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Chapter

**EXPOSURE TO ADVERSE CONDITIONS, THE
MORAL SENSE, AND INVOLVEMENT IN
JUVENILE DELINQUENCY AND TROUBLESOME
YOUTH GROUPS.**

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ABSTRACT

In this study, we seek to explain how (through what mechanisms) young adolescents have an increased likelihood of becoming involved in a troublesome youth group. We combine social, developmental, personal, and situational risk factors under the umbrella of an integrated theoretical framework that stresses the importance of the moral sense as an important mediator in the relationship between adverse developmental conditions, juvenile delinquency, and troublesome youth group involvement. The moral sense is a multi-dimensional construct defined as consisting of moral norms, anticipated moral emotions and self-control ability. Using structural equation modeling for count and dichotomous outcomes we test the key propositions of our integrated framework. Our research is based on the

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International Self-Reported Delinquency Data (Belgian sample). The implications of these findings for future studies of self-control, juvenile delinquency, and troublesome youth group involvement are discussed.

Keywords: troublesome youth group involvement, juvenile delinquency, adverse conditions, self-control ability, moral sense, moral emotions

INTRODUCTION

Youth gangs or troublesome youth groups have been a classical theme in criminology for a long time. Explanations have been proposed by the Chicago School's disorganization perspective (Thrasher 1927; Braga, Papachristos and Hureau 2010), social learning perspectives (Akers 2009; Bandura 1986), anomie, strain (Agnew 2007) and subcultural theories (Cohen 1955; Cloward and Ohlin 1960; Miller 1958), control theories (Kornhauser 1978), modern lifestyle/routine activities theories (Hoeben, Meldrum and Young 2016; McNeeley and Hoeben 2017; Osgood et al. 1996; Riley 1987) and self-control theory (Gottfredson and Hirschi 1990; Hirschi and Gottfredson 2001). While all these separate perspectives have their relative merits, scholars increasingly seem to prefer the way of theoretical integration. One very specific integrated delinquency theory of great importance for the explanation of gang membership was Thornberry's interactional theory of adolescent delinquency (1987). This theory has been applied to explain gang membership (Thornberry et al. 2003) as an example for contemporary integrative theory-testing research.

Among European scholars, comparative studies have been conducted within the research program of the Eurogang group¹, resulting in numerous publications from scholars within and outside Europe (e.g. Decker and Weerman 2005; Esbensen and Maxson 2012; Esbensen and Weerman 2005; Haymoz, Maxson and Killias 2014; Sharp, Aldridge and Medina 2006; van Gemert et al. 2008). An increasing number of studies have taken a life course perspective with a focus on transitions and changes in crime involvement during periods of gang membership

¹ Detailed information on the history and Research Program of the Eurogang can be found in several publications (e.g. Decker and Weerman 2005; Esbensen and Maxson 2012; Klein et al. 2000; Maxson and Esbensen 2016; van Gemert et al. 2008). A Eurogang Program Manual provides information on background, development, and use of the Eurogang instruments in multi-site, multi-method comparative research (Weerman et al. 2009).

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(Melde and Esbensen 2011; Melde and Esbensen 2014; Weerman, Lovegrove and Thornberry 2015).

Despite observed differences between characteristics of street gangs in the US and Europe, we can't deny the existence of juveniles involved in a troublesome youth group in European cities. This has previously been documented by Maxson and Klein (1995) and Klein, Weerman, and Thornberry (2006). In the present study, the term troublesome youth group is preferred, as used by the Eurogang network. The Eurogang network defines a troublesome youth group as: "... *any durable, street-oriented youth group whose involvement in illegal activity is part of its group identity*" (Weerman et al. 2009:p. 20). However, research on troublesome youth group involvement, young people's offending and its causes is a research tradition that is nascent in Belgium (Pauwels and Svensson 2013; Pauwels, Vettenburg, Gavray and Brondeel 2011).

The goal of the present study² is threefold: firstly, we present an integrated general theoretical framework that may help us understand how youths become involved in a troublesome youth group; secondly, we specifically focus on the role of self-control ability as part of a larger construct i.e. 'a moral sense' and thirdly, we present an empirical test of the elaborated model based on a large-scale Belgian sample of young adolescents.

The framework that we use and test is an integrated theory that unites elements of *ecological, social, personal* and *situational* mechanisms for a better explanation and understanding of troublesome youth group involvement. A *key ecological setting characteristic* is the micro-place context of residence, in line with contemporary studies on crime and place (see Weisburd, Groff and Yang 2014). Attachment to parents, parental monitoring and the school social bond are considered as key mechanisms of informal *social control*. *Personal controls* are moral norms, anticipated moral emotions (shame) and self-control ability. These constructs are important parts of a multidimensional construct defined as 'a moral sense'. Finally, the theory takes into account the role of *situational mechanisms*, especially exposure to a risky lifestyle, as a proxy of exposure to criminogenic moral settings (see Wikström and Butterworth 2006; Wikström et al. 2012), which consists of both delinquent peer exposure and exposure to settings conducive of crime (measured by unstructured routines).

² The study outlined in this chapter has been presented at the ISRD conference in Amersfoort (The Netherlands) on June 8 and 9, 2017 on the subject of '*Less Social Bonding, More Problems? An International Perspective on the Behavior of Young People*'.

The structure of this chapter is as follows: firstly, we present and discuss the theoretically integrated model. Secondly, we empirically test the integrated model using generalized structural equation models for count, dichotomous and continuous variables (Muthén and Muthén 2011). And finally, we discuss the findings of the test of the theoretical model.

