Crime Propensity, Criminogenic Exposure and Crime Involvement in Early to Mid Adolescence

by Per-Olof H. Wikström

Summary

This paper explores the impact of crime propensity and criminogenic exposure on individual crime involvement during early to mid adolescence. The analysis is guided by the theoretical framework of the Situational Action Theory (SAT) and the data used is taken from the ESRC financed Peterborough Adolescent and Young Adult Development Study (PADS+). Crime propensity is measured as a composite construct of morality and capability to exercise self-control and criminogenic exposure is measured as a composite construct of peer delinquency and time spent with peers in risky places. SAT predicts that a person's crime involvement is dependent on his or her propensity and exposure (and their interaction), and that changes in a person's crime involvement are dependent on changes in his or her propensity and/or exposure. The findings of this study support these two hypotheses.

Keywords: Peterborough Adolescent and Young Adult Development Study (PADS+), Situational Action Theory (SAT), crime, crime propensity, criminogenic exposure

1. Introduction

Adolescence is an important developmental phase in human life. It is the transitional period between childhood and the start of adulthood. It is also the age period in which overall crime involvement peaks. This paper will explore the impact of crime propensity and criminogenic exposure on individual crime involvement during this critical developmental phase.

The analysis is guided by the theoretical framework of the *Situational Action Theory* (SAT) and the data used is taken from the ESRC financed *Peterborough Adolescent and Young Adult Development Study* (PADS+). The focus of the investigation is young people's crime propensity (as dependent on their morality and capability to exercise self-control) and their exposure to criminogenic settings (as dependent on their time spent unsupervised with peers in areas with poor collective efficacy and their friends' crime involvement), and their relationship to crime involvement during the period of early and mid adolescence. Two key hypothesis derived from SAT are explored in this paper: (1) that a person's crime involvement is dependent on his or her propensity and exposure (and their interaction), and (2) that changes in a person's crime involvement are dependent on changes in his or her propensity and or exposure.

2. Situational Action Theory (SAT)

Two central ideas in criminology are that crime involvement is a consequence of (i) peoples' crime propensity and (ii) criminogenic features of the environments to which people are exposed. A prominent example of a theory focusing on the role of person differences is *Gottfredson & Hirschi*'s (1990) »General Theory of Crime«, often referred to as self-control theory, and a prominent example of a theory focusing on the role of environmental influences is *Cohen & Felson*'s »Routine Activity Theory« (1979). These two strands of thinking are rarely combined into an integrated theoretical framework, although scholars have recognized increasingly the need and importance of the integration of personal and environmental approaches to advance knowledge about crime causation (e.g. *Jensen & Akers* 2003; *Reiss* 1986, 29; *Tonry, Ohlin & Farrington* 1991; *Wikström & Sampson* 2006).

The Situational Action Theory (SAT) is a newly developed (and developing) general theory of moral action and crime that aims to integrate individual and environmental explanatory perspectives within the framework of a situational action theory (*Wikström* 2004; 2005; 2006; 2010a; 2010b; *Wikström & Sampson* 2003; *Wikström & Treiber* 2007; 2009). According to SAT, acts of crime are an outcome of a *perception-choice process* guided by the interaction between a person's crime *propensity* and his or her *exposure* to criminogenic settings. Acts of *crime* are regarded as moral action (action guided by what is the right or wrong thing to do in a particular circumstance). The key aspects of the perception-choice process concern moral perception and moral choice. In a particular setting, a person will perceive certain action alternatives and, on this basis, make a choice. This process can be more or less *habitual* or *deliberate* depending on the subject's degree of familiarity with the setting he or she takes part in and its circumstances. Familiarity with the setting and circumstances promotes habitual (automated) processes of action, while unfamiliarity with a setting and circumstances promotes deliberate (rational and reflective) processes of action[1].

Morality (values and emotions) and the *capability to exercise self-control* are the main person characteristics that influence *crime propensity* (i. e., the tendency to see crime, or a particular crime, as an action alternative and to choose to act upon such an alternative). Morality is important because it has to do with what kind of action-alternatives a person perceives as potential responses to a particular circumstance. A person's capability to exercise self-control is important because it has to do with how well a person can direct his or her action in accordance with his or her own morality when experiencing motivations (temptations and provocations) that conflict with his or her own morality. The capability to exercise self-control thus comes into play when a person's motivation is in conflict with his or her morality.

A key assumption of SAT is that human action (and development) is directly influenced only by the settings in which people take part. A *setting* may be defined as the part of the environment which an individual, at a particular moment in time, can access with his or her senses, including any media present. The key environmental factor which determines whether or not a setting is criminogenic is its *moral context* (the moral rules that apply to the particular place and their levels of enforcement). In terms of analyzing action, the moral context is significant because it is within such a context that *opportunity* (which may create *temptation* if connecting to a person's particular desires and needs) and *friction* (which may create *provocation* if evoking feelings of annoyance or anger in a person) appear. Temptation and provocation are key motivational elements emerging from the person-setting interaction. However, it is the moral context, and its interaction with a person's morality and ability to exercise self-control, that, by acting as a »moral filter«, will determine whether or not a person will act upon a particular temptation or provocation. In other words, motivation is a necessary but not sufficient cause of acts of crime (and of the breach of moral rules more generally).

