THE SHORTSIGHTED VICTIM

Short-term Mindsets Mediate the Link Between Victimization and Later Offending

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Abstract

Background: Predominant explanations of the victim-offender overlap tend to focus on shared causes, such as (low) self-control or risky lifestyles. Such explanations bypass the possibility of a causal link between victimization and offending. We draw on developmental psychology and criminological research to propose and test the hypothesis that victimization induces what we refer to as a short-term mindset, i.e., an orientation towards the here-and-now at the expense of considering the future, which in turn increases offending.

Methods: We test this mediation hypothesis using structural equation modeling of longitudinal data from a representative sample of urban youth from the city of Zurich, Switzerland (N = 1,675).

Results: In line with our preregistered predictions, we find that short-term mindsets mediate the effect of victimization on offending, net of prior levels of offending and short-term mindsets, and other controls.

Conclusions: We discuss implications for criminological theory and interventions.

Keywords: longitudinal; structural equation models; short-term mindsets; future uncertainty; adversity; victim-offender overlap

INTRODUCTION

Victims of crime are more likely to be offenders than non-victims, and offenders are more likely to be victims than non-offenders (Entorf, 2013). This "victim-offender overlap" is one of the most robust empirical findings in criminology (Jennings et al., 2012; Mulford et al., 2018; Shaffer & Ruback, 2002). Predominant explanations of the overlap tend to invoke shared causes, such as low self-control or risky lifestyles, which promote both victimization and offending. To the extent that prior work has focused on causal relationships, the effect of prior offending on later victimization has received most attention. However, there is also evidence showing that prior victimization leads to increased later offending (Averdijk et al., 2016; Hay & Evans, 2006; Jackson et al., 2013; Shaffer & Ruback, 2002; Smith & Ecob, 2007). Why this is the case is currently not well understood. In this article, we propose and test a novel hypothesis for this nexus that draws on developmental psychology and connects it to findings from criminological research.

Developmental psychologists have argued that individuals respond to uncertain future prospects by prioritizing immediate rewards (Daly & Wilson, 2005; Frankenhuis et al., 2016). We posit that victimization is a critical event signaling that the future is unsafe and uncertain. Following this logic, we hypothesize that being victimized induces a greater orientation towards the here-and-now at the expense of considering the future, an orientation hereafter referred to as a 'short-term mindset' compared to non-victims. This in turn increases the likelihood of later offending. Below, we elaborate on the theoretical rationale underlying our hypothesis and discuss relevant empirical evidence. We follow with a discussion of the notion of short-term mindsets, and how it compares with self-control, before presenting our methods and results. We start out, however, by reviewing current explanations of the victim-offender overlap.

REVIEW OF THE LITERATURE

Explanations of the Victim-Offender Overlap

Predominant explanations of the victim-offender overlap emphasize traits and activities that increase propensities for both victimization and for offending. One influential explanation argues that low self-control leads to both victimization and offending, rendering their relation spurious (Gottfredson & Hirschi, 1990). In support of this account, low self-control has been found to strongly predict both offending (Pratt & Cullen, 2000; Vazsonyi et al., 2017) and victimization (Pratt et al., 2014; Schreck, 1999). However, as self-control is seen as a relatively stable individual trait, the account does not accommodate the possibility of a causal relationship linking victimization to later offending.

Risky lifestyles/routine activities perspectives (Cohen & Felson, 1979; Hindelang et al., 1978) provide another prominent explanation for the victim-offender overlap with empirical support (McNeeley, 2015). According to these perspectives, risky lifestyles or routine activities bring potential victims and offenders together in settings conducive to crime (Cohen & Felson, 1979; Osgood et al., 1996; Osgood & Anderson, 2004). Particularly, increased engagement in risky behaviors and exposure to other offenders increase people's risk of victimization (Schreck et al., 2004; Wu & Pyrooz, 2016). Given this logic, research in this tradition has focused on offenders' increased risk to be victimized, rather than the other way around.

Turanovic et al. (2015) recently advanced the debate by integrating self-control theory with risky lifestyles/routine activities perspectives, arguing that low self-control leads people to self-select into risky situations. This hypothesis is supported by studies showing that risky lifestyles mediate the effect of self-control on victimization (Ren et al., 2016; Turanovic & Pratt, 2014). In the self-control/lifestyle framework the relationship between victimization and offending remains spurious; low self-control leads to risky activities, which increases the risk of both offending and victimization.

To our knowledge, only the subculture of violence hypothesis and general strain theory seek to explain the link between victimization and offending in causal terms. The subculture of violence hypothesis applies to groups that advocate the use of violence to deal with conflicts. The hypothesis suggests that in these groups, victims of crime respond with retaliatory violence to restore honor and to avoid future victimization (Anderson, 1999; Jacobs & Wright, 2006). The victim-offender overlap is indeed particularly strong in groups and neighborhoods in which there is a (subcultural) norm to use violence to resolve conflicts (Berg et al., 2012; Pyrooz et al., 2014). However, the overlap is also observed in populations that do not embrace retaliatory violence (Hay & Evans, 2006; Jackson et al., 2013; Jennings et al., 2012; Walters, 2021). Therefore, this perspective cannot explain why victimization is still linked to offending outside of groups that are immersed in a violent subculture.

Another, broader, causal explanation is provided by general strain theory, which considers victimization a negative life experience that triggers negative emotional states, primarily anger (Agnew, 1992, 2002, 2006). These emotional states, in turn, may create motivations for coping through criminal conduct (Agnew, 2002). We argue that, as a fleeting emotional state, state anger is unlikely to generate enduring effects (Forgas, 1995; van Gelder, 2013). In fact, the duration of anger, similar to that of other emotions, is generally viewed as spanning seconds, minutes or hours, rather than days or weeks (Verduyn & Lavrijsen, 2015). It therefore seems implausible that such short-lived experiences by themselves shape long-term offending trajectories. Additionally, although measures of anger as an enduring individual trait are problematic for testing general strain theory's assumptions (Mazerolle et al., 2003), many empirical investigations of the theory have used such measures. These tests have yielded mixed findings, with some studies reporting that trait anger partially mediates the relationship between victimization and offending (Hay & Evans,

2006; Oh & Connolly, 2019), and others reporting no such indirect effects (Walters, 2020; Walters & Espelage, 2017).

It is also possible that state anger after strain such as victimization promotes short-term mindsets. State anger has been shown to trigger a momentary focus on the present (Calluso et al., 2021; Denson et al., 2011; Habib et al., 2015). While it is possible that strain-elicited anger contributes to short-term thinking, there are likely to be other, more plausible ways through which victimization contributes to short-term mindsets over longer periods. Our hypothesis proposes that victimization signals uncertainty about the future that persists over longer periods, when anger has already subsided. We discuss this hypothesis in more detail after first providing a description of the concept of short-term mindsets and how it relates to self-control.

Short-Term Mindsets

The term 'short-term mindsets' denotes a tendency to focus on the present and to disregard or discount the future. This tendency is embedded in a series of individual-level correlates of crime and delinquency, such as impulsivity, sensation-seeking, (low) conscientiousness, (lack of) consideration of future consequences, (inability to) delay gratification, (low) future orientation, (low) future self continuity, present bias, anticipation of an early death, and temporal/future discounting. We use the term short-term mindsets as an umbrella or meta-level construct that covers these different correlates, and treat these correlates as indicators of the former.

The notion of short-term mindsets also aligns with Gottfredson and Hirschi's definition of (low) self-control as the tendency to disregard long-term costs and to pursue immediate benefits (cf. Gottfredson & Hirschi, 1990, p. 177; 2019, p. 4), later redefined as the "tendency to consider the full range of potential costs of a particular act" whether those be

immediate or long-term (Hirschi, 2004, p. 544). Yet it deviates from self-control as commonly operationalized in several important ways that warrant discussion.

First, the notion of short-term mindsets is more focused than Gottfredson and Hirschi's view of self-control as it discards self-control's non-temporal components that do not align with its definition (i.e., preference for physical activities, self-centeredness, volatile temper, and preference for simple tasks (Burt, 2020; van Gelder et al., 2020). From a psychometric perspective incorporating elements outside of the definition of a construct 'contaminates' measures of a construct with other, related yet different, constructs (Malouf et al., 2014). This may inadvertently mask relations between a measure and outcome criteria, as differential effects of various elements may cancel each other out, and also makes it more difficult to conceptually understand and interpret the relations between a construct and an outcome (de Vries et al., 2011). Two components of self-control, namely impulsivity and sensation-seeking, correspond to the notion of short-term mindsets are used as indicators in this study. Consistent with earlier work, we define impulsivity as a tendency to act on immediate urges (DeYoung & Rueter, 2016, p. 348), and sensation-seeking as the tendency to accept risks in the pursuit of exciting behaviors despite potential future costs (Burt & Simons, 2013; Gottfredson & Hirschi, 1990; Zuckerman, 1994). Sensation-seeking as defined here has also been referred to as 'thrill seeking' (Burt & Simons, 2013), and 'risk-seeking' (Grasmick et al., 1993) in the criminological literature.

