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# **COMPARING SWEDISH ADOLESCENTS' CRIMINAL INTENTIONS AND ACTUAL CRIMINAL BEHAVIOURS: DO THEY CORRESPOND?**

- A TEST OF THE SITUATIONAL ACTION  
THEORY

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It is of importance to direct resources to prevention since crime is costly both for the offender, possible victims and of society and its citizens at large. In general, prevention programs and the types of interventions are not well understood. It is therefore of necessity to find and study potential causal mechanisms that could aid and enable better preventive measures. This study investigates such mechanisms by testing one of the key aspects of the Situational Action Theory: the perception-choice process. This study relies on data gathered within the frames of Malmö Individual and Neighbourhood Development study (MINDS). Through scenario research and self-reported crime data the correspondence between criminal intentions and actual criminal behaviours are investigated. Relevant personal and situational characteristics are examined in order to provide insights about crime propensity and the role of motivation and controls in intended and actual action outcomes. The result show that Swedish adolescents' criminal intentions correspond with self-reported actual criminal behaviours to a large extent. The result further indicates clear tendencies of correspondence between level of propensity and prevalence of criminal intentions and actual criminal behaviours.

*Keywords:* Adolescents, crime propensity, criminal intentions, criminal behaviours, perception-choice process, scenario research, situational action theory.

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## INTRODUCTION

The Swedish Ministry of Justice and the Swedish Prison and Probation Service have estimated that every year 500 individuals under the age of 21 are sentenced to prison, and 1400 are sentenced to probation (Justitiedepartementet, 2013). In itself, the reported numbers may not be strikingly high in comparison to international levels. Estrada and Flyghed (2013) noted that youth crime appears to be one of the most central and commonly raised issues within both criminology and the Swedish society. Furthermore, the social and societal costs of youth crime are massive. Those who continuously come in contact with the justice system are at risk of developing a chronic pattern of offending, and even more concerning: criminal careers or lifestyles (Brå, 2000: 5; Torstensson Levander, 2013). One can broadly differentiate between two patterns of criminal activity; one that is temporary during adolescence, and; one that persist after adolescence and often, but not always, have been expressed already in childhood (Andershed & Andershed, 2010). Some researchers, like Moffitt, consider youth crime to be common, relatively transient and near normative (Moffitt, 2003; Moffitt, 1993). Others on the other hand, have another point of view. Hoffman, Knox and Cohen (2011) argue that though many regard crime, such as violence, to be an unavoidable element for youth, years of development and prevention suggests the opposite.

To study juvenile delinquency and crime at an early age does therefore seem urgent. Of specific interest in this thesis is to study the mechanisms of perception, choice and decision-making in criminal acts. Wikström's Situational Action Theory of Crime Causation (SAT) is therefore the analytical framework of this thesis. Briefly, SAT proposes that contemporary urban crime pattern can be explained through social dynamics that are created through an interaction between individuals and the environment. The interaction that the theory proposes creates different situational dynamics (perception-choice processes) that enables an explanation of varying intersections of kinds of people and environments in different parts of the city at different times of the day. Some of these varying intersections are supposedly more likely to result in crime, subsequently supporting an explanation of concentrations of crime in time and space.

Actions are the result of the interaction of relevant personal and environmental factors that initiate a causal process (Wikström et al., 2012). In SAT, as in this study, the relevant personal characteristics are an individual's *crime propensity*. Crime propensity is constituted by a person's morality and ability to exercise self-control- and this composition varies between people. It is therefore possible to study groups of people with varying levels of crime propensity, and how this relates to decisions in both intentional and actual criminal behaviour. In criminology, there is little research about decision-making in general. This study aspires to tap into to the specific process in decision-making, namely the perception-choice process. According to Van Damme and Pauwels (2015) the perception-choice process has only been tested in a restricted amount of studies. In fact, there are very few empirical tests of this process. However, those studies that have tested this processes has relied on experimental research to investigate the workings of the mechanism (Van Damme & Pauwels, 2015; Wikström et al., 2012).

In this study, Swedish adolescents' will be studied at two points in time, one where they are aged 15-16 respectively 16-17. The study will undertake a rather uncommon way of studying youth crime, namely through a factorial scenario research and additionally utilize self-reported crime data to study actual criminal

behaviours. In scenario research it is rarely possible to link behavioural intentions to actual behaviours. However, this study is inspired predominantly by the findings from the Peterborough Adolescent and Young Adult Development Study (hereafter PADS+) presented by Wikström, Oberwittler, Treiber and Hardie (2012) and also findings presented by Haar and Wikström (2010) and Van Damme and Pauwels (2015). Wikström and his colleagues (2012) could in their scenario research link approximately 700 adolescents' reports of criminal behavioural intentions to their actual behavioural outcome. The study found that adolescents who reported criminal behavioural intentions were more likely to have self-reported acts of crime and additionally to have a police record. Individuals with high crime propensity were more likely to report both intentional and actual crimes.

The utilized data in this study has been gathered within the frames of the Malmö Individual and Neighbourhood Development Study (MINDS). MINDS is a replication of PADS+ and studies adolescents' individual development and changes in exposure to different settings (Haar & Wikström, 2010). The objective of MINDS is to "contribute to the understanding of the causes and prevention of young people's crime involvement" by "studying the interaction between individual characteristics and experiences and the features of the environments in which young people interact" (Torstensson Levander, Svensson, Ivvert, Andersson & Pauwels et al., 2015: 7). The data in MINDS has been obtained using the same methods as in PADS+. This facilitates the possibility of exploring the Swedish data in similar ways. This study will therefore replicate, to the extent it is possible, the method utilized by Wikström et al. (2012) in their scenario research to investigate if Swedish adolescents' criminal intentions can be linked to their self-reported actual criminal behaviours.

### **Aims, Purpose and Research Question**

The overarching aim of this study is to contribute to the predominant objective of MINDS. Since this study relies on scenario research, individual characteristics are explored through differences in crime propensity whereas the features of the setting are simulated through the scenarios in an attempt to study the interaction between individuals and their environment. The more specific aim of this study is to explore how Swedish adolescents respond to hypothetical situations where crime is a possible action alternative, and further if these intentions correspond with self-reported crime data of similar crimes. The purpose of investigating if it is possible to link adolescents' reports of criminal intentions to their actual criminal behaviours is to contribute with insights of potential causal mechanisms. Hence, the guiding research question is;

- Do criminal intentions correspond to self-reported actual criminal behaviours among Swedish adolescents'?

### **Delimitations of the Study**

The main delimitation of this study is that it only test a part of SAT, namely the perception-choice process. According to Wikström et al (2012) the design of the scenario research facilitates the possibility to tap into this process, however, this does not measure the perception-choice process directly. At present time there is no way of analysing how complex thought processes work in neuroscience (Van Damme & Pauwels, 2015).

## **Relevance of the Study**

It is of importance to direct resources to prevention since, as will be described, crime is costly both for the offender, possible victims and of society and its citizens at large. In general, prevention programs and the types of interventions that are most effective are not well understood. Therefore it is of interest and of necessity to find and study potential causal mechanisms that could aid and enable better preventive measures. The primary delimitation of the study can also be considered the biggest strength of this study. To test the situational process (the perception-choice process) of SAT can provide insight about the causal mechanisms that come into play in decision-making. Usually, it is hard to untangle how the impact of different situational factors affects the decision-making process and thereby capture individual differences. It is important to remember that this is not a measure of the perception-choice process but rather an attempt to study individuals who differ in their crime propensity to settings that differ in the criminogenicity- and observe the interaction. Previous research has been conducted on the perception-choice process and violent scenarios. This study additionally tests the relation between this process and moral judgements through scenario research. The study will also investigate individual differences in terms of levels of crime propensity. This is of utmost importance since individuals with high crime propensity have been found to commit more crimes. It is therefore a greater risk that these youth will develop a more persistent pattern of offending after adolescence and continue to offend and engage in deviant behaviour. To study differences in propensities is important in developing effective preventive measures. That such measures are effective is not only rewarding for the offender, it is also cause for reduction in the substantial amount of both social and societal costs that crime entails.

## **BACKGROUND**

### **Previous Research**

Three empirical studies that have tested the perception-choice process through scenario research should be given attention as they have provided substantial contributions in understanding the mechanism. Naturally and as previously mentioned, Wikström and his colleagues work (2012), which this thesis relies on, will be presented and referred to throughout the thesis. However, two other studies should also be mentioned that utilize scenarios that originally was developed in PADS+. The scenarios will be more thoroughly outlined in a later section, however it should be mentioned that the relevant variables are the individual characteristic crime propensity whereas the situational characteristics are provocation and monitoring which together composite the criminogenic exposure.

Firstly, Haar and Wikström (2010) utilized scenario data from PADS+, but the analyses were conducted using a different statistical modelling than in 2012. They used the more conventional logistic model and further the Rasch model. The results of the both models showed that the extent to which youths indicated a violent response were dependent on levels of propensity and levels of criminogenicity. The first model, which is the method that will be utilized in this thesis, was the logistic model. It was used to determine crucial intervening variables in violent responses. The logistic model showed that both individual and situational variables had a strong significant influence on the reaction of a violent or non-violent response. It indicated that the observed probability of a violent



response increased with higher levels of provocation, and the probability of reporting violent intentions decreases when there is an increase in monitoring. The second model, the Rasch model, was used to describe “a useful shorthand conception” (Haar & Wikström, 2010: 321). Haar and Wikström (2010) called this method a probabilistic ‘risk assessment’ through the analysis of unidimensional interplay of individual propensity and criminogenic exposure. It was concluded that they are two comprehensive variables, and that the analysis suggested that in terms of causation of violent responses, the interaction between individual propensity and criminogenic exposure was sufficient empirically meaningful for the scenarios and the sample. The result of the Rasch model corresponded with the logistic model, and also the findings presented by Wikström et al. (2012). For a more elaborate description of the model and how the variables were used, see further Haar and Wikström (2010).

And secondly, Van Damme and Pauwels (2015) gathered new data with n=1040 participants through an online survey that was created specifically for this purpose. Using scenarios that had been developed for PADS+ they made a partial replication of the methodology utilized by Wikström et al. (2012). Though, it should be noted that their replication was far more extensive than the one conducted in this study. They found what they describe as a “clear trend” in their study, namely that “the proportion of participants that choose a violent response over a non-violent response increases by level of propensity” throughout various analyses (2015: 53). The result also indicated that levels of provocation in the scenario made a strong and significant increase in the likelihood of reporting violent intentions. High monitoring appeared to have less of an effect on individuals with high propensity. These findings are not just important in explaining how individuals make decisions, it is also important for society and its citizens at large. If it would be possible to gain a greater understanding of decision-making, it would also be easier to direct intervention and preventative efforts of crime to decrease both social and societal costs of crime.

### **The Social and Societal Costs of Youth Crime**

Young offenders are typically versatile in their offences. Even those who engage in violent crimes are more frequently conducting non-violent crimes and young people rarely specialize in one type of crime. The onset for different types of offending seem to occur at distinctively different ages, moving from shoplifting to burglary to robbery, with additional new types of offending until the age of 20, afterwards it is more common to specialize in an area of criminal activity. Understanding why, and how, patterns of crime develop over time is thus of essence. Hilterman, Nicholls and Nieuwenhuizen (2014) concludes that it “can contribute to a significant reduction of the emotional, social, and economic costs of juvenile offending” (2014: 324). This can also prohibit or deter individuals from lifelong antisocial behaviour or developing deviant pathways or criminal careers. Evidence indicates that youth violence is serious and an expensive social problem. It leads to huge personal costs of the victim (and offender) and it requires a significant portion of governmental resources (Meyers & Schmidt, 2008). Individuals that early in life express problematic behaviour have an increased risk of expressing deviant behaviour throughout life. Such behaviour have been found to be related to social issues related to economy, housing and drug addictions later in life and continuously being involved with the justice system. Such findings direct attention to the fact that violence and crime may not only hurt the youth who are engaging in it, but also the collateral effect on the

family, the community and the broader society (Nilsson, 2013: Andershed & Andershed, 2010; Hoffman et al., 2011).

