INCORPORATING ROUTINE ACTIVITIES, ACTIVITY SPACES, AND SITUATIONAL DEFINITIONS INTO THE SOCIAL SCHEMATIC THEORY OF CRIME

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Simons and Burt’s (2011) social schematic theory (SST) of crime posits that adverse social factors are associated with offending because they promote a set of social schemas (i.e., a criminogenic knowledge structure) that elevate the probability of situational definitions favorable to crime. The present study extends the SST model by incorporating the role of contexts for action. Further, the study advances tests of the SST by incorporating a measure of criminogenic situational definitions to assess whether such definitions mediate the effects of schemas and contexts on crime. Structural equation models using 10 years of panel data from 582 African American youth provided strong support for the expanded theory. The results suggest that childhood and adolescent social adversity fosters a criminogenic knowledge structure as well as selection into criminogenic activity spaces and risky activities, all of which increase the likelihood of offending largely through situational definitions. Additionally, there was evidence that the criminogenic knowledge structure interacts with settings to amplify the likelihood of situational definitions favorable to crime.


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**INTEGRATING** **ROUTINE** **ACTIVITIES**, **ACTIVITY** **SPACES**, **AND** **SITUATIONAL** **DEFINITIONS** **INTO** **THE SOCIAL** **SCHEMATIC** **THEORY** **OF** **CRIME**

How do past experiences influence an individual’s propensity to offend? This is a key theoretical question driving criminological theorizing. Most theories of individual offending attempt to identify the elements of criminal propensity and the mechanisms and processes whereby past experiences give rise to these characteristics. In their recently developed social schematic theory (SST), Simons and Burt (2011) propose social schemas to be the key theoretical mechanism that accounts for the effect of past experiences on criminal behavior.

SST emphasizes the role of several criminogenic social environments in shaping social schemas. In doing so, it integrates findings from a variety of traditions in criminology that evince the importance of social adversity in shaping criminality including those related to neighborhood conditions, parenting, and racial discrimination (e.g., Agnew 2006; Loeber & Farrington 2000; Sampson & Laub 1993; Tittle 1995; Unnever & Gabbidon 2011). What unites these seemingly disparate social influences, according to SST, is that all teach similar lessons about the future, social norms, and the nature of people and relationships. As such, learning is central, and SST can be thought of as a life-course learning theory. However, SST departs from the dominant learning theory in criminology in a number of ways. Primary among these is its focus on the *content* of learning rather than its form. Whereas Aker’s (1985) social learning theory emphasizes operant learning principles, SST shifts the focus to the messages or tenets implicit in the repeated patterns of interaction that occur in an individual’s social environment. Simons and Burt (2011) argue that criminogenic conditions such as harsh parenting, racial discrimination, and community disadvantage promote social schemas involving a hostile view of people and relationships, a preference for immediate rewards, and a cynical view of conventional norms. Further, they posit that these three schemas are interconnected and combine to form a criminogenic knowledge structure (CKS) that gives rise to situational interpretations legitimating or compelling criminal and antisocial behavior.
In their initial test of the theory, Simons and Burt (2011) found strong support for the SST model, as the identified social factors strongly influenced individuals’ social schemas, which in turn increased the likelihood of offending. Indeed, with one exception, the effects of all of the social factors they examined as well as sex/gender and prior offending were fully mediated by the CKS. Further support for the theory was provided by Simons and Barr (2012) who reported that much of the effect of romantic relationships on desistance is explained by a reduction in the CKS. In addition, Burt and Simons (2013) showed that racial discrimination increased the likelihood of offending through the CKS and that a resilience factor, racial socialization, reduced offending through its effect on the CKS.

Thus the initial support for SST is strong and promising. There are, however, two clear ways that this work can be extended. First, SST proposes that the CKS increases an individual’s probability of engaging in crime by making it more likely that situations will be perceived as justifying or requiring acts of law violation. Due to data limitations, prior tests of SST were unable to test the idea that the CKS influenced offending through definitions of the situation. With the addition of a measure of criminogenic situational definitions in the most recent wave of the Family and Community Health Study (FACHS), we are able to test the idea that criminogenic situational definitions are the mechanism through which CKS increases the likelihood of offending. This is the first aim of the present study.

In addition, in their initial presentation of the theory, Simons and Burt (2011) focused on the role of social environments as contexts for learning and development. As Wikström and colleagues (2012; Wikström & Sampson 2003) have noted, however, contexts are not only sites for development but also sites for action. Individuals bring their social schemas into various contexts, but schemas alone are not sufficient to motivate action. Actions, including crime, result from the combination of individual characteristics and situational cues. Moreover, individuals are not randomly placed in various contexts, but actively seek out certain contexts consistent their aims and preferences. Consistent with recent work, rather than viewing selection as a nuisance in modeling, we view it as an important mechanism and causal
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force (e.g., Wikström et al. 2012; Sampson 2012). Thus we examine whether individuals’ CKSs influence their likelihood of offending in part by influencing the contexts in which they choose to spend their leisure time (selection). In addition, we explore the idea that an individual’s CKS interacts with criminogenic contexts to amplify the likelihood of criminogenic situational definitions and, in turn, criminal behavior. This idea, as elaborated below, is that individuals with high CKSs are more likely to respond to situational inducements with crime than those with lower criminal propensity.

