action Theory has been influential in the development of the research project from which the data in this thesis derives from. However, while RAT has a somewhat more straightforward connection between situations, and offending and victimization, Situational Action Theory is based on a complex model of human behavior which is not needed in this study. RAT is also used here in a somewhat broader sense, as incorporated into the complete Lifestyle-Routine Activities Theory (L-RAT).

Lifestyle-Routine Activities Theory. L-RAT consists of two theoretical frameworks which are generally related to offending and victimization respectively: RAT and Lifestyle-Exposure Theory. Because of their different origins, at times in this passage, offending is discussed only in relation to RAT, and victimization only in relation to Lifestyle-Exposure Theory. It is, therefore, also important to first describe the basic concepts of RAT and the Lifestyle-Exposure Theory separately. The work presented below is not exhaustive but it presents the foundations of the theoretical approach that is being employed in this study.

The basic concepts of Routine Activities Theory. The basic assumption of RAT is that activity patterns affect offending patterns, thus emphasizing the need to understand why some settings are more likely to induce criminal behavior than others (Cohen & Felson, 1979). Originally, RAT aimed at explaining *crime rates* due to changes in the routine activities (e.g. how time is spent at work, leisure time, etc.) (Cohen & Felson, 1979) but has later been developed into a theory that may also explain *individual offending* in relation to differences in routine activities (e.g. Osgood et al. 1996). What remains central to RAT is that a crime occurs if: (1) a motivated offender and (2), a suitable target, converge in space and time while (3), in absence of a capable guardian. These are the three main components of RAT and they explain situational offending because if one of these three elements is eliminated, there will be no act of crime (Cohen & Felson, 1979). If and how the three components of situational offending converge in space and time is dependent on routine activities (e.g. work, leisure time, etc.) (Cohen & Felson, 1979).

Originally, RAT left out explaining the motivation of the offender, and so will this study. Felson and Boba (2010) propose that “A suitable target is any person or thing that draws the offender toward a crime, whether a car invites him to steal it, some money that he could easily take, somebody who provokes him into a fight, or somebody who looks like an easy purse-snatch.” (p. 28). Thus, a suitable target may be an item that the offender covets or a person with certain characteristics. The third element, absence of capable guardians (i.e. any person who supervises and/or may interfere in a situation), is perhaps the most important situational component for the current study. Felson (2006) argues that in a situation, supervision inhibits acts of crime in three different ways: handlers supervise the potential offender (e.g. parents and teachers), guardians supervise the crime target (e.g. passersby), and place managers keep an eye on a place (e.g. neighbors).

In terms of victimization, the description of RAT may here serve as an explanation of both offending and victimization as it describes situations in which offenders and victims converge, which is crucial for the occurrence of both offending and victimization. However, by incorporating the work within Lifestyle-Exposure Theory, the combined L-RAT is more appropriate than just RAT for the situational explanation of victimization.

The basic concepts of Lifestyle-Exposure Theory. Hindelang, Gottfredson and Garofalo (1978) founded the Lifestyle-Exposure Theory based on their work on victimization and how it varies depending on demographic characteristics. The basic idea of the life Lifestyle-Exposure Theory is that “various constellations of demographic characteristics are associated with role expectations and structural constraints that, mediated through individual and subcultural adaptations, channel lifestyles.” (Hindelang, Gottfredson & Garofalo, 1978, p. 246). Lifestyle is thus suggested as the explanation for the demographic differences in victimization, and is proposed to be highly dependent on routine activities (work, school, leisure activities etc.) (Hindelang, Gottfredson & Garofalo, 1978).

Lifestyle-Exposure Theory centers on why people end up pursuing certain routine activities while RAT typically focuses on the characteristics of routine activities (i.e. presence or absence of the three elements of situations in which crimes are committed). Maxfield (1987) argues that the antecedents of lifestyle consist of “(1) behavioral expectations of persons occupying various social roles; (2) constraints on behavior imposed by economic status, education, and familial obligations; and (3) individual and subcultural adaptations to behavioral and structural constraints.” (p. 276). Thus, structural factors explain the uneven distribution of victimization among different groups through their respective differential lifestyles (Meier & Miethe, 1993). This is exemplified by Meier and Miethe (1993) as they suggest that young women are at less risk of being victimized than young men because their lifestyles usually include spending more time at home and under supervision. Another structural factor that affects victimization is income. Individuals with low incomes are less able to choose their place of living, making them more at risk of being victimized due to them living in disadvantaged areas (Meier & Miethe, 1993). Also, Karmen (2009) states that married young couples are less likely to be robbed than their single counterparts because they engage themselves in less risky routine activities, such as family events.

A unified Lifestyle-Routine Activities Theory. It is rather uncontroversial to argue that when looking further into RAT and the Lifestyle-Exposure Theory, the differences are merely related to terminology and not content (see Meier & Miethe, 1993). Both of the theories emphasize individuals’ everyday lives as the key to understand offending and victimization. Thus, although some of the work mentioned here would not be defined by the authors as belonging to the full L-RAT perspective, it is the position of this study that they have enough in common to be defined within the same theoretical family. Moreover, merging Lifestyle-Exposure Theory and RAT is rather common. For instance, in a comprehensive review of L-RAT in relation to offending and victimization, McNeeley (2015) treats L-RAT as *one* theory that explains behavior patterns of individuals which result in them being more or less likely to end up in situations with a convergence of motivated offenders, suitable targets, and an absence of capable guardians.

When reviewing L-RAT in relation to offending, McNeeley (2015) found that guardianship is important, as well as the fact that many offenses are carried out with co-offenders. McNeeley (2015) concludes the research findings within L-RAT in relation to offending by stating that “this work demonstrates that one’s lifestyle influences the risk of delinquency by providing opportunity to engage in criminal behavior (perhaps with delinquent peers) and by moving one away from the supervision of potential handlers, such as parents or teachers.” (p. 37). McNeeley (2015) describes victimization in relation to L-RAT in similar words, but with a slightly different terminology. According to McNeeley (2015), the five cornerstones of L-RAT in regards to victimization, originally proposed by Cohen, Kluegel, and Land (1981), have rendered strong support in explaining victimization. These five cornerstones are: (1) exposure (visibility or accessibility to offenders), (2) proximity (to motivated offenders), (3) attractiveness (the economic and symbolic value of the crime target), (4) guardianship (makes victimization less likely to occur), and (5) definitional properties of specific crimes (e.g. burglary is more complicated to carry out than general larceny). The latter is not a feature of its own, but is an important factor since the other four elements vary according to the type of crime.

It should also be mentioned here that studies within L-RAT are not always similar in how the effect of routine activities should be interpreted. For instance, when discussing their findings, Henson, Wilcox, Reyns and Cullen (2010) conclude that “many unstructured, nondelinquent activities away from home are largely not risky for adolescents.” (p. 323). Moreover, Henson et al. (2010) also proposed an age-graded L-RAT, as routine activities may not be related to the same outcomes (e.g. victimization), at all stages of life. The relation between age and routine activities is, according to Henson et al. (2010), largely a question of differences in adolescent and adult lifestyles:

The situation that we are proposing regarding adult control over “unstructured activities” is fundamentally different from, say, an adult setting their own parameters regarding unstructured activity. As such, it is at the young adult stage of the life course where decisions with more implications for risky exposure, especially, begin to take place at far greater frequency. (p. 323).

Thus, age may need to be included in the L-RAT perspective if it aims to explain offending and victimization at all ages. Another issue within L-RAT, is the lack of adding a macro-level to the explanation of offending and victimization. For instance, a study of victimization by Sampson and Wooldredge (1987) found that lifestyles lose their explanatory function when controlling for the level of offending in an area, i.e., no matter what kind of lifestyle a person has, he/she is more likely to be victimized when living in close proximity to high-rate offenders (Sampson & Wooldredge, 1987). However, other studies do find a relationship between risky lifestyles and victimization and, importantly, also to offending (e.g. Cops & Pleysier, 2014). Moreover, Sampson and Lauritsen (1990) also emphasize the need to consider deviant lifestyles in relation to victimization, as their study showed that even people reporting minor offending are more likely to become victimized, thus referring to offending as a marker of a risky lifestyle.

In sum, the reason of employing L-RAT in this study is rather simple: L-RAT has a twofold focus on both offending and victimization; it is centered on situations; and it does not address offender motivation.