A second distinction between short-term mindsets and self-control is that the former covers well-established individual-level correlates of crime that are not considered to be a part of self-control. In this sense, the notion of short-term mindsets is more encompassing than self-control. In the present study, we include future orientation, which refers to people's tendency to make plans and set goals for the future, and to act in ways that align with these

plans and goals (Corral-Verdugo & Pinheiro, 2006; Steinberg et al., 2009) as a third indicator of short-term mindsets.

Third, we treat the different indicators of short-term mindsets separately, rather than conflating them as is the case for self-control. Empirical research shows that although different indicators of short-term mindsets are correlated, they are nevertheless distinct constructs that have different neurobiological bases and unique developmental trajectories (Burt et al., 2014; Forrest et al., 2019; Steinberg, 2008; Steinberg et al., 2008). Studies have also shown that impulsivity, sensation-seeking, and future orientation are independently associated with imprudent behavior, offending, and victimization and to explain unique variance in these outcomes (Arneklev et al., 1993; Burt et al., 2014; Foreman-Peck & Moore, 2010; Forrest et al., 2019; van Gelder et al., 2018, 2020).

Finally, the term ‘mindsets’ explicitly suggests the possibility of variability over time. One of the central tenets of self-control theory is that self-control is a relatively time-stable trait that is established in childhood as a consequence of parental monitoring and consistent disciplining; after the formative early childhood years, neither parenting nor other social factors have any significant influence on it (Gottfredson & Hirschi, 1990, 2019). This assumption is contradicted by increasing empirical evidence showing that self-control continues to show change over time, also well beyond childhood and adolescence (see Burt, 2020, for review; Burt et al., 2006, 2014; Na & Paternoster, 2012). This is also true for indicators of short-term mindsets (e.g., Ashton & Lee, 2016; Forrest et al., 2019; Roberts & Mroczek, 2008; Winfree et al., 2006). Importantly, research is showing not only that traits indicative of a short-term mindset change but also why they change, i.e., as adaptive responses to environmental adversity and stressors. Such conditions involve unpredictability, sanctions, corporal and inconsistent parental punishment, poverty, (Frankenhuis et al., 2016;

Frankenhuis & Nettle, 2020; Pepper & Nettle, 2017; van Gelder et al., 2018), and other types of adversity, including victimization (Wojciechowski, 2022).

Is victimization associated with increased short-term mindsets?

Being victimized highlights one's vulnerability (Perloff, 1983) and can increase uncertainty about future prospects (e.g., "Will I be alive at age 25?", "Can I count on keeping what is mine?") or directly diminishes such prospects (e.g., impaired health due to physical trauma; Daly & Wilson, 2005). For example, Lejeune and Alex (1973) found that victims of mugging showed a new sense of vulnerability and an awareness of the self as a potential target following the event. Furthermore, in a sample of young offenders, being victimized was linked to expecting less future success in multiple life domains, such as work and family (Daigle & Hoffman, 2018). In a similar vein, in a representative sample of U.S. adolescents, Tillyer (2015) found that victimization was associated with a higher perceived risk of being killed before the age of 21 (see also Warner & Swisher, 2014).

Both criminologists and psychologists have argued that people respond to future uncertainty by focusing more on the present (Brezina et al., 2009; Daly & Wilson, 2005; Frankenhuis et al., 2016; Wilson & Daly, 1997). That is, if the future is perceived as unsafe and uncertain, one might not be able to cash in deferred rewards. As there is little to lose when the future seems bleak, it might make sense to take risks that could lead to immediate rewards (Harris et al., 2002; Kruger et al., 2008). For instance, college students reported more risk-taking when they perceived their future as less certain, less controllable, and less predictable, and when they estimated a shorter life span (Hill et al., 1997). A recent study found that retrospectively perceived unpredictability in childhood was associated with adult delay discounting, i.e., a preference for smaller immediate rewards over larger delayed rewards (Martinez et al., 2022). In line with these findings, a study by Piquero (2016) showed that youth who anticipated a lower age at death also reported lower impulse control.

The prioritization of immediate rewards as a response to uncertainty already manifests itself early in life. A study with 3- to 5-year-old children induced uncertainty by manipulating the reliability of the experimenter, who either returned with a promised reward (reliable) or not (unreliable) (Kidd et al. 2013; replicated by Moffett et al., 2020). In the unreliable condition, children waited substantially shorter in a subsequent delay of gratification task (about four times shorter in Kidd et al., 2013). Thus, increased uncertainty led these children to favor a smaller, immediate reward over a larger, later reward. In conjunction, these studies suggest that adopting a short-term mindset may be a reasonable response to poor and/or uncertain future prospects (Frankenhuis et al., 2016; Pepper & Nettle, 2017).

There is also evidence that victimization during adolescence, which as discussed above is a relevant cue for uncertainty, is associated with an increased focus on the present. For example, using longitudinal data from a sample of U.S. adolescents, Agnew et al. (2011) observed that victimization in the preceding six months predicted lower levels of self-control, net of prior levels of self-control. Similarly, in Korean adolescents, bullying victimization in the past year was negatively associated with self-control within- and between-individuals over two years (Kim et al., 2020). Victimization also predicted lower impulse control and higher sensation-seeking in the following year among adolescent serious offenders. (Davis et al., 2017; Wojciechowski, 2022). The effects of victimization on the disregard of longer-term consequences may also play out over longer timescales, especially when people experience chronic or ongoing victimization (Agnew, 2006; Macmillan, 2001). For example, one study showed that young serious offenders who had experienced more violence also had a slower growth in future orientation, persisting beyond adolescence (Monahan et al., 2015).

Offending as a Response to Uncertainty and Adversity

Offending is one response reflective of a tendency to prioritize the present over the future that may result from exposure to uncertainty and adversity. Indeed, criminal conduct

epitomizes a short-term mindset as it tends to offer immediate rewards but delayed costs, which tend to outweigh the immediate rewards (Hirschi, 2004; Nagin & Pogarsky, 2004). There is some evidence linking uncertain future prospects to offending. Perceived life expectancy and the expected likelihood of attending college were negatively associated with offending in African American adolescents (Caldwell et al., 2006). Within-individual increases in estimated life expectancy were linked to decreased offending in U.S. male adolescent offenders (Knowles et al., 2022). In a mixed-methods study, Brezina et al. (2009) found that the anticipation of an early death, a measure of 'futurelessness', was associated with increased offending in a representative U.S. youth sample. Interviews with offenders suggested "several mediating variables that may link anticipated early death to crime, including a present-time orientation, perceived salience of immediate benefits, [and] a disregard for the future consequences of behavior, […] that may result from the anticipation of early death" (p. 1119). According to these researchers, the increased focus on the present arose from constant exposure to violence, including victimization.

There is emerging evidence that the tendency to focus on the present could explain the link between victimization and offending. A longitudinal study by Walters and Espelage (2017) suggests that impulsivity mediates the bullying victimization-offending relationship. Longitudinal research has also reported an indirect relationship between exposure to violence and later violent behavior through lower future educational aspirations (Stoddard et al., 2015). However, these studies did not control for prior levels of these mediators. For our purpose, such controls are essential because they reduce the likelihood that preexisting short-term mindsets account for the effects of interest. An additional limitation of the existing longitudinal studies is their focus on a particular measure of short-term mindsets, while our study includes several indicators of short-term mindsets.

THE PRESENT STUDY

This article aims to extend predominant theoretical perspectives on the victim-offender overlap by proposing a novel theoretical explanation. Specifically, we argue that victimization signals that the future is more likely to be unsafe and uncertain, lowering perceived long-term prospects. Prioritizing immediate benefits and disregarding potential future costs may then be reasonable response under these conditions. Thus, we hypothesize that, compared to non-victims, victimization increases short-term mindsets, which in turn can result in increased offending. We use three distinct indicators of short-term mindsets: impulsivity, sensation-seeking, and future orientation. To test our hypothesis, we examine the following predictions in a representative sample of adolescents in Zurich, Switzerland, using between-subjects structural equation modeling of longitudinal data:

1) Victimization will be positively associated with offending two years later.
2) The relationship between victimization and offending will be fully or partially mediated by levels of short-term mindsets.
    a) Victimization in the past twelve months will be associated with higher levels of impulsivity and sensation-seeking and lower levels of future orientation.
    b) Higher levels of impulsivity and sensation-seeking and lower levels of future orientation will be associated with offending two years later.