For the Swedish society crime is extremely costly. Two Swedish economists, Nilsson and Wadeskog (2012), conducted an average calculation of the socioeconomic costs of violence in Sweden. They describe each and every component that produces actual costs for society (e.g. via employment service, justice system and municipality) as a result of violent crimes. Of specific interest is the cost estimation for a single person conducting a, or several, violent crime(s). In their report, Nilsson and Wadeskog proposed different calculated scenarios and the accumulated costs for society. If *a single person* is sentenced to prison once and is assumed to have issues adapting to society afterwards, for example through marginalisation in the labour market, it is estimated to cost 5.7 million SEK over a 45 year period.<sup>1</sup> If the person were to develop a criminal career/lifestyle and was convicted every third year, the cost increases to over 9 million SEK over a 45 year period. However, if a person were sentenced to prison and thereafter did not engage in any future criminal activity the cost would decrease to 1, 200 000 million SEK since the cost were estimated to only affect a two year period. The cost would decrease even further to 109 000 SEK if an individual were sentenced to (supervised) probation and abstained from criminal activity afterwards (Nilsson & Wadeskog, 2012). The above directs immediate and legitimate attention to the statement “the need to prevent and intervene in youth violence is self-evident” (Meyers & Schmidt, 2008: 344).

### **Most Crimes are Committed by a Small Proportion of People**

Even though research consistently indicates that engagement in criminal activity in adolescence is common and often subsides when entering adulthood, the above described issues direct attention to those who continue with such behaviour. In Sweden, and on an international level, adolescents as a group are those who most actively engage in criminal behaviour in society. It is vital to remember that the over representation does not equal that youths commits most of the crimes, on the contrary: most crimes are committed by adults (Estrada, 2013). Previous research has indicated that those with high crime propensity more persistently engage in crime. Therefore it can be of interest to regard the following information, even though the research is not conducted based on propensity levels. In Sweden it is estimated that around 5% of those who commit crime during adolescence continue to do so after entering adulthood. This population commits a relatively large proportion of all crimes. In fact, a majority of all crimes are committed by a small portion of individuals that can be called chronic offenders (Andershed & Andershed, 2010; Torstensson Levander, 2013). Bergström (2003) reported that 2% of the entire population conducted 55% of all crimes. BRÅ (2014) estimated that 16 out of 10 000, a total number of 11 600 individuals in Sweden were highly active offenders<sup>2</sup>, responsible for 56% of all crimes. This is in consistency with other results, usually it is estimated that among males between 1,5 to 4% account for highly active chronic offenders in the population (Torstensson Levander, 2013: Andersson, Levander, Svensson and Torstensson Levander, 2012).

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<sup>1</sup> Similar estimates have been produced, for example in the U.S in a study conducted by Cohen in 1998 where it was determined that if a single high-risk youth was prevented from developing a criminal career it would save \$1.3 to \$1.5 million (Meyers & Schmidt, 2008).

<sup>2</sup> Defined as individuals over the age of 20, with at least 5 prior convictions within the last 5 years (BRÅ, 2014)

## **Rational Choice and Decision-Making**

In criminology there has been a great variety of theories attempting to explain crime, and why some people engage in crime more frequently, but few have focused on why individuals decide to carry out a criminal act. Cohen and Felson (1979) focused on the circumstances in which criminal acts are carried out, introducing their *Routine Activities Theory*. They identified three critical elements that had to occur simultaneously for a crime to be committed; a motivated offender, a suitable target (object or person) and the absence of a capable guardian. The aim of this theory is to explain how societal changes can impact upon opportunities for crime. When it was discovered that avoidance of risk and effort played a central role in target selection decisions made by the offender a new branch of criminology was developed and the first simple “choice” model emerged in the 1980s. This was later developed to what is called the *Rational Choice Theory* (RCT) (Cohen & Felson 1979; Clarke, 1997; Morgan, Boxall, Lindeman & Anderson, 2011).

RCT provided a more satisfactory basis by focusing on the individual decision-making process and the personal choice of engaging in criminal behaviour, including weighting the risks and rewards associated with offending in order to benefit from the crime. The theory posits that the primary cause of crime is self-interest and not an enduring disposition, meaning that a regular citizen may manifest this self-interest when faced with both temptation and opportunity (Morgan et al., 2011; Clarke, 1989; Clarke, 1997). The rational choice perspective and the routine activities approach are situational theories that stipulates that decision processes that lead to rule-breaking are rational in their nature. However, these rational choice approaches fail to specify how choices are made. The weight that has been given to the element of rationality in the concept of rational choice has also been criticised for being overemphasised. Van Damme and Pauwels state that SAT is to be considered “a powerful alternative to traditional rational choice theories” by providing a “groundbreaking contribution to our knowledge of criminal decision-making by pointing to the fact that the commitment of acts of crime is not the outcome of a process of choice, but a perception-choice process” (2015: 7).

## **THE SITUATIONAL ACTION THEORY**

*“Whatever the relevance of antecedent events and contemporaneous social conditions, something causally essential happens in the very moments in which a crime is committed”*

*J. Katz, (1988: 4).*

### **The Development of the Situational Action Theory**

The Situational Action Theory (SAT) was developed as an attempt to overcome a fundamental criminological shortcoming according to Wikström, namely the tendency of theorizing (and researching) the causes of crime as if the influence of personal and environmental factors were independent in acts of crime. This, according to Wikström is a mistake. The influences of these factors on acts of crime should not be regarded independently but as an *interaction*. If there is no account of the interaction, there can be no proper explanation of acts, of particular interest within criminology *acts of crime*. To enable such an explanation of acts of

crime, SAT advocates an understanding of the process (mechanism) that forms acts of crime (Wikström et al., 2012).

### **Explaining Crime as Moral Action**

The (lack of a) conceptualisation of crime raises concerns in criminology as theories of crime causation are not entirely clear on what they aim to explain (Wikström, 2006). Concerns have also been raised about the generalizability and truth of explanations for actions that differ to a great extent in both legal and subjective interpretations. However, the situational action theory aims to overcome these concerns through the focus of explaining *rule-breaking* instead of focusing on the many different kinds of *acts* that constitute crime. Rule-breaking is common to all crime, regardless of acts of crime, and accordingly it is possible to explain why individuals breach or act in compliance with rules of conduct (Wikström et al., 2012).

The key to explaining acts of compliance or breach of rules of conduct is approached through the concept of *moral*. Acts of crime are considered as moral actions- in turn, such actions are guided by *moral rules*. A moral rule serve as a rule of conduct that determines what is the right and the wrong thing to do (or not to do) in certain situations. The *law* is therefore regarded as a set of moral rules of conduct in SAT. Hence, “acts of crime are acts that breach moral rules of conduct stated in the law” (Wikström et al., 2012: 12). According to Wikström *moral rule-breaking* is to be preferred over concepts as “delinquency”, “antisocial behaviour” and “conduct disorder” because it is more clear and precise. This emphasises and enables an explanation of the *breaking* of rules that may vary by place and over time, something that should be explained by a theory of crime causation. This reasoning facilitates the advantage of accentuating what all crimes, in all places, at all times, have in common through the focus of identifying the causal mechanism in crime. The SAT is thus a general theory of crime as it attempts to explain all kinds of acts of crime (Wikström, 2006).

It should be noted that SAT does not aim to explain why rules of conduct exists, its interest is to explain why individuals follow or breach those rules (Wikström et al., 2012: 13). There are also a few exceptions of explanations of acts of crime made within the theory, those are: (1) *mistakes*, acts where the individual is unaware that they are breaking a moral rule defined in the law; (2) *accidents*, meaning unintentional activity, and lastly; (3) *children*, under the age of at which they have developed a clear sense of morality, which most likely vary between individuals (Wikström, 2006).

### **The Perception-Choice Process**

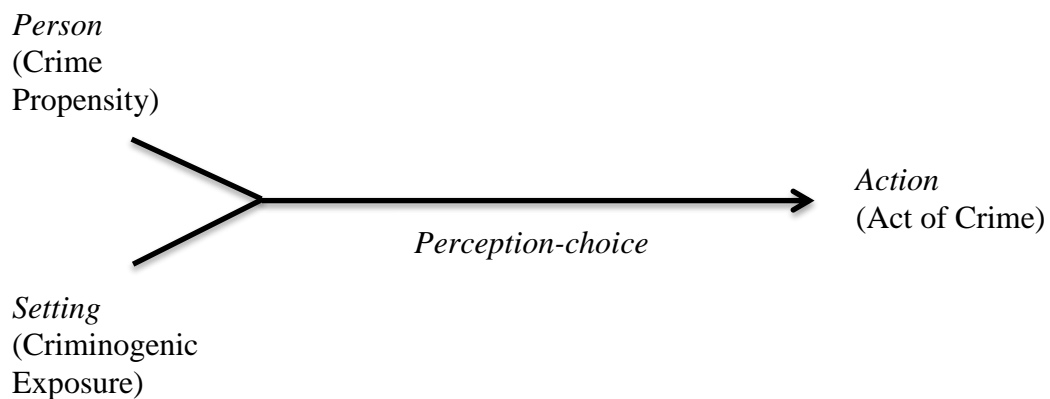
In order to explain acts of crime it is of necessity to understand the process (mechanism) that results in acts of rule-breaking. Similar to action theories, SAT details the process (the mechanism) that produces action. To properly specify the process that makes individuals act in one way or another is of importance to identify and determine which of all crime correlates that are causally relevant (Wikström et al., 2012; Wikström, 2006). An abundance of risk factors have been found in genetic, biological, psychological and social research (Wikström, 2004). Over a hundred specific variables have been found to correlate with violence alone (Douglas, Cox & Webster, 1999). This in itself creates a problem that for instance has been recognized by Matza in the following way “when factors become too numerous, we are in the hopeless position of arguing that everything matters” (Matza, 1964: 23-24).

On the contrary, one could ask if anything matters as Katz (1988) did and

instead proposed that the focus should be directed to the foreground rather than the background in the explanation of crime. However, Wikström advocates the need of acknowledging to the link between the background (genetic, biological, psychological and social factors) and how it may influence acts of crime through assessing its potential impact on the foreground (what causes people to act in a particular situation) (Wikström, 2004). Therefore, it is vital to identify which factors are causally relevant and not only those who are *markers* (factors merely correlated with causally relevant factors) or *symptoms* (factors merely associated with the outcome) (Wikström et al., 2012).

In SAT, the process that causes a person to make an *action* is termed *perception of action alternatives and process of choice*, henceforth referred to as the *perception-choice process*. The perception-choice process could be considered as a two-stage process in which “the perception of action alternative sets the boundaries for the choice process by providing the alternatives among which a person makes a choice” (Wikström et al., 2012: 17). SAT proposes that actions are an outcome of the perception-choice process which is initiated and guided by the *causal interaction* of (crime) *propensity* and (criminogenic) *exposure*. Influential factors that affect a person’s perception of action alternatives and process of choice, i.e. propensity and exposure, are *casually relevant factors* for the action. A causally relevant factor can be manipulated, and thereby change the relevant input for the perception-choice process and thus influence the choice of action (Wikström et al., 2012). The perception-choice process in SAT is outlined according to the model below;

Figure 1. The causes of the perception-choice process in crime causation (Wikström et al., 2012: 17).



The term *perception* has numerous different meanings depending on the nature of its philosophical paradigm. However, in SAT the meaning of perception is broadly interpreted as the information we get from our senses- this is the link between a person and the environment (Wikström et al., 2012). In psychology perception is described as “collectively, those processes that give coherence and unity to sensory inputs” (Reber, Allen & Reber, 2009: *Perception*). The link in SAT is constituted by such processes and these are physical, physiological, neurological, sensory, cognitive and affective components (Reber et al., 2009). Perception is thus the information obtained by senses, “and our knowledge- and experience-based interpretation, and moral evaluation, of this information” (Wikström, 2006: 81). As a result, perception is an outcome of the *interaction* between a person and the setting (Wikström, 2006).

