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Analysis of Violent and Non-violent Versatility in Self-reported Juvenile Delinquency

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Situational action theory (SAT) has emphasized the interaction between individual and social influences on youth crime involvement. In this study, attitudes towards violence, self-control and perception of neighbourhood are tested in order to determine to what extent they predict versatility in violent and non-violent offences. In order to attain this goal, 2309 Belgian youths aged from 12 to 18 years were administered the Self-report Delinquency Questionnaire. When the offences are divided into violent and non-violent versatility, the results show differences in the factors that predict delinquency; whereas attitudes towards violence and self-control predict all type of offences, the perception of neighbourhood is only a predictive factor for non-violent offences. External and internal factors need to be included in order to predict the widest range of criminal versatility, since committing a crime involves making choices that depend on the perceived alternatives.

Keywords: crime; neighbourhood; self-control; self-reported delinquency; situational action theory; versatility, violent/non-violent offences.

Introduction

It is well known that delinquent behaviour is not caused by one single variable, but instead by a multidimensional construct with many different roots. Numerous factors therefore interact simultaneously on different levels, through biological, family, social or environmental factors (Kazemian, Farrington, & LeBlanc, 2009; Klepfisza, Daffernab, & Dayc, 2016; Zara & Farrington, 2009). Various specific factors have been classified as predictors of future delinquency, including socio-economic deprivation, family deviance, school problems, hyperactivity-impulsivity-attention deficit and antisocial child

behaviour (Farrington, 1990). The more risk factors that an adolescent accumulates, the greater the probability of involvement in deviant or illegal conduct (Andrews & Bonta, 2006; Born, 2005; Glueck & Glueck, 1950). Social and personal factors thereby influence changes over time, from childhood to old age (Durrant, 2015; Wikström, Oberwittler, Treiber, & Hardie, 2012). All these interactions in a specific individual may predispose him or her to commit a crime.

In fact, situational action theory (SAT; Wikstrom, 2006) emphasizes the interaction between individual and social influences on involvement in crime, focusing on the

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interaction between ‘kinds of individuals in kinds of settings’ (Wikström, 2004, p. 19; see also Wikström & Svensson, 2010). Through their interaction, individual and environmental factors directly influence how individuals perceive their action alternatives and make their choices, including illegal ones.

According to this theory, there are four key elements: the *person*, the *setting*, the *situation* and the *action* (Wikström et al., 2012). An individual faces specific opportunities, in particular moral contexts. The moral context is determined by the concrete *setting* or part of the environment where the individual interacts (e.g. school grounds, a city centre entertainment district, a neighbourhood park, etc.). The *situation* is the interaction between the person (an individual’s moral rules, habits, self-control, etc.) and the setting, where the perception of action alternatives and the process of choice emerge. The situation will determine whether the temptations or provocations experienced will lead to the individual engaging in any kind of action or behaviour related to crime (Wikström, 2005; Wikström & Treiber, 2009).

According to SAT, crime is explained by personal moral actions guided by moral rules. A moral rule states what it is right or wrong to do in a particular circumstance, so exposure to different settings needs to be considered as an important indicator, since it creates different types of *situations* and thus influences the lifestyles of adolescents (Wikström & Sampson, 2003). The link between an individual’s characteristics and the environmental features of the *setting* in which he or she operates will therefore determine his or her actions (Wikström, 2010).

In the present study, two individual measures (attitudes towards violence and self-control) and an environmental variable (neighbourhood) considered as a *setting* are analysed in relation to juvenile criminal conduct. Individual or personal differences in involvement in criminal and analogous behaviour are largely due to differences in personality traits (e.g. self-control). Self-

control has received a great deal of empirical attention in relation to its effects on general crime, serious offending, and property and drug crime (Cretacci, 2008; DeLisi & Vaughn, 2008; Pratt & Cullen, 2000; Ribeaud & Eisner, 2006; Tittle, Ward, & Grasmick, 2003). These studies assume that crime is related to adolescents with low self-control because of the difficulty they have in resisting temptation to engage in criminal conduct that involves risk-taking activities and immediate and easy gratification. On the other hand, individuals with high levels of self-control often have a larger pool of resources and are therefore less affected by the demands of self-control in various everyday contextual interactions (Hay, Meldrum, & Piquero, 2013; Jones, 2015; Piquero & Bouffard, 2007). Self-control has for a long time been presented as the only enduring personal characteristic involved in criminal activities; the variety of behaviours among juveniles with low levels of self-control – illegal or otherwise – are consequently wider than among those with better self-control (Gottfredson & Hirschi, 1990).