Whilst the Situational Action Theory regards the perception-choice process, as guided by the interaction of a person's propensity and exposure, as the immediate causal nexus explaining acts of crime, it does not ignore the importance of broader social factors (such as social integration and segregation) but insists these should be analyzed as potential *causes of the causes*, for example, causes of why certain kinds of settings emerge in a society and why different kinds of people tend to be exposed to different kinds of settings.

From a developmental perspective, SAT predicts that stability or change in a person's crime involvement are dependent on stability or change in his or her crime propensity and

---

1 Although few action processes will be fully habitual or deliberate, many will be predominantly habitual or deliberative.

his or her exposure to criminogenic settings (affecting their interaction). Against this background, the relationship between, on the one hand, changes in crime propensity and exposure to criminogenic settings and, on the other hand, changes in crime involvement become of particular interest to investigate.

3. The Peterborough Adolescent and Young Adult Development Study (PADS+)

The Peterborough Adolescent and Young Adult Development Study (PADS+)[2] is an ongoing ESRC financed longitudinal study of a sample randomly selected at age 11 from a cohort of young people living in the city of Peterborough and nearby villages in 2003. PADS+ includes about one third of all members of the age cohort in the study area. The study acquired active written consent from participants' parents (or other legal guardians). In 716 cases (72 % of the original sample of 991), the parents agreed to take part in an initial interview and to have their child take part in subsequent waves of data collection. The main reasons for not participating were refusals (223 cases)[3] and being uncontactable even after multiple letters, telephone calls and even personal visits by researchers to their home address (52 cases). To date (2008) the study has completed six annual waves of data collection with a highly satisfactorily retention rate of 97 %.

The first wave consisted of one-to-one interviews with each subject's main caregiver (parent) and focused on collecting data about the family and the child's current situation alongside retrospective information about the child's life-history from birth. The subsequent five waves consisted of a wide ranging data-collection involving interviewer-led small-group questionnaires and one-to-one conducted psychometric tests and space-time budgets with the subjects themselves.

In addition to these data a separate small-area community survey – the »Peterborough Community Survey« (PCS) – was carried out in 2005, targeting a random sample of the general population over the age of 17. The PCS used the smallest available administrative units called »output areas« (OAs), which subdivide the city into 550 areas with about 300 residents each. We sampled an average of 13 respondents per unit for a total sample of 6,600 respondents (for details see *Oberwittler & Wikström* 2009). The main purpose of the small area community survey was to use residents as social observers to collect data about social settings (e.g., their levels of social cohesion and informal social control) to be linked to the space-time budget to measure the young people's exposure to different social environments. The space-time budget data includes hourly information for a four-day period (each year), including where the subject spent time (geographic location), at what place (e.g., street), with whom (e.g., peers only) and doing what (e.g., unsupervised socializing).

4. The Constructs and Their Measurement

In this section we will introduce the particular data from PADS+ (and PCS) used in this study. The crime propensity construct is a composite measure based on scales measuring morality and capability to exercise self-control. The criminogenic exposure construct is a composite measure based on a scale measuring peer delinquency and a scale measuring time spent unsupervised with peers in areas of poor collective efficacy (subsequently also referred to as »risky places«). The data on morality, capability to exercise self-control, peer delinquency and crime involvement is taken from the PADS+ questionnaire. The data on risky

---

2 See www.pads.ac.uk
3 Most refusals were by parents; only a few children whose parents agreed to take part themselves refused.

places is based on a combination of data from the small-area community survey (PCS) and the space-time budget.

To enhance the quality of the data, the questionnaires were administered in small groups of four subjects and divided into blocks of questions by topic (e.g., neighborhood, family bonds, moral values or self-control). To make sure the subjects' interpreted the questions as intended (as much as possible), each block was introduced by a project staff member who also invited the subjects to raise any queries before answering the questions. At the end of each block, the staff member asked the subjects to check that they had answered all the questions in the block, before moving on to the next block, keeping internal non-responses to a minimum. The space-time budget data was collected through one-to-one interviews.

4.1 Crime propensity
The basic idea is that a young person's morality and capability to exercise self-control are the key personal factors that influence his or her crime propensity. Young people with a strong morality and capability to exercise self-control are likely to refrain from crime regardless of their level of criminogenic exposure[4], while those with a weaker morality and capability to exercise self-control are more likely to engage in acts of crime when exposed to criminogenic settings. It is important to point out that here »morality« refers specifically to moral values and emotions which are believed to encourage the breaching of common rules of conduct such as moral rules defined in law. In this study we have only included a measure of moral values but not of moral emotions, as data on moral emotions was not collected until the third wave (the second wave of data collection from the young people). Analyses conducted show that the morality construct becomes stronger when moral emotions are included, which means that in this study we are likely to somewhat underestimate the impact of morality on crime involvement.