METHODS

Participants

We used data from the Zurich Project on the Social Development from Childhood to Adulthood (z-proso; Ribeaud et al., 2022; study website: http://www.jacobscenter.uzh.ch/de/research/zproso), a prospective longitudinal study conducted in the city of Zurich, Switzerland. 2,520 individuals started primary school in the 90 public schools in Zurich in 2004. The z-proso Research Team first sorted the schools into groups by enrollment size and school district, then drew a stratified sample of 56 schools,

with a total sample size of *N*=1,675 children. Participants provided active informed consent, and parents provided passive consent up to age 17. Participants completed the questionnaires in classrooms after school lessons and received monetary compensation. The Ethics Committee of the Faculty of Arts and Social Sciences of the University of Zurich provided ethical approval (approval number: 2018.2.12).

TABLE 1 about here

Data for the present study came from waves 5 through 8 of the z-proso project, collected from 2011 through 2018 (see Table 1). We chose these waves as they contain all variables of interest, and both victimization and delinquency are most likely during this period (Loeber & Farrington, 2014; Macmillan, 2001). We used waves 6 to 7 for the main analysis (see Figure 1). On February 04, 2021, before the data analyses started, we preregistered our hypotheses, data processing decisions, and statistical plan on the Open Science Framework. We embargoed the time-stamped preregistration (preventing changes) and made it publicly available after the article was accepted for publication (DOI: https://osf.io/7a36h/?view_only=3a74108706ca470ab86aa3b70898ecfe). We also provide the used data together with metadata and the analysis scripts on a publicly accessible repository (PLACEHOLDER). In doing so, we attempt to be transparent about our research processes and to reduce bias (Frankenhuis & Nettle, 2018; Nosek et al., 2018; Sweeten, 2020).

FIGURE 1 about here

Measures

Independent Variable: Victimization

Six items measured exposure to various types of violent victimization (see Appendix A for the complete list of items). Participants answered four dichotomous items (0 = no; 1 = yes) taken from the Serious Victimization Questionnaire (adapted from Wetzels et al., 2001). Two additional items from the Zurich Brief Bullying Scale (Murray et al., 2021) also measured forms of violent victimization on a six-point Likert scale from 1 = never to 6 = (almost) every day. We dichotomized these items according to whether there was at least one incident (0 = no; 1 = yes). We then summed the six dichotomous victimization items to a variety scale consistent with prior criminological studies (e.g., Schreck et al., 2008) and studies using z-proso data (Averdijk et al., 2016; van Gelder, Averdijk, et al., 2015).

Mediating Variables: Short-Term Mindsets

Impulsivity, sensation-seeking, and (low) future orientation are best viewed as 'indicators' of short-term mindsets (i.e., in terms of a reflective measurement model; see Jarvis et al., 2003). For impulsivity and sensation-seeking, we used the items from an adapted and abbreviated version of the Grasmick et al. (1993) self-control scale available in the dataset (see Appendix A for the list of items). Two items measured impulsivity (wave 5 mean inter-item correlation[1] (MIIC) = .269; wave 6: MIIC = .262). Two items measured sensation-seeking (wave 5: MIIC = .545; wave 6: MIIC = .520). We assessed future orientation with three items capturing participants' long-term educational aspirations (created and psychometrically pretested by the z-proso Research Team; see Appendix A; wave 5: MIIC = .482; wave 6: MIIC = .517). Participants rated all items on a four-point Likert scale ranging from 1 (false) to 4 (true). For each of the three indicators of short-term mindsets (impulsivity, sensation-seeking, and future

[1] Cronbach's alpha is a biased estimate for scales with few items. The (mean) Spearman-Brown inter-item correlation (MIIC) is a more appropriate measure for internal consistency (Eisinga et al., 2013; Peterson, 1994). Clark and Watson (1995) recommend the MIIC to fall between .15 and .50.

orientation), we computed the average across their respective items. Latent factors are not recommended with few items (Kline, 2016, p. 454).

Dependent Variable: Offending

Fourteen items from a scale adapted from Wetzels et al. (2001) captured several types of offenses in the past twelve months (see Appendix A for the exact items), .Three items referred to violent offending (extortion, robbery, and assault), whereas the other 11 items measured non-violent offending. After dichotomization (0 = no; 1 = yes), we summed all 14 items to create a variety scale. The variety scale is the field's preferred way to measure criminal offending as it has high reliability and validity and is not biased by less serious, but frequent crime types (Sweeten, 2012, p. 533).

Control Variables

We control for variables associated with offending, short-term mindsets, and/or victimization. More information on why we chose the control variables is available in Appendix A. We controlled for wave 6 demographic variables on both the mediator and the outcome: sex (1 = male; 2 = female), migration background (1 = at least one Swiss-born parent; 2 = both parents foreign-born), age, and socio-economic status (SES). For SES, we used the caregivers' current profession (Elias & Birch, 1994) to compute each caregiver's International Socio-Economic Index of occupational status (Ganzeboom et al., 1992). For participants with two caregivers, we used the higher of the two scores as the final measure.

We controlled for the following variables from one wave prior (wave 5), in order to rule out pre-existing factors as alternative explanations of the relationships between victimization, short-term mindsets, and offending.

We controlled for parental monitoring using two subscales. We computed the mean of four items measuring parental supervision (wave 5: α = .70), and the mean inverted scores of three items assessing adolescent disclosure (wave 5: α = .63). All items are based on the

Alabama Parenting Questionnaire (APQ; Shelton et al., 1996) and the Parenting Scale (Wetzels et al., 2001). Items were scored on a four-point Likert scale (1 = never; 4 = often/always).

We operationalized the measure of delinquent peers as a dichotomous measure assessing whether either of the nominated two best friends did either of two delinquent acts (theft, assault; 0 = none, 1 = at least one of the friends committed at least one of these offenses).

Five items (based on Wetzels et al., 2001) measured the frequency of participating in unstructured unsupervised socializing with peers on a six-point Likert scale from 1 = never to 6 = (almost) every day (wave 5: α = .80). We computed the average of the scores to obtain a mean score of risky activities.

For our substance use measure, participants indicated on a six-point scale (ranging from 1 = never to 6 = daily) how many times in the past 12 months one has consumed either tobacco, beer/wine, liquors, or cannabis. We computed the mean frequency of these four items.

We controlled for prior short-term mindsets with the same indicators as presented above. To account for prior involvement in crime, we controlled for prior offending and prior victimization, using the same variety scales.

Statistical Analyses

First, we computed bivariate correlations. Next, we used a structural equation model to test our main hypothesis (including waves 6 to 7, see Figure 1). The structural equation model investigated a possible mediation of victimization on later offending by the three indicators of short-term mindsets. We also conducted a robustness check, running the same analysis for waves 7 to 8 (control variables from waves 6 and 7). As a meta-analysis observed greater victim-offender overlap for violent offenses than for property crimes (Jennings et al., 2012),

we exploratorily also estimated separate models for violent and non-violent offending, controlling for the prior levels of the offense type.

We conducted the mediation analyses with the robust maximum likelihood estimator with robust (Huber-White) standard errors and a scaled test statistic that is (asymptotically) equal to the Yuan-Bentler test statistic, making it insensitive to violations of the multivariate normality assumption (Satorra & Bentler, 1994). We used a negative binomial model since the offending variety scale is a count variable (Hilbe, 2011). Negative binomial regression controls for the 'rare events' nature of crime counts and corrects for overdispersion in the data (Piza, 2012). The model utilizes robust full information maximum likelihood estimation to deal with missing data. Table 1 shows the number of participants per wave; Table 2 provides the number of available data points for each variable (see Appendix B for the robustness check). We adjusted standard errors by adding school class as a cluster variable. We conducted all analyses in Mplus 8 (Muthén & Muthén, 1998-2017) and estimated both direct and the indirect pathways. We took a template of the Mplus code from a webpage (Stride et al., 2015) and modified it for our structural equation models. All analyses are two-tailed with a significance level of $\alpha = .05$.

RESULTS

Bivariate Correlations

Table 2 shows the zero-order bivariate Pearson correlations for victimization with the two-year lagged offending measure. Table 2 also shows the means and standard deviations of all variables and their bivariate associations with the independent, mediating, and outcome variables. As expected, victimization was positively correlated with the two-year lagged measure of offending (waves 6-7: $r = .153$, $p < .001$). See Appendix B for the correlation table of waves 7 to 8 (robustness check). Note that the lag between these later waves was three years (waves 7-8: $r = .051$, $p = .050$).

TABLE 2 about here

Confirmatory Mediation Analyses

First, we ran the structural equation model with only victimization, short-term mindsets, and offending included, omitting all controls. The model from waves 6 to 7 showed a partial mediation via sensation-seeking and future orientation. For the robustness check (waves 7-8), we observed a full mediation that was mainly driven by sensation-seeking.[2]

Second, we computed the same model including controls (see Table 3, left two columns; see Appendix C for the decomposed indirect effect). In waves 6-7, we observed a partial mediation by sensation-seeking.[3] The structural equation model is depicted in Figure 2. Analogous to the exploratory models without controls, we found a full mediation by sensation seeking in the robustness check.

