

Contents lists available at [ScienceDirect](https://www.sciencedirect.com)

Social Science Research

journal homepage: www.elsevier.com/locate/ssresearch

Strategic action or self-control? Adolescent information management and delinquency[☆]



Maria S. Grigoryeva^{a,b,*}

^a University of Washington, 211 Saverly Hall, Box 353340, Seattle, WA 98195-3340, United States

^b New York University Abu Dhabi, Division of Social Sciences, P.O. Box 903, New York, NY 10276, United States

A B S T R A C T

Recent scholarship has begun to challenge the prevailing view that children are passive recipients of parental socialization, including the common belief that parental disciplinary practices are central to explaining adolescent problem behaviors. This research shows that children exert a significant influence over parents via information management, or the degree to which children disclose information about their behavior to parents. Despite the incorporation of child information management into contemporary models of parenting, significant theoretical and empirical concerns cast doubt on its utility over classic parent-centered approaches. The current paper addresses these concerns and adjudicates between disparate definitions of adolescent information management in two ways. First, it provides a theoretically grounded definition of information management as agentic behavior. Second, it specifies a model that tests definitions of secret keeping as agentic against a non-agentic definition of secret keeping supplied by criminological theories of self-control. The model is estimated with three four-wave cross-lagged panel models, which disentangle the interrelationships between parenting, child concealment of information, and child problem behavior in a sample of high risk youth. The results offer support for a definition of concealment as strategic and self-regarding, and have implications for research on delinquency, parent-child interactions, and child agency.

1. Introduction

Social scientists have long viewed parents and parenting as fundamental to the specific life chances and overall fate of children (Kohn, 1969; Akers, 1973; Lareau, 2003; Thomson et al., 1994; Fan and Chen, 2001). Consequently, a substantial amount of research has focused on the family environment in which children are reared and the strategies parents employ to shape a child's development (Baumrind, 1967; Gottfredson and Hirschi, 1990; Hirschi, 1969; Heimer, 1997; Sampson and Laub, 1993, 2005; Steinberg et al., 1994). This work shows that parental disciplinary practices—such as engagement, discipline, and control—are central to the evolution of child behavioral problems and juvenile delinquency (Gottfredson and Hirschi, 1990; Simons et al., 2005). These classic parent-centered research programs, however, tend to overstate the actions of parents and understate elements of child agency.

Recent scholarship has begun to challenge the view that children are passive recipients of parental socialization (Pugh, 2009,

[☆] I thank Blaine Robbins, Ross Matsueda, Jerald Herting, and the anonymous reviewers for comments and suggestions. An earlier version of this paper was presented at the 2012 Annual Meetings of the American Sociological Association. Partial support for this research came from a Eunice Kennedy Shriver National Institute of Child Health and Human Development research infrastructure grant to the Center for Studies in Demography & Ecology at the University of Washington (R24 HD042828). This research was also supported by a grant from the National Science Foundation (SES-1436259).

* New York University Abu Dhabi, Division of Social Sciences, P.O. Box 903, New York, NY 10276, United States.

E-mail address: mg5446@nyu.edu.

2014; Calarco, 2011, 2014; Ojeda and Hatemi, 2015; for classic treatments of this topic, see: Bell, 1968; Scarr, 1992). Theoretical work in this area redefines parental discipline as an exchange between parents and children, where children influence the parent-child relationship and parental discipline as much as parents (Stattin and Kerr, 2000). According to this model, the main source of child influence is information management, or the degree to which children strategically disclose information about their behavior (Stattin and Kerr, 2000; Kerr and Stattin, 2000; Afifi and Weiner, 2004). Despite the incorporation of child information management into recent models of parenting (Fletcher et al., 2004; Soenens et al., 2006; Cumsille et al., 2010; Tilton-Weaver et al., 2010; Keijsers et al., 2010; Kerr et al., 2012; Rote and Smetana, 2015), significant theoretical and empirical concerns cast doubt on its utility over classic parent-centered approaches.

Theoretically, a clear conceptualization of child agency and an explicit model of how information management constitutes agency is absent from the child information management literature. Without such theoretical elements, it is difficult to generate causal claims about child information management or assert that it is in fact strategic (Cohen, 1989). Empirically, models of parent-child exchange and strategic child information management have yet to be directly tested against competing models. The general theory of crime offers one such competing model, which views parents as primary agents of change in child behavior and conceptualizes child information management—secret keeping and lying—as symptomatic of low self-control: an inherently nonstrategic problem behavior stemming from trait-like propensities for impulsivity rather than agency, autonomy, and strategic decision-making (Gottfredson and Hirschi, 1990).

Given the lack of explicit theoretical links to agency as well as studies testing competing explanations of child information management, the present paper aims to accomplish two important goals. The first goal is to integrate theories of information management with research on agency and agentic behavior (Emirbayer and Mische, 1998; Hitlin and Long, 2009). Doing so provides a theoretically grounded explanation for how and why information management can (and should) be viewed as strategic and child-driven. The second goal is to specify and conduct a test of whether adolescent information management stems from trait-like propensities for impulsivity and problem behavior or is a strategy of obtaining power and control. Adjudicating between these two competing models will help refine definitions of information management and shed light on how children contribute to the parent-child disciplinary process.

In the remaining sections of this paper, I review the general theory of crime as a model for understanding parent-child interactions, information management, and problem behavior. I then present an alternative theoretical model that grants more autonomy and influence to children via strategic information management. I amend this model by drawing on theories of agency to generate testable propositions about how child information management constitutes and increases agentic behavior. To identify which theory accounts for more variation in parenting, information management, and problem behavior, I estimate three four-wave cross-lagged panel models. These statistical models explore how parenting, child information management, self-control, and delinquent behavior interrelate over time. The results indicate that through concealing information children are able to influence how much parents know about their behavior. Likewise, the findings suggest that concealing information is a strategic response to how parents discipline their children and to the type of delinquent behavior children engage in. However, contrary to the strategy-based model of information management, low self-control youths are more likely to conceal information from their parents, and self-control renders the relation between one type of delinquency and concealment spurious. These findings have implications for definitions of lying and secret-keeping as well as for research on child agency.

2. Parent-centered explanation: self-control theory

The idea that, within the family, parents and not children possess agency and an internal locus of control has long dominated the social sciences. While multiple theories feature parents as key actors who shape and mold child behavior (e.g., Akers, 1973), in this paper I focus on self-control theory or what criminologists refer to as the general theory of crime (hereafter, GTC). I do so for three reasons. First, the GTC is a parsimonious theory with substantial empirical support and a leading perspective on parenting, delinquency, and crime (see Pratt and Cullen, 2000 for a review). Second, the GTC employs a conceptualization of parenting practices widely accepted in the social sciences: parental attachment, monitoring, and control produce the lowest rates of antisocial behavior among children (Baumrind, 1967; Maccoby and Martin, 1983; Gray and Steinberg, 1999; Lamborn et al., 1991; Simons et al., 2005; Simons et al., 2006; Steinberg et al., 1994; Weiss and Schwarz, 1996). Third, in contrast to theories of information management, GTC considers lying and secrecy as stemming from trait-like propensities for impulsivity and problem behavior (i.e., low self-control) and not from rational decision-making or future planning on the part of children (i.e., agency). Due to space limitations, I cannot do justice to the large literature testing and refining GTC. I do, however, provide a brief review of its key principles, especially as these relate to the idea of child agency.

The GTC is rooted in control theory—a foundational model of criminal behavior. Its theoretical core consists of the idea that individuals are not socialized into crime but are born motivated to commit crime by a self-interested pursuit of pleasure and avoidance of pain. Crime fulfills these desires by providing easy and immediate gratification. Despite this universal need for self-regarding gratification, individuals can be taught to control their impulses, take into account the interests of others, and regulate antisocial behavior through successful socialization (Hirschi, 1969; Gottfredson and Hirschi, 1990; Hirschi, 2004).

For control scholars who subscribe to the GTC and focus on self-control, prosocial values and the ability to delay gratification are taught early in life by parents who recognize and sanction problem behavior. Echoing other research on optimal parenting strategies, parents teach children to control impulsive and selfish behavior through monitoring, recognizing, and controlling problem actions in a warm and caring manner (Baumrind, 1967; Maccoby and Martin, 1983; Steinberg et al., 1994; Gottfredson and Hirschi, 1990; Burt et al., 2006).

By early adolescence many children internalize parental discipline and behavioral consequences as *self-control*—the ability to delay gratification, plan ahead, and consider the interests of others when making decisions (Gottfredson and Hirschi, 1990; Hirschi, 2004; Bridgett et al., 2015). Originally, Gottfredson and Hirschi (1990) proposed that children internalize the consequences of their actions via experience, which is largely a function of parental monitoring and sanctioning of problem behavior. Drawing on his classic theory of social control (Hirschi, 1969), Hirschi (2004) amended the concept of self-control by underscoring the necessity of social bonds for internalizing external controls. According to Hirschi, attachment to parents and prosocial others alters the calculus of delinquent behavior by enabling individuals to consider how their actions impose costs on others (i.e., internalize externalities). Yet, the synthesis of social bonds and self-control remains a divisive issue, with research showing that the two may best be considered separate theories (Ward et al., 2015). Therefore, the present study focuses on the original GTC definition of self-control (Gottfredson and Hirschi, 1990; Bridgett et al., 2015).¹ Once formed, the relative levels of self-control between individuals persist through time (Gottfredson and Hirschi, 1990; but see Burt et al., 2014). Finally, empirical evidence suggests that self-control is somewhat malleable within individuals over the life-course (Burt et al., 2006; Heatherton, 2011). In sum, the GTC proposes that levels of self-control are determined by parental actions early in childhood, and uniformly remain relatively stable throughout the life-course.

According to the GTC, individuals who fail to develop self-control are more impulsive and excitement-seeking (unable to delay gratification or plan ahead) as well as self-regarding (unable to take others' interests into account). As a result, those with low self-control are prone to a range of problem behaviors, including lying, cheating, poor social skills, theft, substance use, violence, and other forms of delinquency (Gottfredson and Hirschi, 1990; Burt et al., 2014). Importantly, such findings are robust to various fields and methods of study. Work in clinical psychology, for instance, indicates that individuals with low self-control externalize problem behaviors and have difficulty accomplishing long-term goals (see Heatherton, 2011).