Individual differences affect the perception; it becomes selective as it filters stimuli through personal characteristics (such as preferences) and previous experiences and hence, it does not solely depend on the features of the setting.

Thus, there are individual differences in how people attend, process and evaluate information. The outcome of the differences in this person-environment interaction is how the individual perceive the action alternatives, and this varies significantly between individuals. The varying responses to a particular motivator in a particular setting is dependent on the perception of the situation, and whether or not the individual perceive an action alternative that break rules of conduct. Understanding *why* people perceive situations differently, and as a consequence vary in the action alternatives, is an important step in explaining why people follow or breach rules of conduct (Wikström et al., 2012).

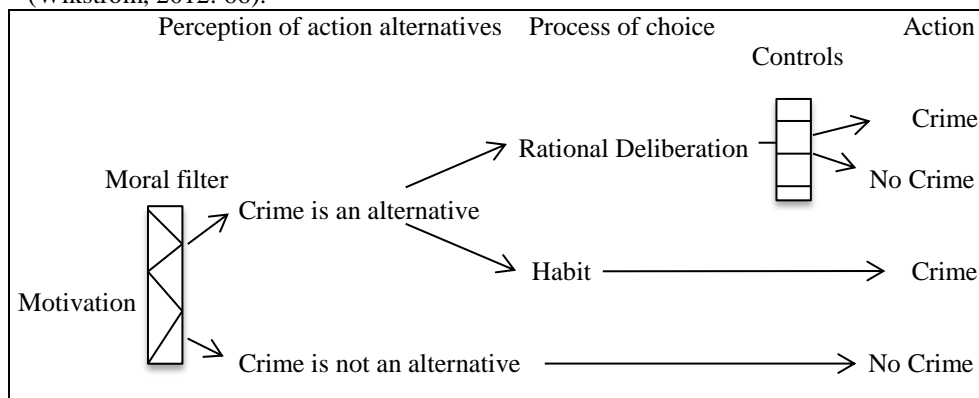
The perception of different action alternatives leaves the individual with the task of choosing an alternative. Wikström et al. describes this in the following way “a *choice* is the formation of an intention to act in a particular way” (2012: 18). However, intention and action is not the same thing. An individual may have an intention to act in a particular way, but for various reasons such as prevention or interruption, this intention may not be realized. In SAT, the process of choice is *only* important in the explanation of crime when a person see an act of crime as an action alternative. The focus in SAT is directed at why people differ in their perception of action alternatives, that is; *why some people see crime as an alternative whereas others do not*. This is an essential insight of why most people, most of the time, do not engage in most acts of crime, because they do not perceive crime as a viable action alternative even when being exposed to criminogenic environments (Wikström et al., 2012).

### Rational Deliberation and Habit- The Process of Choice

If an individual do not perceive crime as an action alternative, there will be no crime. Conversely, if the individual perceive crime as an action alternative the process of choice is of essence for the action outcome. In SAT the process of choice is divided into *habitual* or *rational deliberate* processes. When choice is considered a *habit*, the individual is likely to only vaguely be aware of other action alternatives but only perceives *one* causally effective action alternative. During such perception where the act of crime is considered as the only action alternative, the process of choice is automatic and forms an intention to carry out the action. According to this rationale, the individual do not make an active consideration of other action alternatives (Wikström et al., 2012).

When the process of choice instead is *rational deliberate*, the individual perceives *several* different action alternatives where at least one involves a criminal act in the particular situation. The outcome of the *deliberation* of the potential action alternatives will affect whether or not the individual will form an intention to engage in an act of crime or not (Wikström et al., 2012).

Figure 2. The role of the moral filter and controls in the perception-choice process (Wikström, 2012: 66).



The process of choice within SAT has its foundation in human agency, this means that individuals express agency through habit or rational deliberation. *Agency* implies that people have the ability to make something happen intentionally. Wikström accounts for agency in the following way; “SAT recognizes that human action exhibits elements of free will and predictability and incorporates voluntaristic and deterministic processes into its explanation of acts of crime” (Wikström et al., 2012: 20). The actions are more or less strongly determined by the circumstances since agency is considered to be context-dependent. Actions made through rational deliberation are less strongly determined. This is because the individual is exercising ‘free will’ when choosing one of the different perceived action alternatives, thus there is no automatic predetermined response associated with habitual behaviour. However, the deliberate process of choice is also deterministic in the sense that the perception of action alternatives differs between individuals, as they differ in responses to a particular motivator in a particular setting. Hence, individuals “exercise ‘free will’ within the constraint of perceived action alternatives” (Wikström et al., 2012: 20).

Rationality, at times, therefore guides human actions through deliberation- and only then (Wikström, 2012). Rational choice theories claim that by acting rationally people aim to optimize the result of their actions by assessing the best possible outcome among several alternatives. This implies that people aim at choosing the action alternative with the best means of satisfying either one’s desires, or commitments, or response to a provocation given the persons apprehension of options and consequences. This does not necessarily mean that people act out of egoism, but rather out of a rational self-interest by weighing pros and cons in deciding the most rewarding or best action to make. However, rationality does not mean that people *always* act out of self-interest. In the case of habitual actions rationality does not come in to play as there is no weighing of pros and cons, the choices may even be irrational and could have been improved through deliberation (Wikström et al., 2012).

### *Situational Factors: Motivation, the Moral Filter and Controls*

Motivation, the moral filter and controls are the three key situational factors that influence the perception-choice process in SAT. Though, these factors influence the process of action in different ways. The first situational factor, *motivation*, is defined as goal-directed attention. Motivation initiates the action process and is an outcome of the person-environment interaction. However, there are no particular motivations that *always* make people break rules of conduct. People may be initiated to act out of different motivators. SAT recognizes two different motivators that are important in acts of crime; temptations and provocations. *Temptations* are either the outcome of a person’s needs or desires or the opportunity to fulfil this desire, or the interaction between a person’s commitments and opportunities to fulfil those commitments. *Provocations* on the other hand are a friction, an unwanted external interference, which causes a person to be annoyed or angry with the source. The extent of these emotions depends on the person’s sensitivity to the particular interference. Both temptations and provocations include emotions, although temptations are in general linked with positive emotions (such as excitement) while provocations often correspond with negative emotions. In SAT, motivation is considered a necessary factor to explain why people act as it initiates the action process. However, it is not sufficient on its own because it does not explain why some people breach rules of conduct to respond to a provocation or satisfy a desire (Wikström et al., 2012;

Wikström 2012).

The second situational factor that influences the action process is the *moral filter*. The action alternatives a person perceives in response to temptations or provocations are dependent on the interaction between a person’s moral rules and the moral norms of the setting; this interaction is conceptualized as the moral filter. The moral filter is defined as the moral rule-induced selective perception of action alternatives, confining perceived appropriate responses to a motivator. The moral filter thus determines if a person sees crime as an action alternative. During unfamiliar circumstances the moral filter is applied through rational deliberation, providing action alternatives for a moral judgement. The moral filter can either encourage or discourage the breaking of a moral rule (such as the law) (Wikström et al., 2012). In sum, if a person’s moral rules *encourages* abidance by a particular rule of conduct and this correspond with the (perceived) moral norms of the setting, it is unlikely that a criminal action alternative will be perceived- thus encouraging the person to abide by the law. However, if the moral rules and the moral norms *discourage* abidance by the law, it is more likely that a criminal action alternative will be perceived (Wikström et al., 2012: 23-24; Wikström, 2012: 66-67).

The third and final situational factor that influences the action process is *controls*. It is defined as “the cognitive process by which people manage conflicting rule-guidance when deliberating whether to act upon a motivation that involves breaching a rule of conduct” (Wikström, 2012). There are two types of controls in SAT, one is *self-control* which functions as an internal control, and the other is *deterrence* which is an external control in its origin. Self-control is defined as an inner-to-outer process in which the person succeeds to adhere to the moral rules in a conflicting rule-guidance. Thus, a person’s ability to exercise self-control affects the process of choice. Conversely, deterrence is defined as an outer-to-inner process by which the (perceived) enforcement of moral norms of the setting succeeds to make a person adhere to the moral norms even though they conflicted with the person’s moral rules, also affecting the process of choice. This implies that people would refrain from criminal action due to perceived risks and fear of consequences (Wikström et al., 2012; Wikström, 2012). The key constructs and their relation is illustrated in the following model:

Figure 3. Key constructs of the situational model and their relationship (Wikström et al., 2012: 28)

Situation	=	Person	x	Setting	Affects
<b>Motivator:</b>					
<b>1. Temptation</b>		a. Desires (Needs)		Opportunity	Goal-Directed
		b. Commitments		Opportunity	Attention
<b>2. Provocation</b>		Sensitivity		Friction	
<b>Moral Filter</b>		Morality		Moral Norms	Perception of Action Alternatives
<b>Control</b>		Ability to exercise Self-Control		Capacity to enforce Moral Norms	Process of Choice
		Propensity	x	Exposure	= Action

It is important to understand why people and settings become as they are. In other words, it is essential to understand why people vary in their crime propensities and why environments vary in their criminogenity. This is best analysed through processes of social and personal emergence, and processes of social and self-selection. The concept of *emergence* refers to how something becomes as it is. *Personal emergence* is a ‘kinds of persons’ question, focusing on how people become different in their crime propensity, for example against the backdrop of



their psychosocial development. In SAT this is explored through processes of moral education and of cognitive skill development that is relevant for their ability to exercise self-control. *Social emergence* is instead a ‘kinds of settings’ question, focusing on how environments become different in their features related to their criminogenicity, for example against the backdrop of socioecological factors. Of particular interest in SAT is the processes by which different kinds of environments develop specific moral contexts, as previously mentioned the moral norms of the setting either encourage or discourage an individual to breach or follow rules of conduct in relation to the provided opportunities or generated frictions (Wikström, 2012; Wikström et al., 2012).

## **ESTABLISHING CAUSALITY THROUGH MANIPULATION**

SAT emphasises that the *situation* is the proper level for crime analysis and explanation of crime, because “the causes of acts of crime are situational” (Wikström et al., 2012: 29). Crime propensity and criminogenic exposure are the two causally relevant factors that guide the causal (perception-choice) process that moves individuals to engage in criminal actions. The idea of causation is; regularly occurring associations; the possibility of prediction, and most importantly; the notion that the cause somehow produces the effect through a causal process that links the cause to the effect (Wikström et al., 2012; Wikström, 2012).

“The view that causation is fundamentally defined by the process (mechanism) that connects (in time and space) the cause to the effect, and brings about the effect, helps us distinguish between correlation and causation because in cases of mere correlation there is no credible process (mechanism) by which one produces the other” (Wikström, 2012: 57).

This means that if there is no plausible causal process linking a predictor with the outcome, it is also probable that it is not a causal relationship. Wikström quite bluntly concluded that “to demonstrate correlation and make predictions may (in most instances) not to be very useful knowledge if there is no underlying causation” (Wikström, 2006). Wikström maintains that it is not possible to properly define a cause without firstly defining the effect, “since a cause has to be a cause of *something*” (Wikström, 2012: 57). The effect we should define in criminological research is thus “crime”, which remains an ambiguous concept in a large proportion of theories about crime causation. However, in SAT acts of crime, as previously mentioned, are defined as “acts that breach moral rules of conduct stated in the law” (Wikström et al., 2012: 12).

The aim is thus to (properly) specify causes of crime, in doing so, one is about to embark on a complex task. The safest way, according to Wikström, to establish causation is through manipulation- this is possible through scientific experiments. If it can be demonstrated that the outcome (effect) can be altered in predicted ways by changing the supposed cause, it is likely that the two (the cause and effect) are causally related. It should be noted that there are multiple factors interacting on a personal and environmental level as a “cause” which initiates a causal process. Separately, the factors would not initiate the process, they are only

causally effective when combined (Wikström, 2012: 58).