DATA AND METHODS

This section describes the study's sample, the methods for collecting data, the operationalization of the phenomena that are studied, the analytical approach, and the ethical considerations that were taken.

Sample

The data in this study is drawn from the Malmö Individual and Neighbourhood Development Study (MINDS) which was initiated in 2007. MINDS is modelled on the Peterborough Adolescent and Young Adult Development Study (PADS+) which has been exported to other countries than Sweden as well (e.g. the Netherlands, Slovenia). The primary aim of MINDS is to examine adolescents' development of various kinds of problem behavior and how this can be explained in relation to the participants' individual characteristics, experiences, and exposure to different social environments. Data has so far been collected from parents at one point in time and from the participants at four different occasions (age 12-13, 14-15, 16-17, and 18-19). The total sample of 525 individuals was selected randomly from the cohort of children born in 1995 and living in Malmö in 2007. The final sample is representative for the entire cohort in most respects but it should be mentioned that there is a slight overrepresentation of participants from affluent neighborhoods.

This study examines individuals that took part in the last three data collection waves and that participated in both of the two different data collection methods that were used (an interviewer-led questionnaire and a space-time budget interview, which are described in subsequent sections). A total number of 320 participants fulfilled the inclusion criteria. Importantly, this study also uses data from a study of Malmö's neighborhoods. That particular study is used for this study's measure of collective efficacy and is based on a different sample (see more information below).

Methods

Three data collection methods were employed to obtain the data in this study. Each participant in MINDS filled out an interviewer-led questionnaire and took part in a space-time budget interview. The latter is described somewhat more thoroughly because of its unique design. The third data source is a community survey that was carried out in Malmö.

Interviewer-led questionnaire

The interviewer-led questionnaire is a questionnaire that each participant fills out in the presence of a trained interviewer who helps out if there is anything that the participant do not understand or is uncertain about. The questionnaire covers a wide range of items on several different topics such as mental health, drug use, morality, victimization, and offending. Although the items have changed somewhat from the initial data collection sweep, it is still largely the same areas

that are being examined in the questionnaire and the structure of it is similar to the one employed by Wikström et al. (2012). It is here not possible to describe all items in the questionnaire, but only two parts of the questionnaire are important as these are the ones being employed in the current study: offending and victimization, which are described in subsequent sections and in appendix 2. Importantly, the questionnaires at age 14-15 and at age 16-17 refer to incidents that took place during the previous school grade the respondents took part of (e.g. 8th grade) while the questionnaire at age 18-19 refers to the previous year (2013) in relation to when the data collection was carried out.

Space-time budget

The space-time budget (STB) employed in MINDS was developed within the British PADS+ study which was initiated by Wikström and colleagues in the early 2000s. According to Hoeben, Bernasco, Weerman, Pauwels and van Halem (2014), the use of STB has made it more reliable to measure the spatiotemporal aspects of different phenomena as it includes a specific and rather precise measure of time (usually hours). The procedure of the STB interview in MINDS is described below, but for a thorough and complete description of the use of space-time budgets; see Hoeben et al. (2014).

The STB interview is based on a structured interview guide (appendix 1) in which the respondents' whereabouts are recorded. The STB data is collected from four days of each participant's recent week, including two regular weekdays (Monday-Thursday) and two weekend days (Friday and Saturday). Which weekdays that are included depend on the day of the interview: the weekdays closest in time prior to the interview are chosen for the STB (e.g. an interview on a Friday includes the previous Thursday and Wednesday in the STB). Friday and Saturday are included in every STB because Wikström et al. (2012) argue that these days differ significantly from regular weekdays (e.g. one spends less time in school-oriented activities). Sundays are always excluded from the STB because they are somewhat "in between" the weekend activities and the upcoming school week (Wikström et al., 2012) and are thus hard to differentiate as either weekdays or weekend days. Individuals that spent 48 hours or more on holiday in the STB are excluded from the analyses as their STBs are not likely to represent their general level of exposure to criminogenic features.

The STB interviewer registers data based on the following features of each hour: geographic location (e.g. address), place (e.g. home, school), activity (e.g. studying, sleeping), and with whom the hour was spent. Each hour also contains information regarding special incidents: truancy from school and work, alcohol/drug use, risk situations (e.g. threatening situations), victimization, offending, and if the participant was carrying any weapons. These incidents are noted for every hour they occur although they are not normally the main activity of an entire hour. However, the number of crimes and victimization occasions reported in the STB are too low in MINDS in order to be used for quantitative data analyses. Therefore, it is not possible to examine the exact situational features of the crimes that are committed by the respondents or their occasions of victimization, but it is still possible to examine the relationship between individual offending and victimization (measured through the questionnaire), and the level of individual exposure to criminogenic settings (measured through the STB).

The coding procedure of the STB data is centered on specific codes (e.g. exact activity that is being pursued, such as hanging around) but these are often aggregated to larger categories (e.g. hanging around may fall under the wider concept of unstructured activities). Consequently, decisions between conflicting codes are usually decisions between similar codes and these codes generally end up in the same category, resulting in no unwanted effects on the data analyses. It is also rather common that the same codes are used for multiple hours (e.g. playing football for two hours). One hour is the smallest amount of time that is being recorded which results in coding decisions that are centered on what a participant has been doing during the majority of the time during an hour (e.g. eating for twenty minutes and studying for forty minutes is coded as one hour of studying). Although this may seem like a somewhat blunt method of collecting this kind of data, it would be too difficult to practically collect data in smaller time units. Many other studies of exposure to situational features have far less detailed exposure data, such as survey items of general exposure with predefined answering alternatives that do not account for hourly fluctuations (e.g. Osgood et al., 1996).

Validation of space-time budget data. As the STB is focused on four days only for each participant, there is no guarantee that these days are representative for the participants' everyday life. Bernasco et al. (2013) found support for the validity of the STB data as substance use corresponded well between their survey and their STB. Hoeben et al. (2014) validated STB data by comparing it to data from a questionnaire with items that were related to the STB. They found correlations for most items but discuss which instrument (STB or questionnaire) that is most reliable for measuring the general spatiotemporal dimension of people's everyday life. Hoeben et al. (2014) claim that the STB is not constructed for measuring the prevalence of offending; it is more a tool for understanding the circumstances for certain crimes that are reported in the STB. This is important to bear in mind as this study adopts a somewhat different perspective by examining individuals' prevalence of offending and victimization (from the questionnaire) in relation to their individual levels of exposure to situational criminogenic features (from the STB). The measurements of offending and victimization in this study are thus based on survey items and not items from the STB. However, as the STB data provides a superior level of detail of situational exposure to criminogenic settings compared to survey data (Wikström et al., 2012), the exposure variables in this study are based on STB data. In conclusion, what the STB loses in terms of the obvious risk of including possible non-representative days in the participants' everyday life, is gained by the detailed and groundbreaking possibility to capture the specific characteristics of the participants' everyday life, such as their situational criminogenic exposure.

Community survey

The community survey was carried out in late 2012 and aimed at examining various features on a neighborhood level in Malmö, such as fear of crime and neighborhood social processes (Ivert, Chrysoulakis, Kronkvist & Torstensson Levander, 2013). Surveys were mailed to 7965 randomly selected individuals between 18 and 85 years of age of which more than half (4200) were returned. One of the topics that were examined in the community survey was the level of collective efficacy in each of the city's neighborhoods which was measured by several items (see appendix 2). The community survey's results regarding

neighborhood level of collective efficacy were employed in this study in order to examine the MINDS participants' time spent in areas with low collective efficacy.

Measures

This section describes how each variable is operationalized and, when appropriate, how decisions have been made to maximize the possibility of making comparisons between the different data collection waves. See appendix 2 for a full list and explanation of the variables included in the study.

Dependent variables

The constructs of the outcome variables (offending and victimization) are centered on allowing for comparisons both within and between each data collection wave.

Offending. The offending variable is measured by using data from the interviewer-led questionnaire. The offenses included are only those that correspond with the items measuring victimization in the questionnaire. These include property offenses against persons (one item for theft and one item for robbery) and one item for violent offending. These are merged into one dichotomous offending variable that measures if the participants have or have not committed any of these offenses during the last grade/year. Importantly, it should be noted that the offending items are not identically structured in all data collection sweeps (see appendix 2) but the content of the items correspond to each other in all data collection sweeps.