AN INTEGRATED CONDITION-CONTROLS-EXPOSURE (CCE) MODEL OF TROUBLESOME YOUTH GROUP INVOLVEMENT

Our integrated condition-controls-exposure model of troublesome youth group involvement heavily relies on and elaborates on previous work of Esbensen et al. (2012), Sampson and Laub (2003), Pauwels and Hardyns (2016), Pauwels and Svensson (2013) and Wikström et al. (2012). In this paragraph, we further specify the ecological (*condition*), social and personal (*controls*), and situational (*exposure*) factors of troublesome youth group involvement with specific emphasis on the concept of self-control ability.

Ecological settings of development and adverse life events (condition)

While a multitude of studies of adolescent offending and troublesome youth group involvement has focused on social disorganization/disorder at the neighborhood or census tract level, there is a growing consensus that it is of primordial interest to open the black box and see what is going on in ecological contexts, as most of the youths who live in disadvantaged areas do not evolve to be seriously delinquent. It has also been acknowledged that it is important to study the effect of disorganization/disorder at the micro-place level, such as the street-level (Oberwittler and Wikström 2009; Weisburd, Groff and Yang 2012). In the present study, we focus on the *cumulative* effects of settings which we consider to be of major importance for the development of youths, namely the neighborhood of residence, the family and the school context.

The moral sense: self-control ability, moral norms and anticipated shame (controls)

A moral sense

Firstly we need to clarify what a moral sense is. Krebs (2008) defines a sense of morality as ‘... *a mental phenomenon that consists of thoughts and feelings about ..., good and bad character traits ... and right and wrong motives and behaviors.*’

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(p. 150). The moral sense includes values, norms, emotions such as shame, guilt, evaluative thoughts and judgments about forms of conduct that one considers (morally) right or wrong. Krebs (2011) goes on to argue that it might be more accurate to say that people possess a suite of several different moral senses. For instance, the sense that one should refrain from harming someone else is quite different from the sense that one should resist temptation. Moral beliefs may differ significantly from moral judgments and moral justifications. Nevertheless, all these aspects are components or parts that make up the body of a moral sense. For present purposes, our primary focus is on three constituent parts of the moral sense that are important correlates of juvenile delinquency and troublesome youth group involvement, namely, self-control ability, moral norms and anticipated shame (e.g. Pauwels & Svensson 2013; Pauwels, Vettenburg, Gavray and Brondeel 2011)

Self-control ability

Self-control ability is an important part of human morality (see also Tomasello 2016). People have impulses, desires, preferences that sometimes urge them to behave in ways they (or others) consider immoral. People often struggle to muster the willpower to resist temptations that seduce them to compromise their moral values. Temperance or self-restraint was one of the cardinal or master virtues in Greek philosophy and Christianity. In the present study we define the ability to self-control in line with Baumeister and Exline (2000) as the ability of the self to...'*alter its own states and responses, and hence it is....central to virtuous behavior, especially insofar as the latter requires conforming to socially desirable standards instead of pursuing selfish goals*' (p. 29).

The very same idea is proposed by Hofmann and colleagues (2018) in what these scholars call *moral self-control*. Moral self-control is needed whenever people experience a conflict, when people need to overcome a *selfish* or antisocial desire in the service of a *less selfish* or prosocial moral value.³ This is not to say that people always have to work hard whenever an opportunity to behave selfishly arises. With repeated opportunities, successfully resisting temptation can become a function of automaticity in 'doing the right thing' (Sapolsky 2017).

A lack of or a failure of self-control is a central topic in the etiology of juvenile delinquency. Because of the connections between self-control and the temptations of many types of crime, including becoming involved in a troublesome youth group

³ Empirical research on morality and self-control have largely been studied separately. A solid argument for how both study areas may benefit from collaborative and integrated research can be found in Hofmann et al. (2018).

(immediate benefits of crime versus long-term costs and consequences), criminologists have devoted much attention to low or poor self-control (Hay and Meldrum 2016). Compared to their high self-control counterparts, individuals who have a low ability to apply self-control are more likely to become involved in criminal, deviant, and accidental behaviors.

Gottfredson and Hirschi (1990) considered the relationship between gang involvement and offending as a spurious relationship, and argued that low self-control would be the ultimate common cause. However, many empirical studies revealed that poor self-control is not the only necessary condition leading to criminality (Pratt and Cullen 2000).

More recently, attention has been paid to the concept of self-control ability in the explanation of troublesome youth group involvement (Esbensen and Weerman 2005; Hope and Damphousse 2002; Kissner and Pyrooz, 2009; Pyrooz and Decker, 2011).

For example, Hope and Damphousse (2002) found empirical evidence for a negative relationship between self-control and gang membership. Pauwels (2010) found evidence for the existence of a strong positive effect of impulsivity and anger management (a major dimension of low self-control besides risk-seeking) on troublesome youth group involvement, even when controlling for background characteristics, social bonds, deviant beliefs, and exposure to criminogenic moral settings. Vettenburg et al. (2013) found, in their study, that low levels of self-control increased the probability of troublesome youth group involvement which in turn related to higher levels of violent offending.