While self-control has historically been presented as an enduring personal trait, it is nowadays considered less as a stable characteristic, and has been gradually recognized as being caused by social and situational dimensions, and influenced throughout one’s life. Self-control continues to evolve during adolescence (e.g. as a result of processes that take place within adolescent peer networks; Meldrum, Young, & Weerman, 2012). Self-control therefore also depends on opportunities and circumstances. In fact, self-control is defined in SAT as a process responsible for making choices depending on a specific motivation, i.e. self-control is influenced by a particular circumstance (Wikström & Treiber, 2009).

Another individual trait taken into account in this study is attitudes towards violence. Attitudes are considered to be constructs determined by internal value systems (Fishbein & Ajzen, 1975; Roth & Upmeyer, 1989). Individuals develop attitudes in an

evaluative process based on cognitive and affective reactions to life experiences (Ajzen, 1988, Lloyd & Serin, 2012). Some research shows that antisocial values, such as tolerance of crime and attitudes towards violence, have stronger effects on violent behaviour than other individual factors (Glueck & Glueck, 1930, 1934; Svensson, Pauwels, & Weerman, 2010). These studies were among the first to show the importance of attitudes among delinquents, and particularly among violent delinquents (Kraus, 1995; Polaschek, Collie, & Walkey, 2004; Upmeyer, 1989). This relation effect occurs in children and adolescents, and predicts future violent recidivism (Andrews & Bonta, 2006; Clarbourn, Roger, Miles, & Monaghan, 2009; Cotten et al., 1994; Funk, Elliot, Urman, Flores, & Mock, 1999; Guerra & Slaby, 1990; Mills, Kroner, & Hemmati, 2004; Zelli, Dodge, Lochman, & Laird, 1999). However, empirical support for the predictive validity of attitudes is controversial. Although attitudes are expected to predict criminal behaviour, consistency is not always obtained (Ajzen & Fishbein, 1977; Cialdini, Petty, & Cacioppo, 1981; Matsueda, 1989; Menard & Huizinga, 1994). Furthermore, there is evidence for the opposite effect – that criminal behaviour affects conventional beliefs to an even greater extent (Menard & Huizinga, 1994). Research in the field of criminology therefore shows that the nature of the attitude-behaviour relationship is still ambiguous.

In adolescents specifically, outdoor activities start to increase and the public *settings* where the juveniles spend their time can be decisive in the activities in which they become involved. Besides self-control and antisocial attitudes, the context of the adolescent could consequently be included in the prediction of delinquency. It may therefore be appropriate to take an environmental factor such as the neighbourhood in which an individual lives into account (Onifade et al., 2008).

Various studies have found a significant influence of neighbourhood in relation to

delinquency, and it has even been described as one of the most important developmental contexts (Leventhal & Brooks-Gunn, 2000). For example, living in disadvantaged areas or in neighbourhoods of low socio-economic status has been shown to be related to more frequent and severe criminal behaviour among adolescents, and changing neighbourhoods tends to be characterized by changing levels of delinquency (Loeber & Wikström, 1993; Ludwig, Duncan, & Hirschfield, 2001; Peeples & Loeber, 1994; Sampson, Raudenbush, & Earls, 1997). For instance, youths whose parents report high levels of social and neighbourhood integration are less likely to experience violent outcomes (Kurlychek, Krohn, Dong, & Lizotte, 2012). Furthermore, self-reported and official delinquency has been found to be related to specific neighbourhood-level factors, such as the community's level of organizational participation and the extent of disorder and criminal subculture (Simcha-Fagan & Schwartz, 1986).

However, some challenges persist regarding the relationship between neighbourhood and juvenile delinquency. The neighbourhood's socio-economic context does not seem to have a major direct impact on the early onset of serious offending (Wikström & Loeber, 2000), and attachment to the neighbourhood has been found to have a relatively low impact on delinquency (Markina & Saar, 2010). Characteristics of neighbourhoods have also been shown to influence aspects of young people's delinquent and drug-using behaviour, although their impact is relatively weak in comparison to the effect of individual characteristics such as gender and personality (McVie & Norris, 2006). Further research into the relation between neighbourhood and youth crime is therefore required.