The rationale behind an experiment is that it is possible to assess if there is a causal dependency between x and y through the manipulation of a regular association and observing the following outcome. If there is a change in y, the manipulation of x is causally relevant for the change in y. If there is no change in y, x can be assumed to only be a mere correlation, since the manipulation did not affect the cause and effect, this is because there is no causal process linking them (Wikström, 2012: 59).

## **MATERIALS AND METHOD**

### **Ethical Considerations**

The Malmö Individual and Neighbourhood Development Study (MINDS) have ethical approval from the Regional Ethics Board at Lund University (reference number 201/2007 and reference number 2014/826). Participation in the study is voluntary and is based on informed consent obtained from the youth at every point of data gathering, and informed consent from the parents at the start of the project in 2007-2008. The data is decoded to ensure anonymity since the gathered material contains sensitive data of the participants' lives and behaviours. In order to guarantee that the ethical consideration of the project is met, the current study will, in line with other findings from MINDS, only be presented on a group level and in a manner that avoids reproducing stereotypically types of offenders and groups to preserve the integrity of the participants. The current study has not been revised by an ethical board, but still follows the ethical guidelines provided by MINDS and the Regional Ethics Board.

### **Sample**

This study relies on data retrieved from two waves (2010-2011 and 2011-2012) of MINDS<sup>3</sup> (Torstensson Levander et al., 2015: 10). MINDS were initiated in 2007 and is an ongoing longitudinal study. The sample was selected to include individuals who were born in 1995 and resided in Malmö on the 1<sup>st</sup> of September in 2007. At the starting point of the project the individuals were 12 years old and the intention is to follow them to age 24. The 525 adolescents that constitute the total sample were randomly selected from the total cohort of people born in 1995, which corresponds to approximately 20% of the entire cohort (Ivert & Torstensson Levander, 2014: 180). The sample in this thesis is constituted by N=482 adolescents, n=242 boys and n=240 girls. To ease interpretation the waves will be referred to as *wave 2* (school year 9, age 15-16) respectively *wave 3* (the first year of high school, age 16-17).

### **Self-reported Data**

Self-reported data was first introduced in the criminological field in the 1940's to collect data on delinquency and have become increasingly common in social sciences over the years. One of primary concerns with self-reported data is the truthfulness of participants reporting that they engage in criminal behaviour, though it has been suggested that ensuring anonymity will increase the response of honest answers. It has been acknowledged that there is no gold standard on

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<sup>3</sup> For a brief summary of the data collection waves, see appendix C.

how to assess self-reported data, however one could compare it to official data<sup>4</sup> - this is done in PADS+ but is not possible to do in this study. Gathering large quantities of self-reported data is relatively easy using questionnaires. It is a favourable method as it is not so costly in comparison to other methods. However, self-reported data is also subjected to bias, both from the researcher and the participant. Concerns has also been raised about social desirability, meaning that the participant answer in a manner that would be socially acceptable. However, the evolution and development of self-reported methods have made it more reliable over the years and is a standard method in attempts to gather information to enable understanding of deviant behaviour (Krohn, Thornberry, Gibson & Baldwin, 2010).

### **Factorial Survey Approach**

Over the last decade there has been an increased usage of the factorial survey approach (FSA) in both attitude and decision studies. The method was first introduced by Rossi in 1951 in an attempt to develop a method of measurement that differentiates the relative relevance of several factors (Sauer, Auspurg, Hinz, Liebig & Schupp, 2014; Wallander, 2008). Randomized scenarios, also called vignettes and factorial objects, rely on the advantages of experimental design as each of key attributes (referred to as dimensions) is allowed to vary independently. This facilitates the possibility to investigate the relative impact of dimensions that oftentimes are highly correlated (Wikström et al., 2012), and is therefore suited to explore contexts and conditions affecting judgements (Wallander, 2008). In MINDS, as in PADS+, the participants are asked to judge one randomized permutation of each scenario. The scenario universe (combination of levels and dimensions) is randomly distributed among the participants; this provides randomized experimental data from individuals that differ in personal characteristics in settings that vary in their environmental characteristics. However, details that were essential for setting the scene were kept constant across all permutations (Wikström et al., 2012), according to Wallander (2008) this minimizes the risk of respondents adding their own embellishments which principally would cause them to respond to different situations.

The strength and weakness of FSA design can be traced back to the same cause: the manipulation of the independent variable. This allows studies using FSA to commonly enjoy high levels of internal validity, meaning the confidence with which researchers can make causal interpretations from the findings of the study. On the negative side, this is at the cost of the external validity of the study results, meaning that it is difficult to generalize the findings to the general population. The researchers utilizing this method have also been critiqued for sometimes creating scenarios with elements that seldom co-occur in the real world (Wallander, 2008). However, according to Wikström et al. (2012) the design of the scenarios are constructed to be familiar to settings the respondents are likely to often find themselves in. Since this method permits the prospect of studying the effects of changing levels of key variables and their interaction, Wikström and his colleagues claim that this methodology is well suited for tapping into the perception-choice process for two main reasons. Firstly, the process remains implicit, it is thus not altered by explicit consideration by the participant. This directly relates to the second reason, namely that this method does not measure people's reasoning about their behaviour, it measures their behavioural intentions.

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<sup>4</sup> Which has its own limitations, see further Krohn, Thornberry, Gibson & Baldwin (2010).

It should also be noted that the responses are ranked ordered, which could be an issue according to Wallander (2009) who state that it forces participants' to stay within a set range which causes them to round up their judgements<sup>5</sup>. Finally, the scenarios cannot 'assign' causally relevant personal characteristics, such as crime propensity. Therefore they are measured using other methods and then introduced in the analysis of the scenario research. Following this procedure the "randomized scenarios can capture the differential impact of scenario dimensions on different people, or groups of people, with particular personal characteristics" (Wikström et al., 2012: 368). It should also be kept in mind that the scenarios only constitute a very small part of the entire questionnaire that the participants responded to (Wikström et al., 2012).

### **Scenarios: Contents and Designs**

Wikström and his team conclude that "we cannot peer inside the minds of our participants to understand which action alternatives they perceive and how they deliberate" (2012: 365), therefore it is difficult to test the proposed situational mechanism. In research, for example through the usage of generalized survey questions, it is not desirable to directly ask participants to consider the rationale behind their perceptions and choices as this almost certainly alters their answers. The main reason behind this is that people usually lack awareness of these processes, and to consciously consider them often result in an alteration as respondents often start to think about alternatives they would never actual consider if they were to face the situation in real life. Although it is not a favourable method, it is still applied sometimes and it can capture individual differences (Wikström et al., 2012: 365).

Although, generalized survey questions cannot explain how situational factors impact the decision-making process or how these factors interact. The scenario research that was developed for PADS+, and later transferred to MINDS, was designed to tap into this process. It cannot measure perception and choice processes directly, however "it is possible to devise an experiment whereby we introduce individuals who differ in their crime propensity to settings that differ in their criminogenity, and observe how they interact" (Wikström et al., 2012: 365). This will be enabled through experimental manipulation of relevant key features of the setting. These features are causally relevant to the perception-choice process and it therefore facilitates the possibility of observing the outcome (whether crime occurs). This in turn can assist in understanding personal and environmental factors, and their interaction, that lead people to perceive and choose crime as an action alternative (Wikström et al., 2012).

The presentation of hypothetical situations (scenarios) contains a description of controlled and manipulated causally relevant features of the setting, this gives the participant the possibility to answer how they would hypothetically respond to the situation. This measures their *behavioural intention*. The four different scenarios are divided into two different subcategories. One is moral judgements where, what is referred to as criminal intentions (based on judging what is right and wrong), are represented through taking or keeping an amount of money. Criminal intentions were chosen as the wording since it is a criminal offence<sup>6</sup> to take or keep the money that is found, it is supposed to be reported to the police. It should be noted that even though the analysis predicts moral judgements, it is

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<sup>5</sup> Wallander (2008) suggests that so-called "number matching" where respondents mark a point on a (or match a number to a point) on a response-variable continuum.

<sup>6</sup> Polisen. Stulet, tappat, hittat.

> <https://polisen.se/Start-Lattlast/Stulet-tappat-hittat/> (2016-05-22).

referred to as “having (or not having) criminal intentions” when interpreted in the result and in the following discussion. This supposedly make it easier to follow the discussion and the aim of the study.

The other subcategory is provocation where criminal intentions, referred to as the more specific violent intentions, are represented through hit, push or assault. During each wave respondents’ were given one of the moral scenarios, and one of the violent scenarios and asked to report the likelihood of criminal intentions in response to each scenario. The causal dimensions were experimentally and independently varied so that both types of scenarios were divided into four different permutations that varied in their levels of motivators and deterrence. The participant thus only answered to one of the four permutations of each scenario. The MINDS scenarios detailed below introduced the participants to a situation where crime could be a possible action alternative (Wikström et al., 2012: 367).

### *Moral Judgement*

In two of the scenarios the respondent is faced with a moral judgement where an amount of money is found. Observe that the questions in the scenarios vary between if one would *take the money*, and if one would *keep the money*.

Figure 4. Scenario 1 Wave 2. Moral judgement scenario content and design (male version).

INTRODUCTION			It is early Sunday morning/Friday afternoon. Peter is on his way to an ATM to withdraw money.
DIMENSION		Level	Wording
<b>Temptation</b>	Low	2000 SEK.	When he arrives at the ATM, he notices that the person before him has forgotten 2000 SEK in the machine.
	High	100 SEK.	When he arrives to the ATM, he notices that the person before him has forgotten a 100 SEK in the machine.
<b>Monitoring</b>	High	Police Officer	There is a police officer standing behind him in the queue, pointing towards a person further away and say that it is the person who forgot the money.
	Low	None	There is no one around the ATM.
OUTCOME		Take the money	If you were Peter, how likely do you think it is that you would take the money and kept them for yourself?
JUDGEMENT			Very likely Likely Unlikely Very unlikely
Scenario Universe		Monitoring	
		Police officer	No one
Temptation	2000 SEK	D	C
	100 SEK	B	A

Figure 5. Scenario 2 Wave 3. Moral judgement scenario content and design (female version).

INTRODUCTION Felicia has been to the cinema. She is on her way to leave the cinema when she notices money on the floor. Outside of the cinema a stranger asks if Felicia has seen a 100/1000 SEK that she dropped.		
DIMENSION	Level	Wording
<b>Temptation</b>	High	100 SEK She sees that someone has dropped a 100 SEK on the floor. She picks it up and puts it in her pocket.
	Low	1000 SEK She sees that someone has dropped a 100 SEK on the floor. She picks it up and puts it in her pocket.
<b>Monitoring</b>	High	Security guard When she has put the money in her pocket she notices that a security guard is looking at her.
	Low	None There is no one around.
OUTCOME	Take the money	If you were Felicia, how likely do you think it is that you would tell the stranger that you found her money and give it back?
JUDGEMENT		Very likely Likely Unlikely Very unlikely
Scenario Universe		Monitoring Security guard      No one
Temptation	100 SEK and approached by stranger. 1000 SEK and approached by stranger.	B      A D      C

### Violence

In two of the scenarios the respondent is faced with a verbal or physical provocation. Observe that the questions in the scenarios vary between vary between if one would *hit or assault* or *hit or push* the other person.

Figure 6. Scenario 2 Wave 2. Violence scenario content and design (male version).

INTRODUCTION It is Friday evening. Thomas is in the queue outside a cinema when another boy passes and intrudes in the line.		
DIMENSION	Level	Wording
<b>Provocation</b>	Low	Ignored Thomas asks the boy to go back to his place in the line but the boy just ignores him.
	High	Laughed at and insulted Thomas asks the boy to go back to his place in the line but the boy laughs and tell Thomas to piss off.
<b>Monitoring</b>	High	Security guards There are two security guards monitoring the incident.
	Low	No adults There are no adults around, only other adolescents'.
OUTCOME	Violence	If you were Thomas, how likely do you think it is that you would hit or assault the boy that intruded in the line?
JUDGEMENT		Very likely Likely Unlikely Very unlikely
Scenario Universe		Monitoring Security guards      Other Adolescents
Provocation	Ignored Laughed at and insulted	B      D A      C

Figure 7. Scenario 2 Wave 3. Violence scenario content and design (female version).