Moral norms

The second component of the moral sense relevant to the present study is *moral norms*. A norm is a specific and concrete standard of conduct that states how individuals are expected to behave in certain specific circumstances (Homans 1974: p. 96). Opp (2013) defines a (moral) norm as ‘ *Any statement claiming that something ought or ought not to be the case under certain conditions. A norm is internalized to the extent that following the norm is intrinsic motivation or goal*’ (p. 384). Norms become part of the individual (i.e. are internalized by the individual) to the extent that she partakes in the social group, is socialized by the group and as such morally binds herself to the norms of the group. The intensity of this norm internalization varies from very weak to very strong, meaning that people differ in their motivation to conform to moral norms. Norm internalization is sometimes used as a synonym to morality i.e. the motivation or *having the goal* to follow a

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norm (see Opp 2013). According to Opp (2013) behavior is chosen that is believed by the individual actor to be the best way to achieve a certain goal, that is, the motivation to follow a moral norm. Failing to follow a norm may lead to internal negative feelings (e.g. bad conscience, negative moral emotions) and/or external negative reactions (e.g. punishment, risk of social exclusion). The former leads to the third component of the moral sense relevant to the present study, that is, the *moral emotions*.

Moral emotions

Haidt (2003) defines moral emotions as ‘*those emotions that are linked to the interests or welfare either of society as a whole or at least of persons other than the judge or agent*’ (p. 853). The two prototypical features for identifying moral emotions are firstly the fact that they tend to be triggered by social events that do not directly affect the self, meaning that these emotions go beyond the direct self-interests, and secondly the fact that moral emotions have prosocial action tendencies or urge to perform specific actions (Haidt 2003). Moral emotions have been classified including self-conscious, self-evaluative emotions such as shame (Tangney, Stuewig and Mashek 2007). Shame is triggered by another person’s negative belief about one’s character (Elster 2015: p.142). Shame has a close relationship with moral norms. It emerges when a person has violated a moral norm. Scholars have theorized and researched about how moral emotions, such as shame, motivate or drive moral decisions, in real and anticipated forms. For instance, moral emotions such as shame may motivate people to steer clear of risky, aggressive, delinquent or criminal behavior (Stuewig and Tangney 2007) or to refrain from violating a moral norm to avoid post-decisional anticipated shame, which is a negative painful emotion (Lewis 1992). For example, Svensson et al. (2013) found empirical support for the hypothesis that anticipated shame (and guilt) are negatively associated with offending (see also Rebellon et al. 2015 for the mediating role of anticipated shaming on criminal intent).

Next, we turn to situational factors in the explanation of troublesome youth group involvement.

Lifestyle risk as exposure to criminogenic moral settings

Lifestyle theory argues that delinquency results, in part, from individuals spending time in environmental and social contexts that offer appealing opportunities (temptations or provocations) for delinquent behavior. This perspective finds support in the evidence that delinquency is associated with

spending time in unstructured and unsupervised socializing with peers (e.g. Higgins and Jennings 2010; Haynie and Osgood, 2005; Osgood et al. 1996). The higher the individual score on measures of lifestyle risk, the more an individual is exposed to criminogenic moral settings, and the greater the likelihood of becoming affiliated with a troublesome youth group. A risky lifestyle consists of different elements: unstructured socializing, spending unsupervised leisure time in the city-center and spending time with delinquent peers. This lifestyle reflects living on the edge, being involved in exciting unstructured routine activities day by day, unhindered by feelings of future responsibilities, which have primarily been neutralized by lowered levels of personal control, weak social bonds, and perceived normlessness. Risky lifestyles were originally considered of importance as a situational element in the explanation of victimization, while some more recent studies suggest that lifestyles are much more important in explaining individual differences in offending (Osgood et al. 1996; Wikström and Butterworth 2006) Especially Wikström and Butterworth argued that lifestyle risk is an adequate proxy for spending time in criminogenic settings.

The condition-controls-exposure (CCE) model

The above presented characteristics have been discussed in the empirical literature on covariates of troublesome youth group involvement (Alleyne and Wood 2010; Curry, Decker and Pyrooz 2003; Egley et al. 2006; Esbensen et al. 2012; Katz and Fox 2010; Maxson and Esbensen 2016; Sharp, Aldridge and Medina 2006; Thornberry et al. 2003; Wood and Alleyne 2010). The key causal factors involved in the CCE-model can be distinguished in (1) characteristics referring to cumulative ecological exposure (neighbourhood, family and school) and negative life events, (2) characteristics referring to a personal control system (dimensions of a moral sense: self-control ability, moral norms and anticipated shame) and (3) situational exposure through a risky lifestyle. Exposure to criminogenic moral settings is a matter of both delinquent peers and crime conducive places (and especially the interaction between both) and our measure combines both delinquent peers and crime conducive places. Adolescents are more likely to engage in these risky behaviors than people at any other stage of the life cycle (Ellis et. Al. 2013, Barkley, 2001). The integrated CCE-model is visualized in Figure 1.

Figure 1: Conceptual model of ecological and social, personal and situational factors, troublesome youth group involvement and offending

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*****INSERT FIGURE 1 ABOUT HERE*****

In the condition-controls-exposure-model, a series of direct effects are hypothesized for all endogenous variables in the system of equations. The absence of an arrow thus simply means that we did not hypothesize a direct effect. As can be seen from figure 1, we hypothesized a series of direct effects based on the logic of end-to-end theoretical integration.

Hypothesis 1: Accumulation of negative conditions in ecological and social contexts of development and adverse life events should be negatively related to each component of the moral sense (moral norms, anticipated shame and self-control ability).