Versatility in Crime

These individual and social risk factors have been traditionally studied in relation to different outcome variables such as frequency of

crime commission, rearrest rates, number of criminal records, number of sentences, rates of recidivism, custodial centre sentencing and minor judicial measures (Cottle, Lee, & Heilbrun, 2001; Duncan, Kennedy, & Patrick, 1995; Flores, Travis, & Latessa, 2004; Sanchez-Meca, 1996). However, versatility was considered among the better ways of measuring juvenile delinquency (Mazerolle, Brame, Paternoster, Piquero, & Dean, 2000). The extent to which social circumstances influence specialization or versatility is a theme that has been studied (Farrington, Snyder, & Finnegan, 1988; McGloin, Sullivan, Piquero, & Pratt, 2007; Thomas, 2016). Versatility, as examined by self-reported data, could be more accurate according to global offending trajectories compared to criminal records (Piquero, Farrington, & Blumstein, 2007).

According to this theory, crimes are explained by the breaking of moral rules. The explanation of the commission of a crime as the breaking of a moral rule is therefore applicable to all kinds of crimes (Wikstrom & Treiber, 2009). For this reason, all types of crimes are taken into account in this study, and the crimes are divided into violent and non-violent categories in order to give a more descriptive view of the influence of the type of crime (Cuervo & Villanueva, 2013).

This article aims to analyse the versatility of the offences committed by juveniles (Brame, Paternoster, & Bushway, 2004; McGrath, 2015) by studying a qualitative aspect of crimes related to violent and non-violent crimes. The attempt to determine which factors predict each type of offence that minors become involved with is extremely important in order to effect a decrease delinquency in society (Pihet, Combremont, Suter, & Stephan, 2012). The objective of this study is therefore to analyse the prediction of juvenile crime versatility based on individual (self-control and attitudes towards violence) and environmental (neighbourhood) aspects using self-reported data in a wide sample of youths. The following hypotheses were established: self-control, antisocial attitudes and the

variable neighbourhood were expected to predict crime versatility; no differences between violent and non-violent offences were expected, since the causal explanation for the commission of crimes is the same.

Method

Participants

The participants consist of 2309 youths aged 12 to 18 years ($M = 13.95$). The students were in Years Seven, Eight and Nine of schooling according to the international code. They were in the first three years of secondary school in the Belgian system. The sample consists of 1194 males (51.7%) and 1113 females (48.2%). In terms of nationality, the largest percentage, 89.4%, are Belgian, followed by 5.7% from South American countries and 4.8% from Arab countries. The juveniles were from the cities of Ghent, Liege, Aalst and Verviers. The cities, schools and classrooms were selected randomly.

Instrument

The analyses presented in this research are based on a second phase of the International Self-Report Delinquency Study, and are drawn from the self-report survey of the International Self-Report Delinquency Questionnaire (ISRD-2) (Junger-Tas et al., 2010). Self-reporting has been widely proved as a valid measure of delinquency, and indeed, official records may underestimate the true number of offences (Farrington, 1992).

The questionnaire is composed of closed questions. Only three parts were extracted from the questionnaire for analysis in this study: the Attitudes towards Violence Scale, the shortened version of the Self-control Scale (Grasmick, Tittle, Bursik, & Arneklev, 1993; Hay et al., 2013) and the Perception of Neighbourhood Scale. The alpha values for the scales range from .697 to .809 (Table 1).

The Self-control Scale consists of twelve items that include impulsivity (e.g. 'I act

Table 1. Alpha values for the set of items.

Domain	Number of items	Alpha
Attitudes towards Violence Scale	5	.760
Self-control Scale	12	.809
Perception of Neighbourhood Scale	13	.697

spontaneously without thinking'), risk seeking (e.g. 'I like to test my limits by taking risks'), self-centred (e.g. 'If things I do upset people, it's their problem not mine') and volatile temper (e.g. 'I lose my temper pretty easily'). The Attitude towards Violence Scale is composed of five items: 'A bit of violence is part of the fun'; 'You need to use force to be respected'; 'If somebody attacks me, I will hit him/her back'; 'Without violence everything would be much more boring'; 'It is completely normal for boys to want to prove themselves in physical fights with others'. The Perception of Neighbourhood Scale contains thirteen items related to the physical perception of the neighbourhood and attitudes towards people that live there (e.g. 'There is a lot of graffiti'; 'There are a lot of empty and abandoned buildings'; 'People in this neighbourhood can be trusted'; 'There is a lot of fighting'). All three scales were answered on a four-point Likert scale, with the answers ranging from *I completely agree* to *I completely disagree*. On the Attitudes towards Violence Scale and the Self-control Scale, a higher score represents a higher presence of the construct, and on the Self-control Scale a higher score indicates less self-control.