In keeping with other adult-centered views of decision making in criminology (Matza, 1967; Laub and Sampson, 2003; Sampson and Laub, 2005), the GTC emphasizes choice-making in adults and ascribes individual agency to parents but not children; specifically, parents have the agency, internal locus of control, and power to mold the behavioral outcomes of their children (and not the other way around). Although research has acknowledged bidirectional relations between the behavior of parents and children (Patterson, 1982; Thornberry et al., 1991; Laird et al., 2003; Warr, 2007; Pardini et al., 2008; Meldrum et al., 2012), such work falls short of attributing agency to children. In other words, the GTC paradigm does not examine whether children *deliberately choose* to act or to influence parental behavior and parenting strategies. There is evidence that when it comes to delinquent behavior, adolescents can and do act rationally and agentially (Matsueda et al., 2006a). Despite this, with regard to parent-child interactions, the integration of agency at the child-level escapes the criminological literature at large and the GTC in particular.

3. Bringing the child back in: child information management

Fifteen years ago, research in developmental psychology showed that existing models of parenting and parental influence—such as the model offered by self-control theorists—fail to account for an important source of child influence. Stattin and Kerr (2000) argue that parental supervision of a child—the backbone of optimal parenting for Gottfredson and Hirschi and many others (e.g. Baumrind, 1967; Steinberg et al., 1994)—is comprised of two theoretically distinct concepts: parental attempts at monitoring (i.e. solicitation of information) and parental possession of information (i.e., parental knowledge about the child).² Treating the concepts as a single construct makes it difficult to dissect whether parental strategies of gathering information or actual knowledge of what children do impacts child behavior. It also leads to upwardly biased estimates of relations between parent-driven monitoring and child delinquency (Kerr et al., 2012).

Importantly, Kerr and Stattin (2000) show that while solicitation and monitoring are initiated and controlled by parents, parental knowledge is principally controlled by children rather than parents. This is because parents predominantly gain knowledge about their children from information voluntarily disclosed to them by their children, rather than parental tactics of information gathering (Stattin and Kerr, 2000; Soenens et al., 2006). The authors argue that since parents discipline their children based on what they know about their child's behavior, children have more agency and control in the parent-child disciplinary encounter than has been previously acknowledged. In short, child disclosure and secrecy—not parental attempts at monitoring and supervision—generate the knowledge that parents require to discipline children and prevent them from engaging in delinquent behaviors.

Following Stattin and Kerr (2000), developmental psychologists have integrated child disclosure and secret keeping into models of parenting and child behavior (Smetana, 2008). These studies show that child disclosure and secret-keeping are influenced by how warmly the parents act towards children, how often parents solicit information from children, children's acceptance of parental authority, and parental reactions to prior disclosure (Crouter et al., 2005; Blodgett et al., 2009; Cumsille et al., 2010; Tilton-Weaver et al., 2010; Keijsers and Laird, 2014). Adolescents also cite self-preservation and boundary maintenance as important reasons for keeping secrets and withholding private information from parents (Afifi et al., 2005; Afifi and Weiner, 2004; Marwick and Boyd, 2014). With regard to consequences of information management, studies show that secret keeping and dishonesty increase delinquent outcomes both directly and indirectly through decreasing parental knowledge (Fletcher et al., 2004; Soenens et al., 2006; Keijsers et al., 2010). Moreover, once child disclosure is accounted for, research reveals inconsistent evidence for a direct relation between

¹ Notably, the expectation for concealment remains the same for both the 1990 and 2004 versions of self-control theory. Concealment is considered a manifestation of low self-control and not an agentic behavior (Hirschi, 2004, p. 545, p. 545).

² In the GTC tradition, key indicators of parental monitoring include items that measure parental knowledge, such as “Does your mother (father) know where you are when you are away from home?” and “Does your mother (father) know whom you are with when you are away from home?” (Gottfredson and Hirschi, 1990).

specific parenting practices—like monitoring or control—and delinquent behavior (Fletcher et al., 2004; Keijsers et al., 2010), although poor relationship quality between parents and children increases secret keeping (Smetana, 2010).

Finally, while some research examines the general withholding of information, other work treats child information management as multi-dimensional, with honesty and disclosure comprising empirically distinct concepts (Rote and Smetana, 2015). The present paper focuses on general processes of withholding information via secrecy and lying, and therefore treats dishonesty and lack of disclosure as a single construct. For the remainder of the paper, general withholding of information from parents, including secret keeping and lying, is referred to as *concealment*.

4. Debate on the nature of concealment

While related themes, such as impression management and information management at the organizational level, have received ample attention in sociology (Goffman, 1959; Ramaswami et al., 1997), the notion that children are capable of strategically managing information in their interactions with parents has yet to be adopted by sociologists and criminologists (see Warr, 2007 for an exception). This lack of cross-pollination reflects two fundamental issues. First, current research on adolescent concealment neglects a robust research program on agency, and adolescent agency in particular, within sociology (Emirbayer and Mische, 1998; Hitlin and Johnson, 2015). Such an omission makes it difficult to conceptualize the ways in which concealment constitutes agency and to examine concealment as a strategic, agentic act on the part of the children.

Second, contemporary developmental definitions of concealment (e.g. Stattin and Kerr, 2000) are incongruent with definitions of concealment shared by many criminologists (Gottfredson and Hirschi, 1990; Stouthamer-Loeber, 1986). The former believe that concealment is a strategic forward looking act, while the latter maintain that concealment is impulsive and not guided by rational decision making. These opposing views have yet to be directly tested against one-another. To resolve these outstanding issues, the present paper shows that adolescent concealment constitutes a particular form of agency and that agency and self-interest are central to bridging the information management and criminology literatures. This is where I turn to next.

4.1. Agency

The concept of agency is important to understanding human behavior as interacting with—but not completely determined by—the social context. Agency offers an account of how individuals, acting in response to their physical and social environment can intentionally enact change at both the micro and macro level of social space (Matsueda, 2006). The concept of agency has a long history in sociology (see Hitlin and Long, 2009) and it is important to situate adolescent concealment within this literature to make claims about information management-as-agency. To this end, I provide a working definition of agency in keeping with recent work in sociology and social psychology (Emirbayer and Mische, 1998; Hitlin and Johnson, 2015), and identify specific links between agency and information management for adolescents.

In sociology, the study of agency is largely rooted in theories of symbolic interactionism (Mead, 1934; Blumer, 1986; Matsueda, 2006) and rational choice (Hechter and Kanazawa, 1997).³ Out of harmony with these two literatures and their prior synthesis (Emirbayer and Mische, 1998), I define agency as follows: agency is an individual's capacity to act in any given environment, where capacity is a function of conscious choice (i.e. deliberative cognitive processes) as well as objective and subjective constraints. Choice is the process by which individuals weigh the value of and expected success for each behavioral alternative. Constraints are any anticipated punishment or reward that restricts the behavioral alternatives an individual can pursue by altering the costs or benefits of action (Ingram and Clay, 2000). Decision-making then is neither free nor perfect but limited by structural and temporal constraints—the social and physical environment in which the individual is embedded, the information available to the decision maker, and the individual subjective interpretations of events as occurring in the past, present, future, and vis-à-vis others (Emirbayer and Mische, 1998; Hitlin and Johnson, 2015).⁴

Given my definition, there are two primary ways in which concealment engages the objective and subjective dimensions of agency. First, if information is concealed to avoid punishment or other negative outcomes, then the decision to conceal is made with conscious reference to future impression making and anticipated sanctions. Furthermore, concealment is an attempt by adolescents to resolve the problematic situation of conflicting interests: parents desire knowledge about and control over a child's behavior, while children want to keep their behavior private and self-directed. Such conscious and forward-looking efforts at problem solving are consistent with existing criteria for agentic choice and action (Matsueda, 2006; Emirbayer and Mische, 1998). Second, if concealment successfully limits parental knowledge and control, it objectively yields children more autonomy and power to make choices. Greater

³ As Hitlin and Long (2009) point out, the main concerns in the literature on agency involve two matters: determining whether agency exists and operationalizing agency. The existence of agency is an ongoing debate, in which the strongest claims for the existence of agency come from arguments that (1) there is variation in behavior for individuals who share cultural and structural determinants of behavior (i.e., shared social positions), and (2) choice making is a conscious decision used to resolve problematic situations. With regard to operationalizing agency, there is a divide among treatments of agency as objective levels of power and control versus subjective beliefs about how much power and control an individual has over their own behavior (Hitlin and Long, 2009), although most agree that agency is a combination of objective and subjective processes (Emirbayer and Mische, 1998). Recent empirical research in social psychology, however, identifies agency as subjective beliefs and self-efficacy (Hitlin and Johnson, 2015, Hitlin and Long, 2009).

⁴ The subjective temporal components of decision making are intertwined: the value of a possible choice or action in the present is determined by the future self or anticipated rewards. Future selves and aspirations are based on desires and views of the self that are rooted in a history of experiences. Past experiences and behavior are selectively recalled and organized in a way that allows the past to make sense and provide support for beliefs about the self and circumstances in the present. This definition allows for subjective appraisals of the environment and the self, and also references objective environmental impacts on choice-making.

objective agency, in turn, may increase *subjective* beliefs about agency with regard to areas in life where parents would be, if not for concealment, in control (Hitlin and Long, 2009).⁵ This second property defines agency as something that can vary in magnitude: an individual can have more or less agency. In sum, I propose that information management is both an agentic behavior and a behavior that generates more autonomy and control over one's life by expanding one's agency (or capacity to act in any given environment). That is, concealment is a form of agentic behavior that can be used to limit parental knowledge and control, thereby increasing one's objective levels of agency and subjective beliefs about one's own agency. These propositions are tested at a later point in the paper.

4.2. Information management as problem behavior

However, the theory of concealment as agentic behavior has not been tested against competing explanations of why children conceal information from parents. One such explanation is supplied by the GTC. As stated by the GTC, lying, like other anti-social behaviors, is a manifestation of low self-control—the pursuit of immediate gratification through exciting and risky behavior as well as the inability to consider long-term benefits or the interests of others (Burt et al., 2014; Gottfredson and Hirschi, 1990).⁶ In other words, concealment is a maladaptive behavior which is neither agentic nor strategic. Empirically, the implication is that concealment and delinquent behavior are spuriously related as both are manifestations of low self-control. This contradicts the concealment-as-agency view, where concealment would increase as a result of prior delinquency (as a strategy of concealing problem behavior) even when self-control is accounted for. Because such relationships between concealing information, self-control, and delinquency have not been assessed empirically, it is difficult to fruitfully evaluate an agentic definition of child concealment against definitions provided by existing models of delinquent behavior. The present paper investigates these relationships and examines whether secrecy and lying are mere symptoms of low self-control or conduits of agency.