4.1.1 Morality
PADS+ includes different sets of questions about moral values and moral emotions (shame and guilt). In this study we will use one of the sets of questions regarding moral values (inspired by a scale used in *Loeber*'s Pittsburgh Youth Study), which asks the subjects how wrong it is for someone their age to do 16 specific acts, ranging from »Ride a bike through red light« to »Use a weapon or force to get money or things from another young person«.

The instruction given to the subjects for the questions about moral values reads as follows:

»Now I would like you to answer some questions about what things you think are wrong for a person your age to do. I would like you to tick ›very wrong‹ if it is something someone your age should never ever do, ›wrong‹ if it is something someone your age normally should not do, ›a little wrong‹; if it is something that is a little bad but not too bad to do, and ›not wrong at all‹ if it is something not bad at all that someone your age can always do.

If you have problems understanding any of the questions please raise your hand and I will come over and help you«.

4.1.2 Capability to exercise self-control
The questions about capability to exercise self-control are a modified scale based on the *Grasmick et al.* (1993) self-control scale. Included in PADS+, depending on the wave, are 16 to 20 questions on self-control, but for this study we will use only 8 questions. The reason for excluding questions from the original *Grasmick et al.* scale is that many of the questions

---

4 Although in the longer term exposure may affect morality (for example, longer term exposure to crimi-nogenic moral contexts may contribute to the weakening of a person's morality).

do not refer to self-control as defined here and some, in fact, are arguably more questions about morality than self-control. Examples of included questions are »I often act on the spur of the moment without stopping to think« and »I lose my temper pretty easily«. This scale is best viewed as a scale of generalized ability to exercise self-control since the subjects report on their general tendency to be able to control themselves in unspecified circumstances.

The questions about self-control were introduced in the following manner:

»Now I would like you to answer some questions about how you are as a person, for example, if you easily get upset, easily get angry, if you care about what others think of you, and if you think a lot about what is going to happen to you in the future.

For each question I would like you to tick the box that best fits how you are as a person. If the statement is true about you, tick strongly agree, if it is mostly true about you tick mostly agree, if it is only a little bit true about you tick mostly disagree and if it is not at all true about you tick strongly disagree.

If you have problems understanding any of the questions please raise your hand and I will come over and help you«.

4.2 Criminogenic exposure

The basic idea is that young people's exposure to criminogenic settings is dependent on the places they frequent and with whom they tend to frequent them with. The peer group is particularly important in adolescence and activities outside the home and school are generally conducted with peers. Therefore the characteristics of one's peers (e.g., their morality) and the places a young person frequents with those peers (e.g., their level of informal social control) should give some indication of his or her exposure to criminogenic settings. Young people who spend more time unsupervised with peers in areas with poor collective efficacy (i. e., in areas with weak social cohesion and poor informal social control) and whose peers are more delinquent are assumed to have a higher exposure to criminogenic influences (that is, they more often spend time at places and with people that may encourage involvement in acts of crime). It is important to observe that this is not a perfect measure of criminogenic exposure and therefore can be developed further. There are, for example, most likely other environments that are criminogenic; the assumption made here is that the measure used in this study will capture some key variation in young people's general exposure to criminogenic settings.

4.2.1 Friends' moral rule breaking and crime (peer delinquency)

The data about young people's friends' tendency to breach common rules of conduct (peer delinquency) included 7 questions regarding how often subjects' friends got involved in specific actions ranging from »to skip school/work without an excuse« to »get into fights with others«.

This block of questions was introduced in the following way:

»Now, I would like you to answer some questions about whether any of your friends do things that may get them into trouble. Please remember that when we talk about your friends we mean peers that you often spend time with and like to be with.

If you have problems understanding any of the questions please raise your hand and I will come over and help you«.

4.2.2 Time spent unsupervised with peers in areas with poor collective efficacy (risky places)

The data on time spent with peers in risky places were constructed using information from the small area community survey (PCS) and the space-time budget. The measure specifies »time spent unsupervised with peers in areas with poor collective efficacy«. This measure

was obtained in the following manner. Based on data from the community survey (PCS), each output area of the city was dichotomized according to whether or not it had a low level of collective efficacy (i.e., poor collective efficacy). Poor collective efficacy was derived using two scales measuring the area level of (1) social cohesion and (2) informal social control. Areas with low levels of social cohesion and informal social control were classified as having a poor collective efficacy (see *Sampson, Raudenbush & Earls* 1997 for more on the concept of collective efficacy). Data from the space-time budget specified how many hours (of awaken time) during a four day period[5] (in each wave) a subject had been in an area of poor collective efficacy at the same time he or she was also unsupervised and with peers. Because the space-time budget recorded, among other things, geographic location, we were able to directly link the community survey data (being in an area with poor collective efficacy) and the space-time budget data (being unsupervised with peers).