FIGURE 2 about here

Third, after running our preregistered analyses, which supported our predictions, we decided to also run the model without controlling for prior levels of victimization. As noted earlier, we had included this variable to control for a lagged effect of prior victimization on offending. However, we suspected this variable could allow for an additional pathway from

[2] A partial mediation is also referred to as a complementary mediation, where both an indirect (mediated) effect and a direct effect are present and point at the same direction (Zhao et al., 2010). The total effect of victimization on delinquency is made up partially of a direct component and partially of the indirect path. All the full mediations (Baron & Kenny, 1986) found in the present study are technically indirect-only mediations. Indirect-only mediations describe the situation in which an indirect effect is present, but there is no direct effect (Zhao et al., 2010).

[3] Upon request by a reviewer, we ran an additional exploratory analysis which included the remainder of the available self-control items as controls. These analyses yielded the identical results, with deviations of maximally 0.001 on the regression coefficients. Results are available upon request.

prior victimization via (prior) short-term mindsets to the offending outcome, though this pathway is not specified in the structural equation models. The results (see two right columns in Table 3) show the same qualitative pattern, with a partial mediation by sensation seeking for waves 6-7, and a full mediation by sensation seeking in the robustness check of waves 7-8. Thus, our results were robust to whether or not we controlled for prior victimization.

TABLE 3 about here

The path from impulsivity to offending was not significant in the confirmatory models above, contrary to prior findings (Forrest et al., 2019; van Gelder et al., 2018; Walters & Espelage, 2017). However, high intercorrelations can cause type II errors in structural equation models (Grewal et al., 2004). In our study, impulsivity was moderately correlated with sensation-seeking (r = .452, overlapping variance of ~ 20%). When omitting sensation-seeking as a mediator, impulsivity has a significant effect on offending (see Appendix D), indicating this effect was suppressed in the model with sensation-seeking. Hence, the non-significant path from impulsivity to offending should be interpreted with caution; impulsivity might be more influential than this structural equation model suggests.

Exploratory Mediation Analyses

Next, to explore differences between violent and non-violent offending, we divided the 14-item offending scale into violent offending (three items: threat and extortion, robbery, assault) and non-violent offending (the remaining 11 items). These separate mediation analyses are presented in Table 4 (see Appendix E for the decomposed indirect effect). We included the control for prior victimization in all of these analyses.

For violent offending, in waves 6-7, there was a full mediation by short-term mindsets. The indirect effect was produced by impulsivity, sensation-seeking, and future

orientation collectively, while none of the individual indirect effects were significant. For the violent offending model in waves 7-8, there was a full mediation by sensation-seeking. For non-violent offending, there was a partial mediation by sensation-seeking in waves 6-7, and a full mediation by sensation-seeking for the robustness check in waves 7-8.

TABLE 4 about here

We also ran the confirmatory structural equation models again but this time exploratorily including all seven items (two for impulsivity; two for sensation-seeking; three for future orientation) in one common factor measuring short-term mindsets (standardized factor loadings were $\lambda > .35$ for all items). There was a partial mediation for waves 6 to 7, and a full mediation by short-term mindsets for waves 7 to 8 (see Table 5 and Figure 3 for the waves 6-7 model). This speaks to the robustness of the results of the confirmatory analyses.

FIGURE 3 about here

TABLE 5 about here

DISCUSSION

Although empirical support for the victim-offender overlap is well-established (Jennings et al., 2012), explanations for why people are more likely to offend after having been victimized are in shorter supply. We theorized that victimization affects people's future expectations, inducing short-term mindsets, in turn increasing the likelihood of offending. We tested this hypothesis in a large sample of Swiss urban adolescents. In line with our expectations, we

found that compared to non-victims, victims on average exhibit increased offending following victimization, net of prior levels of offending, victimization, short-term mindsets, and a set of other controls. This finding is consistent with the idea of a causal relationship running from victimization to offending (e.g., Averdijk et al., 2016; Jackson et al., 2013). Furthermore, as predicted, victimization was associated with all three indicators of short-term mindsets, that is, increased impulsivity, increased sensation-seeking, and reduced future orientation, net of their prior levels. Finally, in our models short-term mindsets partially or fully mediated the relationship between victimization and offending. The indirect effect via short-term mindsets accounted for 26.04% (waves 6-7) and 58.04% (waves 7-8) of the total effect. Sensation-seeking had the most consistent and largest indirect effect. These findings are consistent with the integrated self-control/risky activities framework (Turanovic et al., 2015), and suggests that risky activities, including offending, may become *more* likely with increased short-term mindsets after victimization. Individuals with short-term mindsets are more likely to experience future (re-)victimization (Schreck et al., 2006; Turanovic & Pratt, 2014), as are those who offend (Ruback et al., 2014), potentially creating a dangerous, self-reinforcing cycle.

Our findings are of theoretical importance in two principal ways. First, they advance our understanding of the victim-offender overlap by providing a theoretical rationale for why victims are at increased risk of offending. Second, they contribute to an increasingly central debate about the stability and dimensionality of self-control (cf. Burt, 2020). As noted, victimization was associated with increases in all three indicators of short-term mindsets, including the self-control subdomains of impulsivity and sensation-seeking, net of prior levels and a set of other controls. These findings support the idea that experience shapes short-term mindsets (van Gelder et al., 2020). Not only do short-term mindsets increase the

likelihood of victimization (Pratt et al., 2014), victimization is also associated with an increase in short-term mindsets.

Future Directions

Our work complements previous research that has proposed several mechanisms for why victims later offend. First, general strain theory posits that victimization elicits negative emotions, particularly anger, which can lead to offending either directly or indirectly by decreasing self-control (Agnew et al., 2011). We think it is unlikely that anger could account for our results. As was mentioned in the introduction, one of the main characteristics of emotions, including anger, is that they are short-lived (Forgas, 1995). Although anger can lead to "hot" in-the-moment decision-making, resulting in impulsive behavior in the immediate term (van Gelder, 2013), we think it is unlikely to have long-term effects on short-term mindsets and offending. Nonetheless, future work could examine whether anger also increases short-term mindsets in the longer-term – for example, after recurrent victimization, as speculated by Agnew and colleagues (2011).

Second, also using z-proso data, in a vignette study, Averdijk et al. (2016) found that violent victimization alters the situational appraisal of anticipated costs and benefits of violent offending. Victims of crime perceived more benefits of the hypothetical use of violence (e.g., pleasure or admiration). Victims also anticipated lower costs of offending (e.g., shame or risk of retaliation). This altered situational appraisal was associated with an increased likelihood of actual violent offending in a later wave. Whereas Averdijk et al. (2016) focused on changes in the perceived *magnitude* of costs and benefits of offending, the current study highlights shifts in intertemporal preferences in response to victimization, that is, the altered *weighting* of expected present and future behavioral outcomes. Future work could explore whether victimization's link with offending is mediated by both short-term mindsets and appraisal of costs and benefits in conjunction or in interaction.

It is possible that victimization results in precautionary rather than risk-taking behavior, which would signal sensitivity to long-term outcomes rather than short-term mindsets. Precautionary behavior may be inconvenient and offers little immediate gratification (other than reducing concerns about uncertain events at an unknown time in the future; Berg & Schreck, 2021). In fact, violent victimization predicts delinquent peer affiliations, gang membership, and carrying defensive weapons (DeLisi et al., 2009; Schreck et al., 2006; Spano & Bolland, 2013). While these behaviors may be intended to prevent future victimization, they are known to actually increase the risk of both victimization and offending (DeLisi et al., 2009; Schreck et al., 2004; Wilcox et al., 2006; Wu & Pyrooz, 2016). Increased short-term mindsets make such behaviors more likely (Johnson et al., 2019; Pyrooz et al., 2021), and may thus help explain why victims respond in potentially criminogenic ways (Schreck et al., 2006). The extent to which these behavioral responses to victimization contribute to the overlap could be investigated in future work.

For some offenders, victimization might act as a turning point, leading them to desist from risky activities and crimes in the future (Hindelang et al., 1978; Jacques & Wright, 2008). However, empirical support for this idea is limited (Berg & Schreck, 2021; Ousey et al., 2011). Generally, such lifestyle changes appear to be more common among individuals who are likely to consider future outcomes (Schreck et al., 2006; Turanovic & Pratt, 2013, 2014). For example, shortsighted victims of violent crime are less likely to reduce their affiliations with delinquent peers and engagement in risky activities (Turanovic & Pratt, 2014). In the present study, we did not separate groups according to their prior levels of short-term mindsets. An interesting line of future research could be to study specific factors that shape whether individuals adopt effective behavioral changes for crime prevention (e.g., desistance from crime) as a response to victimization. Such work could leverage a moderated

mediation analysis to investigate whether these pathways differ according to prior levels of short-term mindsets (Turanovic & Pratt, 2014).