5. Present paper

Given the literature reviewed above, I now define my concepts and hypothesize how they interrelate. Drawing on the parenting literatures in criminology (Browning et al., 2005; Burt et al., 2006; Furstenberg et al., 1999; Heimer, 1997; Simons et al., 2001) and developmental psychology (Baumrind, 1967; Maccoby and Martin, 1983; Steinberg et al., 1994; Stattin and Kerr, 2000; Fletcher et al., 2004), I argue that optimal parenting practices consist of four distinct but interrelated concepts: parental solicitation (monitoring), parental warmth, parental control, and parental knowledge. Parents who set behavioral limits (parental control) and solicit information about their children (parental solicitation or monitoring) in a warm and affectionate manner (parental warmth) and who are informed about their child's life (parental knowledge) foster pro-social outcomes in children (e.g., Steinberg et al., 1994). Concealment, on the other hand, is defined as an agentic choice to lie and to withhold information from parents. Self-control is defined as the ability to delay gratification, plan ahead, and consider the interests of others when making decisions and enacting behavior. With these definitions I now specify my model and hypotheses.

5.1. Hypotheses

The empirical component of the present paper consists of two primary goals. The first goal is to evaluate which of the two accounts of concealment presented thus far—my concealment-as-agency model versus low self-control—is supported in a statistical model that includes parenting, concealment, self-control and delinquency. To clarify the similarities and differences between the two approaches, and what we might expect if either one is correct, I briefly summarize their key points below.

According to both conceptualizations, concealment is a self-interested and self-regarding act, something that may be done against the wishes of others. The main difference is that according to the GTC concealment is impulsive, while under the concealment-as-agency conceptualization concealment is strategic, forward-looking, and rooted in cost-benefit analysis. Finally, while the GTC does not address this, my definition of concealment suggests that it may yield increases to future agency and autonomy for the youth through limiting parental involvement and control.

What are the empirical implications of these differences? First, if impulsivity is the driving force behind concealment, we would expect lying and delinquency to be spuriously related, as both are manifestations of low self-control (Paternoster and Brame, 2000). In other words, children lie more *and* commit more delinquent acts due to low self-control, presumably because both bring about immediate gratification. This means we should expect to see a positive relationship between concealment and delinquency, but that this relationship should be fully accounted for by fact that delinquency and concealment are both predicted by low self-control.

Conversely, if agency and strategy drive concealment, youth should conceal information when lying and secrecy seem like a good strategy given the circumstances. I expect two factors to drive the anticipated costs and benefits of concealment: prior delinquency and parental disciplinary practices. Regarding delinquency, I expect—net of self-control—prior delinquency to motivate beliefs about concealment as a beneficial strategy (assuming that parents disapprove of delinquency).⁷ Concealing prior delinquent behavior

⁵ By treating concealment as both an implementation of agency and a decision that begets greater agency—at least with regard to parental control—I do not ascribe a normative component to agentic behavior. In other words, I do not expect agency and agentic decisions to necessarily yield prosocial or beneficial outcomes for individuals and groups over the life course.

⁶ The conceptualization of child disclosure as strategic (Afifi et al., 2005; Afifi and Weiner, 2004) establishes child secrecy as a rational and premeditated approach to boundary maintenance and self-preservation—an approach that low self-control youth should by definition be less capable of.

⁷ The notion that parents disapprove of delinquency is a classic assumption in the GTC. A brief reflection on its plausibility is warranted. Gottfredson and Hirschi

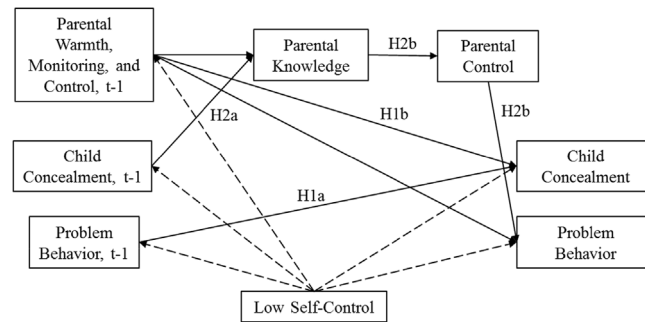


Fig. 1. Conceptual model.

prevents punishment and other unwanted parental interventions to restrict future delinquent behavior. If this is the case, prior delinquency should be positively related to present concealment and *not rendered insignificant* once accounting for self-control.

I also expect factors beyond delinquency to affect the costs and benefits of information management. In particular, affectionate and communicative parents reduce the costs associated with disclosing private information. These types of parents respond less harshly toward reports of problem behavior and communicate often and effectively, thereby providing a setting where sharing is less costly. It follows that, net of self-control and prior delinquency, prior parental warmth and monitoring should be negatively related to concealment. Conversely, the GTC predicts that parental warmth and communication should be *unrelated* to concealment after accounting for self-control. By early adolescence, children will have internalized parental involvement and discipline, which will manifest as either high or low self-control depending on the effectiveness of monitoring and sanctioning. Once self-control is solidified as a personality trait, any observed correlation between parenting and concealment is purely a function of self-control (Gottfredson and Hirschi, 1990). These arguments yield the first set of hypotheses:

Hypothesis 1a. Prior delinquent behavior increases concealment once accounting for the effect of self-control.

Hypothesis 1b. Parental warmth and monitoring decrease concealment once accounting for the effect of self-control.

The second goal of the analysis is to assess whether concealment contributes to agency by suppressing parental knowledge. What parents know about their children affects how they respond to their children as well as the extent to which parents are able to influence child behavior (Stattin and Kerr, 2000). For instance, if parents never learn that their child shoplifts after school, they cannot intervene by grounding their child to prevent future shoplifting. In this example, the child will achieve the autonomy to shoplift in the future. This indirect path from concealment to knowledge to future delinquency is important to investigate for two reasons. First, it allows us to establish whether concealment generates youth autonomy and internal locus of control. Generally, if concealment limits parental knowledge of child behavior (delinquent or not), it reduces the scope of parental involvement and control over behavior. Reductions in parental regulation grant the child autonomy to deliberate over and enact certain behaviors. Second, this part of the analysis evaluates whether it is appropriate to treat concealment as a problem behavior because it enables future problem behavior: Does concealment grant youth the ability to enact delinquency without parents “being the wiser”? Specifically, if we assume like Gottfredson and Hirschi (1990) that parents want to decrease youth delinquency, then reductions in parental knowledge and control stemming from concealment should increase delinquency. Evidence of indirect effects of concealment on parental control and delinquency via parental knowledge would suggest greater child agency in the domain of delinquency. Finally, these relationships should hold after accounting for self-control. Thus:

Hypothesis 2a. Concealment reduces parental knowledge.

Hypothesis 2b. Parental knowledge increases parental control and decreases delinquent behavior.

Fig. 1 provides a model of the causal relations and expectations outlined above. Parental monitoring, warmth, and control directly influence youth delinquency (Steinberg et al., 1994) and indirectly by increasing parental knowledge of youth behavior (Stattin and Kerr, 2000). Youth concealment arises as a way of dealing with prior delinquent behavior, a reaction to prior parental behavior, and or as a manifestation of low self-control. Adolescents manipulate parental knowledge by varying the frequency and honesty with which they share personal information (Stattin and Kerr, 2000). Parental knowledge, in turn, affects parental attempts to regulate child behavior (i.e., parental control), which impacts delinquent behavior.

This model contains feedback loops and reciprocal relations between the variables. Because of this, specific data and statistical

(footnote continued)

(1990) state that even parents who participate in criminal activities desire different paths for their children, and want their children to be prosocial and abstain from delinquency. In reality, parents who commit crime are more likely to have delinquent children. Beyond genetic and structural factors driving the intergenerational transmission of crime Thornberry et al., 2003), it could be that witnessing parental crime undermines the effect of parental disapproval of crime on child delinquency; or, that some parents may indeed approve of certain delinquent acts in specific situations—like those where a display of violence may ensure future safety—though it is unlikely that any parent wants their child to commit all crimes, indiscriminately (Anderson, 2000; Matsueda et al., 2006b). While examining this issue is beyond the scope of the present paper, future research should investigate the strength of this assumption.

tools are required for its estimation, including repeated measures of variables over time and simultaneous estimation of reciprocal relations between variables. The methods section below details both the sample and the analytic methods used to address these modeling requirements.

6. Methods

6.1. Data

The data used to analyze the model illustrated in Fig. 1 come from the Denver Youth Survey (DYS), an ongoing longitudinal data collection effort conducted by David Huizinga and colleagues at the University of Colorado, Boulder. The goal of the design was to identify a representative sample of children and youth at high risk of behavioral problems. Using cluster analysis of census tracts by arrest rates and census-based indicators of social disorganization (such as high mobility, low SES, and high percent minority population), the investigators selected the most disadvantaged neighborhoods in Denver, Colorado. From an initial sampling frame of 20,300 households, they drew a stratified probability sample of households containing youths aged 7, 9, 11, 13, and 15, resulting in a sample of 1530 respondents at the first wave. The response rate was 85 percent at wave 1, while attrition rates across the first five waves were remarkably low, ranging between 7 and 9 percent (see Esbensen and Huizinga, 1990 for details).

During survey administration, respondents age 11 and older at a given wave received a youth questionnaire, while youth less than 11 years old received a child questionnaire. The present sample is limited to those respondents ($N = 805$) who have youth survey data available for all 4 waves considered here (i.e., those who were 11, 13, or 15 at wave 1). At wave 2 (completed in 1989 and the first wave considered in this analysis) these respondents were 12–16 years old and at wave 5 (completed in 1992 and the last wave considered in this analysis) these respondents were 15–19 years old. Youth were interviewed in their homes by trained interviewers. Information was also obtained by household interviews of parents at each wave.

The DHS is representative of youth in at-risk neighborhoods, where the sample is ethno-racially diverse and sampled households face substantial economic disadvantage. Regarding race and ethnicity, 48 percent of the respondents identified as Hispanic or Latina/o, 34 percent identified as black, 8 percent identified as white, and 9 percent identified as neither of those three categories. As expected for a disadvantaged sample, the average income for a youth's family was less than \$8000 a year. Only one-third of youth respondents reported living with both biological parents.

Overall, the sample permits a longitudinal analysis of the effects of parenting on a stratified random sample of children who are—spatially and economically speaking—at the highest risk of delinquency, while still allowing for sufficient variation in both the key parenting variables and the outcome variables of interest (i.e., delinquency and substance use).