INTRODUCTION Louise is waiting for the bus at the bus stop. She is listening to her iPod.			
DIMENSION	Level	Wording	
<b>Provocation</b>	Low	Pushed and ignored	Suddenly a girl walks by and pushes her. When Louise asks her why she pushed her the girl just ignores her.
	High	Pushed twice and broken Ipod	Suddenly a girl who walks by pushes her and she drops her Ipod to the ground and it breaks. When Louise asks her why she pushed her the girl pushes her once again.
<b>Monitoring</b>	High	Police Officers	There are to police officers walking on the other side of the street.
	Low	None	There are no people at the bus stop.
<b>OUTCOME</b>	Violence	If you were Louise, how likely do you think it is that you would hit or push the girl that pushed you?	
<b>JUDGEMENT</b>		Very likely Likely Unlikely Very unlikely	
Scenario Universe		Monitoring Police officers	No one
Provocation	Pushed and ignored	B	A
	Pushed twice and Ipod broken.	D	C

## Measures for Logistic Regressions

### *Dependent Measure*

**Intended offending:** the dependent variable in all scenario analyses was intended offending. This is measured through the responses to each scenario which were ranked very likely, likely, unlikely and very unlikely. The dependent variable was dichotomized so ‘likely’, ‘unlikely’ and ‘very unlikely’ represented 0 (no intention of offending) and ‘very likely’ responses represented 1 (intended offending).

### *Independent Measures*

**Crime propensity scale:** the propensity scale utilized in MINDS is constructed in the same manner as in PADS+<sup>7</sup>. The items that measure adolescent’s generalized morality<sup>8 9</sup> and ability to exercise self-control<sup>10 11</sup> are separately constructing two additive indices, which are combined to a generalized crime propensity scale. The morality scale is based on the pro-social values scale used by Loeber. The self-control scale is a modified and limited version of the self-control scale that was introduced by Grasmick et al. in 1993, including some new items with the focus on general risk-taking, impulsivity and future-orientation (Wikström et al., 2012). In SAT, crime propensity is believed to have “some relationship with people’s

<sup>7</sup> For a more elaborate discussion on the construction of the generalized crime propensity scale, see Wikström et al., 2012.

<sup>8</sup> Morality Scale: general views of the wrongfulness of particular actions. Values ranges between 0-48, high values indicate high morality- therefore the morality is rescaled so that higher values indicate lower moral when used in the crime propensity scale (Wikström et al., 2012; Torstensson Levander & Ivert, 2016).

<sup>9</sup> See appendix A.

<sup>10</sup> Ability to exercise self-control scale: general views on relevant self-control reactions. Values ranges between 0-24, higher values indicate low self-control (Wikström et al., 2012; Torstensson Levander & Ivert, 2016).

<sup>11</sup> See appendix B.

likelihood to see, and choose, crime as an action alternative when confronted with a criminogenic setting” (Wikström et al., 2012: 132). Imputed crime propensity scales with values ranging between -4 (min) and 6 (max) were employed in the final analyses presented in this thesis both on a scale and group level (M=0, SD= 1,675 (wave 2) and SD= 1,638 wave 3)<sup>12</sup>. The distribution of scores was approximately normal. Though, individuals with more than two missing values on each scale were excluded. Therefore, due to internal missing data, crime propensity scores could not be calculated for one person, who therefore was excluded from the sample. Cronbach’s alpha is recommended to be 0.7 or higher, for the morality scale it was 0.86 in wave 2, and 0.84 in wave 3. Cronbach’s alpha for the self-control scale was 0.71 in wave 2 and 0.70 in wave 3.

**Propensity groups:** For some of the analysis in this thesis the findings are presented for three groups of adolescents’: those with low, medium and high crime propensity. Those with high crime propensity are defined as those whose crime propensity scores were one standard deviation or higher above the mean, whereas those with low crime propensity are defined as those whose crime propensity scores were one standard deviation or lower below the mean (Wikström et al., 2012: 139). Wikström and his colleagues acknowledge that this method to a certain extent result in arbitrary cut-off points, but claim that “these groups heuristically help illustrate some key differences among young people according to their levels of crime propensity” (2012: 139). The groups in the analyses for wave 2 are divided into low (n= 81, 16,8%), medium (n=318, 66,0%) and high (n=83, 17,2%) and for wave 3 into low (n=81, 16%), medium (n=315, 65,4%) and high (n=86, 17,8%).<sup>13</sup> This method allowed for the missing respondents to be included in the analysis.

**Criminogenity scale:** Criminogenity is measured as scenario conduciveness to crime. It is coded in accordance with Wikström et al., (2012) suggestions, it is therefore founded on the varying levels of monitoring and provocation (or temptation) of each scenario permutation. It is measured and coded as 0 (low)<sup>14</sup>, 1 (medium low)<sup>15</sup>, 2 (medium high)<sup>16</sup> and 3 (high)<sup>17</sup>.

**Absence of monitors:** this measure is based on the criminogenity scale but is dichotomized in accordance with the presences or absence of monitors in each scenario permutation, where 0 (monitoring) and 1 (absence of monitoring).

**Temptation:** temptation is used as a measurement in the two scenarios where one is presented with a situation to take or keep the money. This measure is also based on the criminogenity scale but is dichotomized in accordance with the level

<sup>12</sup> The analyses were initially carried out on the original crime propensity scale from wave 2 and 3. However, due to missing values of the self-control scale and the moral scale, the amounts of missing participants were quite large. Descriptives for wave 2: Scores ranged between -3,81 (min) and 5,52 (max) M= -,039, SD= 1,691. Missing N= 68 (N=415 remained). Descriptives for wave 3: Scores ranged between -4,12 (min) and 5,55 (max) M=0,04, SD= 1,648. Missing N= 28 (N=455 remained) out of the total 483 participants. In order to avoid missing participants, it was decided to use the imputed scale.

<sup>13</sup> The groups based on the original crime propensity scale (described above) for wave 2 was: low (N= 71, 17,1%), medium (N=273, 65,8%) and high (N=71, 17,1%) and wave 3: low (N=78, 17,1%), medium (N=297, 65,3) and high (N=80, 17,6%).

<sup>14</sup> Moral Scenarios: high monitoring/low temptation. Violent Scenarios: high monitoring/low provocation.

<sup>15</sup> Moral Scenarios: low monitoring/low temptation. Violent Scenarios: low monitoring/low provocation.

<sup>16</sup> Moral Scenarios: high monitoring/high temptation. Violent Scenarios: high monitoring/high provocation.

<sup>17</sup> Moral Scenarios: low monitoring/high temptation. Violent Scenarios: low monitoring/high provocation.



of temptation<sup>18</sup> in each scenario permutation. The higher amounts of money is considered to be 0 (lower levels of temptation), whereas lower amounts of money is considered to constitute 1 (higher levels of temptation).

**Provocation:** provocation is used as a measurement in the two scenarios where one is presented with a situation to act violently towards someone. It is based on the criminogenicity scale and being dichotomized in accordance with the level of provocation in each scenario permutation with response scores ranging between 0 (lower levels of provocation) and 1 (higher levels of provocation).

### Measures for Correlation Analysis

The measures of actual offending were chosen to be the variables of shoplifting and assault from both wave 2 and 3.<sup>19</sup>

**Shoplifting:** for the analysis of intended criminal outcome in comparison to actual criminal outcomes measured in the (moral) scenarios shoplifting were chosen as the crime variable, since it was reasoned that this type of crime could be comparable to the one in the scenario. Both the hypothetical crime in the scenario, and shoplifting, is signified by not directly stealing from *someone* per se. Other types of theft-related crimes were considered as possible comparable data but were ruled out because they were considered to be direct-person or property crimes which is not in consistency with the crime in the scenario. The question in the survey is phrased “Have you stolen anything from a store during year 8?” respective “year 9” for the questionnaire conducted in the first year of high school with response scores for ranging from 0 (no) to 1 (yes).

**Assault:** the chosen crime to compare with the violent scenarios was assault since this act match the violent outcomes measured in the scenarios. Other violent and/or aggressive crimes are reported in the questionnaire but are not incorporated in the analysis as Wikström et al. (2012) identified those crimes as not being comparable to the violent responses (measured in the scenarios) since they may be more instrumental. In wave 2 the question in the survey for year 9 is phrased “Have you punched or kicked someone (so that he/she got hurt) during year 8?”<sup>20</sup> The wording in the question from wave 3 conducted in the first year of high school is a bit different<sup>21</sup>, “Not counting events when you took money or other things from someone, have you during year 9 assaulted someone, e.g. punched, kicked or head butted someone?”<sup>22</sup> Both of the questions response scores ranged from 0 (no) to 1 (yes). However, it should be kept in mind that analyses of self-reported actual behaviour is measured through past behaviour, this means that when comparing criminal intentions and actual criminal outcomes, the analyses are comparing two different points in time.

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<sup>18</sup> Originally it was hypothesized that larger amounts of money in the scenarios would constitute a higher level of temptation, however, the first logistic regression models unexpectedly showed negative associations between the likelihood of taking the money and higher temptation. Therefore, it was re-hypothesized that smaller amounts of money perhaps constituted a higher level of temptation, the re-running of logistic regression models showed positive associations with such coding and it was therefore kept as the permanent coding.

<sup>19</sup> During the analysis of comparing criminal intentions and criminal outcomes it should be noted that only prevalence of actual crimes are investigated. This is because there was no frequency data gathered on assault in the questionnaire handed out to the respondents during the first year of high school.

<sup>20</sup> This exact question did not occur in wave 3.

<sup>21</sup> It should be noted that the more serious violent response, assault, was added which make the question more severe than the comparative question used from wave 2.

<sup>22</sup> This question was also posed in wave 2 with the revision of “have you ever” instead of specifying that the crime had to be committed during year 8.

## **Missing Data**

The amount of missing data was not a particularly large problem in this study. In year 9, the number of missing respondents were  $N=2$  (0,4%) for scenario 1, and  $N=8$  (1,7%) for scenario 2 out of the total  $N=483$ . In order to keep the number of respondents constant across all scenario analyses it was decided to include missing participants in the analysis but coded as zero, meaning that they were always coded as reporting having no criminal intention in respective scenario. This technique was favoured as it avoids overestimation of the number of reported criminal intentions. However, while running frequency analysis on the chosen types of crimes reported in year 9 a substantial amount of missing data was discovered. Additionally, missing data occurred from the first year of high school but in a much smaller amount. Therefore frequencies were run on all reported crime data during both years and it was discovered that the initial coding of the data in year 9 was different from the coding of the data obtained from participants in the first year of high school. For instance in year 9, data on shoplifting showed that  $N=51$  said they had never shoplifted, whereas  $N=66$  reported that they had shoplifted and the amount of missing respondents were  $N=366$  (75, 8%). Similar results were discovered on all self-reported crime data for year 9. With regard to how the questions were posed and coded, there was reason to believe that the missing respondents were actually answering no to the question of shoplifting but inevitably were classified as missing. Therefore the missing respondents from both points of data gathering were included as having reported no to the particular offence. This could potentially result in a large overestimation of non-offenders in the sample, however it is very unlikely as the prevalence of crimes in year 9 were quite consistent with the prevalence in the first year of high school, giving support to the conclusion that the coding of year 9 was different. Regardless, this technique does not overestimate the amount of offenders, which could have caused more substantial harm to the results, and the amount of respondents are kept equal across all analysis.