4.3 Calculating the propensity and exposure measures

The crime propensity and criminogenic exposure measures were calculated in the following manner. First, for each sub-scale (e.g., morality) the variables measuring the sub-scale at each of the five waves were merged on an add cases basis into one variable covering the whole study period[6]. Secondly, the Z-scores for these new variables were calculated. Third, the Z-scores of the two sub-scales (e.g., morality and self-control) were then added to create the composite measure (e.g., crime propensity). Finally, the values for the composite measure for the whole period (e.g., crime propensity) were split by wave into five variables (e.g., a measure of crime propensity for each wave) where each person was assigned his or her Z-score for that wave[7] (which had been calculated on the basis of the Z-score distribution for the whole period, i.e., the distribution of the values for all five waves).

The overall crime propensity score measure for the five waves is approximately distributed normally (skewness = 0.39, S.E. = 0.041, n = 3,508), while the overall criminogenic exposure measure for the five waves is clearly positively skewed (skewness = 1.59, S.E. = 0.042, n = 3,442) because most young people have a low exposure to criminogenic settings.

4.4 Crime involvement

The questions in the study about *self-reported criminality* refer to 10 different types of crime: shoplifting, theft from a person, residential burglary, non-residential burglary, theft from a car, theft of a car, vandalism, arson, assault and robbery from a person. The subjects were asked whether they had committed the crime in question during the last year and, if so, how many times they had done so. Although the questions cover most of the kinds of crime young people tend to engage in, it should be particularly noted that crimes of fraud and sexual crimes are not included in the study (neither are traffic crimes).

The questions about *self-reported criminality* were introduced by the project staff member supervising the questionnaires using the following instructions (the text is from the 2005 questionnaire):

---

5 These days always included the Friday and Saturday and the two most recent week days (excluding Friday, Saturday and Sunday) preceding the interview date. All interviews were scheduled so these four days always fell within a normal school week (e.g., did not include a term break).

6 In the new variable each person contributes 5 values (one from each wave).

7 This was possible because the subjects' ID and the wave to which a particular data point referred to were kept in the data set when adding the cases of the five waves into one variable.

»Now I would like you to answer some questions about things you may or may not have done. The questions will ask about things that happened in 2005, that is, in the second and third term of year 9, the summer break and the first term of year 10. When you answer these questions do not include anything that happened after New Years Eve[8]. [Here the supervisor stopped and asked the subjects if this was all clear and if they had any questions. When he or she was convinced that they all understood the time frame he or she would continue the introduction]. The questions follow the same format. First they ask you to answer yes or no whether you have done something. If you answer yes, you need to say how many times you did it in 2005. If you answer no, you need to go on to the next question. Please remember that nobody, not your family, not your teachers, not the police nor anybody else will be told what you have told us. You can be sure that what you tell us will remain secret«.

The crime data is highly skewed (skewness = 7.42, S.E. = 0.093, n = 693[9]) and therefore a log number of crimes is used as an alternative outcome measure for the crime rate (crimes per young people) and crime frequency (crimes per offender) in some subsequent statistical analyses.

4.5 Crime involvement by crime propensity and criminogenic exposure

According to the Situational Action Theory, acts of crime are an outcome of the interaction between a person's crime propensity and his or her exposure to a criminogenic setting. This is a situational model. Propensity and exposure have to come together in time and space to create an incitement to commit an act of crime. This implies that to test the basic situational assumption of the theory, we should preferably have situational data exploring whether a person with a particular propensity in a particular setting tends to act in a particular predicted way. Ideally, we need to demonstrate that acts of crime tend to occur when a person with a higher crime propensity encounters a setting with a higher criminogenic exposure. However, what we can investigate with the kind of data presented here is whether people with a higher propensity who are also more frequently exposed to criminogenic settings are more likely to have engaged in acts of crime. We know a person's crime propensity and level of exposure to criminogenic settings, but we do not know whether his or her acts of crime actually occurred in such settings. The crucial assumption we thus have to make here is that these acts of crime actually have occurred in criminogenic settings (as defined by the theory)[10].

With this qualification in mind, the findings of this study support the hypothesis that crime propensity and criminogenic exposure and their interaction predict young people's crime involvement[11]. Both propensity and exposure are significantly correlated with crime involvement (*Table 1*) and are independent predictors of crime involvement (*Table 2 – Model 1*). They are much stronger predictors when the outcome is logged (because the crime rate is a highly

---

8　The fieldwork was carried out in the early part of the following year (in this example, in the early part of 2006).

9　Please note that this refers to a variable in which data from all five waves have been added into one summary variable for the whole period (i.e., the number of crimes committed by a person over the whole study period). The skewness data earlier presented for propensity and exposure refers to data for all five waves added on a case basis (each person providing five data points).