In sum, the purpose of this paper is both to elaborate SST and test this elaboration in a theory-sensitive research design. In doing so, we incorporate the role of social contexts both as sites for development and for action into the theoretical model. In addition, we test whether situational definitions serve as the mechanisms through which social schemas and contexts influence criminal behavior. In the following pages we discuss SST, focusing extra attention on the elaborated role of context as a site for action, drawing especially on insights and findings from situational action theory (Wikström et al. 2012), crime pattern theory (Brantingham and Brantingham 1984), and routine activities theory (Cohen & Felson 1979). We then test this model using several waves of panel data from a sample of several hundred African American young adults from the FACHS. Given its inclusion of measures of both developmental and interactional contexts, as well as a host of other strengths including its longitudinal design and measures designed to test SST, the FACHS is particularly well suited for evaluating the elaborated SST model under consideration.

Social Schemas and Situational Definitions

SST starts with the assumption that humans adapt to survive in their environments, and a significant part of this adaptation is cognitive. The theory assumes, consistent with a burgeoning body of work on human morality, that humans are born with innate capacities to be fair, cooperative, and sympathetic (e.g., Alexander 1987; De Waal 2006; Hauser 2006) as well as to be selfish, egoistic, and sometimes aggressive
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(Shermer 2004; Smith 2007). Rather than being born good, bad, or as empty vessels into which society pours its views of morality, SST assumes that we are born with the capacity (i.e., the wiring) to adapt our orientation to fit our environment. Humans have evolved to survive in a variety of contexts, which vary in the degree to which they are supportive and predictable versus hostile and dangerous and, thus, require different orientations and competencies (Belsky, Scholomer, & Ellis, 2012; Ellis et al. 2012). The emphasis here is on the fact that individuals adapt to survive, not necessarily to thrive, in the contexts in which they find themselves, and that egoistic, unkind, and criminal behavior can be incited by such adaptations. Given these assumptions, the theory’s focus is on the role of social environments—especially persistent and memorable ones—in blunting humans’ innate capacity to be sympathetic, fair, and cooperative into an orientation that that is cautious, self-defensive, selfish, and even hostile.

From this perspective, offenders do not engage in criminal behavior despite their “morality” or commitment to conventional norms. Rather, individuals offend because their interpretations of situations shaped by past experiences lead them to believe that criminal acts are required or justified by the exigencies of the situation. This perspective is supported by evidence that most individuals do not believe that their illegal actions are evil or immoral, but consider their (mis)deeds to have been compelled by the situation (e.g., Black 1998; Katz 1988). Thus, crimes result when individuals come to define situations as requiring or justifying aggression, cheating, or coercion. Undergirded by these insights, SST aims to explain the process—the underlying mechanisms—that explain individual differences in situational definitions compelling or justifying crime, which are referred to as criminogenic situational definitions.

Drawing on insights from information processing theories in cognitive psychology (e.g., Dodge & Pettit 2003) and social learning theories in criminology (e.g., Akers 1985), Simons and Burt (2011) emphasize the primary role of persistent or memorable social experiences in shaping situational definitions. As noted previously, the emphasis in SST is on the content of learning. Whereas the dominant learning theory in criminology, Aker’s (1985) social learning theory, focuses on the process of learning, SST focuses
more on the lessons inherent in the reoccurring interactions that comprise an individual’s existence. As Simons and Burt (2011) proposed, these lessons are stored as social schemas, which are cognitive representations of the patterns and messages from past interactions, which link social stimuli to future behavior through their effects on situational definitions (see Crick & Dodge 1994). Individuals’ social schemas are abstract principles and dispositions that specify the meaning and salience of various social stimuli and the probable consequences of various action alternatives (Baldwin 1992; Crick & Dodge 1994). Social schemas make defining and responding to situations both more efficient and more successful as they suggest which cues are worth noticing, what they mean, what responses are expected or necessary, and the likely outcomes of various lines of action. Importantly, social schemas are durable and transposable (Bourdieu 1990; Sallaz & Zavisca 2007), though they are malleable in response to changes in recurring patterns of interaction (Michelson, Kessler, & Shaver, 1997; Simons & Burt, 2011).