In this study, we tested our hypotheses at the between-person level. Future studies could complement our analyses by investigating within-individual changes in short-term mindsets and associated behaviors following victimization. As was noted earlier, various factors might condition the observed effects such as personality traits or environmental factors. For instance, whereas some individuals may respond to victimization by developing increased short-term mindsets, risky behavior, and offending, others might take expedient precautions, and refrain or desist from crime.

Limitations

Our study has several limitations that merit discussion. First, we used data from a large adolescent sample representative of public-school students in Zurich. Future research should investigate whether the findings hold for other age groups and samples from other countries, cultures, and socioeconomic compositions. Our findings may not generalize to mild forms of non-contact victimization (e.g., light internet harassment (insults), stolen goods of a low value) or crimes that require forethought or for which rewards are typically delayed (e.g., money laundering, currency schemes, insider trading, racketeering, securities fraud, welfare fraud). Also, testing the hypothesis with data that incorporates other indicators of short-term mindsets could potentially corroborate the robustness of our findings.

Second, effects might be larger or easier to detect at shorter time spans. Overall, the effect from victimization on later offending was not large in our sample, with two to three years lag between waves. The direct effect of victimization on lagged offending was not significant in the robustness check (three years lag). However, we are aware of at least one study which found victimization effects on later offending even over longer periods of time (five years), but earlier in adolescence (Hay & Evans, 2006). Nevertheless, short-term

mindsets still mediated the pathway from victimization to offending in the waves we analyzed. Future research could examine whether the indirect effects of short-term mindsets are stronger when predicting more recent offending.

Finally, although the results support our hypotheses, as with all observational longitudinal data, conclusions about causality are unwarranted. Although we included an extensive set of control variables, we cannot rule out the possibility that unobserved variables explain our results. The lag of two years between the waves in the dataset creates scope for the possibility that the level of short-term mindsets had already changed prior to victimization. Adopting a situational perspective, our study can also not rule out the possibility that, due to the dynamic and contextual nature of events, victimization and offending may be confounded in certain cases. The social-interactionist/situational perspective argues that in some incidents of violent crime, the later victim might have initiated the physical altercation that ultimately led to their self-reported victimization, blurring the roles of victim and offender (Berg & Felson, 2020). Future research should strive to further disentangle the intertwined relationship between victimization and offending.

Conclusions

Our study theoretically contributes a novel explanation of how and why victimization may induce short-term mindsets which, in turn, increase the likelihood of offending. Specifically, considering recent evidence for malleability of short-term mindsets, we have argued that a prioritization of the present is a response to lower future expectations after victimization. Our findings can also inform interventions. Ideally, preventing victimization would also prevent crime by disrupting pathways into offending. If victimization cannot be prevented in the first place, intervention programs for victims of crime should promote building back a positive future and consideration of future outcomes. These programs are designed to curtail future offending (Caldwell et al., 2006, p. 600; Forrest et al., 2019), other maladaptive coping

behaviors like substance use (Turanovic & Pratt, 2013; Walters & Espelage, 2018), and further victimization (Schreck et al., 2006; Turanovic & Pratt, 2014). For example, confronting one's future self with virtual reality or avatars can reduce offending (van Gelder et al., 2013, 2022; van Gelder, Luciano, et al., 2015). Improving future prospects and future orientation may therefore help mitigate the detrimental consequences of violent victimization.

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TABLE 1 Description of the waves

wave	assessment time	*n* (% of total *N*)	mean age (SD)	school grade
wave 5	summer 2011	1,366 (81.55%)	13.67 (0.37)	7th grade
wave 6	spring 2013	1,447 (86.39%)	15.44 (0.36)	9th (just before the end of compulsory school attendance)
wave 7	spring 2015	1,306 (77.97%)	17.45 (0.37)	11th (if school has been continued)
wave 8	spring 2018	1,180 (70.45%)	20.58 (0.38)	all out of school; after “Sekundarschule II”

Note. Total sample size N = 1,675.

TABLE 2 Descriptive statistics and correlations of the study variables (n = 1,485) in the mediation from waves 6 to 7

	n	*M* (SD)	1	2	3	4	5
(1) wave 6 victimization	1,414	0.59 (0.87)					
(2) wave 6 impulsivity	1,413	2.37 (0.56)	.113**				
(3) wave 6 sensation-seeking	1,402	2.20 (0.73)	.182**	.455**			
(4) wave 6 future orientation	1,421	3.16 (0.61)	-.076**	-.216**	-.243**		
(5) wave 7 offending	1,266	0.99 (1.61)	.153**	.181**	.319**	-.200**	
control variables							
wave 5 victimization	1,338	0.72 (0.99)	.325**	.073**	.124**	-.047†	.182**
wave 5 impulsivity	1,331	2.30 (0.61)	.167**	.303**	.289**	-.150**	.197**
wave 5 sensation-seeking	1,337	2.12 (0.77)	.166**	.264**	.494**	-.219**	.312**
wave 5 future orientation	1,351	3.24 (0.61)	-.056*	-.136**	-.167**	.431**	-.201**
wave 5 offending	1,328	0.96 (1.76)	.153**	.151**	.260**	-.136**	.429**
wave 5 parental supervision	1,352	3.09 (0.64)	-.011	-.079**	-.137**	.092**	-.067**
wave 5 adolescent disclosure	1,338	3.13 (0.64)	-.128**	-.181**	-.268**	.213**	-.259**
wave 5 delinquent peers	1,082	0.25 (0.43)	.115**	.114**	.169**	-.096**	.213**
wave 5 substance use	1,334	1.41 (0.74)	.149**	.130**	.234**	-.148**	.349**
wave 5 risky activities	1,318	2.76 (1.05)	.106**	.173**	.245**	-.113**	.200**
wave 6 sex	1,422	1.48 (0.50)	.049†	-.031	-.126**	.098**	-.273**
wave 6 migration background	1,448	1.49 (0.50)	-.025	-.011	-.042	.126**	-.066*
wave 6 SES	1,404	45.62 (19.28)	.003	-.002	.042	-.078**	.057*

Note. mean age = 15.44 (*SD* = 0.36); † $p < .10$; * $p < .05$; ** $p < .01$.

TABLE 3 Overview of the main confirmatory mediation analyses

	with control for prior victimization		without control for prior victimization	
	victimization w6	victimization w7	victimization w6	victimization w7
	offending w7	offending w8	offending w7	offending w8
type of effect	*b* (*SE*)	*b* (*SE*)	*b* (*SE*)	*b* (*SE*)
total effect	0.169** (0.045)	0.112 (0.102)	0.182** (0.041)	0.112 (0.097)
total indirect effect	0.044** (0.013)	0.065** (0.017)	0.039** (0.011)	0.067** (0.018)
indirect effect of impulsivity	0.002 (0.003)	0.010 (0.007)	0.002 (0.003)	0.010 (0.007)
indirect effect of sensation-seeking	0.036** (0.011)	0.052** (0.016)	0.033** (0.009)	0.054** (0.016)
indirect effect of future orientation	0.005 (0.003)	0.002 (0.006)	0.004 (0.003)	0.002 (0.006)
direct effect of offending on victimization	0.125** (0.048)	0.047 (0.103)	0.144** (0.044)	0.045 (0.099)
n	*1,485*	*1,475*	*1,485*	*1,475*

Note. The first two columns show the analysis as preregistered, including the control for prior victimization, whereas in the second two columns the estimates without controlling for prior victimization are presented. All values are unstandardized regression estimates (*b*-values), the values in brackets are one standard error of these estimates (*SE*). See Appendix C for the decomposed indirect effect.

* $p < .05$; ** $p < .01$.

TABLE 4 Exploratory mediation analyses separated by violent and non-violent offending

	violent offending		non-violent offending	
	victimization w6	victimization w7	victimization w6	victimization w7
	offending w7	offending w8	offending w7	offending w8
type of effect	*b* (*SE*)	*b* (*SE*)	*b* (*SE*)	*b* (*SE*)
total effect	0.181 (0.134)	0.319 (0.224)	0.157** (0.044)	0.086 (0.100)
total indirect effect	0.056* (0.022)	0.072* (0.036)	0.041** (0.013)	0.063** (0.017)
indirect effect of impulsivity	0.020† (0.012)	0.009 (0.016)	0.001 (0.003)	0.009 (0.007)
indirect effect of sensation-seeking	0.020 (0.015)	0.072* (0.035)	0.036** (0.011)	0.050** (0.016)
indirect effect of future orientation	0.015 (0.009)	-0.009 (0.017)	0.004 (0.003)	0.003 (0.006)
direct effect of offending on victimization	0.124 (0.141)	0.247 (0.209)	0.116* (0.045)	0.023 (0.101)
n	*1,485*	*1,475*	*1,485*	*1,475*

Note. All values are unstandardized regression estimates (*b*-values), the values in brackets are one standard error of these estimates (*SE*). We controlled for prior violent offending in the model with violent offending as the outcome, and we controlled for prior non-violent offending in the model with non-violent offending as the outcome. See Appendix E for the decomposed indirect effect.