10　However, space-time budget data includes the exact location of all acts of crime committed within the studied four day period (amounting to 20 days in total over five waves), which, in combination with PCS data on small-area levels of poor collective efficacy, will help test this assumption. PADS+ has also collected data using randomised vignettes (scenarios), a further method for testing the assumptions about situational influences on a subject's action choices. Preliminary analyses of these two kinds of data support the situational model of SAT and will be presented in subsequent publications from PADS+.

11　The data used for *Tables 1* and *2* refers to the full 5 wave period. The measures add all 5 waves' scores for propensity, exposure and crime involvement to give an overall relationship between the studied variables for the whole period.

skewed variable), explaining more than 50 percent of the variation (*Table 2* – Model 2). However, when introducing an interaction term, exposure loses its significance, although its interaction with propensity is significant, in accordance with the prediction of the Situational Action Theory that the relevance of exposure as a causal factor is dependent on a person's level of propensity (*Table 2* – Model 3)[12]. A plot of this relationship (where the high and low categories of each variable have been defined as one standard deviation above and one standard deviation below the mean) shows that for young people with the lowest crime propensity, exposure does not affect their crime involvement much (b = 0.50, S.E. = 0.25, p = 0.048, n = 94)[13], while for those with a medium (b = 5.8, S.E. = 0.78, p = 0.000, n = 468) and high propensity (b = 15.3, S.E. = 7.31, p = 0.039, n = 96), exposure has a greater impact on their level of crime involvement (*Figure 1*)[14]. It is worthwhile to note that for those with a low propensity there are no subjects in the category with the highest exposure. The reverse fundamentally applies to those with the highest crime propensity; only two such subjects fall into the category with the lowest exposure (both have a crime frequency close to zero but have been excluded from the graph due to the low number of observations for the data point).

Table 1   Propensity, exposure and crime involvement; zero-order correlations

Dependent: No of crimes	r	r (Log crime)	Rank order (Spearman)
Propensity	0.46	0.70	0.69
Exposure	0.41	0.64	0.63

Propensity and Exposure measures based on Z-scores

Table 2   Key explanatory factors and crime involvement; multiple regression

| Dependent: No of crimes	b	Beta	Prob.
Model 1			
Propensity	12.7	0.33	0.000
Exposure	7.0	0.19	0.000
Multiple $R^2 \times 100 = 23.0$			
Model 2 (Log No. of crimes)			
Propensity	0.20	0.50	0.000
Exposure	0.12	0.30	0.000
Multiple $R^2 \times 100 = 54.4$			
Model 3			
Propensity	12.5	0.34	0.000
Exposure	1.8	0.05	n.s.
Interaction Term	4.0	0.26	0.000
Multiple $R^2 \times 100 = 28.0$			

Propensity and Exposure measures based on Z-scores

12 Please note that the outcome is not logged in Model 3.
13 The figure b is the within propensity group unstandardized regression coefficient between exposure and crime involvement (S.E. = standard error).
14 These findings are similar to those obtained in an earlier cross-sectional study from 1999 of a sample of about 2,000 young people aged 15–16 from Peterborough (see *Wikström & Butterworth* 2006).

So far we have established that those young people who in early to mid adolescence have the strongest crime propensity (weakest morality and poorest capability to exercise self-control) and highest exposure to criminogenic settings (most time spent unsupervised in areas of poor collective efficacy with peers who tend to be delinquent) are those who are likely to be the most involved in crime. We have also established that the role of exposure is dependent on a person's level of propensity. The next question to investigate is whether changes in a person's propensity and exposure predict changes in his or her crime involvement.

Figure 1   *Crime involvement (No. of crimes) by propensity and exposure in early and mid adolescence*
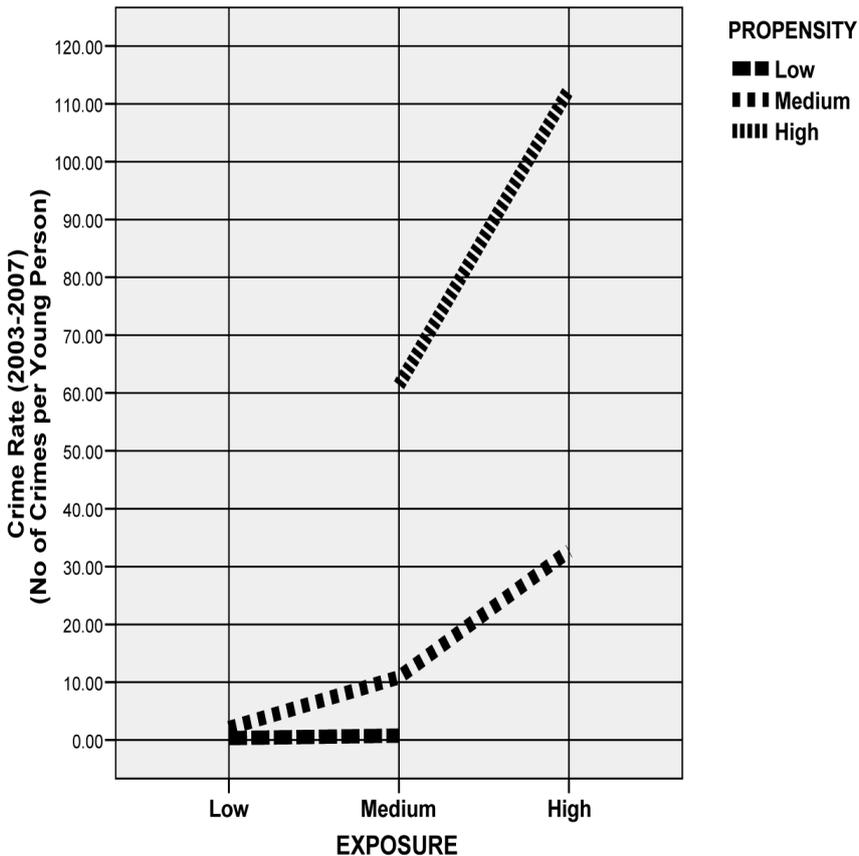
4.6 Changes in crime involvement by changes in propensity and exposure