This first hypothesis refers to the role of the developmental context and unites elements of ecological (micro-place context of residence) and social mechanisms (informal social controls in family and school context) that serve as distant factors or ‘causes of the causes’ in the explanation of troublesome youth group involvement and adolescent offending. This proposition embodies the idea that the *accumulation* of domain-specific adverse setting characteristics is consequential for the adolescent’s moral development.

Hypothesis 2: Each dimension of the moral sense (moral norms, anticipated shame and self-control ability) should be negatively related to situational (criminogenic) exposure.

We hypothesize that higher levels of moral norms and anticipated shame should be related to a reduced likelihood of situational exposure, that is, delinquent peers and crime-conducive places. Adolescents who experience high levels of moral norms and anticipated shame should be morally reluctant and less susceptible to expose themselves to criminogenic moral settings through their risky lifestyle. Furthermore, adolescents who can resist temptations (high ability to self-control) should feel moral resistance to situational inducements. That is, a higher ability to self-control may lead to a lower likelihood of self-selection to become exposed to exciting unstructured routine activities with delinquent peers.

Hypothesis 3: *Each dimension of the moral sense should be negatively related to the likelihood of troublesome youth group involvement and offending.*

We hypothesize that three dimensions of moral sense function as proximate factors reducing the probability of troublesome youth group involvement and offending.

Hypothesis 4: *Situational (criminogenic) exposure through risky lifestyles should be positively related to troublesome youth group involvement and offending.*

The fourth proposition rests on routine activity/lifestyle theories that consider delinquent peers and unstructured routines as situational instigators. Situational exposure to criminogenic moral settings may provide adolescents access to norms and behavioral models, that is, the presence of delinquent peers provide a learning context that increases the likelihood of troublesome youth group involvement. Also, adolescents spending time in unstructured and unsupervised socializing with delinquent peers may offer appealing situational opportunities for becoming affiliated with a troublesome youth group and for offending.

THE PRESENT STUDY METHODS

Belgian ISRD3 sample

The *International Self-Report Study of Delinquency* (ISRD) project is an international collaborative study, which repeatedly (ISRD1, ISRD2, and ISRD3) collects data on juvenile delinquency and victimization from comparable (but not identical) samples at regular intervals. The ISRD project has two major objectives. The first objective is to observe and compare differences, similarities, and trends in offending and victimization between countries. Although the primary focus is on Europe, the sample includes several non-European countries as well. The second objective is to explore and test theoretical issues related to juvenile delinquency

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with relevance for policy purposes.⁴ Belgium has been a participant in the ISRD project from the start.

For the present study, data are used that were collected through the Belgian version of the third edition of the *International Self-Report Study of Delinquency (ISR3D)*. The Belgian ISR3D survey is a school-based paper-and-pencil survey among 4758 secondary school children in two large cities (Gent and Luik) and two middle-sized cities (Aalst and Verviers). Respondents are a sample of adolescents enrolled in the first four years (=2 grades) of secondary compulsory education. The primary sampling units are school classes⁵. Data collection started in 2013 and ended in 2014. A total of 2375 boys and 2370 girls (4745 in all) completed the paper and pencil questionnaire. The respondents ranged in age from 12 years or younger (16,4%), 13-14 years (43,7%), 15-16 years (34%) to 17 years or older (5,9%). In Belgium, adolescents are on average 12-13 years when entering the first grade and on average 14-15 years when entering the second grade⁶. Around 59,1% of the respondents had a fully native Belgian background (i.e. both parents are of Belgian descent), 40,9% of the respondents had at least one parent with an immigrant background. This overrepresentation is probably due to the participation of schools in inner-city areas. Around 72,2% of the respondents lived with two parents or caretakers. In almost 30% of the cases, respondents lived in a single-parent or caretaker family. It should be noted that the data are representative of Belgian cities and not for the country as a whole.⁷⁸

Measurement of key constructs

⁴ ISRD Website: <http://www.northeastern.edu/isrd> for additional resources and news, as well as the link to data on the ICPSR data archive.

⁵ In Belgium a total of 66 schools including 316 classes were selected: 30 schools and 195 classes in the Flemish sample, 36 schools and 121 classes in the Walloon sample.

⁶ The Belgian school system consists of three grades: each grade has a two years' duration. Adolescents enter the secondary school system after 6 years of education in elementary school. People are on average 12 years of age when they enter secondary school and on average 18 years of age when they leave the third and last grade. The Belgian secondary school system prepares for future study or vocational training.

⁷ For more information on the Belgian, ISR3D-data we refer to the technical reports: Gavray 2015; Pauwels, Vettenburg and Pleysier 2015

⁸ More information on the first global findings from the Third International Self-Report Delinquency Study (ISR3D): see Enzmann et al. (2017).

In our analyses, *self-reported offending* and *troublesome youth group involvement* are the endogenous variables.

Self-reported offending was measured by asking respondents if they had *ever* committed one or more offenses in a series of 15 offenses and if yes, how often in the last twelve months. The delinquency items in the questionnaire are adapted to the types of youth crime that are in general committed by young adolescents and to items that the majority of the social scientists using the method of self-reported delinquency consider to be measurable (for a discussion see Kivivuori, 2012). It should be noted that serious gang crimes (such as gang shootings and murder) are not a part of the questionnaire. The combined variety and frequency index has a Cronbach's α of .72.