† $p < .10$; * $p < .05$; ** $p < .01$.

TABLE 5 Exploratory mediation analyses with short-term mindsets as the mediator which subsumes the items of impulsivity, sensation seeking, and future orientation

		short-term mindsets			
model	*n*	~ on victimization *b* (*SE*)	offending on ~ *b* (*SE*)	total effect *b* (*SE*)	indirect effe short-term mi *b* (*SE*)
victimization w6	*1,485*	0.028*	1.667**	0.159**	0.047*
offending w7		(0.011)	(0.400)	(0.045)	(0.021)
victimization w7	*1,475*	0.050**	2.110**	0.093	0.106**
offending w8		(0.012)	(0.529)	(0.100)	(0.034)

Note. All values are unstandardized estimates (*b*-values) the values in brackets are one standard error of these estimates (*SE*).

* $p < .05$; ** $p < .01$.

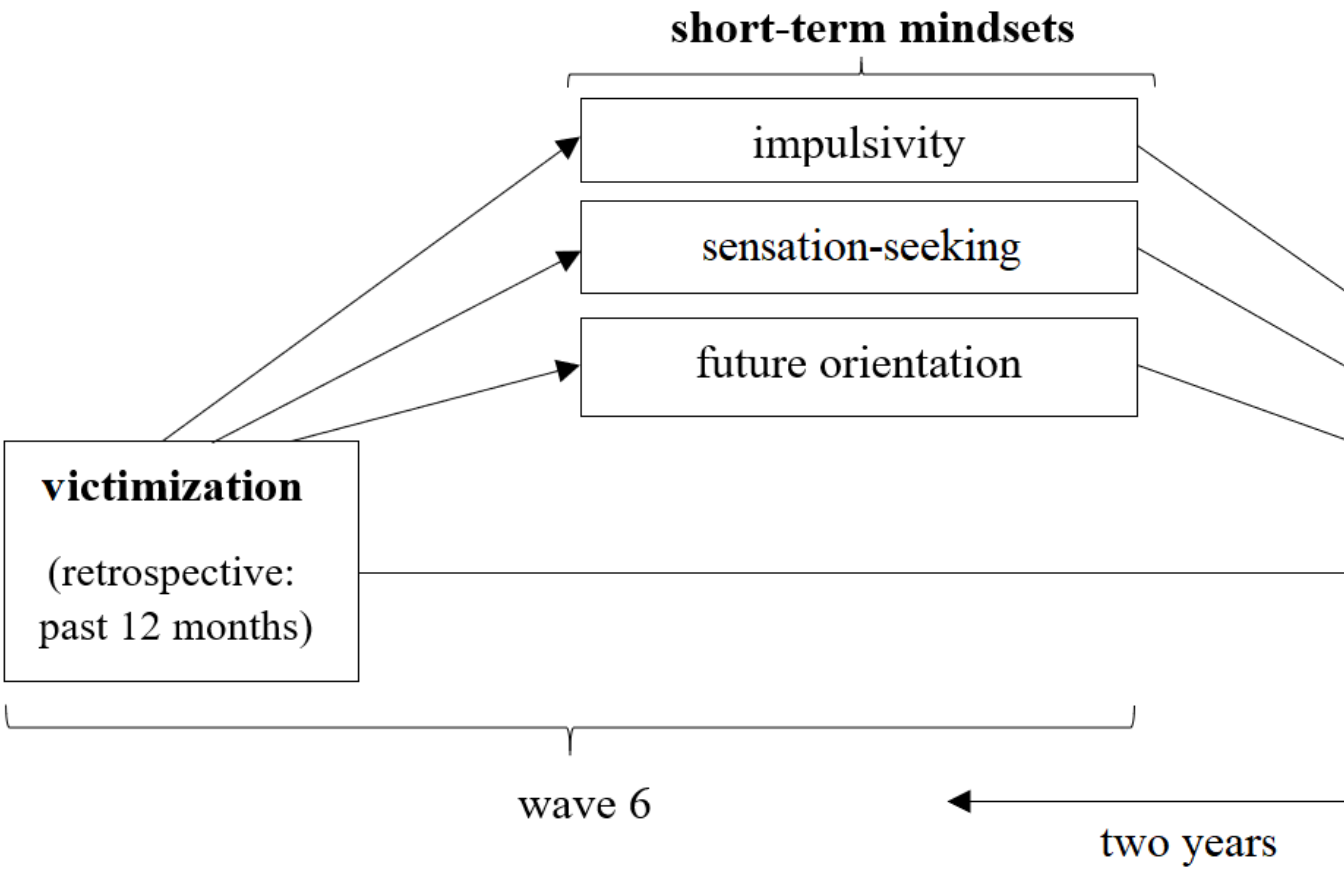
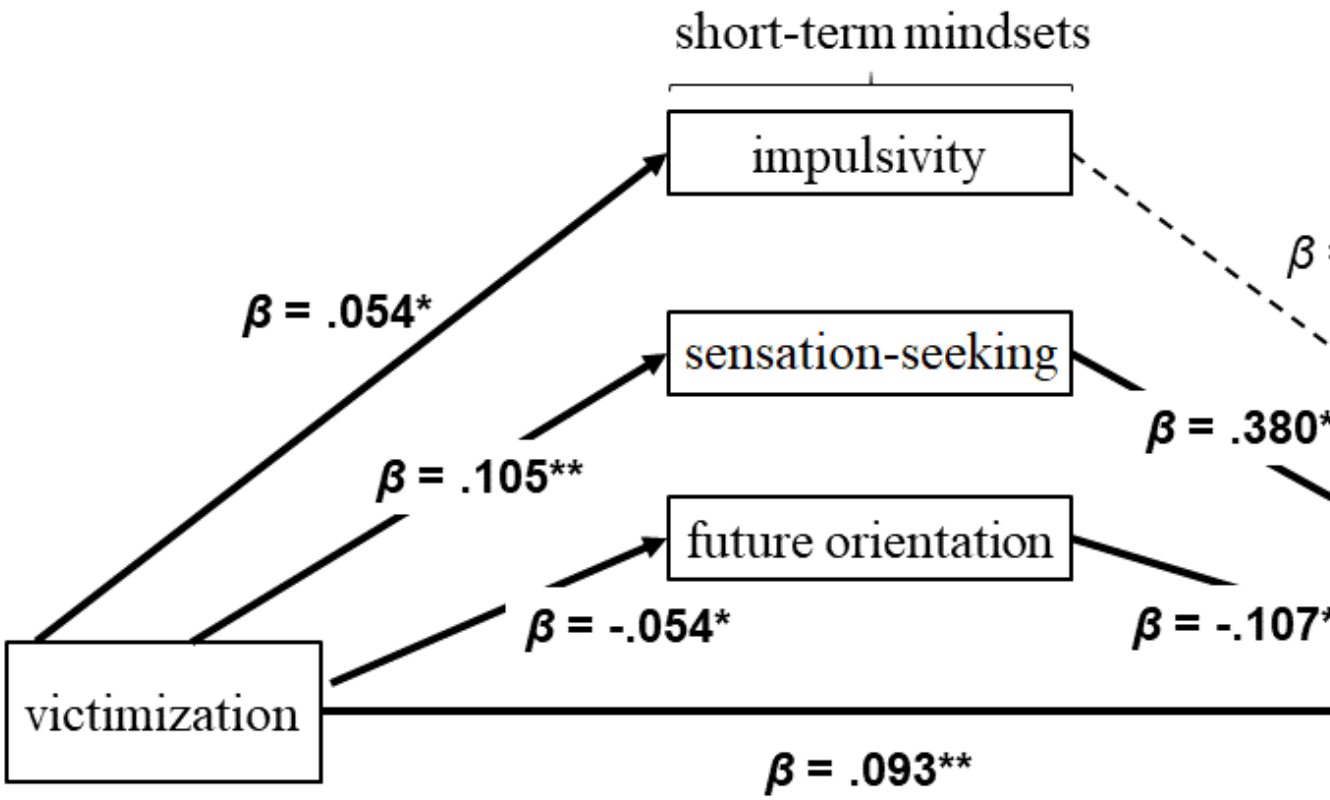
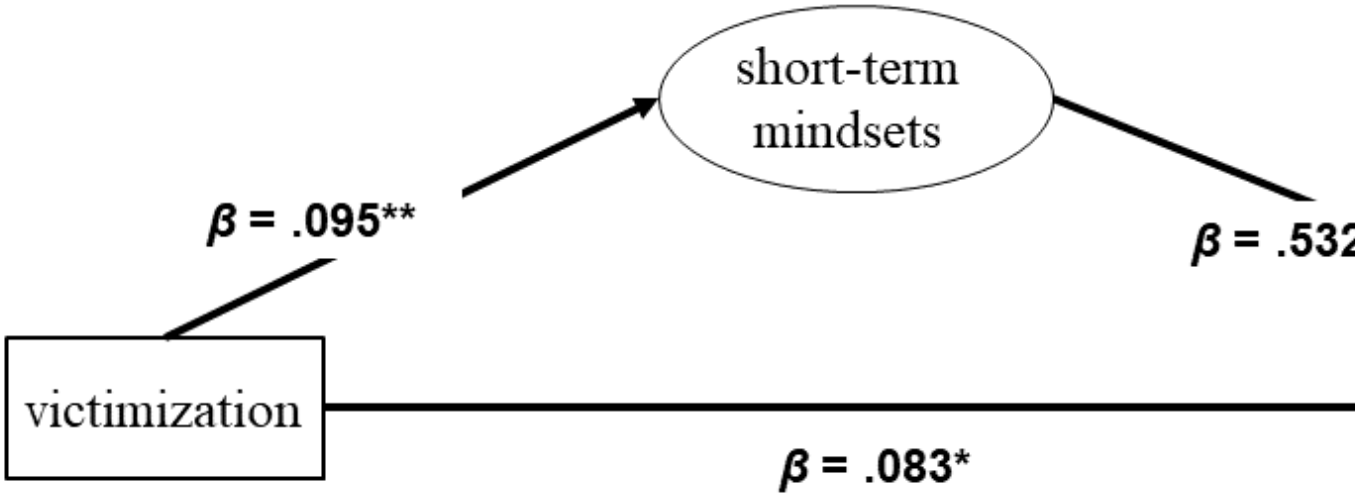