6.2. Measures

The theoretical constructs of interest are assessed with youth reports of parental discipline, parental knowledge, adolescent concealment, and delinquent behavior at waves 2, 3, 4, and 5, as well as youth reports of self-control at waves 2, 3 and 4. Youth reports are also used to measure gender, age, race, and family structure (all assessed at wave 2), whereas parent reports are used to measure family income (assessed at wave 2). Table 1 provides summary statistics for all measures used in the analysis. For exact wording of the measures and response categories, please see Table S1 in the Supplemental Materials online.

Parental warm monitoring. Because of the high correlation between parental monitoring and parental warmth in the substantive

Table 1
Descriptive statistics ($N = 754$).

	Time 1 Mean (SD)	Time 2 Mean (SD)	Time 3 Mean (SD)	Time 4 Mean (SD)
Parental Knowledge (Standardized)	−0.009 (0.420)	−0.026(0.446)	−0.039 (0.511)	−0.040 (0.611)
Parental Warm Monitoring	2.400 (0.190)	2.389 (0.208)	2.369 (0.195)	2.331(0.213)
Parental Control	2.396 (0.515)	2.291 (0.555)	2.063 (0.622)	1.925 (0.695)
Child Concealment (Standardized)	0.002 (0.352)	0.010 (0.391)	0.042 (0.378)	0.062 (0.403)
Low Self-Control	1.828 (0.130)	1.878 (0.128)	1.874 (0.146)	
Violence (cube root transformation)	0.209 (0.285)	0.230 (0.285)	0.214 (0.233)	0.218 (0.329)
Theft (cube root transformation)	0.167 (0.139)	0.199 (0.176)	0.176 (0.158)	0.180 (0.178)
Substance Use (cube root transformation)	0.831 (0.617)	0.831 (0.617)	0.891(0.630)	1.040 (0.694)
Gender				
Female	46.55%			
Male	53.45%			
Age w2	14.054			
Race/ethnicity				
Hispanic/Latino/Latina	49.60%			
Black	33.02%			
White, non-Hispanic	9.36%			
Other	9.02%			
Family income (log of dollars/year)	7.434 (2.462)			
Both biological parents (Yes = 1)	33.69%			

models ($r = .80$, exhibiting multicollinearity in some of the substantive models), and because the combination of warmth and involvement by parents is a defining feature of authoritative discipline (Maccoby and Martin, 1983), warmth and monitoring are combined into a single scale measuring *warm monitoring*, averaged across five Likert-scale items. The *monitoring* dimension is captured by three items (ranging from 1 = Never to 3 = Often), which assess the efforts of parents to procure information about their child. Some example items include “How often do your parents talk with you about how things are going in school?” and “How often do your parents find time to listen to you when you want to talk to them?” This operationalization of monitoring closely parallels Stattin and Kerr’s measure of solicitation, and has been used across psychology and sociology as a necessary component of the more general concept of monitoring, which usually conflates solicitation, knowledge, and control (e.g., Gottfredson and Hirschi, 1990; Gray and Steinberg, 1999; Laub and Sampson, 1988; Steinberg et al., 1994). The *warmth* dimension captures how warm and responsive parents are in their interactions with their child. The two items used to capture *warmth* measure how often parents respond to their child’s good behavior with hugs and smiles (both items range from 1 = Never to 3 = Often). The alpha reliabilities for *warm monitoring* at waves 2, 3, 4, and 5 are .694, .731, .731 and .754, respectively. Higher values of the *warm monitoring* scale indicate more frequent and affectionate monitoring.

Parental control. Parental control is measured as the average of two Likert-scale items assessing the extent to which parents enforce curfew for the child on school and weekend nights. Both items were rated on a 3-point scale (1 = No, 2 = Sometimes, 3 = Yes). This measure captures the common items shared by both Stattin and Kerr (2000) and Fletcher et al. (2004) measures of parental control. The alpha reliabilities for parental control at waves 2, 3, 4, and 5 are .662, .703, .730 and .808, respectively. Higher values indicate greater parental control.

Parental knowledge. Parental knowledge evaluates how much parents know about their child. This construct is assessed with a mean of four standardized Likert-scale items: how many of the child’s friends the parents know (1 = None, 2 = Some, 3 = Most, 4 = All), how often the parents know if the child is home on-time (1 = Never, 2 = Sometimes, 3 = Often), how often parents know who the child is with when they are away from home (1 = Never, 2 = Sometimes, 3 = Often), and how often the parents know where the child is when they are neither at home nor at school (1 = Never, 2 = Sometimes, 3 = Often). Kerr and Stattin (2000) use similar items as part of their knowledge measures, and the last two knowledge items are identical to Hirschi (1969) supervision items. The alpha reliabilities for the knowledge scale at waves 2, 3, 4, and 5 are .456, .422, .479 and .484, respectively. Although the alpha reliabilities for these scales are low, I nevertheless use these four items and the resulting composite knowledge scale for theoretical reasons.⁸

Child concealment. A mean of four standardized Likert scales is used to measure child concealment, or the extent to which children withhold information about their own behavior from a parent. The indicators reflect two aspects of information management: how often *and* how honestly a child reports on their own behavior (Cumsille et al., 2010). The frequency item assesses “How often do you leave a note for your parents or call them about where you are going if they are not at home?” (1 = Never, 2 = Sometimes, 3 = Often). The three remaining items are attitudinal indicators of honesty. Each of these item asks how much the child respondent agrees with the following: “It’s important to be honest with your parents, even if they become upset and you get punished,” “It’s ok to lie to parents to keep their trust,” and “Making a good impression is more important than telling the truth to parents” (each item ranges from 1 = Strongly Disagree to 5 = Strongly Agree).

Although attitudinal, the honesty items are necessary to capture key elements of information management concerned with (a) concealing information that could elicit punitive behavior from parents (e.g., concealing behavior that conflicts with a parent’s interests), and (b) self-preservation—a motivating factor behind the withholding of information (Afifi et al., 2005) and a key dimension of secrecy. While attitudinal measures generally suffer from response bias to a greater extent than behavioral indicators, research shows that attitudes both produce and are a product of behavior (Rebellon et al., 2014) and that—more specifically—measures of attitudes toward lying are strongly associated with objective measures of child secrecy and concealment (Rote and Smetana, 2015). Finally, DYS parents report those youth who score higher on the concealment scale as significantly more secretive than those who score lower on the concealment scale, which indicates construct validity of this measure.⁹ Taken together, the behavioral and attitudinal items reflect both the unwillingness to disclose *and* the dishonesty of information, both of which are included in Stattin and Kerr (2000) operationalization of concealment. Increases in the child concealment scale indicate greater use of and support for concealing information from parents. The alpha reliabilities for this measure at waves 2, 3, 4, and 5 are .390, .442, .479 and .450, respectively.¹⁰

Self-Control. Seven Likert-scale items are averaged to operationalize self-control consistent with its recent theoretical treatments, which center on impulsivity and excitement-seeking (Burt et al., 2014). The self-control items measure agreement with statements such as “[You] are impatient—want to have things right away”, “[You] act without stopping to think”, and “[You] like to do daring things.” Please see Table S1 in the Supplemental Materials for a complete list of self-control items. To be consistent with the GTC’s stipulations for adolescent self-control, self-control is modeled as affecting—but not affected by—the parenting, concealment, and

⁸ The alpha reliabilities for the scales using adolescent reports of parental knowledge are very similar to the alpha reliabilities of parents self-reports of what they know about their children. These similarly low reliabilities of the scales, regardless of the source, suggest that for respondents in the DYS sample, parental possession of knowledge of certain domains of their child’s life is not strongly associated with knowledge of other such domains. Even in the absence of high correlation among the knowledge categories, it is important to sample from as many domains as possible in order to fully capture this multidimensional construct.

⁹ Results are available from the author upon request.

¹⁰ The lower alpha reliabilities reflect the two dimensional nature of this measure. Although the attitudinal measures alone result in larger alpha reliabilities, I include all four items in keeping with the theoretical definition of concealment as any withholding of information, either through omission or commission (i.e., dishonesty).

delinquency variables (Gottfredson and Hirschi, 1990).¹¹ The alpha reliabilities for self-control assessed at waves 2, 3, and 4 are .564, .601, .605, respectively.

Child problem behavior. Three types of child problem behavior—violent behavior, theft, and substance use—are used in the present analysis.¹² This is done for several reasons. First, subscales of delinquent behavior are preferred to an all-inclusive index of delinquency (Sweeten, 2012). Second, both violence and substance use are understudied as possible outcomes of child secrecy and lying. Third, rational decision making, planning, and strategic concealment may impact these three outcomes to varying degrees. For instance, substance use maps onto addiction and, as a result, is a behavior more likely practiced by individuals prone to impulsivity and excitement-seeking than violent behavior or theft (Allen et al., 1998). Violence, in turn, is generally (a) more susceptible to impulsivity than theft (Loughran et al., 2011), and (b) more visible to the public than theft and substance use, which may render concealment an ineffective strategy. As such, the relations between self-control, secrecy and problem behavior may vary depending on the outcome considered, with theft most likely to be related to concealment.

The *violence* measure is generated from averaged responses to three survey items. Each item captures how many times adolescents reported engaging in simple assault, aggravated assault, and gang fights over the prior year. The alpha reliabilities for violence at waves 2, 3, 4, and 5 are .864, .629, .537, and .622, respectively. The *theft* measure consists of mean responses to ten survey items that ask how many times adolescents engaged in avoiding payment, stealing less than five dollars, between 5 and 50 dollars, between 50 and 100 dollars, and more than 100 dollars, shoplifting, purse-snatching, auto-larceny, fencing, and auto-theft over the prior year. The alpha reliabilities for theft at waves 2, 3, 4, and 5 are .329, .682, .700, and .842, respectively. *Substance use* consists of eight self-report survey items that measure how frequently adolescent respondents consumed beer, wine, hard liquor, marijuana, hallucinogens, cocaine, crack, and amphetamines over the prior year. The alpha reliabilities for substance use at waves 2, 3, 4, and 5 are .453, .497, .445 and .459, respectively.

Exogenous control variables. Control variables include age, dummy variables for gender and race-ethnicity of the child, family income, and a dummy variable assessing whether the child lives with both biological parents. These control variables were selected because the literature consistently shows that each accounts for variation in parenting and child delinquency (Browning et al., 2005; Fagan et al., 2011).