Finally, participants were asked if they had committed various offences at least once in the last 12 months. There were thirteen types of offences or crimes, divided into non-violent and violent categories. The non-violent offences are vandalism, shoplifting, burglary, bicycle theft, motorbike or car theft, hacking and stealing from a car, and the violent offences are bag-snatching, carrying a weapon (stick, knife or chain), assault, group

fights, aggravated assault and selling drugs (Junger-Tas et al., 2010).

Procedure

The ISRD-2 was used in 30 countries between November 2005 and February 2007 (Junger-Tas et al., 2010). Only data from Belgium are presented in this study. Permission to participate in the study was requested from the directors of the schools and to the parents of the pupils. The Belgian data were collected by the Université de Liège and Ghent University. Each participating class completed a paper-and-pencil questionnaire of 67 items taken from the ISRD-2. The total number of observations is 2309. The number of missing data varies between the variables included in this study. The variation in the number of missing values between different analyses arises from different combinations of variables with different missing values.

Data Analysis

First, the descriptive analyses of the total number of offences and the interaction depending on the type of offence are presented. Predictive analyses were calculated and the dependent variable – self-reported delinquency – was found to have an over-dispersed distribution, which violates key assumptions of traditional Ordinary Least-Squares Regression regression (Long, 1997; Weerman & Hoeve, 2012). Negative binomial regression was used to examine the importance of total, violent and non-violent versatility in explaining the likelihood of self-reporting delinquency (DeLisi, Trulson, Marquart, Drury, & Kosloski, 2010; Walters, 2007). These analyses were conducted in two models, one with and one without the inclusion of neighbourhood as an independent variable.

Results

In the distribution of the juveniles that committed each crime, the most common offence

Table 2. Total number of offences for each juvenile.

Number of total offences reported	Frequency	%	Valid %
0	1561	67.6	74.4
1	288	12.5	13.7
2	108	4.7	5.2
3	60	2.6	2.9
4	26	1.1	1.2
5	26	1.1	1.2
6	8	0.3	0.4
7	10	0.4	0.5
8	7	0.3	0.3
9	2	0.1	0.1
10	1	0.0	0.0
Total	2097	90.8	100
Missing	212	9.2	
Total	2309	100	

in the last year was participation in a group fight (13.2%), followed by carrying a weapon (10.4%) and shoplifting (7.5%). The less common offences were theft from cars (0.8%), burglary (1.0%) and motorbike or car theft (1.2%). Table 2 shows the distribution of the total sample in terms of how many offences were reported. The range of the different types of offence that juveniles committed varies from 0 to 10, with a mean of 0.53 offences per youth and variance of 1.53 ($n = 2097$). A total of 1561 of the juveniles did not

report having committed any offence at all (67.7%).

The maximum range for violent offences was 5, whereas the range for non-violent offences was 6, with a mean of 0.28 (variance = 0.45) for violent offences and 0.26 (variance = 0.54) for non-violent offences. The distribution of violent and non-violent offences is shown in Table 3. The biggest percentage is for minors with no offences of any type at all (74.4%). The distribution shows that as the number of offences (both violent and non-violent) increases, the percentage of juveniles decreases.

The correlation between versatility in violent and non-violent offences is .569, $p = .000$ ($n = 2133$). There is also a positive correlation between the total versatility and the age of the juveniles, $r = .187$, $p = .000$ ($n = 2092$).

Table 4 presents the prediction of the total range of versatility offences. The variables included in the model predict general versatility (attitudes towards violence, followed by self-control). Sex and age have an important value in the model. The perception of the neighbourhood in the model is significant, but less predictive than the other variables.

More specifically, when the main variable is divided into versatility of violent and non-violent offences, different predictors in each case are found. For non-violent offences, all the variables are significant predictors (Table 5). Again, the variables that best

Table 3. Number reporting various frequency combinations of violent and non-violent offences.