The Situational Action Theory predicts that changes in a person's propensity and/or exposure will lead to changes in his or her crime involvement. To explore this assumption, change scores and residual changes scores were calculated. A change score is simply the change in a variables score between t_1 and t_2 ($t_2 - t_1$), while a residual change score refers to the residual obtained when regressing a variable's value at t_1 on its value at t_2. Residual change scores than

take into consideration the general age change between t_1 and t_2 and show, so to speak, whether a particular subject's change is bigger or smaller than the general change by age for the whole group. It is important to notice that in these analyses we predict change by change. The question is do changes in propensity and exposure predict changes in crime involvement?

By and large the findings support the SAT's prediction that changes in propensity and exposure significantly predict changes in crime involvement (*Table 3*). The findings are more consistent when using residual change scores (i.e., taking into consideration general changes by age) as the basis for the analyses; when using (absolute) change scores in two cases propensity change comes out as non-significant.

Table 3   Changes in propensity and exposure predicting changes in crime involvement (no. of crimes); absolute and residual change scores; unstandardized bivariate regression coefficients and zero-order correlations

Dependent: No of crimes	(Absolute) Change Scores		Residual Change Scores	
	b	r	*b*	r
Change				
Age 12 to 13				
Propensity	*1.48*	0.13	*2.33*	0.19
Exposure	*2.98*	0.26	*3.93*	0.32
Age 13 to 14				
Propensity	*n.s.*	n.s.	*1.55*	0.16
Exposure	*1.55*	0.14	*1.78*	0.22
Age 14 to 15				
Propensity	*1.29*	0.08	*2.05*	0.12
Exposure	*2.56*	0.19	*2.98*	0.21
Age 15 to 16				
Propensity	*n.s.*	n.s.	*2.44*	0.10
Exposure	*1.29*	0.10	*1.28*	0.08

All shown coefficients are significant at the 5 percent level or better.

Considering the joint influence of changes in a person's propensity and exposure on changes in his or her crime involvement suggests that changes in exposure are generally the more important of the two predictors (*Table 4*). When basing the analyses on (absolute) change scores, changes in propensity fail to be significant when compared with changes in exposure. When basing the analyses on residual change scores, both predictors are significant (except for changes between age 15 and 16, where both are non-significant), but changes in exposure tend to be stronger where there is a notable difference between the two.

*Table 4   Changes in propensity and exposure predicting changes in crime involvement; ab-
solute and residual change scores; multiple regression*

Dependent: No of crimes	(Absolute) Change Scores		Residual Change Scores	
	b	r	*b*	r
Change				
Age 12 to 13				
Propensity	0.70	n.s.	1.04	0.030
Exposure	2.84	0.000	3.60	0.000
Multiple $R^2 \times 100$:	7		11	
Age 13 to 14				
Propensity	0.63	n.s.	1.44	0.000
Exposure	1.42	0.030	1.40	0.000
Multiple $R^2 \times 100$:	2		7	
Age 14 to 15				
Propensity	0.90	n.s.	1.34	0.044
Exposure	2.38	0.000	2.63	0.000
Multiple $R^2 \times 100$:	4		5	
Age 15 to 16				
Propensity	0.32	n.s.	1.11	n.s.
Exposure	1.23	0.014	1.03	n.s.
Multiple $R^2 \times 100$:	1		1	

4.7 The effect of change in exposure on change in crime involvement by initial crime propensity

According to SAT, the crime involvement of those with higher propensity is more affected by exposure than those with lower propensity. Therefore one would expect that changes in exposure would affect changes in crime involvement more for those who have a higher propensity. To test this assumption the impact of change in exposure on change in crime involvement was calculated for different groups of subjects defined by their initial propensity level. Subjects were classified into groups by their propensity level at ages 12, 13, 14 and 15; a high propensity is defined as one or more standard deviations above the mean and a low propensity as one or more standard deviations below the mean. The impact of changes in exposure on changes in crime involvement was then calculated for each age. For example, for the propensity classes at age 12, the relationship between changes in exposure and crime involvement between ages 12 and 13 was explored; for the propensity classes at age 13, the relationship between changes in exposure and crime involvement between age 13 and 14 were explored, and so on.