6.3. Analytic strategy

In order to identify reciprocal effects between child secrecy, parenting practices, adolescent self-control, and delinquent behavior, and to account for errors in the variables across time and between endogenous variables of interest, I estimate three four-wave cross-lagged panel models using waves 2, 3, 4, and 5 of the DYS. Cross-lagged panel models help identify the causal direction of relations between variables over time by estimating reciprocal effects between variables. Additionally, cross-lagged panel models estimated across 4 waves of data facilitate the examination of complex mediation processes such as whether and to what extent variable Z mediates the relation between variables X and Y.

In the present analysis, I model endogenous variables at each wave with a lagged $t - 1$ autoregressive term as well as with cross-lagged $t - 1$ explanatory variables (see Figs. 2–4). Additionally, consistent with other specifications of control variables in cross-lagged panel models, all control variables are assessed at time 1 (i.e., wave 2), allowed to covary with substantive variables at time 1 (i.e., wave 2), and directly predict substantive variables at each subsequent time point (i.e., waves 3 through 5) (Matsueda and Anderson, 1998). The autoregressive coefficients represent stability of individual differences for a given variable measurement from $t - 1$ to t . The cross-lagged effects refer to the effects of a $t - 1$ explanatory variables on other endogenous variables measured at t . If an individual's relative value on the prior variable is associated with their relative value on the current variable, then a significant cross-lagged relationship will be observed (Selig Todd and Little, 2012). In other words, the cross-lagged relations explain the residual variance in a variable that is left after accounting for its autoregressive path. The errors among all endogenous variables within each wave are allowed to covary, while the errors for each variable are allowed to covary across time (i.e., first order autocorrelation of the error terms). Given the large number of covariates, all parameters are constrained to be equal across the four waves in order to obtain stable and precise estimates of the model parameters (see Matsueda and Anderson, 1998).

All analyses were conducted in Mplus 7 (Muthén and Muthén, 1998–2015). Maximum likelihood estimation with robust standard errors (MLR) was used to estimate three separate four-wave cross-lagged panel models examining relations between secrecy, parenting, and one of three youth problem behaviors: violence, theft, and substance use. Because a number of youth ($N = 607$) received the child and not youth survey at wave 2 (or wave 2 and wave 3), a large percentage of not-at-random missing values were observed for all variables of interest and, as a result, were excluded from the models. For the remaining data, a full information maximum likelihood (FIML) estimation approach to missing data was used. For purposes of clarity, only statistically significant effects ($p < 0.05$) are shown in each figure. The relations between key explanatory variables and control variables are discussed but not shown in Figs. 2–4. For full model results, see Tables S2–S4 in Supplemental Materials.

¹¹ Alternative models (available from the author upon request) where self-control was allowed to be predicted by (as well as predict) parenting, show that no parenting variables are significantly associated with self-control. This parallels results from other cross-lagged panel models estimating the relations between parenting and self-control over time, which find that parenting does not predict self-control in adolescence (Meldrum et al., 2012).

¹² The cube root function is used to transform right-skewed variables, such as the counts of delinquency variables considered here. The transformation to normal allows for efficient estimates and unbiased standard errors.

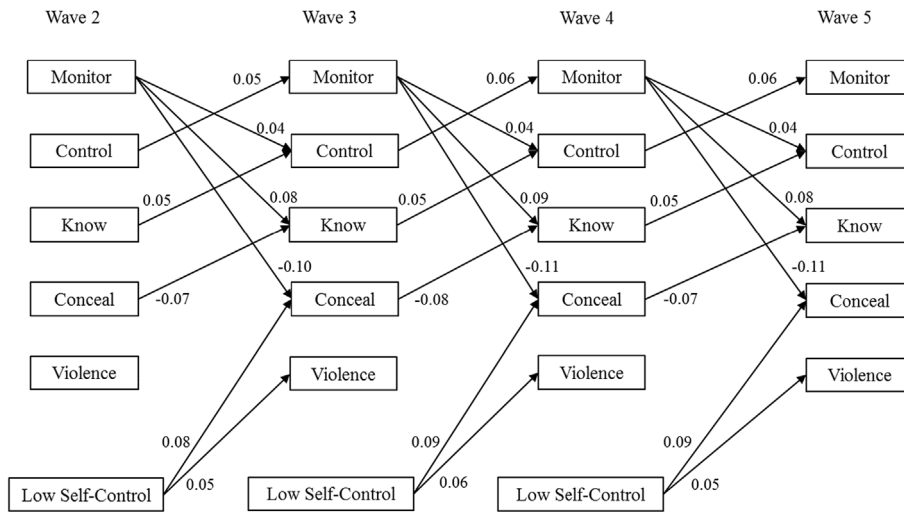


Fig. 2. Four-wave Cross-lagged Panel Models with Violence, Standardized Coefficients (N = 752, CFI = .92, RMSEA = .04, BIC = 17499; all coefficients significant at $p < .05$).

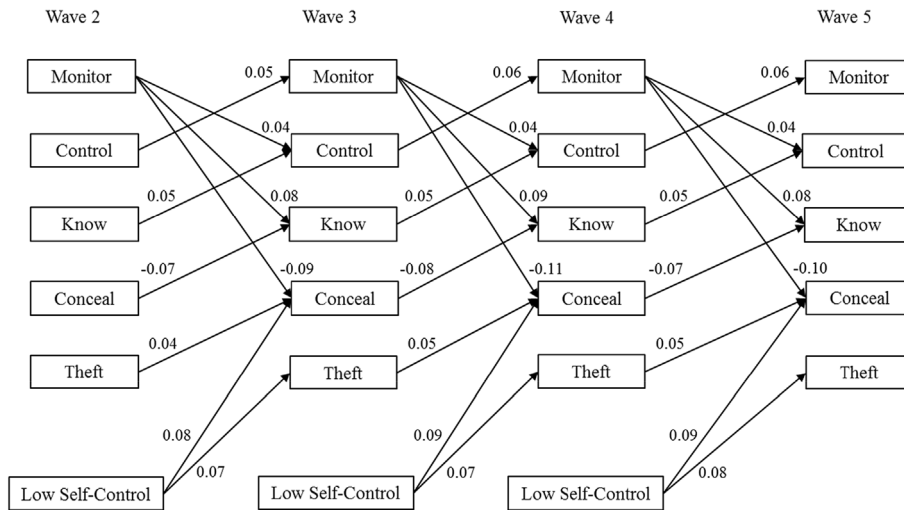


Fig. 3. Four-wave Cross-lagged Panel Models with Theft, Standardized Coefficients (N = 752, CFI = .91, RMSEA = .04, BIC = 16442; all coefficients significant at $p < .05$).

7. Results

Table 1 provides descriptive statistics for the variables used in the analysis. Despite the concentrated disadvantage faced by families of the DYS youth, the reports of parental discipline indicate moderately involved parenting. Table 1 shows that, on average, parents are warm, affectionate, and communicative with their children, and sometimes set and enforce curfew.

Since both the parental knowledge and concealment variables are standardized, I summarize these measures in the text with the mean of each item across the 4 waves. Youth report that their parents know most of their friends ($M = 2.88, SD = .74$). Parents also know more often about a broken curfew ($M = 2.70, SD = 0.43$) than about where their kids were ($M = 2.46, SD = 0.49$) or who their kids were with when not at home ($M = 2.54, SD = 0.46$). For their part, adolescents report that making a good impression is not more important than telling the truth ($M = 2.19, SD = 0.64$), report that it's important to be honest with parents even if it results in punishment ($M = 3.88, SD = 0.53$), and somewhat disapprove of lying to parents in order to keep their trust ($M = 2.45, SD = 0.70$). Finally, adolescents report sometimes contacting their parents to tell them of their whereabouts ($M = 2.35, SD = 0.60$).

Figs. 2–4 summarize results from the four-wave cross-lagged panel models. Each figure shows standardized betas but excludes estimates of the control variables (see Tables S2–S4 in the Supplemental Materials for the full set of estimates).¹³ Because the

¹³ Sample size is 754 for the substance use model, but is reduced to 752 for theft and violence models due to missingness. In order to check that the results of the present models are robust to sample size, I restricted the sample size of the substance use model to be identical to the other two models and found that the substantive

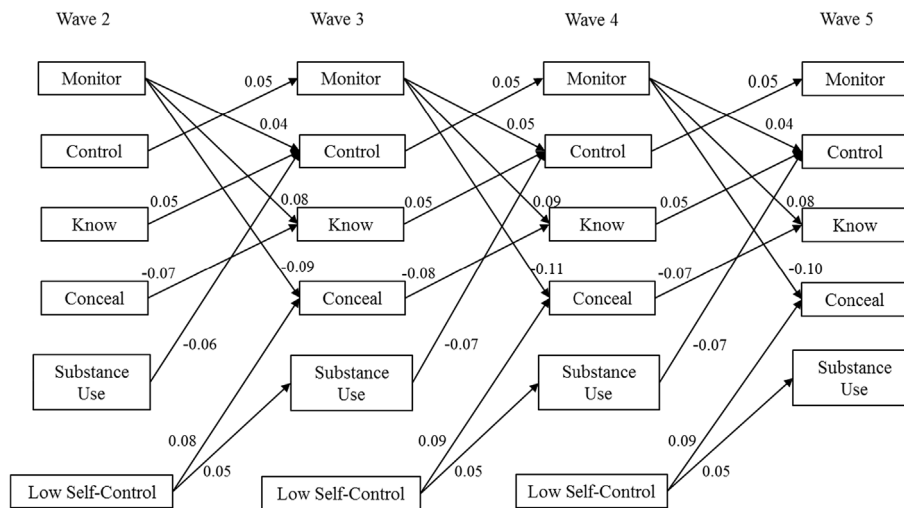


Fig. 4. Four-wave Cross-lagged Panel Models with Substance Use, Standardized Coefficients (N = 754, CFI = .92, RMSEA = .04, BIC = 19626; all coefficients significant at $p < .05$).

coefficients in Figs. 2–4 are standardized, there are small variations in the effect sizes from one wave to another, though not in statistical or substantive interpretation of the effects. Regarding overall model fit, all three models have Comparative Fit Indices (CFI) greater than .90 and Root Square Mean Error of Approximation (RMSEA) less than .05, indicating a reasonable fit of the model to the data (Hu and Bentler, 1999). As expected for a sample of this size, the χ^2 tests ($\chi^2(256) = 576.70, p < .001$) for violence model; $\chi^2(256) = 609.90, p < .001$ for theft model; $\chi^2(256) = 563.20, p < .001$ for substance use model) are significant at the $p < .001$ level.