		Non-violent offences							Total
		0	1	2	3	4	5	6	
Violent offences	0	1561 (74.4%)	126 (6.0%)	20 (1.0%)	7 (0.3%)	0 (0.0%)	1 (0.0%)	0 (0.0%)	1715 (81.8%)
	1	162 (7.7%)	52 (2.5%)	20 (1.0%)	7 (0.3%)	1 (0.0%)	0 (0.0%)	1 (0.0%)	243 (11.6%)
	2	36 (1.7%)	30 (1.4%)	15 (0.7%)	10 (0.5%)	4 (0.2%)	2 (0.1%)	1 (0.0%)	98 (4.7%)
	3	3 (0.1%)	3 (0.1%)	11 (0.5%)	4 (0.2%)	5 (0.2%)	4 (0.2%)	0 (0.0%)	30 (1.4%)
	4	1 (0.0%)	3 (0.1%)	0 (0.0%)	2 (0.1%)	2 (0.1%)	2 (0.1%)	0 (0.0%)	10 (0.5%)
	5	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.0%)	0 (0.0%)	1 (0.0%)
Total		1763 (84.1%)	214 (10.2%)	66 (3.1%)	30 (1.4%)	12 (0.6%)	10 (0.5%)	2 (0.1%)	2097 (100.0%)

Table 4. Negative binomial regression model for total versatility of offences.

	<i>b</i>	<i>SE</i>	χ^2 Wald	df	Sig.	IC 95% Wald	
						LL	UL
Model 1							
Intercept	-3.00	0.64	21.99	1	.00	-4.26	-1.75
Male	-0.50	0.09	26.84	1	.00	-0.69	-0.31
Age	0.23	0.03	40.89	1	.00	0.16	0.30
Attitude	0.14	0.01	82.14	1	.00	0.10	0.16
Self-control	-0.08	0.00	90.62	1	.00	-0.09	-0.06
Model 2							
Intercept	-1.81	0.76	5.71	1	.00	-3.30	-0.32
Male	-0.61	0.10	33.98	1	.00	-0.81	-0.40
Age	0.20	0.04	27.63	1	.00	0.13	0.28
Attitude	0.13	0.01	67.60	1	.00	0.10	0.16
Self-control	-0.08	0.00	83.13	1	.00	-0.09	-0.06
Neighbourhood	-0.01	0.00	4.92	1	.03	-0.02	-0.00

Note: *n* = 1581; log likelihood = -1457.471; Akaike Information Criterion (AIC) = 2924.941; Bayesian Information Criterion (BIC) = 2952.346 (Model 1); *n* = 1581; log likelihood = -1285.491; AIC = 2582.983; BIC = 2615.178 (Model 2).

predict non-violent versatility are sex, age, and attitude towards violence, followed by self-control. Once again, the perception of neighbourhood in the model is significant, but less predictive than the other variables.

However, in the case of violent offences, the introduction of the perception of neighbourhood is not significant (Table 6). In other words, when a juvenile commits a violent offence, he or she is guided by his or her

Table 5. Negative binomial regression model for non-violent versatility.

	<i>b</i>	<i>SE</i>	χ^2 Wald	df	Sig.	CI 95% Wald	
						LL	UL
Model 1							
Intercept	-3.46	0.83	17.36	1	.00	-5.10	-1.83
Male	-0.35	0.12	7.79	1	.00	-0.60	-0.10
Age	0.24	0.04	26.91	1	.00	0.15	0.33
Attitude	0.11	0.01	36.46	1	.00	0.08	0.15
Self-control	-0.09	0.01	67.23	1	.00	-0.10	-0.06
Model 2							
Intercept	-1.61	0.98	2.68	1	.00	-3.53	0.31
Male	-0.50	0.13	13.49	1	.00	-0.77	-0.23
Age	0.20	0.05	16.06	1	.00	0.30	16.06
Attitude	0.10	0.02	25.83	1	.00	0.14	25.83
Self-control	-0.09	0.01	63.22	1	.00	-0.07	63.22
Neighbourhood	-0.02	0.00	7.31	1	.01	-0.00	7.31

Note: *n* = 1618; log likelihood = -927.609; Akaike Information Criterion (AIC) = 1865.217; Bayesian Information Criterion (BIC) = 1892.756 (Model 1); *n* = 1618; log likelihood = -808.516; AIC = 1629.031; BIC = 1661.365 (Model 2).