Focusing on criminal acts, Simons and Burt (2011) propose that various social factors identified in past research as strong predictors of criminal behavior increase an individual’s propensity for crime because they foster social schemas that increase the likelihood of situational definitions conducive to crime. Offenders are more likely than their conventional counterparts to have experienced social environmental difficulties and challenges, such as those related to community disadvantage, inept parenting, criminal victimization, and racial discrimination. What unites these seemingly disparate social factors is that all impart messages about the supportiveness and predictability versus the hostility and unpredictability of the world in a manner that fosters schemas related to crime. The latter environments nurture a view of the world as harsh and dangerous, where delayed rewards do not predictably materialize, people are untrustworthy, and social rules and punishments do not apply to everyone equally. According to SST, these are fundamental lessons that are internalized as criminogenic social schemas that promote criminogenic definitions of the situation.
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Integrating insights from prominent theories of crime and research evidence, SST identifies three key criminogenic schemas: hostile views of relationships (Anderson 1999; Dodge 2006), immediate gratification (or discounting the future; e.g., Gottfredson and Hirschi 1990; Wilson & Herrnstein 1985; Wikström & Trieber 2007), and disengagement from conventional norms (e.g., Akers 1985; Hirschi 1969). Simons and Burt (2011: pp. 556-561) argued that because these schemas are rooted in the same set of unpredictable and harsh social conditions, which convey similar messages about the value of delayed gratification, the nature of relationships and benevolence of others, and the wisdom of following conventional norms, these three schemas are mutually reinforcing and operate in tandem. Specifically, SST proposes that these schemas coalesce into a higher-order knowledge structure that incites criminogenic situational definitions: “It is not any one schema that predicts an individual’s actions in a situation; rather, it is the dynamic interplay of the constellation of relevant schemas that is important” (Simons & Burt 2011: 561). This higher-order knowledge structure, referred to as a criminogenic knowledge structure (CKS), exists on a continuum. Individuals at the low end presumably experienced consistently supportive, predictable, fair environments, in general, and develop benign views of relationships and see the value of delayed gratification as well as the wisdom of following conventional rules. At the other (high) end are individuals who have learned to view of the world as harsh, unpredictable, unforgiving, and unjust, and thus are more likely to define situations as justifying or requiring criminal behavior (Burt & Simons 2013).¹

In sum, in their initial presentation of SST, Simons and Burt (2011) proposed that past social experiences influence individuals’ criminality through the messages they convey about the hostility, predictability, and fairness of the world which are stored in a CKS. Central to this argument is the role of criminogenic situational definitions, which are proposed to mediate the effects of the CKS on crime.

¹ There is a shared aspect to schemas as individuals who inhabit similar social positions will have analogous experiences and thus develop comparable constellations of schemas. The consequence of the similar experiences and comparable schemas among individuals is similar interpretations of social interactions, expectations, and lines of action (Simons & Burt 2011). This aspect of shared experiences shaping similar worldviews is central to cultural sociology, and, in particular, the constructs of cultural frames (e.g., Lamont & Small 2008; Snow & Benford 1992) and cognitive landscapes (Sampson & Wilson 1995).
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Although in their initial test of SST, Simons and Burt (2011) found strong support for their theoretical model, the mediating role of criminogenic situational definitions was assumed but not tested due to data limitations (the absence of a measure). Thus, they found that adverse community conditions, racial discrimination, and harsh parenting increased the risk of crime by increasing affiliation with delinquent peers and the CKS. The effect of affiliation with delinquent peers on offending was, like sex/gender and prior delinquency, fully mediated by the CKS. Indeed, with the exception of a small, but significant direct effect of racial discrimination on offending, the effect of all of the social factors was fully mediated by the CKS. In addition, Simons and Burt (2011) also showed that changes in exposure to social conditions was associated with changes in in the social schemas, supporting the notion that schemas are durable and transposable but also malleable in response to changes in social conditions. Two other studies that tested SST have also provided support for the theory. As noted, SST asserts that a persistently supportive environment can reduce an individuals’ CKS. Consistent with this idea, Simons and Barr (2012) showed that much of the effect of supportive romantic relationships on criminal desistance was explained by a reduction in the CKS. A second study by Burt and Simons (2013) found that the bulk of the effect of racial discrimination on increased offending was through the CKS and that racial socialization provided resilience to the criminogenic effects of racial discrimination by buffering the effect of racial discrimination on the CKS as well as the effect of the CKS on crime.

Although these initial tests of SST provide clear support for much of the theoretical model, the role of a key mechanism in the theory—criminogenic situational definitions—has not been tested. Addressing this gap is the first goal of the present study. Similar to Wikström and colleagues’ (2012) theory, SST considers two types of situational definitions to be criminogenic. The first involves perceptions of provocation or threat. Crime is more likely to be viewed as justified or necessary when individuals perceive danger to their persons or property (physical threats) as well threats to their status, self- and social-esteem, or reputation (social/psychological threats). The latter includes, for example, perceptions of disrespect, which may be
indirectly related to physical safety in some milieus (e.g., Anderson 1999). These definitions might involve, for example, a perceived threat, slight, or injustice that requires a forceful reaction.

The second category of criminogenic situational definitions involves perceptions of opportunity. Individuals may, for example, discern an opportunity for a quick reward or an immediate benefit that is justified or excused by their views of the harshness and unpredictability of the social and physical world. Such perceptions tend to be associated with positive affect and excitement and increase the chances of engaging in a criminal act in order to satisfy a need or want (Wikström et al. 2012). When situational cues are interpreted in such a way that the actor sees a justified or compelling opportunity to get over on someone or to obtain a valued resource by bending the rules a bit, crime is more likely. Questions tapping into criminogenic situational definitions were incorporated in the most recent wave of the FACHS data in order to test SST. As such, we provide the first test of the full SST model with criminogenic situational definitions in the context of a theory-sensitive research design.