Overall, associations between parenting and concealment are common to the three models. Consistent with prior theoretical work on parental warmth, involvement, and control (Steinberg et al., 1994; Gray and Steinberg, 1999), I find that parental warm monitoring and parental control mutually influence each other: parents who engage in affectionate communication and information seeking are more likely to enforce curfew, and parents who enforce curfew are also more likely to initiate affectionate communication and information gathering techniques with their children. Moreover, attempts by parents to affectionately solicit information from children are associated with increased knowledge about the child's whereabouts and companions, which supports Stattin and Kerr (2000) specification of the positive relation between parental monitoring and knowledge. Importantly, consistent with hypotheses 1b—and the view of concealment as situationally dependent and strategic (rather than trait-like and impulsive)—warm monitoring by parents is negatively related to concealment: parents who ask more questions about their children's lives and are affectionate tend to have children who are more forthcoming with private information and oppose lying or being secretive with their parents.

Concealment is associated with less parental knowledge—parents whose children conceal more information from them know significantly less about their children. That children are able to circumscribe parental knowledge lends support to hypothesis 2a. While decreased parental knowledge is, in turn, associated with reductions in parental control, indirect effects of concealment on parental control through knowledge (shown in Tables S2–S4 in the Supplemental Materials) are small and not statistically significant at $p < .05$ level. The absence of indirect effects of concealment on control fails to support hypothesis 2b. Additionally, because there are no statistically significant relations between parental knowledge and delinquent behavior or parental control and delinquent behavior, I find no support for hypothesis 2b.

The three models also exhibit substantively identical relations between self-control and the other covariates of interest.¹⁴ In all three models, self-control predicts increases in both concealment and delinquent behavior. These results support self-control theory's propositions that lying and secret-keeping, as well as delinquency, are both sourced from the underlying propensity to have low self-control. Notably, unlike concealment, delinquent behavior is not directly predicted by any of the parenting variables.

Additionally, two model-specific relations are observed. First, net of self-control, theft predicts increases in future concealment. This lends support to hypotheses 1a and the proposition that concealment is used strategically to prevent parents from knowing about problem behavior. Lastly, substance use predicts decreases in parental control. Although not hypothesized, this effect may be interpreted as either the inability or unwillingness of parents to enforce curfew for kids who use controlled and illegal substances.

(footnote continued)

results remain the same. Results are available upon request.

¹⁴ The temporal stability of self-control is an important feature of the GTC. I assess the stability of the DYS measures of self-control in two ways. First, across all models, there is significant stability of self-control from one wave to another—with around half of the variance of self-control attributed to past self-control. Second, following recent research (Burt et al., 2014) I also assess the stability of self-control using trajectory modeling in Mplus as part of a separate working paper. Similar to Burt et al. (2014) findings and contrary to Gottfredson and Hirschi (1990) proposition, I find that there is significant intra-individual variation in both levels and slopes of the trajectories over time. In other words, individuals vary in their starting points and development of self-control over time. In sum, the Denver Youth Survey (DYS) data indicates that while self-control is considerably stable, there is variation in individual trajectories of self-control over time.

As expected, control variables assessing the social context in which parent-child interactions take place significantly affect both parenting and child behavior. Tables S2–S4 in Supplemental Materials provide complete parameter estimates for the control variables. Notably, parents are more likely to control girls' behavior than boys' behavior via curfew enforcement ($\beta = 0.14$, $SE = 0.03$, $p < .001$, theft model only). Parents are also more likely to know about girls' whereabouts and companions than boys' whereabouts and companions (all models). For their part, girls are less likely to conceal information from their parents than boys across all models. Older children are also less likely to conceal information from their parents than younger children.

Finally, because self-control has been omitted from prior models of concealment, it is important to compare models that include self-control to those that do not.¹⁵ The violence models with and without self-control are substantively identical: the association between child concealment and violence is statistically insignificant regardless of the presence or absence of self-control. Conversely, in the theft and substance use models without self-control, child concealment is significantly associated with future delinquency (theft: $\beta = 0.06$, $SE = 0.02$, $p < .001$; substance use: $\beta = 0.07$, $SE = 0.03$, $p < .01$). These results parallel other work on child information management, which finds that concealment increases future delinquency (Fletcher et al., 2004; Keijsers et al., 2010). However, the association between concealment and delinquency is rendered statistically insignificant in both models once self-control is accounted for, providing evidence that self-control confounds any direct effect of secret-keeping on future theft and substance use.

8. Discussion

This study focused on testing and revising existing definitions of adolescent concealment. Cross-lagged panel models were used to estimate the interrelations between concealment, self-control, parenting, and problem behavior and to investigate whether adolescents conceal information from their parents as a result of strategic information management or low self-control. The results suggest that concealment is a deliberative and situationally induced strategy, but that low self-control is associated with increased concealment. The findings also indicate that concealment reduces parental knowledge but does not reduce parental control or increase future delinquent behavior, casting doubt on whether concealment can increase adolescent autonomy and agency. Overall, I find support for the idea that information management is both agentic *and* sourced from low self-control. In the following paragraphs, I detail the ways in which my results augment prior theoretical approaches to concealment, discuss limitations of the present research design, and offer suggestions for future work on agency, information management, and delinquency.

While I find strong support for the hypothesis that youth conceal information strategically, I find only limited support for my hypothesis that the act of concealment itself generates further agency. Regarding the former, I draw on two key pieces of evidence. First, I find that youth are more candid with inquisitive and affectionate parents who provide fewer penalties to disclosing information (see also Afifi and Weiner, 2004; Afifi et al., 2005). Second, I find that youth are more likely to conceal information if they had previously committed theft—suggesting that concealment is used to cover up certain behaviors that might warrant parental interventions and control. These two key findings support the hypothesis that concealment is a strategic act stemming from a child's agency.

Regarding the latter hypothesis of concealment as an agency-building act, I find that concealment is effective at undermining parental knowledge. Effect sizes across all three models suggest that concealment accounted for as much variation in parental knowledge as parent-driven strategies of information gathering, a finding consistent with prior research (Kerr and Stattin, 2000). In this regard, children can be thought of as gaining autonomy from parents through the ability to prevent parental access to those parts of their life that they want to keep private. However, my models do not offer evidence that adolescents alter parents' behavior by limiting what they know. In other words, while parents who know less about their child do place fewer limits on their child's behavior, the knowledge lost as a result of concealment does not alter levels of parental control. By limiting knowledge, concealment may reduce parental control and power in ways not measured here. However, in the absence of decreased parental control or increased delinquency as a result of concealment, it is hard to conclude that concealment generates gains to adolescent agency.

Additionally, corresponding to the GTC's treatment of concealment (Gottfredson and Hirschi, 1990) and contrary to the view of concealment-as-agency, I find that concealment is associated with low self-control. Likewise, any apparent link between concealment and future delinquency is accounted for by low self-control (but note that prior theft remains a predictor of concealment after accounting for self-control). My results, in other words, offer support for both models of concealment. Yet, this presents a puzzle: How can concealment—a strategic behavior—be increasingly practiced by individuals who are, by definition, impulsive and non-strategic decision makers? I offer two possible solutions, one empirical and one theoretical. First, it is possible that measures of self-control are capturing unobserved forms of delinquency and other externalizing problem behaviors. Low self-control children commit more problem behaviors and, consequently, may lie more to conceal those behaviors from others. The self-control-to-concealment link, then, could be observed because the current models fail to account for all problem behaviors that are produced by low self-control and consequently require concealing. While testing this proposition is beyond the scope of the current paper, probing the relations between self-control, concealment, and a wider range of problem behavior is an important next step for future research.

Second, suppose that low self-control truly predicts concealment in the absence of measurement error. Is there a way to theoretically reconcile both the strategic and low self-control views of concealment? Recall that for self-control theory, problem behaviors largely stem from two key inputs: impulsivity and self-interest (Gottfredson and Hirschi, 1990; Hirschi, 2004). Impulsivity and self-interest, however, constitute distinct dimensions of self-control which map onto different personality domains (Burt et al., 2014).

¹⁵ Full results of models without self-control are available upon request.

Therefore, it is possible that some individuals—like those with low self-control—are impulsive and self-regarding, while others are goal-oriented and self-regarding. Theoretically, this suggests that all low self-control children are likely self-interested but not all self-interested children have low self-control. The implication is that the GTC is unable to fully account for all types of behavior that stem from self-regard. For instance, the combination of goal orientation, strategic planning, and self-interest is frequently observed among white-collar criminals (Benson and Moore, 1992; Vaughan, 1998) and is theoretically consistent with a rational choice view of individual action (Hechter and Kanazawa, 1997; Matsueda, 2013).

I argue that concealment is similarly driven by self-regard—acting on self-interest at the expense of others. This self-regarding property of concealment allows it to be sourced from low self-control, which is a trait characterized in part by excessive self-regard. In this case, the relation between self-control and concealment will mimic those observed in the present paper—low self-control youths will be more likely to conceal, but other factors affecting self-preservation and strategic self-regard will predict concealment beyond self-control. For instance, my models suggest that quality of interpersonal relationships matter over-and-above the classic model of self-control (Laub and Sampson, 2003; Hirschi, 2004). However, the mechanism linking relationship quality to disclosure of information may be one of alignment of interests, rather than attachment: the benefits of disclosing information increase in warm and inquisitive environments, and so in disclosing information adolescents still act in a strategic and self-interested way. Warm and communicative parenting aligns the interests of parents and adolescents by reducing the costs associated with disclosing personal information. In short, self-regard helps explain why youths with low self-control conceal information from their parents.

Importantly, I find that despite its ability to limit parental knowledge, concealment is not associated with delinquent behavior. This finding calls into question the widely used and normatively charged definitions of concealment as a problem behavior or gateway to other problem behaviors (Stouthamer-Loeber, 1986; Gottfredson and Hirschi, 1990; Warr, 2007). Although my research design does not dissect concealment at all stages of human development, my results indicate that autonomy from parents during adolescence does not bring about more delinquency. Moreover, this finding is observed in a sample of youth who lack many environmental safeguards afforded to white middle class populations (Browning et al., 2005).

In light of the evidence presented here, I argue that concealing information from parents, even when done against the interests of parents, is not necessarily deviant or antisocial, but merely a strategic behavior used to further one's own interests. In other words, concealment represents an attempt by adolescents to shift the balance of power away from parents, something that is neither bad nor good in and of itself. In this way, the present analysis provides initial support for moving away from a problem-oriented definition of concealment and child information management. It is my hope that future research continues to examine and refine the concept of concealment in this regard.