Troublesome youth group involvement is the second endogenous variable in the present study. The questionnaire used by the research team of the ISRD is strongly related to the measurement instrument developed by the Eurogang working group. Although there are considerable differences between both instruments, the ISRD questionnaire contains the core elements of the Eurogang instrument. Similarly, the ISRD questions refer to the street or neighborhood orientation of the respondents, the approval of illegal things and the engagement in illegal activities. Troublesome youth group involvement is measured using a funneling technique, that is, we combined answers to one filter question and three follow-up questions to measure self-reported troublesome youth group involvement/ participation. The leading question was: '*Some people have a certain group of friends that they spend time with, doing things together or just hanging out. Do you have a group of friends like that ?*' (1 = yes, 0 = no). The three follow-up questions were: (1) 'Does this group spend a lot of time together in public places like the park, the street, shopping areas, or the neighbourhood?', (2) 'Is doing illegal things (against the law) accepted by or okay for this group?', (3) 'Do people in your group actually do illegal things (against the law) ?' These follow-up questions were also dichotomies (1= yes, 0=no). Respondents were categorized as involved in a troublesome youth group if they answered affirmatively to the leading question as well as the three follow-up questions (Haymoz, Maxson and Killias 2014). To the introductory question (n= 4481), 78.2 % of the total valid sample answered positively. 57.3 % (n= 3463) answered positively to the first follow-up question, 25.8 % (n= 3435) answered positively to the second follow-up question. 28.8 % (n= 3457) answered positively to the third follow-up question and 14.7 % (n= 3332) responded positively to the leading and all follow-up questions

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***Exogenous variables: Accumulation of negative conditions in ecological
and social contexts of development and adverse life events***

Accumulation of negative conditions refers to a combination of domain-specific risk factors in the developmental context of the adolescent. Four domain-specific risk factors (subscales) were constructed.

The ecological context of development refers to the micro-place context. Accumulation of negative conditions in micro-places is measured using a composite of two subscales gauging participants' perception of street-level crime in their neighborhood (5 items, Cronbach's alpha: 0.85) and school-level crime (4 items, Cronbach's alpha: 0.74). High levels of this measure indicate high levels of perceived crime. The idea of cumulative developmental risk (Vettenburg et al. 2013) was translated by first recoding each subscale into a no-risk/risk dichotomy and then summarizing the risk ends of the distribution of each concept⁹.

The school context of development refers to cumulative exposure to adverse conditions in the school context. This overall risk scale was constructed based on three Likert-subscales: 'attachment to the school', 'trust in teachers' and 'teacher support'. The pupil-teacher relationship in schools was measured using a combined index of three subscales: four items were used to measure attachment to the school (Cronbach's alpha: 0.76), three items to measure trust in teachers (Cronbach's alpha: 0.61), and four items to measure teacher support (Cronbach's alpha: 0.81). For all items, respondents could indicate their answers on a four-point Likert scale ranging from 1 = totally agree to 4 = totally disagree, so that high scores indicated high-risk factors.

Family context of development refers to the quality of the parent-child relationship and was measured using an index of four subscales: four items measuring 'parental attachment' (Cronbach's alpha: 0.70), three items measuring 'parental knowledge' (Cronbach's alpha: 0.77), five items measuring 'parental supervision' (Cronbach's alpha: 0.62) and four items measuring 'parental disclosure' (Cronbach's alpha: 0.85).

Negative life events refer to a range of adverse situations or stressful circumstances (such as death or serious illness of a parent or a friend, divorce/separation of one's parents). The assumption is that delinquency can occur as a result of perceived strain when individuals are presented with noxious

⁹ *The operationalization of each risk scale was the result of a stepwise process and is explained in more detail elsewhere (see De Buck and Pauwels 2018).*

circumstances or when they lose something that is positively valued (Agnew 1992; Op de Beeck, Pauwels and Put 2012). Participants were asked to indicate, in a no or yes fashion, whether a range of six negative life events (e.g. death of a parent, illness) had ever occurred in their homes or to significant persons.

Intermediary variables: dimensions of the moral sense

The concept of a *moral sense* is used to refer to a complex and multidimensional individual characteristic consisting of ***moral norms, anticipated shame*** and ***self-control ability***.

Moral norms are defined as whether one judges something is morally right or wrong to do in a particular circumstance. The moral norms scale (Cronbach's alpha: 0.77) constitutes of eight offenses for which participants report how wrong they think certain acts are. The item acts include moral transgressions along a 4-point scale (from 1= not wrong at all to 4= very wrong). Higher values reflect the participant's prosocial moral evaluations.

Anticipated shame (Cronbach's alpha: 0.87) consists of three subscales which measure how ashamed respondents would feel in front of their best friends (Cronbach's alpha: 0.81), teachers (Cronbach's alpha: 0.84) and parents (Cronbach's alpha: 0.75)¹⁰. Higher scores on this measure indicate a higher likelihood that the respondent would feel shame if he or she were to commit the specified act.

Self-control ability (Cronbach's alpha: 0.79) is an additive index mainly based on items used and developed by Grasmick, Tittle, Bursik & Arneklev (1993). An abbreviated version was used which is more in line with a psychological conception of trait self-control. The scale consists of two subscales: immediate gratification (3 items, Cronbach's alpha: 0.68) and thrill-seeking (3 items, Cronbach's alpha: 0.81). Immediate gratification and thrill-seeking are very closely linked to the concept of self-control as defined by other scholars (e.g. Mamayek, Paternoster & Loughran 2017; Mischel and Shoda 1995; Tangney, Baumeister and Boone 2004). These two qualities are being marked by an absence of self-control (Hay and Meldrum 2016). However, responses on this scale were coded so that high levels on the overall scale indicate *high self-control ability*.