The SST model can also be extended in another important way. As scholars have pointed out, social environments are not only contexts for learning and development, but also “contexts for action” (Wikström & Sampson 2003). Context for action arguments are concerned with the immediate effects of context: the way that the characteristics of an area influence the behavior of the actors operating within it (Wikström et al. 2012). Although social schemas may specify the import and meaning of stimuli and the intentions and probable actions of actors in various situations, such schemas have no effect on their own but only operate in response to situational stimuli. In the initial presentation of SST, Simons and Burt (2011) only theorized about the role of contexts for development. Below we elaborate the model to include contexts for action, drawing on Brantingham and Brantingham’s (1984) crime pattern theory, Wikström’s (2006; Wikström et al. 2012) situational action theory, and routine activities theory (Cohen & Felson 1979; Osgood,Wilson, O’malley, Bachman, and Johnston, 1996). This is followed by a test of the elaborated SST.
Social Environments as Contexts for Action

Given the predominance of contexts for development theorizing in criminology, contextual research has centered almost exclusively on residential neighborhoods (but see, Bernasco et al. 2013; Wikström et al. 2010). While this focus may be warranted during the crucial formative years, it ignores the fact that adolescents and adults spend considerable amounts of leisure time outside of their residential neighborhoods (e.g., Brantingham & Brantingham 2008; Weerman et al. 2013; Wikström et al. 2012). Context for action theorizing, in particular, requires a shift in focus to broader contexts with the recognition that as children age they gain increasing mobility and freedom, “exerting greater agency in their selection of social environments and greater autonomy in interacting with them” (Wikström et al. 2012: 46; see also Osgood, Anderson, & Shaffer 2005). Thus context in people’s lives as it relates to crime is not limited to residential neighborhoods, but requires a wider consideration of patterns of movement across space at different times, and this is particularly true of increasingly mobile adolescents and young adults who move about in space to hang out with their peers.

Brantingham and Brantingham’s (1984; 2008) crime pattern theory provides a useful framework for viewing context outside of the residential neighborhood. Their theory highlights routine patterns of travel across space and time. Individuals have a range of daily activities that are concentrated around various “activity nodes,” such as home, school, work, entertainment, and shopping and develop “routine movement patterns,” which include the usual path between these activity nodes. Brantingham and Brantingham (2008: 84) introduce the concept of activity spaces, defined as the “set of normal nodes and the normal paths between them.” This concept links the individual to the contexts he or she consistently spends time in, many of which are outside their residential neighborhood. In doing so, it facilitates the recognition that individuals living in the same residential neighborhood often spend much of their daily routines in very different settings and that individuals from different residential neighborhoods can share settings due to overlapping activity spaces (Brantingham & Brantingham 1984; Wikström et al. 2012).
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Activity Space and Risky Activities

Brantingham and Brantingham’s (1984; 2008) concept of activity spaces provides a framework for distinguishing between residential neighborhoods as contexts for development and criminogenic activity spaces as contexts for (criminal) actions. Their discussion of activity spaces focuses upon a person’s daily activities as they unfold across space. Building upon their approach, we view interactional settings or action contexts as consisting of two components that influence the probability of criminal acts. The first involves what individuals are doing and the second involves the social and cultural characteristics of the space where they are doing it. To be sure, activities and activity spaces are related; however, we differentiate them because they are distinguishable and likely have independent influences on criminogenic definitions. After all, one can attend a rowdy party in an area high in social control and watch a movie or play charades in an area that is dangerous and where deviant behavior is prevalent. Additionally, while activities and spaces both influence the chances of crime through their effects on situational definitions involving provocation, threat, or criminal opportunity, the two constructs do so in different ways.

Risky activities increase the probability of criminogenic situational definitions to the extent that they include, by their nature, a degree of disinhibition and spontaneity and involve interaction within a boisterous crowd of strangers. Using these criteria, activities such as bar hopping, frequenting strip clubs, hanging out in a pool hall, and getting drunk at a large sports event are examples of risky activities. For instance, hanging out in a bar with a throng of intoxicated, animated strangers occasions events such as someone cutting in line to order a drink, a socially insensitive remark, a purse being left on a bar stool, or a patron flashing a large sum of money and then stepping into the alley for a smoke. On the other hand, activities such as going to a movie, eating out in a restaurant, watching television at a friend’s house, or attending a party for close acquaintances would be considered low risk activities as they rarely involve events entailing provocations, threats, or criminal opportunities.
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While the nature of an activity directly influences the probability that it will lead to social encounters favorable to crime, activity spaces contribute to criminogenic situational definitions by dictating the norms and social controls that govern social encounters within an area regardless of activity. Consistent with insights from Wikström et al. (2012) and drawing on cultural (e.g., Anderson 1999), structural/control (e.g., Sampson 2012; Shaw and McKay 1942), and routine activities theories (Cohen & Felson 1979; Felson & Cohen 1980; Osgood et al., 2005), we view settings as criminogenic as a function of their moral norms and the extent of formal and, more importantly, informal social control. The moral norms of an area as they relate to crime are instantiated in the prevalence of crime and deviance and the existence of a street culture. Social control is indicated by the willingness of individuals to intervene in conflicts when someone is breaking the law or conventional norms (Sampson, Raudenbush, & Earls. 1997). Thus, areas are considered criminogenic when the norms support deviant behavior and there is low social control. Such settings increase the likelihood of situational definitions involving provocations, conflict, and criminal opportunity, thereby making crime more likely.