Figure 1: Overview of the structural equation model (control variables are not shown)



Note. Solid lines denote significant relations at $p < .05$. Control variables are not depicted in the diagram for reasons of parsimony. Dashed lines depict relations that are not significant. *$p < .05$; and **$p < .01$. All presented values are standardized estimates (β-values). Total effect: β = .125**. Total indirect effect: β = .032**. See Table 3 and Appendix C for the unstandardized estimates (b-values) and standard errors.

Figure 2: Results of the preregistered mediation analysis (waves 6-7) between victimization, the short-term mindsets indicators, and offending with controls (n = 1,485)



Note. Solid lines denote significant relations at $p < .05$. Control variables are not depicted in the diagram for reasons of parsimony. Dashed lines depict relations that are not significant. *$p < .05$; and **$p < .01$. All presented values are standardized estimates (β-values). Total effect: β = .118**. Total indirect effect: β = .035*. See Table 5 for the unstandardized estimates (b-values) and standard errors.

Figure 3: Results of the mediation analysis (waves 6-7) between victimization, the short-term mindsets factor, and offending (n = 1,485)

SUPPLEMENTARY MATERIALS FOR

THE SHORTSIGHTED VICTIM: SHORT-TERM MINDSETS MEDIATE THE LINK BETWEEN VICTIMIZATION AND LATER OFFENDING [*]

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APPENDIX A | SPECIFICATION OF VARIABLES

Independent variable: *victimization (the same for the control of prior victimization)*

Victimization was operationalized as a variety scale, adding up the dichotomous (or dichotomized; 0 = no / never, 1 = yes) scores of the following six items:

Serious victimization questionnaire: In the past 12 months has one of the following things happened to you? (yes / no)

- Robbery: Someone forcibly snatched something from you, or threatened you with violence and then took something from you, for example your bag, your bike, or money.
- Serious assault with weapon: Someone purposely injured you with a weapon (e.g. a knife) or with an object (e.g. a cane) or by repeatedly kicking you with heavy shoes.
- Serious assault without weapon: Someone hit you so hard that they injured you (e.g. drawing blood or causing a black eye). However, no weapons or objects were used in the processes.
- Sexual assault: Someone forced you to perform unwanted sexual acts, or to endure unwanted sexual acts, through violence or serious threats. This involved exposed genitals (e.g. rape).

Bullying questionnaire: How many times in the past 12 months have other youths…: (six-point Likert scale from 1 = never to 6 = almost every day)

- Simple assault: … hit you, bitten you, kicked you, or pulled your hair?
- Sexual harassment: … sexually harassed you (e.g. hit on you, groped you)?

Mediating variable: *Short-term mindsets (the same as control of prior short-term mindsets)*

For the short-term mindsets variables of impulsivity, sensation-seeking, and future orientation, we computed the mean of the scales, respectively.

All items were scored on a four-point Likert scale ranging from 1 = false to 4 = true.

Impulsivity:

- I often act on the spur of the moment without stopping to think.
- I often do whatever brings me pleasure here and now, even at the cost of some distant goal.

Sensation-seeking

- Sometimes I take risks just for the fun of it.
- Excitement and adventure are more important to me than security.

Future Orientation:

- I try hard at school to have a good job later in life.
- When I grow up I want to have an interesting job, and I'm doing everything now to work towards that goal.
- Doing well at school is very important to me.

Dependent variable: *offending (the same for the control of prior offending)*

Offending was coded as a variety scale by adding the dichotomous scores of the following fourteen items. Violent offending was computed as the sum of the scores on the items

"threat/extortion", "robbery", and "assault". Non-violent offending was operationalized as the sum of the remaining eleven items.

Offending questionnaire: In the past 12 months, have you ever…? (0 = no, 1 = yes)

- Steal at school: … stolen something at school?
- Steal at home: … stolen something at home?
- Shoplifting < $50: … stolen something from a shop or kiosk that is worth less than 50 CHF? (approx. 50$)
- Shoplifting > $50: … stolen something from a shop or kiosk that is worth more than 50 CHF?
- Vehicle theft: … stolen a bicycle or another vehicle?
- Driving w/o license: … driven a motor vehicle (car, motorbike) without having a valid driving license?
- Burglary / steal from car: … broken into a car or a building (e.g. house, shop) to steal something from there?
- Drug dealing: … sold drugs (e.g. hashish, cocaine, ecstasy)?
- Graffitiing: … sprayed graffiti on buildings or on public transport, or made "tags"?
- Vandalism: … purposely damaged windows, street lamps, seats on the tram, train, or bus, or other similar things?
- Carry a weapon: … carried a weapon or other dangerous object to protect yourself or to threaten others or attack them?
- Threat/Extortion: … threatened anyone with violence to obtain money or things?
- Robbery: … forcibly took money or things from someone?
- Assault: … purposely hit, kicked, or cut someone, and injured him or her in the process?

Control variables:

Parental monitoring

Parental monitoring is negatively associated with offending (Hoeve et al., 2009; Young & Zimmerman, 1998) and risk of victimization (Lereya et al., 2013), and positively with self-control (Meldrum, 2008).

Parental monitoring was measured with two subscales; the mean of the following four parental supervision items, and the mean of the inverted scores of three adolescent disclosure items presented below.

All items were scored on a four-point Likert scale from 1 = never to 4 = often/always.

Parental Monitoring: Supervision subscale

- When you go out in your free time, your parents ask you where you are going.
- When you go out in your free time your parents tell you what time you have to be home by.
- You have to tell your parents who you meet with in your free time.
- Your parents ask you what you get up to in your free time.

Parental Monitoring: Disclosure/Adolescent Control Behavior subscale

- You keep secret from your parents what you do in the evenings and at the weekends.
- You leave your house without telling your parents where you are going.
- You stay out in the evening past the time you are supposed to be home.

Delinquent Peers

Delinquent peer affiliation is associated with one's own delinquent behavior (Haynie, 2002; Warr & Stafford, 1991), and with violent victimization (Schreck et al., 2004).

As a measure of affiliation with delinquent peers, we computed whether either of two nominated best friends did either of theft or assault.

Referring to the two best friends denominated by the participant (scored yes / no):

- In the last year, has he/she purposely hit or kicked another adolescent and injured them in the process?
- In the last year, has he/she stolen something from a shop, kiosk, or shopping mall?

Substance Use

Substance use is associated with offending (Ford, 2005) and victimization (Averdijk & Bernasco, 2015).

Substance use was measured with the mean frequency of the four items relating to the intake of tobacco, alcohol, strong liquor, and marijuana.

Listed below are some drugs, intoxicants and other substances. Have you ever taken any of them and if yes, how many times in the last 12 months? (rated on a six-point scale from 1 = never to 6 = daily)

- Smoked cigarettes?
- Smoked a joint (i.e., hashish, marijuana, or cannabis)?
- Drunk at least one glass of alcohol (e.g., beer, mixed drinks, or wine)?
- Drunk at least one glass of strong liquor (e.g., vodka, whiskey, schnapps)

Risky leisure activities: Unstructured Unsupervised Socializing (UUS)

Unstructured unsupervised socializing with peers is associated with offending (Osgood et al., 1996; Osgood & Anderson, 2004), victimization (Felson et al., 2013; Turanovic & Pratt, 2014), and the victim-offender overlap (Mulford et al., 2018).