Beyond revising the meaning of concealment, my results have several implications for existing research on parent-child interactions and problem behavior. First, the growing literature on youth information management should include self-control in models of concealment. Given the present results, previously observed effects of concealment on future problem behavior are—in all likelihood—upwardly biased (and possibly spurious) due to omitting self-control from statistical models (Fletcher et al., 2004; Tilton-Weaver et al., 2010; Keijsers et al., 2010; Frijns et al., 2010). Second, scholars studying the effects of parenting and self-control on delinquency should amend their conceptualizations of parental monitoring to reflect the robust finding that monitoring and knowledge are theoretically and empirically distinct constructs (Stattin and Kerr, 2000). Finally, adolescent concealment should be included in such models as an important predictor of parental knowledge *and* as a possible mechanism linking low self-control to parenting practices (Meldrum et al., 2012; Warr, 2007).

Like many empirical pieces, my research design is not without limitations. First, the measures of concealment used in the present manuscript consist of behavioral *and* attitudinal items. Although these measures facilitate a multi-dimensional assessment of concealment, future research on the subject should nonetheless include an expanded range of behavioral indicators of concealment, such as whether children are secretive or lie about specific activities. Such measures will allow a more nuanced analysis of the conditions that induce adolescents to conceal information. Second, while I control for age in my models, such a procedure falls short of describing the ways in which the relationships between parents and children may change over time. For example, some aspects of the parent-child relationship may be more salient for younger adolescents (Meldrum et al., 2012). While fully exploring such processes is beyond the scope of the present paper, I did examine the models of theft and substance use separately for the youngest and oldest cohorts of the DYS. The results show that the relations between parenting, delinquency, concealment, and self-control are robust across teenage years. However, examining the development of concealment in younger populations that are potentially more affected by parenting strategies, and whose levels of self-control may be more malleable, is an important next step in this research program.

9. Conclusion

The present findings indicate that moving away from parents as exclusive agents of the disciplinary encounter provides researchers with a richer and more accurate depiction of parent-child relationships. By strategically managing private information, adolescents shape the way parents think about them. Given this, affectionate and communicative parents motivate children to be more forthcoming with information and to favor honest reporting of sensitive and potentially punishable behavior. That the quality of interpersonal relationships provides a powerful incentive to take others' interests into account—by aligning the interests of the self with others—has been a long standing finding in models of adult decision-making, which assume agency on the part of adult actors (Horne, 2009; Laub and Sampson, 2003). Researchers would do well to acknowledge how similar principles might guide the behavior of children and adolescents.

Appendix A. Supplementary data

Supplementary data related to this article can be found at <http://dx.doi.org/10.1016/j.ssresearch.2018.02.006>.

References

- Affi, Walid A., Weiner, Judith L., 2004. Toward a theory of motivated information management. *Commun. Theor.* 14, 167–190.
- Affi, Tamara D., Olson, Lorean N., Armstrong, Christine, 2005. The chilling effect and family secrets. *Hum. Commun. Res.* 31, 564–598.
- Akers, Ronald L., 1973. *Deviant Behavior: a Social Learning Approach*. Wadsworth, Belmont, CA.
- Allen, Terry J., Gerard Moeller, F., Rhoades, Howard M., Cherek, Don R., 1998. Impulsivity and history of drug dependence. *Drug Alcohol Depend.* 50, 137–145.
- Anderson, Elijah, 2000. *Code of the Street: Decency, Violence, and the Moral Life of the Inner City*. WW Norton & Company.
- Baumrind, Diana, 1967. Child care practices anteceding three patterns of preschool behavior. *Genet. Psychol. Monogr.* 75, 43–88.
- Bell, Richard Q., 1968. A reinterpretation of the direction of effects in studies of socialization. *Psychol. Rev.* 75, 81–95.
- Benson, M.L., Moore, E., 1992. Are white-collar and common offenders the same? An empirical examination and theoretical critique of a recently proposed general theory of crime. *J. Res. Crime Delinquen.* 29, 251–272.
- Blumer, Herbert, 1986. *Symbolic Interactionism: Perspective and Method*. University of California Press.
- Bridgett, David J., Burt, Nicole M., Edwards, Erin S., Deater-Deckard, Kirby, 2015. Intergenerational transmission of self-regulation: a multidisciplinary review and integrative conceptual framework. *Psychol. Bull.* 141, 602.
- Browning, Christopher R., Leventhal, Tama, Brooks-Gunn, Jeanne, 2005. Sexual initiation in early adolescence: the nexus of parental and community control. *Am. Socio. Rev.* 70, 758–778.
- Burt, Callie Harbin, Simons, Ronald L., Simons, Leslie G., 2006. A longitudinal test of the effects of parenting and the stability of self-control: negative evidence for the General Theory of Crime. *Criminology* 44, 353–396.
- Burt, Callie H., Sweeten, Gary, Simons, Ronald L., 2014. Self-control through emerging adulthood: instability, multidimensionality, and criminological significance. *Criminology* 52, 450–487.
- Calarco, Jessica McCrory, 2011. “I need help!” Social class and children’s help-seeking in elementary school. *Am. Socio. Rev.* 76, 862–882.
- Calarco, Jessica McCrory, 2014. Coached for the classroom parents’ cultural transmission and children’s reproduction of educational inequalities. *Am. Socio. Rev.* 79, 1015–1037.
- Cohen, Bernard P., 1989. *Developing Sociological Knowledge: Theory and Method*. Wadsworth Publishing Co.
- Crouter, Ann C., Bumpus, Matthew F., Davis, Kelly D., McHale, Susan M., 2005. How do parents learn about adolescents’ experiences? Implications for parental knowledge and adolescent risky behavior. *Child Dev.* 76, 869–882.
- Cumsille, Patricio, Darling, Nancy, Loreto Martínez, M., 2010. Shading the truth: the patterning of adolescents’ decisions to avoid issues, disclose, or lie to parents. *J. Adolesc.* 33, 285–296.
- Emirbayer, Mustafa, Mische, Ann, 1998. What is agency? *Am. J. Sociol.* 103, 962–1023.
- Esbensen, Finn-Aage, Huizinga, David, 1990. Community structure and drug use: from a social disorganization perspective. *Justice Q.* 7, 691–709.
- Fagan, Abigail A., Lee Van Horn, M., Antaramian, Susan, David Hawkins, J., 2011. How do families matter? Age and gender differences on delinquency and drug use. *Youth Violence Juv. Justice* 9, 150–170.
- Fan, Xiaotao, Chen, Michael, 2001. Parental involvement and students’ academic achievement: a meta-analysis. *Educ. Psychol. Rev.* 13, 1–22.
- Fletcher, Anne C., Steinberg, Laurence, Williams-Wheeler, Meeshay, 2004. Parental influences on adolescent problem behavior: revisiting Stattin and Kerr. *Child Dev.* 75, 781–796.
- Frijns, Tom, Keijsers, Loes, Branje, Susan, Meeus, Wim, 2010. What parents don’t know and how it may affect their children: qualifying the disclosure-adjustment link. *J. Adolesc.* 33, 261–270.
- Furstenberg Jr., Frank F., Cook, Thomas D., Eccles, Jacquelynne, Elder Jr., Glenn H., Sameroff, Arnold, 1999. *Managing to Make it: Urban Families in High-risk Neighborhoods*. University of Chicago Press, Chicago.
- Goffman, Erving, 1959. *The Presentation of Self in Everyday Life*. Doubleday, New York, NY.
- Gottfredson, Michael R., Hirschi, Travis, 1990. *A General Theory of Crime*. Stanford University Press, Palo Alto, CA.
- Gray, Marjory Roberts, Steinberg, Laurence, 1999. Unpacking authoritative parenting: reassessing a multidimensional construct. *J. Marriage Fam.* 61, 574–587.
- Heatherton, Todd F., 2011. Neuroscience of self and self-regulation. *Annu. Rev. Psychol.* 62, 363–390.
- Hechter, Michael, Kanazawa, Satoshi, 1997. Sociological rational choice theory. *Annu. Rev. Sociol.* 23, 191–214.
- Heimer, Karen, 1997. Socioeconomic status, subcultural definitions, and violent delinquency. *Soc. Forces* 74, 799–833.
- Hirschi, Travis, 1969. *Causes of Delinquency*. University of California Press, Berkeley.
- Hirschi, Travis, 2004. Self-control and Crime. In: Baumeister, R.F., Vohs, K.D. (Eds.), *Handbook of Self-regulation*. The Guilford Press, New York, NY, pp. 537–552.
- Hitlin, Steven, Johnson, Monica Kirkpatrick, 2015. Reconceptualizing agency within the life course: the power of looking ahead. *Am. J. Sociol.* 120, 1429.
- Hitlin, Steven, Long, Charisse, 2009. Agency as a sociological variable: a preliminary model of individuals, situations, and the life course. *Sociology Compass* 3, 137–160.
- Horne, Christine, 2009. *The Rewards of Punishment: a Relational Theory of Norm Enforcement*. Stanford University Press.
- Hu, Li-tze, Bentler, Peter M., 1999. Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives. *Struct. Equ. Model.* 6, 1–55.
- Ingram, Paul, Clay, Karen, 2000. The choice-within-constraints new institutionalism and implications for sociology. *Annu. Rev. Sociol.* 26, 525–546.
- Keijsers, Loes, Branje, Susan JT., VanderValk, Inge E., Meeus, Wim, 2010. Reciprocal effects between parental solicitation, parental control, adolescent disclosure, and adolescent delinquency. *J. Res. Adolesc.* 20, 88–113.
- Keijsers, Loes, Laird, Robert D., 2014. Mother–adolescent monitoring dynamics and the legitimacy of parental authority. *J. Adolesc.* 37 (5), 515–524.
- Kerr, Margaret, Stattin, Håkan, 2000. What parents know, how they know it, and several forms of adolescent adjustment: further evidence for a reinterpretation of monitoring. *Dev. Psychol.* 36, 366–380.
- Kerr, Margaret, Stattin, Håkan, Özdemir, Metin, 2012. Perceived parenting style and adolescent adjustment: revisiting directions of effects and the role of parental knowledge. *Dev. Psychol.* 48, 1540–1553.
- Kohn, Melvin, 1969. *Class and Conformity: a Study in Values*. Dorsey, Homewood, Illinois.
- Laird, Robert D., Pettit, Gregory S., Bates, John E., Dodge, Kenneth A., 2003. Parents’ monitoring-relevant knowledge and adolescents’ delinquent behavior: evidence of correlated developmental changes and reciprocal influences. *Child Dev.* 74, 752–768.
- Lamborn, Susie D., Mounts, Nina S., Steinberg, Laurence, Dornbusch, Sanford M., 1991. Patterns of competence and adjustment among adolescents from authoritative, authoritarian, indulgent, and neglectful families. *Child Dev.* 62, 1049–1065.
- Lareau, Annette, 2003. *Unequal Childhoods: Race, Class, and Family Life*. University of California Press, Berkeley.
- Laub, John H., Sampson, Robert J., 1988. Unraveling families and delinquency: a reanalysis of the Gluecks’ data. *Criminology* 26, 355–380.
- Laub, John H., Sampson, Robert J., 2003. *Shared Beginnings, Divergent Lives: Delinquent Boys to Age 70*. Harvard University Press.
- Loughran, Thomas A., Paternoster, Raymond, Piquero, Alex R., Pogarsky, Greg, 2011. On ambiguity in perceptions of risk: implications for criminal decision making and deterrence. *Criminology* 49, 1029–1061.
- Maccoby, Eleanor E., Martin, J.A., 1983. Socialization in the context of the family: parent–child interaction. In: Mussen, P.H., Hetherington, E.M. (Eds.), *Handbook of Child Psychology: Vol. 4. Socialization, Personality, and Social Development*. Wiley, New York.