Selection into Settings

An individual’s routine activities and activity space are not, of course, a connection of random activity nodes. People do not indiscriminately end up at an opera house instead of a strip club. Instead, selection processes are operative; individuals select themselves into certain settings as a result of their preferences. "Selection is a ‘kinds of people in kinds of settings’ question," and as several scholars have recently lamented, much prior work treats selection as a bias to be controlled when examining contextual influences rather than as an important causal force (Wikström et al. 2012:37; Sampson 2012). Heeding these critiques, we treat self-selection not as a bias but as an important explanatory factor. Individuals develop

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2 Of course other factors are at play such as structural and cultural constraints. While my preferences may lead me to elect to spend my leisure time at a beach side mansion in Malibu, unfortunately, this is not a realistic option given my monetary resources (or lack thereof). Likewise, many teenagers may prefer to hang out in over 21 clubs, but only some are able to satisfy this preference (with a fake id, or social connections).
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personal characteristics and preferences that influence their participation in various settings, which are differentially criminogenic. A full theoretical account of the environment on individual actions, then, requires incorporating the role of context as a site for development and action and the role that selection plays in linking the two. Wikström and Sampson (2003: 127) argue, correctly in our view, that “what has been missing [from criminological theory] is a concept that directly links community context to individual behavior and actions…” We believe that the CKS provides such a linkage.

Individuals with high CKSs are attracted to risky activities and criminogenic activity spaces. In such settings, they can engage in deviant behavior with friends unimpeded by guardianship or conventional morality, which facilitate criminogenic definitions of the situation. Thus, in addition to its direct effect on criminogenic situational definitions, the CKS has an indirect effect on such definitions through selection into criminogenic settings. Importantly, selection does not render the setting irrelevant. As we have noted, actions are in response to situational stimuli. Individuals enter into situations with various goals (selection and motivation), but revise those goals and act in light of situational factors (i.e., provocations, threats, opportunities). Thus, while we expect that part of the effect of risky activities and criminogenic activity spaces on situational definitions is a function of the CKS, part of this effect is due to the features of the setting itself.

Moreover, we expect that the CKS and the setting interact in shaping situational definitions. Individuals with high CKSs are more likely to attend to, encode, and respond to criminogenic features of settings and therefore define those settings as compelling or justifying crime than individuals with lower criminal propensity. Thus, given the same situational stimuli—a shove in a bar—individuals with high CKS are more likely to respond with crime—assaulting the pusher—than those with low CKS. Indeed, as Wikström and colleagues (2012) have pointed out, individuals with low criminal propensity often do not even perceive threats or criminal opportunities in the first place.
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Summarizing our context for action arguments, we recognize that individuals act and react in settings. Individuals’ CKSs influence their participation in settings that vary in criminogenic features (namely, activities, moral norms and social control); thus, the CKS has an indirect effect on situational definitions conducive to crime (and thus crime itself) through selection into criminogenic spaces and risky activities. Additionally, criminogenic spaces and risky activities directly influence criminogenic situational definitions (and thus crime). Finally, the CKS and criminogenic spaces and risky activities interact such that those with high CKSs are more likely to define features of criminogenic spaces and risky activities as conducive to crime than those with a low CKS, and, thus, are more likely to engage in crime.

CURRENT STUDY

The current study tests this elaborated version of SST, which is presented in Figure 1. As shown, our measures of social adversity focus upon the three developmental contexts—quality of parenting, community context, and racial discrimination— that were included in the analyses reported by Simons and Burt (2011). We expect that these key contexts for development—as well as sex/gender and past offending—influence individuals’ CKSs. Contexts for development arguments are grounded in the idea that individuals adapt to their environments; thus we expect that persistent exposure to these environments (operationalized by combining waves III, IV, and V) shapes the CKS measured at waves V and VI. We hypothesize that the CKS, in turn, increases the likelihood of criminogenic situational definitions directly, as well as indirectly through selection into risky activities and criminogenic activity spaces (measured at wave VI). Risky activities and criminogenic activity spaces, in turn, are expected to positively influence criminogenic situational definitions. Additionally, we predict that the CKS interacts with criminogenic contexts and amplifies their effects on criminogenic situational definitions. Finally, we hypothesize that situational definitions are strongly associated with and fully mediate the effects of these factors on crime.
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The model is tested using waves III – VI of the Family and Community Health Study (FACHS), an ongoing investigation of the life course trajectories of several hundred African American youth and their families. The FACHS is particularly well suited for testing the SST model. First, unlike most data sets, the FACHS data has measures of both contexts for development and action in a longitudinal design. Moreover, while many criminological theories emphasize the relevance of situational states prior to the commission of crime, such as definitions, these states are invariably unmeasured given data limitations. The latest wave of the FACHS data includes a measure of situational definitions designed to test SST. Thus, the FACHS has a number of strengths that make it quite apposite for testing the SST model. To be sure, the nature of the data, especially the time intervals between waves, precludes our drawing causal connections for the observed associations. Thus the analyses that follow should be viewed as a preliminary investigation concerned with establishing whether the basic pattern of associations is consistent with our elaboration of SST.