Victimization. The victimization measure derives from the interviewer-led questionnaire. Two items measuring victimization are included in the study and these cover two crime categories: victimization of property offenses (theft and robbery) and violent victimization. These are merged into one dichotomous victimization item that measures if the participants have or have not been victimized of any of these offenses during the last grade/year.

The use of general variables of offending and victimization. This study examines offending and victimization in relation to both property and violent offenses jointly (i.e. there is no offense specific approach). There are several reasons for creating these general measures of offending and victimization. First, this approach minimized the amount of missing data (see subsequent sections). Second, it is here hypothesized that the offenses included in this study are related to each other in that larceny may escalate into robbery and/or violence. Similarly, a violent offense may involve theft of property, thus the items overlap each other and what one participant defines as one offense may be differently defined by another participant. The importance of examining crime in a general sense is also well-established within criminology (e.g. Gottfredson & Hirschi, 1990). Third, the offenses included in this study share the fact that they may occur anywhere. Although there are more offenses that could be argued to fit this characteristic, the offenses in this study are clearly different from many other offenses that were included in MINDS such as shoplifting (occurs at shops) and burglary (occurs in buildings or vehicles). Fourth, although correlation analyses (not included) revealed a few moderate correlations between the different offenses within the outcome variables, it is important to highlight that this is irrelevant for this study. The measurements of offending and victimization do not become more reliable if correlations are higher as it is not the exposure at specific events of offending and

victimization that are important but the general level of exposure in relation to individuals' reported offending and victimization. In other words, this study has no interest in examining certain offenses or level of seriousness in offending and victimization events.

Independent variables

The independent variables measure situational criminogenic exposure and are centered on rather simple definitions. Although previous studies differ in their definitions of the exposure variables (e.g. some studies argue for the combination of different situational aspects), this study's exploratory approach embraces the simplest measures of the exposure variables as possible.

Unsupervised. The total amount of hours spent awake without supervision of an adult person in the STB constitutes the measure of being exposed to situations with no supervision.

Unstructured activities. The total amount of hours spent awake pursuing unstructured activities in the STB constitutes the measure of exposure to unstructured activities. Unstructured activities are defined as activities without any certain content that defines the activity. Unstructured activities include media consumption (e.g. watching TV) and various forms of informal socializing (e.g. hanging around) (see appendix 2 for more information).

Presence of peers. The total amount of hours spent awake with friends (including partners) in the STB constitutes the measure of situational peer exposure.

Low collective efficacy. The measure of collective efficacy is adapted from the community survey in which collective efficacy was measured as an index with ten items on informal social control and social cohesion (see appendix 2). The community survey sample's responses were aggregated to a neighborhood level, generating data that showed which neighborhoods that reported the lowest level of collective efficacy. In the STB, the participants' presence in Malmö's different neighborhoods was recorded through individual codes for each neighborhood and combined with the results from the community survey, it was possible to identify the participants' time spent in neighborhoods with low collective efficacy. The total amount of time each participant spent awake in neighborhoods that reported the 25 percent lowest level of collective efficacy constitutes each participant's exposure to neighborhoods with low collective efficacy.

Alcohol use. Having spent any hour drinking alcohol in the STB constitutes the measure of alcohol use. This is not limited to hours spent awake as alcohol use is included in the STB if any part of the hour included drinking (e.g. one could drink a beer at 2.00 am and go to bed at 2.20 am which makes sleeping the dominant activity during that hour and therefore the hour is coded as an hour spent asleep).

Data modifications and data analyses

The data in this study underwent various modifications and analyses in order to fulfill the aims of this study. These are described to their full extent here. All data modifications and analyses were performed using the software IBM SPSS Statistics 20.

Missing data

Missing data was not a particularly large problem in this study. Individuals with missing data on all offending items that were examined in this study were excluded from the data analyses but these were at most five individuals in each sweep. If an individual had committed any of the offenses that were targeted in this study, they were included as “offenders” despite missing data on the other offending variables. Similarly, individuals that did not report offending on any offense were included in the study as “non-offenders” despite missing data for other offenses included in the study. The same procedure was carried out for the victimization variable. This technique of dealing with missing data has likely resulted in an overestimation of non-offenders which seems like a better option than overestimating the number of offenders. It is worth noting that the only variable that had more than 6 individuals with missing data on any of the items that constitute the offending variable is violent offending at age 16-17 (see item 3 in appendix 2) in which 26 participants did not report a response. Thus, the offending variable for that age may rather strongly overestimate the amount of non-offenders if these individuals did not report that they had committed any of the other offenses that are included in this study. A similar problem is related to violent victimization at age 18-19. A total number of 14 respondents did not report any answer and if these people did not report victimization of the other offenses that are included in this study, they may affect the data in an overestimation of non-victims at age 18-19. Yet, these issues are minor and should not have a substantial impact on the interpretations of the findings. It should also be noted that the STB had very few cases of missing data.

Logistic regression analyses

Logistic regression analyses were carried out by first examining the associations between offending and victimization and each of the independent variables separately. Then, all independent variables were included into one logistic regression model for each dependent variable in order to examine if there remained any significant associations. In order to conduct these analyses properly and to correctly interpret the findings, Field (2013) and Pallant (2007) were used as reference literature.

All independent variables were categorized in order to be able to compare the participants with each other. Each variable was split into three categories with approximately the same amount of participants in each group (33.3 %). The groups were based on number of hours spent in relation to each variable, providing the group labels “low” (approximately one third of the sample that spent the lowest number of hours in relation to a situational feature), “medium” (approximately one third of the sample that neither spent the lowest nor the highest number of hours in relation to a situational feature), and “high” (approximately one third of the sample that spent the highest number of hours in relation to a situational feature). As some values were more common than others, all groups were not equal in terms of amount of participants but the groups were large enough to allow for the analyses to run properly. The only exception was alcohol use which was dichotomized instead of grouped into three groups as the data for age 14-15 and 16-17 contained few cases of alcohol use, thus not making it possible to create more than two groups (those that did not report any hour with alcohol use and those that reported at least one hour of alcohol use).

The use of categorized data is important to bear in mind when interpreting the findings; it is not the amount of hours in a criminogenic setting per se that is tested to have an effect on offending and victimization but the amount of hours spent in a criminogenic setting in relation to the other participants. The group that reported the lowest number of hours exposed to each independent variable was employed as a reference category to which the other two groups (medium and high exposure) were compared.

Correlations between variables

First, the relationship between offending and victimization revealed similar correlations (Phi/Cramer's V) in all age groups (.26 at age 14-15, .23 at age 16-17 and .25 at age 18-19). All independent variables are on the ordinal level, thus Spearman's rank order correlation was employed (Field, 2013). Only correlations that are at least moderate ($>.25$) are presented here and it is worth noting that there are no negative correlations. The only moderate correlation in all age groups was between being unsupervised and alcohol use which showed a .34 (age 14-15), a .33 (age 16-17) and a .26 correlation (age 18-19). Being unsupervised correlated with presence of peers at .29 (age 16-17) and .34 (age 18-19). Alcohol use correlated with presence of peers at .27 (age 16-17). All correlations were significant on the .001 level.

Ethical considerations

The MINDS project and the community survey (the two data sources for this study) are approved by the Regional Ethics board at Lund University. Although this thesis has not been revised by an ethical board, it follows the ethical premises that studies on humans should follow according to the Swedish research council. However, it is still relevant to present how general ethical considerations have been taken into account in MINDS and the community survey.

Surveys in general have their own set of ethical principles, mainly centered on privacy and confidentiality issues regarding the protection of the respondents throughout the entire research process (Valerio & Mainieri, 2008). The following ethical considerations in relation to survey research have been met by MINDS and are here presented based on Valerio and Mainieri's (2008) suggestions on what to be aware of when conducting a survey, but this is applicable to the STB interview as well. First, informed consent was obtained from all participants. Thus, information was provided to the participants about the aims, methods, benefits (individual and societal) and purpose of the study as well as the participants' expected burden of the participation to ensure that the consent was truly informed. Second, the participation was entirely voluntary and all participants were allowed to terminate their participation at any time during the research process, without the need to state why they wanted to quit. Third, confidentiality was guaranteed throughout the entire research process. This is important since the content of the questionnaire and the interview consists of sensitive questions. However, no question had to be answered and all the data are kept in a locked safe in order to prevent unauthorized persons from getting access to it. Fourth, the research design is aimed at being transparent to ensure that there will not be any doubts regarding the interpretations of the data and the potential findings. This is also important for science in general since the study may add valuable knowledge to the research field and thus, this contribution must be based on reliable and valid measurements and operationalizations. Also, MINDS has a web page (www.mah.se/minds) that

aims at informing the participants and others which makes the research project more accessible and transparent.