The main question raised is whether the initial level of propensity (at t_1) affects the impact of change in exposure (t_1 to t_2) on change in crime involvement (t_1 to t_2). The findings basically support this assumption (*Table 5*). For example, the changes in crime involvement for those with an initially higher crime propensity appears more influenced by changes in expo-

sure than that of those with a lower crime propensity. However, it should be noted that the standard error is much higher for the high propensity group, indicating a much bigger variation in change in crime rate within this group compared to others.

Table 5   Change in crime involvement (no. of crimes) by change in exposure by initial propensity level; absolute and residual change scores; unstandardized regression coefficients

Dependent: No of crimes	(Absolute) Change Scores			Residual Change Scores		
	b	S.E.	r	*b*	S.E.	r
Change/Initial Propensity Level						
12 to 13						
Low	0.56	0.26	0.035	0.93	0.28	0.001
Medium	2.37	0.41	0.000	2.77	0.41	0.000
High	4.53	1.47	0.005	6.37	1.76	0.000
13 to 14						
Low	0.55	0.18	0.002	0.74	0.15	0.000
Medium	1.30	0.46	0.005	1.02	0.27	0.000
High	2.40	1.47	n.s.	3.02	1.27	0.020
14 to 15						
Low	0.86	0.30	0.006	0.98	0.30	0.002
Medium	1.83	0.36	0.000	1.95	0.36	0.000
High	3.66	1.60	0.024	3.99	1.72	0.022
15 to 16						
Low	0.12	0.09	n.s.	0.03	0.11	n.s.
Medium	−0.17	0.20	n.s.	−0.27	0.20	n.s.
High	3.66	1.85	0.024	4.97	2.48	0.042

5. Conclusion

The Situational Action Theory predicts that crime involvement is dependent on a person's crime propensity and criminogenic exposure, and their interaction. The findings of this study support this hypothesis. SAT further predicts that changes in a person's propensity and exposure predict changes in his or her crime involvement. Also SAT predicts that changes in a person's exposure to criminogenic settings will be more important for changes in crime involvement for those who have a higher crime propensity. The findings of this study also support that hypothesis.

Although this study does lend some support to some key assumptions of SAT about the causal relationships between propensity, exposure and crime involvement, there is much that can be done to improve the study of these relationships. We have already indicated that the measures of crime propensity and criminogenic exposure can be improved, for example, by including moral emotions (shame and guilt) in the propensity construct and by including a wider range of risky places in the exposure construct.

We also believe that the study of personal change can be much improved. In this research we have used change scores and residual change scores to study the annual influence of changes in a person's propensity and exposure on his or her changes in crime involvement. Although the findings of these explorations are encouraging, we can most likely find/develop more sophisticated methods of studying the impact of change on change (over short and longer periods of time).

Since SAT is basically a situational model of action, we need to supplement the kinds of analyses conducted in this paper with studies that demonstrate that acts of crime actually tend to occur when a person with a higher crime propensity encounters a setting with a higher criminogenic exposure. We also need to study the perception-choice process that links propensity and exposure to action to validate the hypothesized role of agency (through habit or deliberation) in crime causation.

Knowledge about how key explanatory factors predict crime involvement, and how their changes predict changes in crime involvement during critical developmental phases (such as adolescence) can help us understand the role they play in shaping people's criminal trajectories and in explaining the processes that underlie aggregate crime trends. However, such an analysis is only a first small step in the building of an integrative interactional developmental model.

If we want to create a better understanding of the processes involved in the shaping of people's different crime trajectories, which underlie the aggregate crime trends we observe and whose causes we debate, we need to further our knowledge about how factors influencing crime propensity and the exposure to criminogenic settings interact over the life-course and their role in different key developmental phases. We further need to know what endogenous social factors (causes of the causes) influence these processes. This is, of course, a monumental project, but one we badly need to take on if we want to advance our knowledge about the causes of crime and its prevention beyond the multitude of poorly integrated partial and disciplinary theories and the host of fragmented risk factor studies that appear to dominate the criminological research agenda.