METHOD

DATA
To test the proposed model, we utilized the latest 4 waves of data from the Family and Community Health Study (FACHS), an ongoing investigation of the life course trajectories of several hundred African American youth and their families, all of whom were living in Iowa or Georgia at the initiation of the study. The FACHS was designed to capture the diversity of African American families and the variety of communities in which they live. Block groups (BGs) were used to identify neighborhoods in Iowa and Georgia that varied on demographic characteristics, particularly racial composition (percent African American) and economic level (percent of families living below the poverty line). These BGs (259 in total) were identified using 1990 census data. Families living within the chosen BGs were randomly selected and recruited by telephone from rosters of all African American families who had a fifth grader (the target child) in the public school system (Gibbons et al. 2004; Simons et al. 2002).
The first wave of data collection began in 1997-1998, and follow-up interviews with the target children and their family members were conducted every 2-3 years thereafter. The current study utilizes target child data from the third through sixth waves of data, collected in 2001-2002, 2004-2005, 2007-2008, and 2010-2011, respectively. These waves of data capture information from mid-adolescence at wave III through early adulthood at wave VI. Of the 889 targets interviewed at wave I, 699 (78.6% of the original sample) participated more than a decade later at wave VI.

If targets were unable or unwilling to be interviewed at any given wave, they were not removed from the study; rather, they were contacted for their participation at subsequent waves. The analytic sample, then, consists of the 623 individuals (369 women and 254 men) who provided complete data at wave VI and at least one earlier wave, most of whom (92.13%) provided complete data across all four waves utilized here. There has been little evidence of selective attrition over the course of the study (e.g., Simons et al. 2011). Although when compared to earlier waves, a higher percentage of the Wave VI respondents were female and were slightly less delinquent, there were no significant differences between participants and non-participants with regard to community measures, family structure, or parenting practices at earlier waves.

PROCEDURES

To enhance rapport and cultural understanding, African American university students and community members, all of whom received training in the administration of the self-report instruments, served as field researchers to collect data from the families. At each wave, the surveys were administered in the respondent’s home and took an average of 2 hours to complete. In both waves III and IV, the instruments were presented on laptop computers. Questions appeared in sequence on the screen, which both the researcher and participant could see. The researcher read each question aloud and the participant entered an anonymous response using a separate keypad. Because many of the instruments administered at waves V
and VI included questions regarding illegal behavior or potentially embarrassing sexual activities, audio-enhanced, computer-assisted, self-administered interviews (ACASI) were used to ensure further anonymity. Using this procedure, the respondent sat in front of a computer and responded to questions as that were presented both visually on the screen and auditorily via earphones.

MEASURES

Our general approach was to use multiple indicators of constructs when available. Given the complexity of our model, however, we were not able to treat these multiple measures as indicators of latent constructs. Rather, when multiple scales were available for a particular construct, they were standardized and summed to form a composite measure of the variable. Reliability of these composite constructs was assessed using Nunnally’s (1978) formula for calculating the reliability of a linear combination of measures. As described below, these coefficients were used in our structural equation models to correct for attenuation in associations between constructs due to measurement error. Notably, SEM cannot be used to assess quality of measurement when composite measures are used in place of latent constructs. Two assumptions are especially important when composite measures are used. First, the subscales used to assess a particular construct need to load as a single factor and, secondly, they should show similar associations with other variables in the model. We tested these assumptions prior to performing our SEM analyses and they were met for each of our composite measures.

Dependent Variable

Crime. Respondents’ engagement in crime was assessed at wave VI using self-reports on a series of questions regarding how often during the preceding year they had engaged in 11 illegal acts, including physical assault, carrying a hidden weapon, pulling a knife or gun on someone, shooting or stabbing someone, and breaking into a building or house. Responses for each act were dummy coded (1 = yes, engaged in act, 0 = did not engage in act) and then summed at each wave, resulting in a count indicator of the number of

3 All measures can be found in Appendix A.
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criminal acts in which the respondent participated in the previous year ($alpha = .78$). At wave VI, the majority
(80%) of respondents reported committing zero crimes. Among those who committed at least one offense,
approximately 48% reported engaging in 2 or more offenses, representing significant variation in individual offending.