In terms of the specific content in the data collected, victimization may be perceived as a particularly sensitive subject. Although it may be very emotional to reveal experiences of victimization, this study adopts the view by Walklate (2008) in that victimological issues are important and need to be studied for the victims' sake. Thus, if the research is carried out with respect to the victims' integrity, the research may be very useful for the entire victimological genre and may help victims by providing them with a way of making their voices heard.

The community survey lived up to the same ethical considerations as MINDS. The survey was cross-sectional and collected data from individuals and aggregated the data on a neighborhood level. The data was then merged onto the MINDS sample as a measure of time spent in certain kinds of neighborhoods. Hence, the community survey data was only used on a neighborhood level and thus should not be problematic from an ethical standpoint other than the fact that some neighborhoods may be perceived as "bad". Still, this study does not point out any specific neighborhoods in Malmö, it only describes, as a group, the 25 percent of the city's neighborhoods that report the lowest level of collective efficacy. This is also important for this study as a whole; it does not focus on specific geographic places and thus no area or specific location will be pointed out as "bad" and, of course, not "good" either.

FINDINGS

The results are presented in three sections with corresponding tables. The first section contains descriptive statistics of all variables included while the second section contains the results from the regression analyses¹. Each of these sections is built upon a structure based on the three data collection sweeps in order to facilitate a comparative approach to the results. The third section provides an overview of which of the independent variables that were significantly related to each outcome. The findings are summarized in the beginning of the discussion in order to make sure that the main points have been highlighted.

Descriptive statistics

Table 1 describes each variable in relation to the three data collection waves. The share of participants that reported offending increased significantly from age 14-15 (11.7 %) to age 16-17 (17.6 %), but decreased significantly to 12.9 percent at age 18-19. Victimization was most prevalent at age 14-15 (34.3 %) and then decreased significantly at both age 16-17 (32.1 %) and age 18-19 (26.8 %). Table 1 also shows the mean (with standard deviation) number of hours that the participants' spent in exposure for each situational criminogenic feature. The

¹ Logistic regressions were also performed with a variable that combines being unsupervised, pursuing an unstructured activity, and having peers/partner present as this combination has been proposed elsewhere (e.g. Wikström et al., 2012) to be more criminogenic than the three independent variables included separately. However, the combined variable did not show a stronger association with the outcome variables than the independent variable with the highest OR in each logistic regression model. The only exception was victimization at age 16-17, where the interaction term had a stronger association than any independent variable both when tested separately and in a model with the other independent variables.

Table 1. Percentage of the sample that reported offending and victimization and mean (and standard deviation) number of hours spent in exposure of each dependent variable in each data collection wave. Chi²-tests (dependent variables) and t-tests (independent variables) were performed in order to compare changes among the variables in relation to the previous data collection wave.

	<i>Age 14-15</i>		<i>Age 16-17</i>		<i>Age 18-19</i>	
<i>Dependent variables</i>						
<i>(percentage)</i>						
Offending (yes)	11.70		17.60***		12.90***	
Victimization (yes)	34.30		32.10***		26.80***	
<i>Independent variables</i>						
<i>(hours)</i>						
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Unsupervised	14.95	8.75	17.17**	10.94	25.46***	11.00
Unstructured activity	29.38	8.22	23.57***	8.74	22.59	9.44
Presence of peers	29.41	9.98	31.79**	11.18	24.35***	11.12
Low collective efficacy	11.46	18.36	10.10	15.45	8.69	13.89
Alcohol use	0.62	2.04	1.97***	4.11	4.05***	5.72

Note: Significant changes in mean number of hours spent in relation to the previous data collection wave for each exposure variable are marked by asterisks. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

mean number of hours spent unsupervised increased significantly in each data collection sweep. The standard deviation increased for each year as well, indicating a wider range of hours spent unsupervised among the participants as they grew older. The number of hours spent in unstructured activities, was significantly higher at age 14-15 compared to age 16-17. At age 18-19, there was no significant change in the mean number of hours spent in unstructured activities compared to the previous data collection sweep. Hours spent in presence of peers increased significantly from age 14-15 to age 16-17. This trend was reversed at age 18-19 as the mean number of hours spent with peers decreased significantly. No significant differences were found for the mean number of hours spent in neighborhoods with low collective efficacy. The standard deviations for this variable were high, indicating great dispersion among the participants. This is likely an artifact of not controlling for where the participants live, which is discussed later. The mean number of hours with alcohol use increased significantly at each data collection sweep. Still, alcohol use was rather uncommon and the standard deviations were also high, indicating great dispersion in the data.

Logistic regression models with one independent variable

The initial logistic regression analyses (see table 2) examined the bivariate associations between the outcome variables and each independent variable separately. The odds ratios (OR) show the odds for a certain outcome to occur for a certain group (medium or high) in comparison to the reference group (low).

Age 14-15. At age 14-15, the group that spent the highest number of hours unsupervised was almost 4.5 times (OR=4.492) more likely to have reported offending compared to the group that spent the lowest amount of time

Table 2. Logistic regression analyses with each independent variable in separate models with each outcome variable. Odds ratios (OR) with 95% confidence intervals (CI).

	<i>Age 14-15 (n=315)</i>		<i>Age 16-17 (n=315)</i>		<i>Age 18-19 (n=310)</i>	
	<i>Offending</i>	<i>Victimization</i>	<i>Offending</i>	<i>Victimization</i>	<i>Offending</i>	<i>Victimization</i>
	<i>OR (95 % CI)</i>	<i>OR (95 % CI)</i>	<i>OR (95 % CI)</i>	<i>OR (95 % CI)</i>	<i>OR (95 % CI)</i>	<i>OR (95 % CI)</i>
<i>Unsupervised (low=ref.)</i>						
Medium	1.470 (.504-4.285)	1.284 (.711-2.318)	1.679 (.803-3.509)	.978 (.533-1.793)	1.521 (.657-3.522)	.865 (.458-1.635)
High	4.492** (1.738-11.612)	2.143* (1.196-3.841)	1.700 (.806-3.583)	2.103* (1.178-3.754)	1.795 (.782-4.122)	1.681 (.922-3.065)
<i>Unstructured activity (low=ref.)</i>						
Medium	2.940* (1.222-7.074)	2.582** (1.466-4.547)	2.175* (1.023-4.623)	1.273 (.714-2.267)	2.345 (.929-5.921)	2.118* (1.099-4.085)
High	2.108 (.810-5.485)	1.921* (1.050-3.513)	2.512* (1.152-5.478)	1.902* (1.050-3.445)	3.516** (1.466-8.437)	3.060** (1.625-5.762)
<i>Presence of peers (low=ref.)</i>						
Medium	1.400 (.572-3.429)	.799 (.450-1.418)	1.884 (.843-4.208)	1.402 (.752-2.613)	1.468 (.628-3.435)	1.131 (.599-2.136)
High	1.863 (.775-4.476)	1.208 (.683-2.135)	3.250** (1.508-7.002)	3.346*** (1.839-6.088)	1.701 (.725-3.994)	1.793 (.959-3.353)
<i>Low collective efficacy (low=ref.)</i>						
Medium	1.833 (.775-4.336)	1.059 (.572-1.960)	1.219 (.593-2.506)	1.487 (.832-2.658)	.900 (.375-2.161)	.902 (.486-1.676)
High	1.378 (.616-3.085)	.978 (.571-1.675)	1.028 (.516-2.045)	.759 (.428-1.344)	1.520 (.711-3.251)	.910 (.501-1.652)
<i>Alcohol use (no=ref.)</i>						
Yes	4.478*** (1.972-10.165)	2.548** (1.252-5.189)	1.498 (.797-2.815)	1.884* (1.118-3.176)	2.173* (1.043-4.529)	1.574 (.935-2.652)

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

unsupervised. Similarly, the likelihood of having reported offending was almost three times (OR=2.940) higher for the group that spent the medium amount of time pursuing unstructured activities. The participants that reported alcohol use were almost 4.5 times (OR=4.478) more likely to have reported offending while spending time in presence of peers and time spent in areas with low collective efficacy showed no significant association with offending in this age group.