Exposure to criminogenic settings through risky lifestyles is measured using the construct of lifestyle risk as an established proxy for situational exposure to

¹⁰ Items include shame if they were caught shoplifting, physically hurting someone or being arrested by the police. Response options were 'no not at all', 'yes, a little bit' and 'yes, very much'.

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criminogenic contexts. This index is a combined index of several questions, each partially reflecting situational criminogenic exposure through aspects of the adolescent's routine activities and lifestyle: (1) *time spent going to a café or pop concert* (3 response categories ranging from 'never' to 'often'), (2) *hanging around in shopping centers, on the street, in the park or in the neighborhood just for fun* (3 response categories ranging from 'never' to 'often') and (3) *peer delinquency* (5 items asking respondents to indicate if, and if so, how many of their friends had ever been involved in rule-breaking behavior such as shoplifting, stealing, using a knife). An overall composite construct labeled *Exposure* was created that reflects the social (peers) and situational aspects (unstructured routines) of lifestyles so that high scores on this scale referred to respondents scoring high on all three risk factors (see also De Buck and Pauwels 2018; Svensson and Pauwels 2010).

Analysis Plan

Structural equation modeling (SEM) for continuous and dichotomous variables was used to calculate path coefficients between the exogenous and endogenous variables. All analyses were conducted using Mplus, version 7.12 (Muthén and Muthén, 2011). Structural equation models are considered common extensions of the linear path model (Jöreskog and Sörbom, 1993; Bollen, 1998). Path models, which combine dichotomous outcomes (such as troublesome youth group involvement) or count data (such as counts of offenses) with exogenous continuous variables, can be handled with Mplus (Byrne 2011). Micro-place disorder refers to the street-level. We did not have a sufficient number of respondents per street to provide reliable street-level aggregate measures of micro-place characteristics (see also Pauwels and Svensson (2014) for a more detailed explanation). All scale scores were standardized before entering the equation. SEM is used for testing the direct effects of a series of exogenous variables on a series of endogenous variables. SEM is highly suitable to evaluate our previously made statements of direct effects of the ecological, personal, social and situational mechanisms. Model fit indices such as RMSEA and CFI are used together with the more traditional R-square to evaluate the hypotheses and explanatory power.¹¹

We bear in mind that cross-sectional data are far from ideal to test such relationships and were therefore extremely careful when interpreting the results. Unfortunately, no panel study of self-reported offending and gang involvement has ever taken place in Belgium. For reasons of parsimony, only the best fitting models

¹¹ The RMSEA fit index should preferably have a value below 0.05 while the CFI index should have a value above 0.96 (Bollen, 1996).

are presented. All effects have reached statistical significance ($p < 0.01$). A calculation of total effects is not done as the key-dependent variable is a dichotomy and offending is a count variable and the test of direct and total effects in combined linear and nonlinear models is still problematic (Byrne 2011). All coefficients are beta-coefficients, except for the direct effects on gang involvement; these are log-odds, as gang involvement is a dichotomous outcome. The direct effects on offending are B-coefficients from a negative binomial regression model. The R-square measures for the scale variables can be interpreted as OLS R-square measures. The R-square measure for gang involvement is a pseudo-determination coefficient (Nagelkerke R square) and the offending R-square relates to a corresponding linear model (while a negative binomial model is run). The RMSEA is 0.04 and also corresponds to a maximum-likelihood linear structural equation model, as generalized models do not provide the traditional fit indices.¹²

Results

In what follows, we restrict the discussion to the direct effects for every exogenous variable in the model (see Figure 2 and Table 1). We did not calculate indirect effects as concern exists on how to calculate indirect effects in regression models in which different parts have different coefficients (odds-ratios, linear regression coefficients, and binomial regression coefficients).

Figure 2: Best fitting model (only significant direct effects are shown)

*****INSERT FIGURE 2 ABOUT HERE*****

Table 1: Path analyses of the CCE-model of gang involvement (best-fitting model)

*****INSERT TABLE 1 ABOUT HERE*****

¹² Models of complex and multiple mediations with multiple mediators (categorical, count, metric, see Hayes 2013) such as is the case in the present study are very difficult to fit. Therefore the analyses are restricted to the study of the direct effects. Ignoring the complexity of the data, and applying a maximum likelihood estimation (as is done in the simplest linear path models) would make it possible to get insights into each indirect effect (Muthen 2011). Therefore we decided to stick to the study of direct effects when discussing the findings.

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Results are discussed per hypothesis used to test the conceptual model.

Hypothesis 1, stating that the *accumulation of negative conditions in ecological and social contexts of development (family and school) and adverse life events should be negatively related to each component of the moral sense (moral norms, anticipated shame and self-control ability)* is corroborated in the study. Each dimension of a moral sense is in part negatively associated with negative conditions in the micro-context of development, with adverse conditions in family and school context, albeit to a lesser extent with negative life events. Focusing on self-control, the finding is that higher levels of adverse conditions in a developmental context are negatively related to self-control ability with effect sizes for resp. family context ($\beta = -0.22$), ecological context ($\beta = -0.18$) and school context ($\beta = -0.17$). Although the effect sizes are moderate, this finding is in line with empirical studies of self-control development about the role of adverse experiences with poverty, poor parenting, family environment and negative school context as potential sources for lower ability to self-control (e.g. Blair and Raver 2012; Hay 2001; Turner, Piquero and Pratt 2005; Vazsonyi and Belliston 2007).