## **Analytical Strategy**

All analyses were conducted using SPSS (IBM SPSS Statistics 23, IBM, New York, US). Initially descriptive analyses were conducted to calculate mean values and standard deviations and to explore distribution and variables needed for further analysis. Binary logistic regression was then conducted in order to assess the impact of the independent variables on the dependent variable; the alpha-level was set to .05 for all analyses. Firstly, unadjusted models were conducted to assess the predictability of each independent variable separately, except for absence of monitors who were analysed together with provocation or temptation. The categorical predictors (a) propensity groups (a) absence of monitors (c) temptation and (d) provocation were compared with low values as the reference category. Propensity and criminogenicity was analysed as scales. It should also be noted that in the following section, the crime propensity scale and the propensity groups are presented in the same table, however, the analysis of each predictor was conducted separately and are only shown together for illustrative purposes. Secondly, logistic regressions with the criminogenicity scale and covariate adjustments of the propensity scale were conducted. Thirdly, bivariate analysis was used to investigate correlations between propensity groups and criminal intentions, and propensity groups and actual criminal outcomes. A non-parametric statistical technique was favoured since they are useful on small samples and when the data does not meet the stringent assumptions of the parametric techniques (Pallant, 2012; Field 2012). A 2x3 cross tabulation was appropriate,

and Cramer's V was used to report effect sizes, effect sizes are interpreted in accordance with Cohen's guidelines.

## RESULTS

The logistic regression results for each model showed good model fit, indicated by non-significant Hosmer and Lemeshow and significant Chi2 statistics, unless stated.

### Moral Judgement Scenario Wave 2

Table 1. Predicting moral judgements by crime propensity.

Moral Scenario	Predictor	Nagelkerke R2 x 100	b	SE	Odds Ratio	Sig.
Wave 2	Crime Propensity Scale	13.0	.44	.07	1.55	.000
	Propensity Groups	9.5				
	<i>Medium</i>		1.32	.42	3.73	.002
	<i>High</i>		2.24	.45	9.37	.000

The amount of respondents reporting criminal intentions in this scenario were n=129. The likelihood of participants' reporting that they would take the money was significantly related to crime propensity both measured as a scale and measured as categories. As can be seen from table 1 there is a positive relationship between crime propensity and reporting criminal intentions (b=.44,  $p < .001$ ; b=1.32,  $p = .002$  and b= 2.24,  $p < .001$ ), indicating that higher values on the propensity scale increases the likelihood of reporting intentions of taking the money. The likelihood of reporting criminal intentions is almost 4 times higher in the medium crime propensity group (O.R=3.73), in comparison to those with low crime propensity. This is further illustrated as the high crime propensity group is the strongest predictor of reporting criminal intentions where the likelihood of reporting criminal intentions is more than 9 times higher in comparison to the low crime propensity group (O.R=9.37). The crime propensity scale could explain 13% of the variability in the answers with the corresponding figure being 9.5% for the propensity groups.

Table 2. Predicting moral judgements using temptation and absence of monitoring.

Moral Scenario	Predictor	Nagelkerke R2 x 100	b	SE	Odds Ratio	Sig.
Wave 2		16.8				
	Absence of Monitors		1.65	.24	5.21	.000
	Temptation		.48	.22	1.62	.028

In the assessment of impacts of absence of monitoring and temptation, absence of monitoring was found to be the strongest predictor in the likelihood of reporting criminal intentions. The level of monitoring in a scenario had a positive relationship with, and significantly predicted, the likelihood of participants'

reporting that they would take the money ( $b=1.65$ ,  $p<.001$ ). As did the level of temptation, albeit to a lesser degree ( $b=.48$ ,  $p=.028$ ). The likelihood of taking the money were more than 5 times higher when one were alone at the ATM compared to when a police were standing in the queue (O.R= 5.21). It was more than 1.6 times more likely to take the money when there was a high temptation (100 kr) compared to low temptation (2000 kr) (O.R=1.62). The absence of monitors and higher level of temptation could explain 16.8% of the variability in the answers.

*Table 3.* Predicting moral judgements using scenario conduciveness.

Moral Scenario	Predictor	Nagelkerke R2 x 100	b	SE	Odds Ratio	Sig.
Wave 2	Criminogenity	7.7	.49	.10	1.63	.000
Adjusted Model	Criminogenity Propensity	21.2	.55 .48	.10 .07	1.74 1.62	.000 .000

Criminogenity significantly predicted criminal responses ( $b=.49$ ,  $p<.001$ ), indicating that higher levels of criminogenity made respondents more likely to answer that they intended to take the money. The participants' were more than 1.6 times more likely to report that they would take the money with higher levels of criminogenity (O.R=1.63). Criminogenity could explain 7,7% of the variability in the answers. However, the Hosmer-Lemeshow Test indicated a poor fit of the model (.000). The results should therefore be interpreted cautiously of the criminogenity scale as a predictor in the unadjusted model. In the adjusted model, however, the Hosmer-Lemeshow Test indicated good fit. Since both predictors are significant ( $b=.55$ ,  $p<.001$  and  $b=.48$   $p<.001$ ), it indicates that there is a positive association between criminogenity and predicting the likelihood of reported criminal intentions, an indication that transpires to propensity. It further indicates that there is an impact of the levels of criminogenity in the scenario even when controlling for the potential covariate of propensity. These results strengthen the result of the unadjusted model of criminogenity, since there is a slight improvement in the predictability, with a slight increase in the predictability of propensity too. Together they can explain 21,2% of the variability in the answers.

### Moral Judgement Scenario Wave 3

*Table 4.* Predicting moral judgements by crime propensity.

Moral Scenario	Predictor	Nagelkerke R2 x 100	b	SE	Odds Ratio	Sig.
Wave 3	Crime Propensity	15.5	.57	.10	1.77	.000

The amount of respondents reporting criminal intentions in this scenario were  $n=63$ . For this scenario, it was not possible to conduct an analysis of the groups since no-one in the low propensity group reported criminal intentions. Therefore, only the crime propensity scale could be utilized as a predictor to assess the likelihood that respondent would report criminal intentions in response to this particular scenario. The results indicate a positive and significant relationship between propensity and reported criminal intentions ( $b=.57$ ,  $p<.001$ ), indicating that it was more than 1.7 times more likely to report criminal intentions when having higher values on the propensity scale (O.R=1.77). The crime propensity scale could explain 15.5% of the variability in the answers.

Table 5. Predicting moral judgements using temptation and absence of monitoring.

Moral Scenario	Predictor	Nagelkerke R2 x 100	b	SE	Odds Ratio	Sig.
Wave 3		4.7				
	Absence of Monitors		1.02	.31	2.76	.001
	Temptation		.24	.28	1.27	.389

In assessing the predictive ability of absence of monitoring and temptation, only absence of monitoring significantly contributed in predicting the likelihood of reporting criminal intentions, whereas temptation was not a significant predictor. Although, both predictors showed positive associations, indicating an increase in the likelihood of reporting criminal intentions ( $b=.1.02$ ,  $p=.001$  and  $b=.24$ ,  $p=.389$ ). When there was no security guard around, it was almost 3 times more likely to take the money than when being watched ( $O.R=2.76$ ). High temptation (100 kr) indicated that it was more than 1.3 times more likely to take the money in comparison to low temptation (1000 kr) ( $O.R=1.27$ ). For this scenario, levels of monitoring and temptation could only explain 4,7% of the variability in the answers. The non-significant contribution of temptation as a predictor is likely to affect the low amount of explained variability in the answers using this particular set of variables in predicting criminal responses.

Table 6. Predicting moral judgements using scenario conduciveness.

Moral Scenario	Predictor	Nagelkerke R2 x 100	b	SE	Odds Ratio	Sig.
Wave 3	Criminogenity	1.8	.27	.13	1.31	.032
Adjusted Model	Criminogenity Propensity	15.8	.26 .57	.13 .10	1.30 1.77	.053 .000

Criminogenity significantly predicted criminal responses, albeit at a lower level ( $b=.27$ ,  $p=.032$ ) suggesting that the more conducive to crime the setting were, the more likely participants' were to report criminal intentions. Criminogenity could only explain 1,8% of the variability in the answers. The Hosmer and Lemeshow goodness of fit test indicated a poor fit of the model (.025). The results should therefore be interpreted cautiously of the unadjusted model. Though, for the adjusted model, Hosmer-Lemeshow Test indicated good fit. When adjusting for propensity, criminogenity became non-significant ( $b=.26$ ,  $p=.053$ ), whereas propensity made a statistical contribution as a predictor in the model ( $b=.57$ ,  $p<.001$ ). Even though the results of the unadjusted model should be interpreted with caution, the adjusted model strengthens that the result from the unadjusted model is not accurate. It appears as though criminogenity in this scenario does not affect the likelihood of reporting criminal intentions when controlling for propensity, since the covariate analysis shows that propensity is the only predictor making a significant contribution. This is further supported since the explained variability in the answers were 15,5% in the unadjusted model of propensity, with the slight increase to 15,8% in the adjusted model.

## Comparing Criminal Intentions and Criminal Outcomes

Table 7. Criminal intentions and actual criminal outcomes. Absolute numbers and percent.

	Criminal Intentions Wave 2 Scenario 1		Criminal Outcomes Wave 2 Shoplifting		Total	Criminal Intentions Wave 3 Scenario 1		Criminal Outcomes Wave 3 Shoplifting		Total
	NO n (%)	YES n (%)	NO n (%)	YES n (%)		NO n (%)	YES n (%)	NO n (%)	YES n (%)	
PROPENSITY GROUP										
LOW	74 (91,4)	7 (8,6)	79 (97,5)	2 (2,5)	81 (100)	81 (100)	0 (0,0)	80 (98,8)	1 (1,2)	81 (100)
MEDIUM	235 (73,9)	83 (26,1)	284 (89,3)	34 (10,7)	318 (100)	275 (87,3)	40 (12,7)	282 (89,5)	33 (10,5)	315 (100)
HIGH	44 (53,0)	39 (47,0)	53 (63,9)	30 (36,1)	83 (100)	63 (73,3)	23 (26,7)	59 (68,6)	27 (31,4)	86 (100)
Total	353 (73,2)	129 (26,8)	416 (86,3)	66 (13,7)	482 (100)	419 (86,9)	63 (13,1)	421 (87,3)	61 (12,7)	482 (100)
Cramer's V	.253		.310			.234		.282		
Sig.	.000		.000			.000		.000		

The bivariate analysis shows that there is a positive association between crime propensity groups and the intention to take the money, and further too actually shoplift. This indicates that the proportion of participants' with higher propensity who report criminal intentions and actual criminal outcomes significantly differ from the proportion of participants' with low propensity who report criminal intentions and actual criminal outcomes in all analysis ( $p < .001$ ). Cramer's V indicated small effect sizes for all associations (.29, .20, .20), apart from assault in wave 2 where the effect size was medium strong (.31). Due to the small amount of respondents in some cells (no-one in one), the result should be interpreted cautiously.

### Violent Scenario Wave 2

Table 8. Predicting violent responses by crime propensity.

Violence Scenario	Predictor	Nagelkerke R <sup>2</sup> x 100	b	SE	Odds Ratio	Sig.
Wave 2	Crime Propensity	21.4	.80	.16	2.21	.000
	Propensity Groups	19.9				
	<i>Medium</i>		.25	1.10	1.28	.824
	<i>High</i>		2.79	1.05	16.23	.000

In this scenario, only  $n=20$  respondents reported criminal intentions. The likelihood of participants' reporting that they intended to act violently was significantly related to crime propensity measured as a scale ( $b=.80$ ,  $p < .001$ ). However, when measured as categories medium crime propensity was non-significant whereas high crime propensity were significantly contributing in predicting violent responses. All associations between propensity and reported violent intentions were positive, indicating that having higher values on the propensity scale increases the likelihood of reporting that one intended to act violently in response to the scenario ( $b=.25$ ,  $p=.824$  and  $b=2.79$ ,  $p < .001$ ). Respondents' in the high propensity group were more than 16 times more likely to

report violent responses than those with low crime propensity (O.R=16.23). Using the crime propensity scale as a predictor explained 21.4% of the variability in the answers with the corresponding figure being 19.9% for the group analysis.

Table 9. Predicting violent responses using provocation and absence of monitoring.