At age 14-15, victimization was more than two times (OR=2.143) more likely to have occurred in the group that spent the highest number of hours unsupervised. The participants that spent a medium amount of hours pursuing unstructured activities were also more likely to have reported victimization (OR=2.582) as well as the group reporting the highest amount of time in unstructured activities (OR=1.921). Similarly, participants that reported alcohol consumption were more than 2.5 times (OR=2.548) more likely to have reported victimization while time spent with peers and time spent in areas with low collective efficacy showed no significant relationship with victimization.

Age 16-17. At age 16-17, offending was related to spending a medium (OR=2.175) as well as a high (OR=2.512) number of hours pursuing unstructured activities. The participants that spent most time with peers were more than three times more likely to report offending (OR=3.250) compared to the group that spent the lowest amount of time with peers. Time spent unsupervised, time spent in areas with low collective efficacy, and alcohol use did not have a significant association with offending in this age group.

Belonging to the group with the highest amount of hours spent unsupervised was significantly associated with victimization (OR=2.103) and participants that spent the highest amount of hours in unstructured activities were almost two times (OR=1.902) more likely to have reported victimization. Similarly, the individuals that spent the highest amount of time with peers were more than three times more likely (OR=3.346) to have reported victimization. Alcohol use was also significantly related to victimization (OR=1.884) while spending time in areas with low collective efficacy was not related to victimization.

Age 18-19. At age 18-19, spending a high amount of time in unstructured activities was related to offending (OR=3.516). The only of the other independent variables that was significantly related to offending at age 18-19 was alcohol use (OR=2.173). Time spent unsupervised, time spent with peers, and time spent in areas with low collective efficacy were not significantly related to offending.

Time spent pursuing unstructured activities was the only independent variable that showed a significant association with victimization as both the medium exposure group (OR=2.118) and the high exposure group (OR=3.060) showed this significant association. Time spent unsupervised, time spent with peers, time spent in areas with low collective efficacy, and alcohol use did not show a significant association with victimization.

Logistic regression models with all independent variables

After testing each independent variable separately, logistic regression analyses were executed with all independent variables included together in the models (see table 3). Thus, the results in this section are interpreted as the odds ratios for a

Table 3. Logistic regression analyses with all independent variables included together in one model for each dependent variable. Odds ratios (OR) with 95% confidence intervals (CI).

	<i>Age 14-15 (n=315)</i>		<i>Age 16-17 (n=315)</i>		<i>Age 18-19 (n=310)</i>	
	<i>Offending</i>	<i>Victimization</i>	<i>Offending</i>	<i>Victimization</i>	<i>Offending</i>	<i>Victimization</i>
	<i>OR (95 % CI)</i>	<i>OR (95 % CI)</i>	<i>OR (95 % CI)</i>	<i>OR (95 % CI)</i>	<i>OR (95 % CI)</i>	<i>OR (95 % CI)</i>
<i>Unsupervised (low=ref.)</i>						
Medium	1.223 (.411-3.638)	1.170 (.637-2.148)	1.236 (.563-2.712)	.767 (.398-1.477)	1.074 (.432-2.668)	.699 (.350-1.397)
High	2.842* (1.002-8.058)	1.651 (.861-3.163)	.966 (.406-2.294)	1.253 (.636-2.467)	1.241 (.487-3.164)	1.313 (.661-2.608)
<i>Unstructured activity (low=ref.)</i>						
Medium	2.206 (.875-5.560)	2.317** (1.291-4.156)	2.003 (.927-4.331)	1.176 (.643-2.150)	2.212 (.861-5.679)	2.163* (1.104-4.237)
High	1.674 (.612-4.574)	1.708 (.918-3.176)	2.489* (1.076-5.757)	1.651 (.861-3.167)	2.947* (1.192-7.282)	2.950** (1.528-5.697)
<i>Presence of peers (low=ref.)</i>						
Medium	1.205 (.469-3.096)	.728 (.401-1.322)	1.902 (.802-4.513)	1.341 (.686-2.623)	1.233 (.507-3.001)	1.063 (.543-2.083)
High	1.014 (.385-2.674)	.838 (.450-1.559)	3.198** (1.384-7.389)	3.058** (1.594-5.867)	1.158 (.454-2.950)	1.367 (.683-2.736)
<i>Low collective efficacy (low=ref.)</i>						
Medium	1.957 (.789-4.852)	1.041 (.548-1.975)	1.210 (.569-2.575)	1.524 (.820-2.834)	.794 (.319-1.978)	.901 (.468-1.735)
High	1.327 (.567-3.104)	.944 (.540-1.651)	.992 (.487-2.022)	.789 (.434-1.434)	1.317 (.591-2.937)	.803 (.426-1.514)
<i>Alcohol use (no=ref.)</i>						
Yes	2.707* (1.066-6.876)	1.818 (.828-3.995)	.997 (.494-2.015)	1.243 (.689-2.241)	1.887 (.859-4.149)	1.324 (.746-2.350)

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

certain outcome in relation to an independent variable when controlling for all the other independent variables. The odds ratios (OR) show the odds for a certain outcome to occur for a certain group (medium or high) in comparison to the reference group (low).

Age 14-15. At age 14-15, participants spending a high amount of time unsupervised were almost three times more likely (OR=2.842) to have reported offending than the group that reported the lowest amount of time spent unsupervised. Alcohol use was the only other independent variable that was significantly associated with offending in this age group (OR=2.707). Time spent in unstructured activities, time spent with peers, and time spent in neighborhoods with low collective efficacy did not show a significant association with offending.

Spending a medium amount of time pursuing unstructured activities was the only independent variable that was related to victimization (OR=2.317) while spending time unsupervised, time spent with peers, time spent in areas with low collective efficacy, and alcohol use did not show a significant association with victimization.

Age 16-17. At age 16-17, spending a high amount of time pursuing unstructured activities was related to offending (OR=2.489). Similarly, the participants that spent the highest amount of time with peers were more than three times more likely (OR=3.198) to report offending than the group spending the lowest amount of time with peers. Time spent unsupervised, time spent in neighborhoods with low collective efficacy, and alcohol use did not have a significant association with offending.

Victimization was more than three times more likely (OR=3.058) to occur among the group that spent a high amount of time with peers. Time spent unsupervised, time spent pursuing unstructured activities, time spent in areas with low collective efficacy, and alcohol use did not show a significant association with victimization.

Age 18-19. At age 18-19, the only independent variable that showed a significant relationship with offending was spending a high amount of time pursuing unstructured activities (OR=2.947). Thus, time spent unsupervised, time spent with peers, time spent in areas with low collective efficacy, and alcohol use did not show a significant association with offending.

Spending a medium amount of time in unstructured activities was related to victimization (OR=2.163) but spending a high number of hours pursuing unstructured activities had an even greater association with victimization (OR=2.950). Time spent unsupervised, time spent with peers, time spent in areas with low collective efficacy, and alcohol use did not show a significant relationship with victimization.

Associations related to both offending and victimization

Table 4 is extracted from table 2 and table 3 and shows which of the independent variables that were significantly associated with offending and/or victimization in the different age groups studied. When comparing the statistically significant associations in the regression analyses, a few of these were similar for both offending and victimization. At age 14-15, all the independent variables that were associated with offending when included in separate regression models were also associated with victimization: spending a high amount of time unsupervised,

Table 4. Overview of the significant ($p < 0.05$) associations between the independent and the outcome variables.