Risky leisure activities (unstructured unsupervised socializing) were computed as the average of the following five items:

What do you do in your free time when you are not at home? How often do you do the following things? (Rated on a six-point Likert scale from 1 = never to 6 = (almost) every day)

- Meet up with friends in the evening and do something with them.
- Meet up with friends at a house without adults.
- Go to a party or festival without adults, in the evening.
- Hang around with friends in a park, in the train station, or in a shopping mall, and have fun, in the afternoon.
- Hang around with friends in a park, in the train station, or in a shopping mall, and have fun, in the evening.

Demographic variables: Sex, migration background, age, socio-economic status (SES)

In the context of industrialized societies, SES tends to be associated with antisocial behavior (Piotrowska et al., 2015). Age and being male are related to both victimization and offending (Sampson & Lauritsen, 1990). Minority ethnic groups are typically overrepresented in criminal behavior (Tonry, 1997), as also observed in adolescents in Switzerland (Vazsonyi & Killias, 2001).

Sex

Sex was coded as “1” for male, and “2” for female.

Age

Age was measured in years, with two decimals.

Ethnicity

Ethnicity was operationalized as “1” for at least one Swiss parent, and “2” for two foreign parents.

Socioeconomic Status (SES)

We calculated each caregiver’s International Socio-Economic Index of occupational status (ISEI) and took the highest of the two caregivers as a measure of SES.

APPENDIX B | CORRELATIONS IN ROBUSTNESS CHECK (WAVE 7-8)

TABLE B Descriptive statistics and correlations of the study variables (n = 1,475) in the mediation from waves 7 to 8

	n	*M* (SD)	1	2	3	4	5
(1) wave 7 victimization	1,275	0.39 (0.66)					
(2) wave 7 impulsivity	1,271	2.34 (0.60)	.114**				
(3) wave 7 sensation-seeking	1,260	2.12 (0.74)	.186**	.451**			
(4) wave 7 future orientation	1,171	3.16 (0.60)	-.072**	-.249**	-.272**		
(5) wave 8 offending	1,154	0.66 (1.28)	.051†	.173**	.290**	-.171**	
control variables							
wave 6 victimization	1,421	0.59 (0.88)	.283**	.095**	.168**	-.073**	.113**
wave 6 impulsivity	1,420	2.37 (0.56)	.076**	.391**	.263**	-.133**	.140**
wave 6 sensation-seeking	1,409	2.20 (0.73)	.122**	.338**	.545**	-.231**	.235**
wave 6 future orientation	1,428	3.16 (0.61)	-.035	-.141**	-.156**	.470**	-.176**
wave 6 offending	1,413	1.12 (1.83)	.144**	.172**	.312**	-.180**	.414**
wave 6 parental supervision	1,429	3.17 (0.63)	.033	-.136**	-.125**	.107**	-.052*
wave 6 adolescent disclosure	1,405	3.00 (0.65)	-.113**	-.216**	-.290**	.262**	-.269**
wave 6 delinquent peers	1,225	0.27 (0.44)	.080**	.128**	.200**	-.170**	.236**
wave 6 substance use	1,414	2.26 (1.20)	.150**	.184**	.303**	-.198**	.322**
wave 6 risky activities	1,403	2.99 (1.00)	.139**	.212**	.251**	-.116**	.177**
wave 7 sex	1,284	1.50 (0.50)	.127**	-.035	-.160**	.164**	-.205**
wave 7 migration background	1,440	1.50 (0.50)	-.016	.010	-.049†	.174**	-.084**
wave 7 SES	1,400	45.70 (19.24)	.022	-.045†	.011	-.141**	.082**

Notes. mean age = 17.45 (SD = 0.13); † $p < .10$; * $p < .05$; ** $p < .01$.

APPENDIX C | CONFIRMATORY MEDIATION ANALYSES – DECOMPOSED INDIRECT EFFECT

TABLE C Decomposed indirect effect (subdivided by the three indicators of short-term mindsets) for the main confirmatory mediation analyses

	with control for prior victimization		without control for prior victimization	
	victimization w6	victimization w7	victimization w6	victimization w7
	offending w7	offending w8	offending w7	offending w8
	b (*SE*)	*b* (*SE*)	*b* (*SE*)	*b* (*SE*)
impulsivity on victimization	0.035* (0.016)	0.058* (0.024)	0.030† (0.016)	0.057* (0.025)
offending on impulsivity	0.060 (0.084)	0.176† (0.097)	0.050 (0.081)	0.180† (0.097)
sensation-seeking on victimization	0.089** (0.025)	0.132** (0.028)	0.081** (0.023)	0.13 7** (0.026)
offending on sensation-seeking	0.410** (0.073)	0.397** (0.088)	0.408** (0.073)	0.396** (0.088)
future orientation on victimization	-0.038* (0.017)	-0.048* (0.025)	-0.030† (0.016)	-0.049* (0.023)
offending on future orientation	-.138* (0.064)	-0.045 (0.116)	-0.138* (0.064)	-0.044 (0.118)
n	*1,485*	*1,475*	*1,485*	*1,475*

Notes. The first two columns show the analysis as pre-registered, including the control for prior victimization, whereas in the second two columns the estimates without controlling for prior victimization are presented. All values are unstandardized regression estimates (*b*-values), the values in brackets are one standard error of these estimates (*SE*). † $p < .10$; * $p < .05$; ** $p < .01$.

APPENDIX D | EXPLORATORY MEDIATION ANALYSES – EXCLUDING SENSATION-SEEKING

TABLE D Overview of the exploratory mediation analyses excluding the mediator of sensation-seeking

	without control for prior sensation-seeking		with control for prior sensation-seeking	
	victimization w6 offending w7	victimization w7 offending w8	victimization w6 offending w7	victimization w7 offending w8
type of effect	*b* (*SE*)	*b* (*SE*)	*b* (*SE*)	*b* (*SE*)
total effect	0.173** (0.046)	0.115 (0.108)	0.171** (0.045)	0.111 (0.104)
total indirect effect	0.018** (0.007)	0.027* (0.013)	0.015* (0.006)	0.025* (0.012)
indirect effect of impulsivity	0.010† (0.007)	0.022* (0.011)	0.008† (0.091)	0.020* (0.010)
impulsivity on victimization	0.038* (0.017)	0.062* (0.025)	0.036* (0.016)	0.058* (0.024)
offending on impulsivity	0.257** (0.083)	0.351** (0.090)	0.232** (.082)	0.341** (0.087)
indirect effect of future orientation	0.008† (0.004)	0.006 (0.006)	0.007† (0.004)	0.005 (0.006)
future orientation on victimization	-0.039* (0.017)	-0.049* (0.025)	-0.038* (0.023)	-0.047† (0.024)
offending on future orientation	-0.198** (0.066)	-0.117 (0.116)	-0.184** (0.065)	-0.103 (0.119)

direct effect of offending on victimization	0.156** (0.046)	0.088 (0.105)	0.155** (0.046)	0.087 (0.102)
n	*1,485*	*1,475*	*1,485*	*1,475*

Note. All values are unstandardized regression estimates (*b*-values), the values in brackets are one standard error of these estimates (*SE*). We controlled for prior violent offending in the model with violent offending as the outcome, and we controlled for prior non-violent offending in the model with non-violent offending as the outcome. See Appendix D for the decomposed indirect effect.

† $p < .10$; * $p < .05$; ** $p < .01$.

APPENDIX E | EXPLORATORY MEDIATION ANALYSES – DECOMPOSED INDIRECT EFFECT

TABLE E Decomposed indirect effect (subdivided by the three indicators of short-term mindsets) for the exploratory mediation analyses separated by violent and non-violent offending

	violent offending		non-violent offending	
	victimization w6	victimization w7	victimization w6	victimization w7
	offending w7	offending w8	offending w7	offending w8
	b (*SE*)	*b* (*SE*)	*b* (*SE*)	*b* (*SE*)
impulsivity on victimization	0.035* (0.016)	0.063* (0.025)	0.035* (0.016)	0.056* (0.024)
offending on impulsivity	0.581** (0.183)	0.141 (0.248)	0.017 (0.080)	0.164† (0.095)
sensation-seeking on victimization	0.091** (0.025)	0.135** (0.028)	0.089** (0.026)	0.131** (0.028)
offending on sensation-seeking	0.225 (0.159)	0.535* (0.220)	0.409** (0.073)	0.380** (0.086)
future orientation on victimization	-0.038* (0.017)	-0.047† (0.024)	-0.038* (0.017)	-0.049* (0.025)
offending on future orientation	-0.404* (0.185)	0.185 (0.326)	-0.117† (0.061)	-0.069 (0.115)
n	*1,485*	*1,475*	*1,485*	*1,475*

Notes. The first two columns show the analysis as pre-registered, including the control for prior victimization, whereas in the second two columns the estimates without controlling for prior victimization are presented. All values are unstandardized regression estimates (*b*-values), the values in brackets are one standard error of these estimates (*SE*). † $p < .10$; * $p < .05$; ** $p < .01$.