Table 6. Negative binomial regression model for violent versatility.

	b	SE	χ^2 Wald	df	Sig.	CI 95% Wald	
						LL	UL
Model 1							
Intercept	-3.58	0.74	23.29	1	.00	-5.03	-2.12
Male	-0.57	0.11	23.89	1	.00	-0.79	-0.34
Age	0.20	0.04	23.56	1	.00	0.12	0.28
Attitude	0.14	0.01	71.45	1	.00	0.11	0.18
Self-control	-0.06	0.00	49.75	1	.00	-0.08	-0.04
Model 2							
Intercept	-2.87	0.88	10.56	1	.00	-4.61	-1.14
Male	-0.65	0.12	27.80	1	.00	-0.90	-0.41
Age	0.19	0.04	18.30	1	.00	0.28	18.30
Attitude	0.14	0.02	60.31	1	.00	0.18	60.31
Self-control	-0.07	0.01	45.88	1	.00	-0.04	45.88
Neighbourhood	-0.01	0.01	1.55	1	.21	0.00	1.55

Note: $n = 1813$; log likelihood = 1101.522; Akaike Information Criterion (AIC) = 2213.044; Bayesian Information Criterion (BIC) = 2240.557 (Model 1); $n = 1610$; log likelihood = -972.385; AIC = 1956.771; BIC = 1989.075 (Model 2).

attitudes towards violence and the level of self-control, and the neighbourhood itself does not have an influence.

Discussion

The key research question is whether or not individual and environmental factors predict general versatility in youth crime. According to the first hypothesis, self-control and antisocial attitudes were expected to predict crime versatility. The results seem to support this hypothesis, indicating that both factors along with age predict the total crime versatility of offences.

Males and older juveniles tend to commit a wider range of offences when examining trends relating to sex and age. The early onset of delinquency has emerged as the most consistent indicator of delinquent career severity in various studies (DeLisi, Neppl, Lohman, Vaughn, & Shook, 2013; Francis, Soothill, & Fligelstone, 2004). In this case, self-control and attitudes towards violence have been effective in predicting the total range of offences, and as predictors of later criminal

actions. The attitudes towards violence score has a greater effect on prediction than the self-control score. This could be explained by SAT, since the moral values could be the engine for the conduct, but modulated by self-control in a secondary manner. This result supports the data of Wikström and Svensson (2010), which suggests that morality related to law is more relevant to involvement in crime than the ability to exercise self-control. According to these authors, self-control is dependent on personal morality.

Due to low levels of self-control, juveniles are unable to avoid committing crimes, as has already been shown in various studies (Cretacci, 2008; DeLisi & Vaughn, 2008; Pratt & Cullen, 2000; Ribeaud & Eisner, 2006; Tittle et al., 2003). Similarly, certain attitudes towards violence have been considered as having a predisposition to commit crimes (Glueck & Glueck, 1930, 1934; Svensson et al., 2010).

Second, it was hypothesized that the neighbourhood context would have an additional influence on the prediction of the total versatility of offences. This hypothesis is

supported by the prediction value of crime versatility being significant when this variable is introduced into the model, although the predictive value is smaller than for the other variables. The commission of different types of crime depends on some internal variables, such as attitudes towards violence and self-control, but also to a certain extent on external circumstances, such as the neighbourhood in which an individual lives.

General results for the influence of neighbourhood can also be found in other studies (Kurlychek et al., 2012). This effect could be due to the juvenile's alternatives or perception of alternatives and choices. A juvenile who lives in a disadvantaged neighbourhood might have and perceive to have more opportunities to become involved in crime. Similarly, an urban environment can be considered an urban setting and a context for actions which create the situation (Wikström et al., 2012). Different places create different exposures to different situations, leading to specific kinds of actions (Wikström, Tseloni, & Karlis, 2011). Accordingly, adolescent outcomes such as delinquency are related to the characteristics of their home environments, relationships, ties in the neighbourhood and co-offending (Leventhal & Brooks-Gunn, 2000; Schaefer, Rodriguez, & Decker, 2014; Zimmerman, Botchkovar, Antonaccio, & Hughes, 2015).

The third hypothesis predicted no differences in versatility in violent and non-violent offences. However, when the total number of the offences was divided according to the two crime categories, different results were obtained in the analysis for the inclusion of perception of the neighbourhood. This hypothesis is therefore not supported by the data.