	<i>Age 14-15 (n=315)</i>		<i>Age 16-17 (n=315)</i>		<i>Age 18-19 (n=310)</i>	
	<i>Separate model</i>	<i>Full model</i>	<i>Separate model</i>	<i>Full model</i>	<i>Separate model</i>	<i>Full model</i>
<i>Unsupervised (low=ref.)</i>						
Medium	-	-	-	-	-	-
High	O+V	O	V	-	-	-
<i>Unstructured activity (low=ref.)</i>						
Medium	O+V	-	O	-	V	V
High	V	-	O+V	O	O+V	O+V
<i>Presence of peers (low=ref.)</i>						
Medium	-	-	-	-	-	-
High	-	-	O+V	O+V	-	-
<i>Low collective efficacy (low=ref.)</i>						
Medium	-	-	-	-	-	-
High	-	-	-	-	-	-
<i>Alcohol use (no=ref.)</i>						
Yes	O+V	O	V	-	O	-

Note: **O**=significant association between the independent variable and offending; **V**=significant association between the independent variable and victimization; **O+V**=significant association between the independent variable and both offending and victimization

spending a medium amount of time in unstructured activities, and alcohol use. However, no independent variable was both associated with offending and victimization when included altogether in one model. The independent variables that were both related to offending and victimization at age 16-17 were: high amount of time spent in unstructured activities and high amount of time spent with peers of which only the latter still had a significant association with both of the outcome variables when controlling for the other independent variables. A high amount of time spent in unstructured activities was related to offending and victimization at age 18-19 when included separately and also when included with the other independent variables. In sum, there were a few significant associations between the exposure variables and both of the outcome variables but these associations were relatively rare. Thus, it generally appears like there are no mutual association patterns between the exposure variables and the outcome variables.

DISCUSSION

This section discusses the findings and their limitations. The findings are first summarized, then discussed in relation to previous research and to the theoretical framework. This is followed by a broader discussion on the findings, before concluding the section through some thoughts on the study's limitations. Suggestions for future research are also, when appropriate, presented throughout this section.

Summary of the findings

The main purpose of this study was to examine the associations between exposure to different criminogenic features and offending and victimization, and how these associations vary as individuals go from early to late adolescence.

In sum, all situational criminogenic features included in this study, except for time spent in neighborhoods with low collective efficacy, were significantly associated with offending and/or victimization in at least one regression model. This supports the notion that situational features are associated with offending and victimization. However, the prevalence of offending and victimization, and the time spent in criminogenic exposure vary over time, as does the statistical significance of the associations between the exposure and the outcome variables. Moreover, offending and victimization are not generally associated with the same independent variables in many regression models (see table 4), thus, age and type of outcome seem to be important factors to consider when studying situational criminogenic exposure.

The findings in relation to previous research

The findings revealed different trends in prevalence of offending and victimization during the three data collection waves, and, therefore, it is here suggested that offending and victimization must be studied as two separate phenomena. Also, the exposure variables changed from early to late adolescence, resulting in a need to consider age as an important factor when studying criminogenic exposure.

Spending a high amount of time unsupervised was associated with both offending and victimization at age 14-15, and with victimization at age 16-17. This connection was also evident when including all independent variables in one model (offending at age 14-15). These results support prior research that showed an association between being unsupervised, and offending (e.g. Osgood et al., 1996; Wikström et al., 2012; Bernasco et al., 2013) and victimization (e.g. Averdijk & Bernasco, 2015). Still, the absence of associations between time spent unsupervised, and the outcome variables at age 18-19, calls for attention. Spending time unsupervised became more common as the participants grew older, which may be interpreted as if supervision becomes less important as a situational feature over time. In other words, spending time unsupervised becomes more normative as adolescents grow older, and it can thus no longer be used to differentiate between those who do or do not offend or get victimized.

The findings in this study regarding unstructured activities are somewhat difficult to discuss in relation to previous research, because, in some age groups, the strongest relation to the outcome variables occurred for the group with a *medium* amount of exposure, suggesting a possible curvilinear relationship. Still, both when included separately and with all independent variables simultaneously, spending a lot of time in unstructured activities was related to offending (age 16-17 and age 18-19). Thus, these findings are, to some extent, consistent with the results in previous studies (e.g. Osgood et al., 1996; Osgood & Anderson, 2004). When analyzed separately, spending a lot of time in unstructured activities was also associated with victimization in all age groups, however, when including all independent variables in one model, this relationship only remained significant at age 18-19. Nevertheless, there seems to be a relationship between unstructured activities and victimization, which is consistent with previous research (e.g.

Maimon & Browning, 2012). Time spent in unstructured activities was the situational feature that was most often significantly associated with the outcome variables in the regression models, thus, adolescents' activities appear to be important regardless of their age. However, the possible curvilinear relationship deserves some attention in future studies.

Spending many hours in presence of peers was only significantly related to offending and victimization at age 16-17. This was evident both when included separately and with all independent variables included simultaneously. The connection between time spent with peers and offending is supported by previous research (e.g. Osgood et al., 1996; Warr, 2002; Haynie & Osgood, 2004). This study also found a similar relationship between time spent with peers and victimization, and this too is supported by previous research (e.g. Averdijk & Bernasco, 2015). However, the fact that peers only had an impact in one age group (16-17) may be interpreted as supporting other studies that have not found a direct link between time spent with peers and offending (e.g. Svensson & Oberwittler, 2010; Weerman et al., 2013). This is also the case in regards to victimization, as studies have shown (e.g. Schreck, Fischer & Miller, 2004; Maimon & Browning, 2012) that the relationship between peers and victimization is somewhat more complicated (e.g. dependent on other factors such as peer characteristics). Another interpretation, of course, is that peer influence is most important for offending and victimization during mid-adolescence – a period in which most Swedish adolescents go through a transition from elementary school to high school, and new friendships and other social relations are formed.

The finding that spending time in areas with low collective efficacy was not associated with offending or victimization in any regression model, is somewhat more difficult to explain. Previous research has found strong support for a connection between low collective efficacy and offending (e.g. Sampson, Raudenbush and Earls, 1997; Sampson & Raudenbush, 1999; Morenoff, Sampson & Raudenbush, 2001) as well as victimization (e.g. Maimon & Browning, 2012). This study, however, did not control for where the participants live which may explain the absence of any significant associations between low collective efficacy and the outcome variables. It is not unlikely that out of all hours spent in neighborhoods with low collective efficacy, many of them were spent at home and in traditional non-criminogenic settings. Still, other studies (e.g. Sutherland, Brunton-Smith and Jackson, 2013) did not find a connection between low collective efficacy and offending, thus, the findings in this study may be accurate regardless of the methodological limitations.

The findings are also important to discuss in relation to the effect that low collective efficacy may have on the other independent variables. Maimon and Browning (2010) found that unstructured activities, as well as being unsupervised, vary on a neighborhood level, and that low collective efficacy may result in less prevalence of these situational criminogenic features. For instance, Maimon and Browning (2010) argue that adolescents in areas with low collective efficacy are more controlled by their parents, and therefore, less prone to become engaged in unstructured and unsupervised activities. Moreover, Maimon and Browning (2010) found that as collective efficacy increases, the positive effect of unstructured socializing on violent behavior decreases. Consequently, it is important to bear in mind the complexity of the relationship between collective

efficacy and other situational features, and thus, multilevel analyses should be employed in similar studies in the future.

When included separately, alcohol use was associated with offending at age 14-15 and 18-19, and victimization at age 14-15 and 16-17. However, when included in regression models with the other independent variables, alcohol use only showed a significant association in one of these groups (offending at age 14-15). Previous research has found a connection between alcohol intoxication and offending (e.g. Felson & Staff, 2010; Bernasco et al., 2013) and victimization (e.g. Averdijk & Bernasco, 2015) which validates the finding in this study that alcohol, in some regression models, had a significant association with offending and victimization. Importantly, alcohol use correlated with being unsupervised in each age group, therefore, one may argue that alcohol is a result of exposure (being unsupervised) and is, thus, an outcome rather than a situational criminogenic feature (as e.g. Osgood et al., 1996 suggest). Nonetheless, since alcohol use showed an association with the outcome variables in some models which included all other independent variables (including unsupervised), one may still argue that alcohol use is an important situational criminogenic feature.

In sum, the findings in this study are to some extent consistent with findings in other studies. All independent variables, except for spending time in areas with low collective efficacy, were significantly associated with the outcome variables in at least one of the regression models. It is here thus argued that offending and victimization are related to situational criminogenic features. However, there were many inconsistencies *within* the age groups. For instance, at age 14-15, when included in the full regression models, alcohol use was only significantly associated with offending, while spending a medium amount of time pursuing unstructured activities was only significant in relation to victimization. Moreover, there were also inconsistencies *between* the age groups studied because no exposure variable was significantly related to the outcome variables in all age groups. Thus, it is essential to highlight that the associations between each situational exposure variable and the dependent variables vary according to outcome, and in relation to age group. The use of data collected at different points in time was vital in order to reveal these findings, and more similar research is needed in order to confirm the validity of these findings.