The second hypothesis stated that *each dimension of the moral sense (moral norms, anticipated shame, and self-control ability) should be negatively related to situational exposure*. This hypothesis is also corroborated. Exposure to risky lifestyle is moderately and negatively related to moral norms ($\beta = -0.18$), self-control ability ($\beta = -0.13$) and anticipated shame ($\beta = -.10$).

Additionally, we found a direct and positive relationship between negative life events and exposure ($\beta = 0.17$). This finding traces back to a line of reasoning in the extended version of General Strain Theory about associations between stressful experiences or strains and the likelihood of criminal coping in particular circumstances: i.e. adolescents interacting informally in unsupervised settings with peers who encourage or support criminal coping (Agnew 2013).

In a similar vein, the third hypothesis stated that *each dimension of the moral sense should be negatively related to the likelihood of troublesome youth group involvement and offending*. Indeed, here we found moderate associations, albeit in the expected direction, between each moral dimension and self-reported offending with the effect of moral norms being the strongest ($\beta = -0.25$), followed by anticipated shame ($\beta = -0.22$) and with a small effect of self-control ability ($\beta = -0.13$). As for troublesome youth group involvement, effect sizes are rather small

with self-control ability having the strongest association ($\beta = -0.17$). Nevertheless, hypothesis 3 is also corroborated.

Finally, the fourth and last hypothesis relates to the association between exposure to situational inducement and the two endogenous variables in the model. It states that *situational (criminogenic) exposure through risky lifestyles should be positively related to troublesome youth group involvement and offending*. Both troublesome youth group involvement and offending are strongly associated with exposure to risky lifestyles with similar effect sizes, resp. $\beta = 0.48$ (troublesome youth group involvement) and $\beta = 0.42$ (offending) meaning that indicators of a more risky lifestyle relate to a higher likelihood of troublesome youth group involvement and self-reported offending.

CONCLUSION

The purpose of this paper was to partially replicate a conditions-controls-exposure model of troublesome youth group involvement and self-reported offending. To test the integrated model, we used data from the Belgian ISRD3 survey, collected in four Belgian municipalities in 2013. Since this was a cross-sectional study, we do not know these adolescents' past childhood development, and we do not know how they have developed since they participated in the study. Therefore we cannot explain how these individual differences have emerged and cannot say how their current troublesome youth group participation will affect their future lives. Unfortunately, a cross-sectional study design poses major restrictions. We argue that panel data are necessary to understand the co-evolution of offending and gang involvement (Melde and Esbensen, 2011; Melde and Esbensen, 2014; Thornberry et al, 2003).

Nevertheless, that does not mean that these survey data cannot be used. They should be used but with care.

In line with the integrated theory, this study showed that cumulative adverse conditions in the ecological, familial and school context of development matter for personal control mechanisms (moral norms, anticipated shame, self-control ability) and exposure to risky lifestyle. The effect of negative life-events was rather indirect. This is in line with many studies in which it is argued that negative life events indirectly affect participation in troublesome youth groups and offending (e.g. see Agnew 2013).

In line with many studies on self-control, this study found a direct negative effect of self-control ability on troublesome youth group involvement and offending, even when exposure to lifestyle risk is statistically controlled for. Adopting a street-oriented lifestyle (a combined measure of risky lifestyle and exposure to delinquent peers) also affects the likelihood of becoming involved in a troublesome youth group, just like it affects involvement in offending. In general, the results show that both exposure to a risky lifestyle and self-control ability (as a constituent part of a moral sense) are important and independent criminogenic factors for troublesome youth group involvement and offending behavior. The risky lifestyle is a consequence of personal preferences, reflected in the self-control ability or the ability to resist temptation, moral norms, and emotions, i.e. the dimensions of the moral sense. This study was the first to address the separate effects of dimensions of the moral sense on offending and troublesome youth group involvement in Belgium.

However, there are many important limitations to the present study that need to be taken into account.

The cross-sectional nature of the study design was already mentioned before. Hereafter we would like to single out the concept of self-control ability and emphasize two important shortcomings, in particular, the conceptual issue of *moderation* and the issue of measuring *trait vs. state* self-control.

The conceptual issue of moderation

The present study has described a rather straightforward pattern of direct effects in which self-control ability has a substantial effect on behavior meaning that those with higher levels of self-control ability have a (statistically) significant lower chance of being involved in a troublesome youth group or of becoming involved in offending. Conversely, those with lower self-control abilities may have a higher chance. However, the reality is far more complex than this. The effect of self-control ability does not operate similarly across all individuals, across all circumstances. Its effect may depend/change on the co-occurrence of other factors.

Our analyses did not incorporate the pattern of differential effects of self-control ability (high versus low) across different circumstances. Many empirical studies already supported the existence of processes of interaction between self-control ability and other factors that work together to affect the likelihood of offending. Such co-occurrence of variables often plays out differently, at times amplifying the effects of one variable such as low self-control ability, at other times

it may diminish the effects. For example, potential moderators that have been studied are, firstly, **variation in the presence of criminal temptations or opportunities**, that is, self-control ability is conditionally related to delinquent behavior depending on situations in which an act of crime is possible, easily accomplished and likely to occur (Hay and Meldrum 2016). For instance, Kuhn and Laird (2013) found that restricted opportunities for antisocial behavior (using a range of parent and peer variables) attenuated the association between low self-control ability and rule-breaking behaviors in the home, school and other contexts (such as stealing, substance use). Low self-control ability was less strongly associated with such behaviors when respondents were less exposed to contexts in which criminal opportunities were present (for a study among older adults, see also Hirtenlehner and Kunz 2017).