The control for prior delinquency is also a variety count of acts committed in the prior year created by combining youth reports at waves III and IV. The items were gleaned from the conduct disorder section of the Diagnostic Interview Schedule for Children, Version 4 (DISC-IV; American Psychiatric Association, 1994). Respondents answered a series of questions regarding how often during the preceding year the respondent engaged in 15 antisocial acts such as shoplifting, physical assault, setting fires, vandalism, burglary, and robbery (for more detail, see Simons & Burt 2011). Although based on a different instrument than the outcome measure, this measure was selected because it captures offending prior to the measurement of the CKS in the model. (It is worth noting that the pattern of results are identical whether an equivalent measure of offending is used from wave V and without a control for prior offending.)

Adolescent Socialization

Our analyses are organized by our proposition that it is persistent exposure to particular social contexts during late childhood and adolescence that shapes criminogenic schemas (Simons and Burt, 2011). For these reasons, we average the scores from waves III, IV, and V (ages 15.5-21.5) to form measures of the developmental contexts proposed to give rise to a criminogenic knowledge structure.

Supportive Parenting. We formed a composite measure of supportive parenting that assessed the various components of effective parenting specified by family sociologists and developmental psychologists (Simons, Simons, & Wallace, 2004). The instruments used in creating the composite parenting measure across waves III through V were adapted from scales developed for the Iowa Youth and Families Project (Conger & Elder, 1994) and were the same as those used by Simons and Burt (2011). Responses for all instruments were coded such that higher scores correspond to more supportive parenting. Target
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respondents answered 9 items at waves III and IV and 6 items at wave V concerning parental warmth in the past year (e.g. “During the past 12 months, how often did your [Primary Caregiver] let you know s/he really cares about you?”). Cronbach’s alpha for the warmth scale was .90 at wave III, .91 at wave IV, and .89 at wave V. Target respondents answered 14 items at waves III and IV and 4 items at wave V concerning parental hostility in the past year (e.g. “During the past 12 months, how often did your [Primary Caregiver] criticize you or your ideas?”). Cronbach’s alpha for the hostility scale was .81 at wave III, .83 at wave IV, and .65 at wave V.

In addition to parental warmth and hostility, both parents and target youth answered questions about effective discipline. At wave III, target respondents also answered 2 questions about their primary caregiver’s use of positive reinforcement (e.g. “When you do something your [Primary caregiver] likes or approves of, how often does s/he let you know s/he is pleased about it?”). Cronbach’s alpha for the positive reinforcement scale was .58. At waves III and IV, both targets and primary caregivers also answered 4 questions about their ability to solve problems (e.g. “How often do the same problems between you and your [Primary Caregiver] come up again and again and never seem to get solved?”). Cronbach’s alpha was .66 for targets and .56 for primary caregivers at wave III and .62 for targets and .55 for primary caregivers at IV. Finally, at wave III, both targets and primary caregivers answered 5 questions about inductive reasoning, or the extent to which primary caregivers provide explanations for their decisions (e.g. “When you don’t understand why your [Primary Caregiver] makes a rule for you to follow, how often does s/he explain the reason?”). Cronbach’s alpha was .86 for targets and .77 for primary caregivers. The inductive reasoning, problem solving, and positive reinforcement scales were combined to form a composite measure of effective discipline.

After standardizing and averaging scales across waves in order to tap into the consistency of parental support over time, we performed CFA to establish that the three parenting subscales (warmth, hostility, and effective discipline) loaded on a common construct. Factor loadings were all above .5. Further, the
various subscales all showed significant association with CKS. Hence, we standardized and summed the subscales to form a composite indicator of supportive parenting. The reliability of this composite measure was .81 and, like the other composite measures described below, was calculated using Nunnally’s (1978) formula for the reliability of a linear combination of measures.

Community Context. For the sake of parsimony, we followed the example of Simons and Burt (2011) and utilized a composite measure of community to assess community adversity. Our composite measure was based on 3 subscales: community crime, criminal victimization, and (lack of) collective efficacy. The measure of community crime was assessed at waves III through V with a revised version of the community deviance scale developed for the Project on Human Development in Chicago Neighborhoods (PHDCN; Sampson, Raudenbush, & Earls, 1997). The measure is concerned with how often various criminal acts occur within the target’s residential community. It includes behaviors such as fighting with weapons, robbery, gang violence, and sexual assault. Responses ranged from 1 “Never” to 3 “Often,” and Cronbach’s alpha was .76 at wave III, .87 at wave IV, and .82 at wave V. The measure of criminal victimization was based on targets’ responses to 2 items at waves III through V. These items assessed the number of times that someone in “the neighborhood surrounding where you lived for most of the past 12 months used violence, such as in a mugging, fight, or sexual assault, against you or against any member of your household?” and “against one of your friends?” Intercorrelations for these items ranged from .62 to .83 across waves.