Violence Scenario	Predictor	Nagelkerke R2 x 100	b	SE	Odds Ratio	Sig.
Wave 2		3.0				
	Absence of Monitors		.90	.50	2.46	.071
	Provocation		.37	.47	1.45	.429

In this scenario, neither of the predictors made significant contributions in predicting the likelihood of violent responses among the participants. Still, both predictors had positive associations with reporting violent intentions (b=.90, p=.071 and b=.3, p=.429). Even though the results are not significant, it appears as though the impact of low level of monitoring (no security guard present) made it almost 2.5 times more likely to report violent intentions than for high level of monitoring (the security guard is present) (O.R=2.46). The likelihood of reporting such intentions were almost 1.5 times higher when experiencing higher level of provocation (being told to piss off and laughed at) in comparison to lower level of provocation (being ignored) (O.R=1.45). The predictors could only explain 3% of the variability in the answers.

Table 10. Predicting violent responses using scenario conduciveness

Violence Scenario	Predictor	Nagelkerke R2 x 100	b	SE	Odds Ratio	Sig.
Wave 2	Criminogenity	1.7	.33	.21	1.39	.127
Adjusted Model	Criminogenity Propensity	24.1	.45 .83	.23 .16	1.57 2.30	.051 .000

There is a positive association between criminogenity and the likelihood of violent responses, however, the contribution of criminogenity as a predictor is non-significant (b=.33, p=.127). Criminogenity could only explain 1.7% of the variance in the answers. In the adjusted model, it appears to be confirmed that levels of criminogenity has no association with predicting violent responses, when controlling for crime propensity it is the only significant predictor for the likelihood of reporting violent intentions in the covariate analysis (p=.051, p<.001). Together they explained 24,1% of the variability in the answers. In this scenario, propensity is the only significant predictor in reporting violent intentions, all other predictors are non-significant.<sup>23</sup>

<sup>23</sup> It was reasonable to suspect that the low response rate (n=20) could have an impact on all independent variables (but propensity) since they were non-significant. Therefore, the analysis was also conducted with the dependent variable recoded to non-violent response 0 (very unlikely and unlikely) (n=395) and violent response 1 (very likely and likely) (n=87) in an attempt to capture a larger amount of respondents reporting violent intentions. The analysis showed that the medium crime propensity group was still non-significant (b=.70, p=.125) as were absence of monitoring (b=.39, p=.106). Noteworthy is that provocation was significant (b=.54, p=.027). The propensity scale remained significant, as did the high crime propensity group (b=.50, p<.001 and b=2.31, p<.001). Noteworthy is that criminogenity was significant in the unadjusted model (b=.29, p=.007), and remained significant in the adjusted model (b=.38, p=.001) as did propensity (b=.53, p<.001). This indicates that there is an association between criminogenity and predicting the likelihood of reported violent intentions, an indication that transpires to propensity. When

### Violent Scenario Wave 3

Table 11. Predicting violent responses by crime propensity.

Violence Scenario	Predictor	Nagelkerke R2 x 100	b	SE	Odds Ratio	Sig.
Wave 3	Crime Propensity	8.3	.36	.07	1.44	.000
	Propensity Groups	6.2				
	<i>Medium</i>		.97	.46	2.64	.021
	<i>High</i>		1.79	.46	5.96	.000

In this scenario, n=109 respondents reported violent intentions. The likelihood of participants' reporting that they intended to act violently was significantly related to crime propensity both measured as a scale and measured as categories. There is a positive relationship between propensity and reporting violent intentions, indicating that having higher values on the propensity scale increases the likelihood of reporting that one intended to act violently (b=.36, p<.001; b=.97, p=.021 and b=1.79, p<.001). Respondents' in the medium crime propensity group was nearly 3 times more likely to report intentions of acting violently in comparison to the low propensity group (O.R=2.64). The high propensity group were almost 6 times more likely to report such intentions in comparison to the low propensity group (O.R=5.96). Using the crime propensity scale as a predictor explained 8,3% of the variability in the answers with the corresponding figure being 6,2% for the group analysis.

Table 12. Predicting violent responses using provocation and absence of monitoring.

Violence Scenario	Predictor	Nagelkerke R2 x 100	b	SE	Odds Ratio	Sig.
Wave 3		9.5				
	Absence of Monitors		.38	.24	1.47	.107
	Provocation		1.21	.24	3.36	.000

Both absence of monitoring and provocation indicated positive relationships with the likelihood of predicting violent intentions, however, only the latter of the two made a significant contribution in such prediction (b=.38, p=.107 and b=1.21, p<.001). In this scenario, provocation thus seem to be the stronger predictor for violent responses, as higher level of provocation (being pushed twice and Ipod broken) make it more than 3 times more likely to report violent responses in comparison to lower level of provocation (pushed and ignored) (O.R=3.36). Despite being non-significant, it appears as though the likelihood of reporting violent intentions is almost 1.5 times more likely with lower level of monitoring (no one is around) compared to higher level (two police officers) (O.R=1.47). The predictors could explain 9,5% of the variability in the answers.

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analysing larger groups, it thus appears as though criminogenicity of the setting has an effect even when controlling for propensity.



Table 13. Predicting violent responses using scenario conduciveness.

Violence Scenario	Predictor	Nagelkerke R2 x 100	b	SE	Odds Ratio	Sig.
Wave 3	Criminogenity	9.3	.56	.11	1.76	.000
Adjusted Model	Criminogenity Propensity	17.6	.60 .39	.11 .08	1.82 1.47	.000 .000

There is a positive association between criminogenity and the likelihood of violent responses, and the contribution of criminogenity as a predictor is significant ( $b=.56$ ,  $p<.001$ ). The conduciveness to crime in the scenario made it almost 2 times more likely to report violent intentions (O.R=1.76). Criminogenity could explain 9,3% of the variability in the answers. In the adjusted model, both predictors are significant ( $b=.60$ ,  $p<.001$  and  $b=.39$ ,  $p<.001$ ), which indicates that there is a positive relationship between criminogenity and predicting the likelihood of reported criminal intentions, an indication that transpires to propensity. Additionally, it indicates the impact of the levels of criminogenity in the scenario remains even when controlling for propensity. Together the predictors can explain 17,6% of the variability in the answers.

### Comparing Violent Intentions and Violent Outcomes

Table 14. Violent intentions and actual violent outcomes. Absolute numbers and percent.

PROPENSITY GROUP	Criminal Intentions Wave 2 Scenario 2		Criminal Outcomes Wave 2 Assault		Total	Criminal Intentions Wave 3 Scenario 2		Criminal Outcomes Wave 3 Assault		Total
	NO n (%)	YES n (%)	NO n (%)	YES n (%)		NO n (%)	YES n (%)	NO n (%)	YES n (%)	
LOW	80 (98,8)	1 (1,2)	80 (98,8)	1 (1,2)	81 (100)	74 (91,4)	7 (8,6)	78 (96,3)	3 (3,7)	81 (100)
MEDIUM	313 (98,4)	5 (1,6)	304 (95,6)	14 (4,4)	318 (100)	256 (80,0)	63 (20,0)	282 (89,5)	33 (10,5)	315 (100)
HIGH	69 (83,1)	14 (16,9)	62 (74,7)	21 (25,3)	83 (100)	55 (64,0)	31 (36,0)	64 (74,4)	22 (25,6)	86 (100)
Total	462 (95,9)	20 (4,1)	446 (92,5)	36 (7,5)	482 (100)	381 (79,0)	101 (21,0)	424 (88,0)	58 (12,0)	482 (100)
Cramer's V	.291		.313			.201		.208		
Sig.	.000		.000			.000		.000		

The bivariate analysis show that there is a positive association between crime propensity groups and the intention to act violently, and further too actually act violently. This indicates that the proportion of participants' with higher propensity who report violent intentions and actual violent outcomes significantly differ from the proportion of participants' with low propensity who report violent intentions and actual violent outcomes in all analysis ( $p<.001$ ). Cramer's V indicated small effect sizes for all associations (.29, .20, .20), apart from assault in wave 2 where the effect size was medium strong (.31). Due to the small amount of respondents in some cells, the result should be interpreted cautiously.

## DISCUSSION

The perception-choice process in SAT is detailed as the process (the mechanism) that produces action. The causal interaction of crime propensity and criminogenic exposure initiates and guides the perception-choice process that ultimately leads to an action. In this study, the causally relevant factors of the setting was manipulated to change the relevant input for the perception-choice process which facilitated the possibility of studying potential influences on the choice of action. The scenario research partially tested the perception-choice process by exploring the role of motivators and controls and to test their influence on choices of actions.

Wikström and his team concluded that “it is logical to assume a relationship between behavioural intentions and action” (2012: 371). They further state that they assume that the responses reflected whether the participants’ perceived crime as an action alternative and intended to choose it. This means that it is not expected that individuals’ who would not perceive crime as an action alternative in reality would report criminal intentions just because such an option was presented to them. It was also acknowledged that in their scenario research (of violent scenarios) the scenarios differed in terms of the violent responses that were presented, and recommend that such “differences should be borne in mind when comparing their results” (2012: 380).

The scenarios analysed in this study differed quite widely in their wording and content. A few points should be addressed immediately as it pertains to the interpretation of the results. Concerning the moral judgement scenarios there is a quite substantial differences in the wording of the scenarios. In the first scenario, one is given the possibility to *perceive and choose* taking the money as an action alternative, in other words, one is presented with the option of taking the money from the ATM (regardless of controls and motivators). However, in all permutations of the moral judgement scenario in wave 3 it is decided that “Felicia sees that someone has dropped a 100 SEK (1000 SEK) on the floor. She picks it up and puts it in her pocket” this does not permit the respondents’ to *perceive and choose* the action of *not taking* the money in the initial phase since it is already decided. Thus, it is a solely a question of *keeping the money when being monitored* and/or *keeping the money when being confronted by the rightful owner of the money*. This also reflected in the questions to respective scenario. Concerning the violent scenarios, they differed quite greatly in their provocation, in wave 2 one is laughed at and told to piss off, whereas in wave 3 one is being pushed and get the Ipod shattered. The seriousness of the responses also differed, in wave 2 one were asked how likely it was that one would hit or assault the other person, whereas the less serious option of pushing were included in the question in wave 3, this will be further discussed in the limitation section. One should keep these differences in mind while interpreting the results. The findings from these scenarios appear difficult to compare and are more suited to investigate and discuss separately. However, some generalized conclusions will be drawn from the implications.

### **Crime Propensity: Morality and Self-Control**

As illustrated, the randomized scenarios varied in their levels of monitoring and provocations, which is expected to interact with the participant’s crime propensity, as it is hypothesised to determine whether they see crime as an alternative or not. During the violence scenario research Wikström et al. argued

that, over all, across all individuals, greater levels of provocation and lower levels of monitoring are expected to increase participant's perception of crime as an alternative. Further it is expected that greater crime propensity increases the likelihood of reporting violent intentions. For example in the case of violence, provocations might create the motivation to reduce friction- and for some people violence is a potential solution to reduce such friction. Even though it is assumed that people have different sensitivities or thresholds to friction, it is reasonable to believe that for everyone higher levels of friction in a setting will generate an experience of higher provocation the likelihood of perceiving and choosing crime as an action alternative (Wikström et al., 2012).

This above was proven to be true among the British adolescents; however, the result of the Swedish adolescents' reported criminal intentions is not entirely in consistency with the British findings. Over all, in the moral scenarios it appears as though propensity and deterrents have the strongest impact, whereas for violence it appears as though propensity (and to a lesser extent provocation) have the strongest impact. It thus appears as though the situation of the scenarios brings about different parts of the composed crime propensity, one that is more closely linked to the morality, and the other is more closely linked to (the lack of) self-control. This means that in situations where the motivator is temptation, and one is supposed to judge 'right or wrong' the relevant causal factor that has most influence on criminal intention is probably morality, whereas the causal factor for violent intentions is predominantly self-control.