Secondly, some studies focused on **the interdependence between the presence of delinquent peers and self-control ability**. In line with social learning theorists, deviant peer associations may also substantially encourage offending especially among those having low self-control ability. Strong peer pressure may translate into larger effects on delinquency when coupled in adolescents with lower levels of self-control ability (e.g. Desmond, Bruce and Stacer 2012). However, some studies suggested the opposite (e.g. Meldrum, Young and Weerman 2009).

Conversely **differential effects of conventional pro-social ties** (such as higher educational achievement, strong family ties, intimate partnerships) on crime varied by self-control levels of respondents in Wright and colleagues' (2001) study. Healthy prosocial ties deterred crime most strongly among the low self-control participants.

Furthermore, **the interplay between personal morality and self-control ability** has been examined with studies reaching mixed results. Some studies find significant interaction terms according to which self-control ability has a greater effect when personal morality is weak (e.g. Wikström and Svensson 2010). Other studies only find partial support (e.g. Antonaccio and Tittle 2008; Bruinsma, Pauwels, Weerman and Bernasco 2015).

Finally, the differential effects of self-control ability have been studied under **conditions of personal morality combined with criminogenic exposure** (e.g. Pauwels 2018). The results revealed a clear pattern of self-control ability being conditionally related to the likelihood of choosing a violent response in a scenario design. However, few studies have examined this issue. Much can be learned in future research that explores under what circumstances (low) self-control ability

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may at times produce harmful effects (to the individual herself or others) but not in other instances.

The issue of measuring trait vs. state self-control

The present research design did not allow for a differentiation between self-control in terms of a personality trait, i.e. a more or less stable (although not invariably) long-term individual difference in the tendency to feel, think or act in a certain way and self-control in terms of a temporary state, i.e. a proximal cause operating in a given situation or a specific short time span. It seems reasonable to assume that trait and state self-control in an individual often are the same, meaning that those with high trait self-control tend to have higher levels of state self-control whenever they find themselves in a given situation. However, some studies have explored the possibility of state self-control as a moderating variable on the effects of trait self-control. For example, reference is made to studies on ego depletion where participants are exposed to circumstances producing a reduced self-control state (e.g. Gailliot, Gitter, Baker and Baumeister 2012). In one study, DeWall, Baumeister, Stillman, and Gailliot (2007) found that depleted capacity for self-regulation increased the likelihood of aggressive responses but only in participants low in trait self-control (measured with the Trait Self-Control Scale-short version (Tangney et al. 2004)). Participants high in trait self-control did not express such aggressive intentions. State self-control is the capacity for self-regulation, a proximate cause for the behavior, operating at the time of decision-making. As such decisions to become involved in troublesome youth group or offending may be caused by a (temporary) diminished capacity for self-regulation. Neurobiological scientific research has shown that activation of the frontal cortex plays a very important role in one's ability to resist temptations (Figner et al. 2010; Heatherton and Wagner 2011; Knoch and Fehr 2007). It is the most recently evolved part of the brain, the last part of the brain to fully mature and, according to Sapolsky (2017), also the most interesting part of the brain because it *...makes you do the harder thing when it's the right thing to do* (p.45). It involves processes such as impulse control, gratification postponement, long term planning and emotion regulation. But, what exactly is 'doing the right thing'? Still, according to Sapolsky, the right thing is 'value-free' and heavily context-dependent. Once decided to join a youth group, it might take self-control ability to conform to the group norms (troublesome or otherwise). However, empirical studies suggest that the ability to inhibit immediate antisocial impulses and to replace them with responses that

adhere to higher-order standards (Tangney, Baumeister and Boone 2004) is central to human success and well-being in the long run. Once again, much can be learned in future research that examines how a trait-state model of self-control interacts under specific circumstances.

We do not doubt the relevance of testing alternative models of troublesome youth group involvement that incorporate mechanisms that are sometimes discussed but rarely tested. But as we have tested a theory of youths using a cross-sectional model, this model is not able to fully capture what is going on over the life course. While the integrated theory is built on causal arrows that go in one direction, we believe for several reasons that this is an oversimplification. First of all, some longitudinal studies, such as the ones referred to by Thornberry and colleagues (2003) have demonstrated that there are reciprocal effects over time. It is unclear at the moment to what extent troublesome youth group involvement in itself is related to the ecological, personal, social and situational mechanisms over time. This is an interesting question that remains unanswered. However, models of decision-making in the situation and development are two different but complementary things. Troublesome youth group involvement is likely to reinforce the moral sense over time, just like it has been shown to amplify offending (Melde and Esbensen, 2011; Pauwels and Hardyns 2016).

Final remark

The ISRD3 findings corroborate previous studies in Belgium which showed that some young adolescents self-report troublesome youth group involvement and the findings can be explained from a conditions-controls-exposure framework. In our sample, the percentage was 14,7%. This underscores the urgent need for effective troublesome youth group resistance education programs and other general and selective prevention programs and indicated intervention initiatives directed at youths in early adolescence, especially those that are prone to a risky lifestyle and have low scores on the dimensions of the moral sense, i.c. self-control ability.

Appendix 1: Descriptive Statistics

*****INSERT APPENDIX 1 ABOUT HERE*****

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Appendix 2: Full scales of variables used in the Belgian version ISRD3

INSERT APPENDIX 2 ABOUT HERE

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