Kriminelle Neigung, kriminogene Gefährdung und kriminelle Beteiligung in der frühen und mittleren Adoleszenz

Zusammenfassung

Dieser Beitrag untersucht den Einfluss der kriminellen Neigung und der kriminogenen Gefährdung auf die individuelle kriminelle Beteiligung während des frühen und mittleren Jugendalters. Die Analyse wird vom theoretischen Rahmen der Situational Action Theory (SAT) geleitet, und die benutzten Daten stammen aus der »Peterborough Adolescent and Young Adult Development Study« (PADS+). Die kriminelle Neigung wird als ein zusammengesetztes Konstrukt aus Moral und der Fähigkeit gemessen, Selbstkontrolle auszuüben. Kriminogene Gefährdung wird aus dem zusammengesetzten Konstrukt der Delinquenz und der Zeit hergeleitet, die mit Gleichaltrigen in Risikogegenden verbracht wird. Die SAT sagt voraus, dass die kriminelle Verwicklung einer Person von ihrer Neigung und ihrer Gefährdung (und deren Interaktion) abhängig ist. Sie prognostiziert ferner, dass Änderungen der kriminellen Beteiligung einer Person von Wandlungen in ihrer Neigung und/oder Gefährdung abhängen. Die Ergebnisse dieser Studie unterstützen die beiden Hypothesen.

Schlüsselwörter: Situational Action Theory, Peterborough Adolescent and Young Adult Development Study, Kriminalität, kriminelle Neigung, kriminogene Gefährdung

References

Cohen, L.E. & Felson, M. (1979). Social change and crime rate trends: A routine activity approach. American Sociological Review 44, 588–608. – *Gottfredson, M.R. & Hirschi, T.* (1990). A General Theory of Crime. Stanford. – *Grasmick, H.G., Tittle, C.R., Bursik, R.J. & Arnklev, B.J.* (1993). Testing the core implications of Gottfredson and Hirschi's general theory of crime. Journal of Research in Crime and Delinquency 30, 5–29. – *Jensen, G.F. & Akers, R.L.* (2003). Taking social learning theory global: Micro-macro transitions in criminological theory, in: R.L. Akers & G.F. Jensen (eds.), Social Learning Theory and the Explanation of Crime. Advances in Criminological Theory 11, 9–37. New Brunswick. – *Oberwittler, D. & Wikström, P-O.H.* (2009). Why small is better. Advancing the study of the role of behavioral contexts in crime causation, in: D. Weisburd, W. Bernasco & G.J.N. Bruinsma (eds.), Putting Crime in its Place: Units of Analysis in Spatial Crime Research, 35–59. New York. – *Reiss, A.J.* (1986). Why are communities important in understanding crime? Crime and Justice 8, 1–33. – *Sampson, R.J., Raudenbush, S.W. & Earls, F.* (1997). Neighborhoods and violent crime: A multilevel study of collective efficacy. Science 277, 918–924. – *Tonry, M., Ohlin, L.E. & Farrington, D.P.* (1991). Human Development and Criminal Behavior. New York. – *Wikström, P-O.H.* (2004). Crime as alternative: Towards a cross-level situational action theory of crime causation, in: J. McCord (ed.), Beyond Empiricism: Institutions and Intentions in the Study of Crime. Advances in Criminological Theory 13, 1–38. New Brunswick. – *Wikström, P-O.H.* (2005). The social origins of pathways in crime: Towards a developmental ecological action theory of crime involvement and its changes, in: D. Farrington (ed.), Integrated Developmental and Life-Course Theories of Offending. Advances in Criminological Theory 14, 211–246. New Brunswick. – *Wikström, P-O.H.* (2006). Individuals, settings, and acts of crime: Situational mechanisms and the explanation of crime, in: P-O.H. Wikström & R. Sampson (eds.), The Explanation of Crime: Context, Mechanisms and Development, 61–107. Cambridge. – *Wikström, P-O.H.* (2010a). Situational Action Theory, in: F. Cullen & P. Wilcox (eds.), Encyclopedia of Criminological Theory. London. – *Wikström, P-O.H.* (2010b). Situational Action Theory, in: B.S. Fisher & S.P. Lab (eds.), Encyclopedia of Victimology and Crime Prevention. London. – *Wikström, P-O.H. & Sampson, R.* (2003). Social mechanisms of community influences on crime and pathways in criminality, in: B.B. Lahey, T.E. Moffitt & A. Caspi (eds.), The Causes of Conduct Disorder and Serious Juvenile Delinquency, 118–148. New York. – *Wikström, P-O.H. & Butterworth, D.* (2006). Adolescent Crime. Individual Differences and Lifestyles. Cullompton. – *Wikström, P-O.H. & Sampson, R.J.* (2006). Introduction: Toward a unified approach to crime and its explanation, in: P-O.H. Wikström & R.J. Sampson (eds.), The Explanation of Crime: Contexts, Mechanisms and Development, 1–7. Cambridge. – *Wikström, P-O.H. & Treiber, K.* (2007). The role of self-control in crime causation: Beyond Gottfredson and Hirschi's General Theory of Crime. European Journal of Criminology 4, 237–264. – *Wikström, P-O.H. & Treiber, K.* (2009). What drives persistent offending. The neglected and unexplored role of the social environment, in: J. Savage (ed.), The Development of Persistent Criminality. Oxford.

(Author contact info: Prof. *Per-Olof H. Wikström*, Ph.D., Institute of Criminology, University of Cambridge, Sidgwick Avenue, Cambridge, CB3 9DT; pow20@cam.ac.uk)