### **Moral Scenarios and Shoplifting**

In the moral judgement scenario from wave 2 all independent measures were significantly associated with reporting criminal intentions. This means that the respondents were more likely to make the moral judgements that it was okay to take the money when having higher crime propensity, when there was no-one who saw them taking the money, and when the amount of money were smaller. The conduciveness to crime in this scenario thus implies that individual differences are not the sole factor in explaining the variability in the answers. This was the only scenario of the total four where all factors significantly influenced the choice of action. Over all, the results give support to SAT, as monitors are theorized to have a deterrent effect on criminal actions, the absence would thereby increase the likelihood of criminal acts to occur. Higher levels of temptation would increase the likelihood of a criminal act to occur, whereas lower would decrease it. As previously mentioned (footnote 18), for the analysis of moral scenarios high temptation was considered to be the lower amount of money as it is hypothesised (by this author) that it would be easier for the respondent to take the smaller amount rather than the larger, as the larger amount might make the respondent more willing to hesitate, and/or consider the potential loss for the rightful owner of the money if the amount is substantial. Therefore, the morality of an individual is suggested to be the key influence rather than self-control in an individual's total crime propensity in situations similar to the ones presented. In the two permutations where a police points towards the person who allegedly forgot the money, the respondent also have to make an active choice *not to tell the person* about the money being found. It could be interpreted as though people who are responding that they would be very likely to take the money in those scenario permutations have lower morality (as a part of their crime propensity) as they have to proceed with their action knowing who they are taking the money from and actively choosing not to correct the action.

In the moral judgement scenario of wave 3, no-one in the low crime

propensity group reported that they would keep the money. Only propensity and absence of monitoring had a significant association with reporting criminal intentions. Temptation and scenario criminogenicity were non-significant components in reporting criminal intentions. This suggests that lack of deterrents and propensity were more important for reporting criminal intentions than the actual temptation. This indicates that doing something morally wrong, like taking or keeping someone else's money, is strongly affected by outer controls. It is possible to assume that the confrontation with the rightful owner would cause the participant to feel like they have committed a morally wrongful act and therefore become more willing to tell the stranger that they do have the money. In line with SAT, it would thus be more likely to hand over the money to the rightful owner if one had higher moral, and less likely if one had lower moral.

The results of the bivariate analysis of wave 2 showed that the total amount of respondents reporting criminal intentions were 26,8% whereas 13,7% reported actual shoplifting. However, for wave 3 the amount of respondents who reported criminal intentions were 13,1% and those who reported that they had shoplifted were 12,7%. These figures correspond well with the estimated shoplifting reported in wave 2. In summary, this is a decrease of 49% of reported criminal intentions between the two waves. However, the amount of reported actual shoplifting remained stable across the two waves and was in consistency with the reported intentions of wave 3. Exploring group differences was also a part of this study. The results indicated that individuals with high crime propensity significantly differ in their reported intentions and actual behaviours from respondents with medium and low crime propensity. Those with high crime propensity significantly and consistently reported higher prevalence of both criminal intentions and actual criminal behaviours across both waves. This is in line with the general findings presented by Wikström et al., (2012).

### **Violent Scenarios and Assault**

The violent scenario in wave 2 generated 4,1% (n=20) reported criminal intentions. The only significant predictor in this scenario was crime propensity, and more interestingly, measured as categories the result indicated that respondents in the high propensity group were more than 16 times more likely to report violent responses than those with low crime propensity. Considering the low response rate of reported violent intentions, it is possible that the provocation in this scenario was not high enough for most people to experience a friction that would make them perceive violence as a possible solution to reduce such friction. This is further supported since n=14 of the respondents had high crime propensity. It is hypothesised in SAT that people have different sensitivities or thresholds to friction, in this case it would be reasonable to assume, as confirmed by the result, that those reporting violent intentions in relation to this provocation has high crime propensity. It is possible that those who reported violent intentions in this scenario are not sensitive to the deterrent effects presented in the scenario, as it is theorized that as crime propensity increases it is expected that the threshold for perceiving and choosing crime as an action alternative will lower in relation to levels of provocation and monitoring. Individuals with high crime propensity also have lower levels of self-control and therefore are considered more likely to react with violence regardless of levels of provocation. It is thus possible to assume that in relation to the particular scenario, the levels of provocation and monitoring made no significant contribution to the model as those who report violent intentions in this scenario might not be susceptible to deterrent effects and have low thresholds to perceive violence as a viable action alternative in such

circumstances.

In the violence scenario in wave 3, 21% reported violent intentions. In this scenario propensity, provocation and criminogenicity were significantly related to the likelihood of reporting such intentions. However, the level of monitoring was not. This is further in line with the above presented reasoning that during provocation, some individuals are less sensitive to deterrent effects. Since this scenario captured a larger amount of people in the low and medium propensity group, provocation probably was of greater importance as this scenario generated a substantial amount of people with higher thresholds for friction reporting criminal intentions. Van Damme and Pauwels (2015) found similar results to this scenario in their research, and hypothesis that the provocation also faces the participants with the loss of a valuable item, their Ipad. The investigation of the correspondence between violent intentions and violent outcomes showed that of the amount of respondents for wave 2, 4,1% reported violent intentions whereas 7,5% reported actual crimes of assault. In wave 3, 21% reported violent intentions whereas the actual reported prevalence of assault was 12%. More interestingly, it indicated that the proportion of participants' with higher propensity who report violent intentions and actual violent outcomes significantly differ from the proportion of participants' with low propensity who report violent intentions and actual violent outcomes in all analyses.

### **Discussion of Methodological Limitations**

Firstly, the composition of the propensity groups was calculated based on standard deviations in accordance with Wikström's et al. method. In retrospect, the results of this study could have been improved if the groups were larger. The utilized method was supposed to "heuristically help illustrate some key differences among young people according to their levels of crime propensity" (Wikström et al., 2012: 139). It is indeed a practical method to illustrate differences; however it was not practical or optimal to meet the aim of this study. There was significant differences between the groups, although, the small groups made some analysis impossible. For example, the moral judgement scenario in wave 3 was not possible to analyse as categories since no-one reported criminal intentions in the low propensity group. The results of the alternative analysis of the violent scenario in wave 2 further emphasised the differences that were possible to detect just by changing the dependent variable (see footnote 23).

Secondly, similar issues arose when trying to study interactions. Logistic regression was conducted using spilt file by propensity groups to assess interaction with the criminogenicity scale and the effects on reported criminal intentions. However, this procedure failed to produce any significant result of the impact of permutation criminogenicity on criminal responses by propensity groups because the sample was too small to analyse interaction effects. This would have been a desirable analysis if it would have been possible to carry out correctly since it could have strengthened the result. Instead bivariate analysis was favoured, however, with such small group the effect sizes should be interpreted with caution.

Thirdly, the scenario research conducted by Wikström et al., (2012) has been of great assistance in interpreting and coding the scenario levels and dimension regarding the violent scenarios. The same was not possible to do with the moral judgement scenarios since there is no available information<sup>24</sup> on coding and interpretation. Therefore, there might be errors in the coding, which ultimately

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<sup>24</sup> To this authors knowledge.

would reproduce errors in the interpretation of the results.

Fourthly, the content and design of the scenarios make it difficult to compare the results since the situations and even response alternatives differ quite greatly. It can be problematic to give the respondents a question that contains several alternatives in one. For example, the high rate of reported violent intentions in response to the violent scenario in wave 3 could hypothetically be due to the inclusion of the less violent option of pushing, it is not possible to determine whether the respondent actually thought that they would hit or push the other person. This issue transpires to the question of actual assault, since pushing is not included in the question, only more severe types of violence are presented. It should be noted that 21% reported violent intentions and 12% reported actual violent behaviours. It is possible that the inclusion of the pushing might have made more individuals susceptible to report that they would engage in physical violence, whereas they may have not if the pushing were excluded.

## **CONCLUSION**

This study has identified some key insights through the conducted scenario research. Individual characteristics, i.e. differences in crime propensity have been found to be the only consistent and significant predictor of criminal intention, and perhaps more importantly, actual criminal behaviour across all analyses and waves. The influence of environmental features in terms of motivators and controls yielded different results depending on which motivator, temptation or provocation that was being studied. The influence of motivators and controls appeared to predominantly be linked to either morality or self-control. It thus appeared as though the components that together composite crime propensity varied in their predominant influence of the perception-choice process, depending on the presented motivator in the hypothetical situations in the scenarios. Propensity thus appears to be interacting with features of the setting, since it was expressed differently in relation to the different scenarios.

SAT proposes that controls only have a role in some action decisions and the results of this study confirms that controls appeared have an important role in action decisions where moral judgements were made. This implies that the influences of outer controls are more closely connected to the morality of a person. SAT also proposes that provocation in general is more influential to the perception-choice process than controls are, this is further strengthened by the findings when provocation is the motivation. Higher crime propensity, thereby lower self-control, is expected to be linked to lower threshold for perceiving and choosing crime as an action alternative in relation to levels of provocation and control.

In conclusion, Swedish adolescents' criminal intentions correspond with self-reported actual criminal behaviours to a large extent. Some of the differences are suggested to be accounted for through the wording and content of the scenarios as they are not directly comparable with the self-reported crime data. The result further indicates clear tendencies of correspondence between level of propensity and prevalence of criminal intentions and actual criminal behaviours. Even though the many limitations of this study suggest a cautious interpretation of the results, they are presented with such consistency across all analyses that it is reasonable to conclude that there is some reliability of the results. Since similar results were found in PADS+, it further strengthens the conclusion of this study.

## **FUTURE RESEARCH**

Influential factors that affect a person's perception-choice process are causally relevant factors for the action. The causal mechanism that initiate and guides the perceptions-choice process thus appear to be underpinned by either morality or self-control. It is helpful, and desirable, for some analysis to utilize generalised crime propensity. However, since the results in this study indicate that morality and self-control substantially influence the perception-choice process differently it would be of interest to study the influence of morality and self-control separately rather than combined as generalised crime propensity. This could potentially illuminate the differences that appear in this study more explicitly.

Future research should also attempt to overcome the limitations of this study and adhere to the alternative suggestions presented in this study (or other alternatives), particularly considering the potential usefulness of larger groups.

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## APPENDIX A

Morality Scale: general views of the wrongfulness of particular actions. Values ranges between 0-48, high values indicate high morality- therefore the morality is rescaled so that higher vales indicate lower moral when used in the crime propensity scale (Torstensson Levander & Ivert, 2016).

Items included in the generalized morality scale:

Question: *How wrong is it for someone your age to...*

- ❖ Ride a bike through a red light
- ❖ Skip doing homework for school
- ❖ Skip school without an excuse
- ❖ Lie, disobey or talk back to teachers
- ❖ Go skateboarding in a place where skateboarding is not allowed
- ❖ Tease a classmate because of the way he/she dresses
- ❖ Smoke cigarettes
- ❖ Get drunk with friends on a Friday evening
- ❖ Hit another young person who makes a rude comment
- ❖ Steal a pencil from a classmate
- ❖ Paint graffiti on a house wall
- ❖ Smash a streetlight for fun
- ❖ Smoke cannabis
- ❖ Steal a CD from a shop
- ❖ Break into or try to break into a building to steal something
- ❖ Use a weapon or force to get money or things from another young person

Answers and coding: 0 (very wrong) 1 (wrong) 2 (a little wrong) 4 (not wrong at all) (Wikström et al., 2012).

## **APPENDIX B**

Ability to exercise self-control scale: general views on relevant self-control reactions. Values ranges between 0-24, higher values indicate low self-control (Torstensson Levander & Ivert, 2016).

Question: *Do you agree with the following statements about yourself?*

- ❖ When I am really angry, other people better stay away from me
- ❖ I often act on the spur of the moment without stopping to think
- ❖ I sometimes find it exciting to do things that may be dangerous
- ❖ I do not devote much thought and effort preparing for the future
- ❖ Sometimes I will take a risk just for the fun of it
- ❖ I often try to avoid things that I know will be difficult
- ❖ I never think about what will happen to me in the future
- ❖ I lose my temper pretty easily

Answers and coding: 3 (Strongly agree) 2 (Agree) 1 (Disagree) 0 (Strongly disagree) (Wikström et al., 2012).

## APPENDIX C

Figure 8. “Data and Methods” (Torstensson Levander, Svensson, Ivvert, Andersson & Pauwels, 2015: 10)