- Marwick, Alice E., boyd, danah, 2014. Networked privacy: how teenagers negotiate context in social media. *N. Media Soc.* 16, 1–17.
- Matsueda, Ross L., 2006. Criminological implications of the thought of George Herbert Mead. In: Deflem, Mathieu (Ed.), *Sociological Theory and Criminological Research: Views from Europe and the United States*. Elsevier Science, Oxford, UK.
- Matsueda, Ross L., 2013. Rational choice research in criminology: a multi-level approach. Pp. 283–321. In: Wittek, R., Snijders, T., Nee, V. (Eds.), *Handbook of Rational Choice Social Research*. Stanford University Press, Palo Alto.
- Matsueda, Ross L., Anderson, Kathleen, 1998. The dynamics of delinquent peers and delinquent behavior. *Criminology* 36, 269–308.
- Matsueda, Ross L., Kreager, Derek A., Huizinga, David, 2006a. Detering delinquents: a rational choice model of theft and violence. *Am. Socio. Rev.* 71, 95–122.
- Matsueda, Ross L., Drakulich, Kevin, Kubrin, Charis E., 2006b. Race and neighborhood codes of the street. In: Peterson, Ruth D., Krivo, Lauren J., Hagan, John (Eds.), *The Many Colors of Crime: Inequalities of Race, Ethnicity, and Crime in America*. New York University Press, pp. 199–220.
- Matza, David, 1967. *Delinquency and Drift*. Transaction Publishers.
- Mead, George Herbert, 1934. *Mind, Self and Society*, vol. 111 University of Chicago Press, Chicago.
- Meldrum, Ryan C., Young, Jacob TN., Hay, Carter, Flexon, Jamie L., 2012. Does self-control influence maternal attachment? A reciprocal effects analysis from early childhood through middle adolescence. *J. Quant. Criminol.* 28, 673–699.
- Muthén, L.K., Muthén, B.O., 1998–2015. *Mplus User's Guide*, seventh ed. Muthén & Muthén, Los Angeles, CA.
- Ojeda, Christopher, Hatemi, Peter K., 2015. Accounting for the child in the transmission of party identification. *Am. Socio. Rev.* 80, 1150–1174.
- Pardini, Dustin A., Fite, Paula J., Burke, Jeffrey D., 2008. Bidirectional associations between parenting practices and conduct problems in boys from childhood to adolescence: the moderating effect of age and African-American ethnicity. *J. Abnorm. Child Psychol.* 36, 647–662.
- Paternoster, Raymond, Brame, Robert, 2000. On the association among self-control and analogous behaviors. *Criminology* 38, 971–983.
- Patterson, Gerald R., 1982. *Coercive Family Process*, vol. 3 Castalia Publishing Company.
- Pratt, Travis C., Cullen, Francis T., 2000. The empirical status of Gottfredson and Hirschi's general theory of crime: a meta-analysis. *Criminology* 38, 931–964.
- Pugh, Allison J., 2009. *Longing and Belonging: Parents, Children, and Consumer Culture*. University of California Press.
- Pugh, Allison J., 2014. The theoretical costs of ignoring childhood: rethinking independence, insecurity, and inequality. *Theor. Soc.* 43, 71–89.
- Ramaswami, Sridhar N., Srinivasan, Srinu S., Gorton, Stephen A., 1997. Information asymmetry between salesperson and supervisor: postulates from agency and social exchange theories. *J. Personal Sell. Sales Manag.* 17, 29–50.
- Rebellon, Cesar J., Manasse, Michelle E., Van Gundy, Karen T., Cohn, Ellen S., 2014. Rationalizing delinquency: a longitudinal test of the reciprocal relationship between delinquent attitudes and behavior. *Soc. Psychol. Q.* 77, 361–386.
- Rote, Wendy M., Smetana, Judith G., 2015. Acceptability of information management strategies: adolescents' and parents' judgments and links with adjustment and relationships. *J. Res. Adolesc.* 25, 490–505.
- Blodgett, Salafia, Elizabeth H., Gondoli, Dawn M., Grundy, Amber M., 2009. The longitudinal interplay of maternal warmth and adolescents' self-disclosure in predicting maternal knowledge. *J. Res. Adolesc.* 19, 654–668.
- Sampson, Robert J., Laub, John H., 1993. *Crime in the Making: Pathways and Turning Points through Life*. Harvard University Press, Cambridge, MA.
- Sampson, Robert J., Laub, John H., 2005. A life-course view of the development of crime. *Ann. Am. Acad. Polit. Soc. Sci.* 602, 12–45.
- Scarr, Sandra, 1992. Developmental theories for the 1990s: development and individual differences. *Child Dev.* 63, 1–19.
- Selig Todd, D., Little, James P., 2012. Autoregressive and Cross-lagged Panel Analysis for Longitudinal Data. *Handbook of Developmental Research Methods*. pp. 265–278.
- Simons, Ronald L., Chao, Wei, Conger, Rand D., Elder, Glen H., 2001. Quality of parenting as mediator of the effect of childhood defiance on adolescent friendship choices and delinquency: a growth curve analysis. *J. Marriage Fam.* 63, 63–79.
- Simons, Ronald L., Gordon Simons, Leslie, Harbin Burt, Callie, Brody, Gene H., Cutrona, Carolyn, 2005. Collective efficacy, authoritative parenting, and delinquency: a longitudinal test of a model integrating community- and family-level processes. *Criminology* 43, 989–1030.
- Simons, Ronald L., Gordon Simons, Leslie, Harbin Burt, Callie, Drummund, Holli, Stewart, Eric, Brody, Gene H., Gibbons, Frederick X., Cutrona, Carolyn, 2006. Supportive parenting moderates the effect of discrimination upon anger, hostile view of relationships, and violence among African American boys. *J. Health Soc. Behav.* 47, 373–389.
- Smetana, Judith G., 2008. It's 10 o'clock: do you know where your children are? Recent advances in understanding parental monitoring and adolescents' information management. *Child Development Perspectives* 2, 19–25.
- Smetana, Judith G., 2010. The role of trust in adolescent-parent relationships: to trust you is to tell you. In: Rotenberg, Kenneth J. (Ed.), *Interpersonal Trust during Childhood and Adolescence*. Cambridge University Press.
- Soenens, Bart, Vansteenkiste, Maarten, Luyckx, Koen, Goossens, Luc, 2006. Parenting and adolescent problem behavior: an integrated model with adolescent self-disclosure and perceived parental knowledge as intervening variables. *Dev. Psychol.* 42, 305–318.
- Stattin, Håkan, Kerr, Margaret, 2000. Parental monitoring: a reinterpretation. *Child Dev.* 71, 1072–1085.
- Steinberg, Laurence, Lamborn, Susie D., Darling, Nancy, Mounts, Nina S., Dornbusch, Sanford M., 1994. Over-time changes in adjustment and competence among adolescents from authoritative, authoritarian, indulgent, and neglectful families. *Child Dev.* 65, 754–770.
- Stouthamer-Loeber, Magda, 1986. Lying as a problem behavior in children: a review. *Clin. Psychol. Rev.* 6, 267–289.
- Sweeten, Gary, 2012. Scaling criminal offending. *J. Quant. Criminol.* 28, 533–557.
- Thomson, Elizabeth, Hanson, Thomas L., McLanahan, Sara S., 1994. Family structure and child well-being: economic resources vs. parental behaviors. *Soc. Forces* 73, 221–242.
- Thornberry, Terence P., Lizotte, Alan J., Krohn, Marvin D., Farnworth, Margaret, Jang, Sung Joon, 1991. Testing interactional theory: an examination of reciprocal causal relationships among family, school, and delinquency. *J. Crim. Law Criminol.* 82, 3–35.
- Thornberry, Terence P., Freeman-Gallant, Adrienne, Lizotte, Alan J., Krohn, Marvin D., Smith, Carolyn A., 2003. Linked lives: the intergenerational transmission of antisocial behavior. *J. Abnorm. Child Psychol.* 31, 171–184.
- Tilton-Weaver, Laoree, Kerr, Margaret, Pakalniskeine, Vilmante, Tokic, Ana, Salihovic, Selma, Stattin, Håkan, 2010. Open up or close down: how do parental reactions affect youth information management? *J. Adolesc.* 33, 333–346.
- Vaughan, Diane, 1998. Rational choice, situated action, and the social control of organizations. *Law Soc. Rev.* 32, 23–61.
- Ward, Jeffrey T., Boman IV, John H., Jones, Shayne, 2015. Hirschi's redefined self-control: assessing the implications of the merger between social-and self-control theories. *Crime Delinquen.* 61 (9), 1206–1233.
- Warr, Mark, 2007. The tangled web: delinquency, deception, and parental attachment. *J. Youth Adolesc.* 36, 607–622.
- Weiss, Laura H., Schwarz, J. Conrad, 1996. The relationship between parenting types and older adolescents' personality, academic achievement, adjustment, and substance use. *Child Dev.* 67, 2101–2114.