The findings in relation to the theoretical framework

While previous research is helpful in order to validate the findings in this study, the L-RAT perspective on offending and victimization provides a possible way of understanding why situational features are associated with offending and victimization. Although it is not the study's aim to explain the selection processes that put people in different situations, it is still likely that differences in lifestyle and routine activities can account for some of the individual variations in exposure to criminogenic situations. Of the various elements of L-RAT presented by McNeeley (2015), the two elements connected to offending (guardianship and co-offending) and two of the cornerstones that are linked to victimization (exposure in terms of visibility or accessibility to offenders and guardianship) are the ones most closely related to the situational features in this study. L-RAT cannot fully explain the findings but it is here employed in order to shed light on a few important aspects.

The most important finding in this study is that there are many inconsistencies between the findings for each data collection wave. These inconsistencies support the suggestion by Henson et al. (2010) to develop an age-graded L-RAT. Henson et al. (2010) argue that differences in adolescent and adult lifestyles may explain why some situational features only have a criminogenic impact at one age but not the other. In this study, alcohol use may serve as an example of a situational criminogenic feature that seems to be age-dependent. Alcohol use had its strongest association with the outcome variables at age 14-15 which may indicate that at age 14-15, alcohol use is a stronger marker of a risky lifestyle than at later adolescence when alcohol use becomes more common. Another finding that supports the suggestion of incorporating age in the L-RAT framework is that the age-crime relationship in this study indicates that the prevalence of offending and victimization varies during adolescence. Moreover, the exposure variables change from year to year (e.g. the participants spent more time unsupervised as they grew older), indicating that age plays an important role for understanding criminogenic exposure. Furthermore, the suggestion by Henson et al. (2010) of an age-graded L-RAT may be consistent with the findings in this study in one interesting but still relatively unexplored way; the variations in importance over time for the exposure variables in relation to offending and victimization suggest that there is a need to better understand why various situational factors should be expected to affect individuals' behavior *regardless* of their age. This is not a simple question to answer and it lies beyond the aims of this study. However, the finding that the relationship between situational criminogenic features and offending and victimization may be age-dependent even within the adolescent years, indicate that a theoretical framework is needed that explains why age is important for understanding criminogenic exposure. An age-graded theory that differentiates between adolescence and adulthood, as suggested by Henson et al. (2010), is important but perhaps it is even more important to study differences within the adolescent years as these years are important from a developmental perspective.

The at times decreasing presence of significant associations between the exposure variables and offending and victimization over time does not necessarily result in claims of reduced importance of situational criminogenic features over time. The influence of criminogenic exposure may, however, need to be revised and broadened to fully capture its complexity over the years in this (and other) studies. For instance, if the exposure to some criminogenic features becomes more normative (i.e. it may not be defined as related to a risky lifestyle, such as time spent unsupervised) from early to late adolescence, it may be argued that these features are age-dependent and thus irrelevant to use as situational criminogenic features at older ages. Again, this is not to suggest that situational criminogenic exposure in general becomes less important as adolescents grow older, but perhaps other situational features should be examined in the later stages of adolescence because these may do better in explaining situational offending and victimization through differential lifestyles and differential routine activities. It is thus here suggested that studies of situational features that are proposed as criminogenic need to consider the age-relevant aspects of that feature. For instance, the above mentioned example of alcohol use demonstrates the age-relevant properties of alcohol use and the norms surrounding its use. There is no reason to believe that other situational features do not contain age-relevant aspects as well.

Despite the many inconsistencies and the many potential interpretations of the findings, the specific associations between the situational criminogenic features and the outcome variables can still, to some extent, be understood within the L-RAT framework. The simplest L-RAT explanation of offending and victimization in relation to being unsupervised is that individuals spending much time unsupervised are more likely to also spend time in situations where they act as motivated offenders or suitable targets. Thus, an unsupervised individual is more likely to offend and/or become victimized because there is no one present to interfere against the criminal act. However, as was discussed previously, time spent unsupervised is less associated with offending and victimization as adolescents grow older, thus suggesting that it is an age-dependent situational criminogenic feature. Importantly, this is not to say that supervision is not important in situations in which crimes are committed and victimization occurs (i.e. the fundamentals of L-RAT should not be rejected). The findings may, however, suggest that as adolescents spend an increasing amount of time unsupervised when they go from early to late adolescence, it loses its role as a significant indicator of a risky lifestyle. In other words, spending much time unsupervised is a natural part of adolescents' social development and therefore, it goes from being a criminogenic influence to a more natural part of adolescents' everyday life.

Although somewhat difficult to interpret because of its possible curvilinear relationship with the outcome variables, spending a high amount of time in unstructured activities was related to both offending and victimization in some regression models. Unstructured activities may reflect a lifestyle in which there is generally more time to commit crimes and to get victimized because these activities' certainly have room for something to occur. However, the fact that belonging to the group that spent a medium amount of time in unstructured activities was also related to offending and victimization in some age groups, may be interpreted as if spending a *low* amount of time pursuing unstructured activities (the reference category) is highly protective against offending and victimization, thus reflecting a low risk lifestyle. This is rather speculative but needs to be considered in future studies. Moreover, it could have been useful if the broader category of unstructured activities was collapsed into smaller categories of unstructured activities in this study. It is not unlikely that only some of all unstructured routine activities are related to offending and victimization.

Time spent with peers only had a significant association with offending and victimization at age 16-17 but this association was rather strong. From an L-RAT perspective, peer influence may be perceived as a marker of a risky lifestyle that is related to offending (co-offending) as presence of peers may have the effect as both a facilitator for committing crimes and as an audience that can be impressed by the criminal act. The significant association between spending much time with peers and victimization is somewhat more difficult to explain through L-RAT. A possible explanation is that many risky situations are likely to occur when spending time with friends, such as going to places at night where one is more visible and accessible for offenders and where there is a lack of guardianship. Nonetheless, peer influence on victimization needs to be examined more closely in the future.

Spending much time in neighborhoods with low collective efficacy was neither associated with offending nor victimization but this finding may, as was discussed

earlier, be an artifact of a methodological shortcoming. Within L-RAT, spending time in areas with low collective efficacy (e.g. where guardianship is weak and targets are more attractive to offenders) could be viewed as a marker of a risky lifestyle but one does not generally choose where to live during adolescence which explains the absence of associations between spending time in areas with low collective efficacy and the outcome variables. Future L-RAT studies need to look further into the role of time spent in neighborhoods with low collective efficacy as a potential marker of a risky lifestyle.

Alcohol use may undoubtedly be defined as a marker of a risky lifestyle and this is perhaps most pronounced at lower ages (i.e. alcohol use becomes more normative as adolescents grow older). Consequently, from the L-RAT perspective, there is no surprise that alcohol use was related to offending and victimization in some regression models. However, the variable in this study only measures alcohol use and not alcohol intoxication, thus we do not know anything about the potential nuances within alcohol use (low or high alcohol consumers, binge drinking etc.) and their relation to offending and victimization. Perhaps alcohol consumption needs to be studied more in depth in order to increase the knowledge on what ways it can be related to risky lifestyles and differences in routine activities.

A wider perspective on situational criminogenic exposure

Looking back at the wider field of environmental criminology, the findings indicate that different aspects of situations may be important if we want to explain why offending and victimization do not occur randomly. It seems like it is possible to examine the situational aspects of offending and victimization by using the same variables, although these variables do not reveal an identical pattern for both outcome variables. This fact calls for a need within criminology to treat offending and victimization as two different, yet related concepts.

If more is known about the situational aspects of offending and victimization, policy implications may contribute to a reduction of opportunities of offending and victimization, resulting in a reduced level of offending and victimization. Still, with the findings of this study at hand, the potential policy implications are rather limited. The study's exploratory approach, with its rather simple measurements of situational criminogenic exposure, may instead call for a need to develop future studies that can lead to a better understanding of the relationship between situational criminogenic features, offending, victimization, and age. If future research better examines these relationships, it may be possible to find situational prevention initiatives that work effectively in reducing offending and victimization.