Sex, age, self-control and attitudes towards violence are significant in the prediction of both violent and non-violent offences. The age of the youths is more strongly associated with predicting non-violent than violent offences, showing that as juveniles mature, they accumulate more non-violent offences. The effect of maturing is therefore more

significant for the prediction of non-violent offences. However, sex has a greater predictive value for violent offences. The Attitudes towards Violence and Self-control Scales are both significant in predicting violent and non-violent offences, but not to the same extent. The predictive effect of attitudes towards violence on recidivism is higher than the predictive effect of self-control. In other studies, these two variables are also considered important mechanisms for explaining juvenile offending and troublesome youth group involvement (Pauwels, Vettenburg, Gavray, & Brondeel, 2011).

When the Perception of Neighbourhood Scale is added, the predictive value is only significant for the non-violent offences. The items of neighbourhood taken into account in this study relate to the physical environmental, attitudes towards the neighbourhood and the juvenile's perception in terms of attachment or feeling bonding to the neighbourhood, i.e. a subjective conception of this variable. The juvenile's perception of his or her environment therefore only seems to affect involvement in non-violent offences.

The addition of the perception of neighbourhood is significant for non-violent crimes, but still less so than attitudes towards violence, self-control and age. Self-control and attitudes are closely related to other factors that mediate in the *settings* – the part of the environment where the juvenile interacts at a particular moment in time (Wikström, 2006). This relationship could be partly explained by the concentration of adolescents with attitudes typical of delinquent subcultures in disadvantaged socio-economic neighbourhoods (Beyers, Loeber, Wikström, & Stouthamer-Loeber, 2001; Oberwittler, 2004). This result could be related to the *outer-to-inner* process (Wikström et al., 2012) since it seems that the moral norms of the settings – in this case operationalized by neighbourhood – are assimilated by the individual and thus influence the commission of crimes. Violent crimes are not subject to this effect, and perception of the neighbourhood

is not included in the model. The behaviour of the adolescent relating to non-violent offences therefore depends not only on his or her individual characteristics and experiences, but also on the *moral features* of the environment with which he or she interacts.

As a result, these variables depend on all the environmental factors that influence the particular setting which the juvenile is in at a particular point in time (the *situation*), providing the juvenile with greater or fewer temptations or provocations for any given behaviour (Wikström et al., 2011; Wikström & Treiber, 2007). Communities with high levels of temptations and/or provocations and low levels of social control could be considered risk communities for non-violent offences (Wikström & Treiber, 2007).

The prediction of violent offences does not improve when perception of the neighbourhood is added. The decision to commit these kinds of offences is mostly based on the individual and his or her moral values and emotions, and less on the situation (considered, according to SAT, as the person and setting interaction). Other studies seem to support this result. Adolescents with high scores for risk characteristics commit serious criminal offences at a similar rate regardless of the socio-economic context of their neighbourhood (Wikström & Loeber, 2000). This would mean that the biggest impact for criminal violent behaviour on youths comes from individual factors rather than other distant ones such as neighbourhood. Attitudes towards the importance of violence could be related to the need to prove oneself hard and tough (Archer, 2010; Beesley & McGuire, 2009). In fact, *being offended against by someone* was the most common trigger for violence in a sample of young male offenders, showing that aggression may indicate authority over others and can restore feelings of pride and honour among this target group (McMurrin, Hoyte, & Jinks, 2012).

Finally, several limitations in the current study are worth mentioning. It is extremely difficult to assess the variable of

'neighbourhood' due to its global and subjective nature, which may reflect very different aspects such as social disorganization, socio-economic context and the social/affective bonding of the neighbourhoods assessed by self-reporting (Markina & Saar, 2010; Wikström & Loeber, 2000). This study includes perception of one's surroundings and neighbours in this regard. For future studies, it would be useful to design a multicomponent measure of neighbourhood which could include more objective measures such as socio-economic level, rates of poverty or official crime statistics, etc. which would add extra value. However, it has also been proven that neighbourhood effects appear stronger when self-reports of neighbourhood quality rather than census socio-economic status are used (Lynam et al., 2000). It is also important to be aware of possible biases such as concealment or forgetting in self-reports that cover long periods of time, since they may not be accurate. However, some studies have proved the importance of self-reporting measures for studying juvenile delinquency (Piquero et al., 2007).

As a final conclusion, an explanation for the committing of a significant percentage of violent and non-violent offences has been found – hence, helping to modify attitudes towards violence and engender better self-control in individuals are therefore useful for preventing crime, and specifically violent offences. However, in order to predict the widest range of versatility on total offences, it is necessary to include external and internal factors, since the commitment of a crime involves making choices that depend on the perceived alternatives. This will provide a better and more accurate picture of criminal versatility.

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