Finally, situational criminogenic features has in this thesis been defined as something highly negative for individuals' behavior. Although beyond the scope of this study, it could be argued that, for instance, spending time unsupervised, pursuing unstructured activities, and spending time with peers, are natural and important aspects of learning to become an adult. Thus, the at times weak or absent associations between the exposure and the outcome variables in this study may be true because situational criminogenic exposure is a natural part of adolescent life, regardless of involvement in offending and victimization. This is also important because the group that was least exposed to criminogenic settings was the reference group, thus suggesting that these adolescents lead the most

normative lives. In fact, the least exposed adolescents may suffer from their lack of encountering rather common adolescent life situations, such as being unsupervised and pursuing unstructured activities. Although speculative, the low exposure group may contain individuals that are less likely to offend or become victimized, but they may at the same time be at higher risk of other negative outcomes such as mental ill-health or low self-esteem. Future studies within MINDS and elsewhere should look into these possible alternative outcomes that one may at first not think of as related to (the absence of) situational criminogenic exposure.

Limitations

There are several limitations to this study that need some attention although the ones mentioned here are not exhaustive. First, the sample was based only on those individuals that participated in all data collection waves in MINDS. Individuals may have been excluded that are significantly different from the ones included. Future studies are thus needed in order to validate the findings in this study and to confirm their generalizability. Importantly, this study's inclusion criteria made it possible to examine the differences within the *same* group of individuals over time which makes the findings more solid as the differences between the age groups studied cannot be an artifact of sample bias. Thus, what is lost in generalizability (small sample, possibly biased) is gained by the possibility to make safe assumptions about changes over time in the age groups that were being studied (sample consistency).

Another limitation is that this study relies exclusively on self-reported data which is related to some general issues such as participants' inability to recall events, perhaps especially if these are traumatic, and simply that people forget when events occurred. Still, self-reported data has become more reliable over the years and is now perhaps the most common data source of delinquency (Krohn, Thornberry, Gibson & Baldwin, 2010).

As was mentioned earlier, this study's measurement of collective efficacy did not account for where the participants live and it was therefore difficult to draw any conclusions regarding exposure to neighborhoods with low collective efficacy. However, there are several other issues regarding the use of collective efficacy. For instance, the variations in collective efficacy within neighborhoods may be greater than between neighborhoods (Sutherland, Brunton-Smith and Jackson, 2013) and a study by Hart and Waller (2013) revealed that perceived and census boundaries of neighborhoods do not correspond well. With these issues in mind, future studies may need to examine how the neighborhood, as a unit of analysis, is best defined.

A last but very important limitation is that, although purposely, gender was not controlled for in the current study which is clearly a variable that needs to be examined in future studies as there is overwhelming research that men are much more likely to offend than women. Research within L-RAT has also shown that gender is a major factor in explaining variations in victimization (Mustaine, 1997). Research on gender differences in relation to victimization have for instance revealed that men are at greater risk of becoming victimized at work (Mustaine, 1997), that women are more at risk of being harassed on the internet (Holt & Bossler, 2008), and that adolescent women are less likely to be victimized by minor violent crimes than men (Henson et al., 2010).

CONCLUSION

This study revealed that the situational criminogenic features included, except spending time in neighborhoods with low collective efficacy, are related to offending and victimization. However, the impact of each situational variable varies over time and according to outcome (offending and victimization). Thus, the two conclusions are that (1) offending and victimization should be treated as two different, yet related concepts in relation to situational criminogenic exposure, and that (2) it is important to add an age dimension to the study of criminogenic exposure. Future studies should further refine the measurements employed in this study and try to develop age-relevant measurements of situational criminogenic exposure.

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APPENDIX 1

Space-time budget interview guide

MINDS-ID:		Day: _____										
Hour	Geo. loc.	Place	Activ-ity	With whom	Extra incidents:							
					Truancy (school)	Truancy (work)	Alcohol/ drugs	Risk situation	Victimi-zation	Offen-ding	Weapon	
06												
07												
08												
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APPENDIX 2

Table1. Descriptions of dependent variables

<i>Variable description</i>	<i>Data source</i>	<i>Items at age 14-15</i>	<i>Items at age 16-17</i>	<i>Items at age 18-19</i>
Offending (yes/no). Answering “yes” on at least one item = offending	Interviewer-led questionnaire	1. Have you, during 8 th grade, stolen anything from another person? 2. Have you, during 8 th grade, used a weapon, hit, or threatened to hurt someone, to take money or other things from them? 3. Have you, during 8 th grade, hit someone or kicked someone (resulting in physical harm to the other person)?	1. Have you, during 9 th grade, stolen anything from another person? 2. Have you, during 9 th grade, used a weapon, hit, or threatened to hurt someone, to take money or other things from them? 3. Not counting events when you took money or other things from someone, have you during 9 th grade beaten up or hit someone (for example punched, stabbed, kicked or head-butted someone)?	1. Not counting events in which you broke into a car, house or non-residential building or shop-lifted, have you during 2013 stolen anything from another person? 2. Have you, during 2013, used a weapon, hit, or threatened to hurt someone, to take money or other things from them? 3. Not counting events when you took money or other things from someone, have you during 2013 beaten up or hit someone (for example punched, stabbed, kicked or head-butted someone)?
Victimization (yes/no). Answering “yes” on at least one item = victimization	Interviewer-led questionnaire	1. Have someone, during 8 th grade, stolen anything from you or robbed you? 2. Have someone, during 8 th grade, kicked or hit you, resulting in physical harm to you?	1. Have someone, during 8 th grade, stolen anything from you or robbed you? 1. Have someone, during 9 th grade, kicked or hit you, resulting in physical harm to you?	1. Have someone, during 8 th grade, stolen anything from you or robbed you? 2. Have someone, during 2013, kicked or hit you, resulting in physical harm to you?

Table 2. Descriptions of independent variables

<i>Variable description</i>	<i>Data source</i>	<i>Items</i>	<i>Inclusion criteria</i>
Unsupervised. Spending an awake hour while not on holiday for 48 hours or more without any adult supervision	Space-time budget interview	1. Space-time budget interview guide category “with whom” (see appendix 1)	Absence of any supervising adults
Unstructured activity. Spending an awake hour while not on holiday for 48 hours or more pursuing an unstructured activity	Space-time budget interview	1. Space-time budget interview guide category “activity” (see appendix 1)	Activities of which most are defined as media consumption (e.g. watching TV) or socializing (e.g hanging around)
Presence of peers. Spending an awake hour while not on holiday for 48 hours or more with peers and/or partners being present	Space-time budget interview	1. Space-time budget interview guide category “with whom” (see appendix 1)	Presence of peers and/or partners
Low collective efficacy. Spending an awake hour while not on holiday for 48 hours or more in an area with low collective efficacy	Community survey ²	<p>Social cohesion: Level of agreement (0-4) on the following statements:</p> <p>1a. People in this neighborhood generally get along with each other</p> <p>1b. People around here are willing to help their neighbors.</p> <p>1c. People in this neighborhood can be trusted.</p> <p>1d. This is a close-knit neighborhood.</p> <p>1e. People in this neighborhood share the same values.</p> <p>Informal social control: Likelihood (0-4) that neighbors could be counted on to intervene if:</p> <p>2a. Children were skipping school and hanging out on a street corner.</p>	The 25 % of neighborhoods that reported the lowest level of collective efficacy which was created by constructing an index of items 1a-e (social cohesion) and items 2a-e (informal social control).

² The items were described in Swedish by Ivert et al. (2013) but as these are based on the work by Sampson, Raudenbush and Earls (1997), they are here included in its original language. However, the somewhat different structure of the items in this Swedish version (sometimes not equal in terms of negations in items or not), has been accounted for and are here presented as in the Swedish version.

		2b. Children were spray-painting graffiti on a local building.	
		2c. Children were showing disrespect to an adult.	
		2d A fight broke out in front of their house	
		2e. Someone tried to break into a car that was parked in front of your house ³	
Alcohol use. Drinking any alcoholic beverage during an hour while not on holiday for 48 hours or more	Space-time budget interview	1. Space-time budget interview guide category "alcohol/drug use" (see appendix 1)	Drinking any alcoholic beverage

³ The only item that is completely different from Sampson, Raudenbush and Earls (1997) original measure