Finally, consistent with Sampson, Raudenbush, and Earls (1997), collective efficacy was assessed with 2 subscales, one measuring social cohesion and one measuring informal social control. Community social cohesion was assessed with a 9-item revised version of the Social Cohesion and Trust Scale developed for the PHDCN (Sampson, et al., 1997) that was administered to the primary caregivers at wave III and targets at waves IV and V. The items focus on the extent to which individuals in the area interact, trust, and respect each other and share values (e.g. “People in your neighborhood do not share the same values” and “People in this neighborhood can be trusted”). Cronbach’s alpha for the social cohesion scale was .80 at wave III, .78
at wave IV, and .80 at wave V. The social control scale, also answered by primary caregivers at wave III and targets at waves IV and V, consists of 6 items (also adapted from the PHDCN; Sampson, Raudenbush, and Earls, 1997) that assess the extent to which individuals in the neighborhood would take action if various types of deviant behavior were evident. For example, items included the following: “If some children were spray-painting graffiti on a local building, how likely is it that your neighbors would do something about it?” and “The adults in the area would not hesitate to call the authorities if a group of teens were fighting with each other.” Cronbach’s alpha was .82 at wave III, .85 at wave IV, and .82 at wave V. Both the community cohesion and social control indices were reversed coded, standardized, and averaged to form a composite indicator of low collective efficacy.

After standardizing and averaging scales across waves in order to tap into the consistency of community context over time, the 3 community subscales (crime, victimization, low collective efficacy) were then standardized and summed to form a composite indicator of criminogenic community context. This variable was then logged to reduce positive skew. Confirmatory factor analysis indicated that the three measures formed a one-dimensional scale, and each of the subscales showed a significant association with CKS. Using Nunnally’s (1978) formula for calculating the reliability of a linear combination of measures, reliability for this composite measure was .76.

Racial Discrimination. At waves III through V, target respondents completed 13 items from a revised version of the widely used and validated Schedule of Racist Events (SRE; Landrine & Klonoff, 1996). The SRE was originally designed for African American adults; the FACHS researchers revised the items to make them more appropriate for youth from late childhood through emerging adulthood. The items assess the frequency (1 “Never” to 4 “Frequently”) with which various discriminatory events were experienced during the past year (e.g. “How often has someone said something insulting to you just because of your race or ethnic background?” and “How often has someone suspected you of doing something wrong just because of your race or ethnic background?” see Burt et al. 2012 for a list of items). Cronbach’s alpha was .91 at wave
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III, .91 at wave IV, and .90 at wave V. The three scales were averaged across waves to create a measure of persistent discrimination throughout late adolescence (α = .72).

Criminogenic Knowledge Structure
SST proposes that the CKS consists of three interrelated schemas that come together to form a higher order knowledge structure. Hence, three subscales (immediate gratification, low commitment to conventional norms, and a hostile view of relationships) are used to assess the CKS. All subscales were assessed at both waves V and VI. (For a list of all of the items in the CKS, see Burt & Simons 2013).

The first schema, immediate gratification, was assessed via 16-items that combine Kendall and Williams’ (1982) inventory of self-constraint (e.g. “You would rather have a small gift today than a large gift tomorrow”) and Eysenck and Eysenck’s (1977) scale of risk-taking tendency (e.g. “Life with no danger would be dull for you”). The items tap into respondents’ impulsivity and short-sightedness, essential elements in Gottfredson and Hirschi’s (1990) self-control theory. Cronbach’s alpha was .75 at both waves V and VI, and the reliability across waves was .76. Disengagement from conventional norms was assessed via 10-items that are similar to those used in Wikström et al.’s (2010) moral values scale. Respondents were asked to indicate the degree to which they think it is wrong for someone their age to engage in deviant acts, such as hitting someone in order to hurt them, stealing or shoplifting, lying, and selling drugs. Cronbach’s alpha was .86 at wave V and .82 at wave VI. The reliability across waves was .82. Finally, the 18-item hostile view of relationships subscale was designed to measure commitment to a hostile attribution bias (Dodge, 2006) and consists of two dimensions: a cynical view of others’ intentions (e.g. “When people are friendly, they usually want something from you”) and a belief that aggression is often necessary in order to avoid exploitation (e.g. “Being viewed as tough and aggressive is important for gaining respect”). Cronbach’s alpha was .90 at wave V and .89 at wave VI. The reliability across waves was .75.

Consonant with past studies (Burt & Simons, 2013; Simons & Burt, 2011; Simons & Barr, 2012), confirmatory factor analyses indicated that the immediate gratification, disengagement from conventional
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norms, and hostile view of relationships scales loaded on a common factor with all loadings greater than .50. Also consistent with Simons and Burt (2011), the three subscales showed comparable associations with other study variables including the developmental contexts, risky activities, activity spaces, and crime. Finally, consistent with SST’s assertion that the three schemas are mutually reinforcing and operate in tandem, preliminary models using these three indicators as correlated traits rather than a latent construct fit the data worse than those utilizing the latent construct. Therefore, the scales were standardized and summed to form a composite measure of criminogenic knowledge structure. The resulting measure provides an indicator of criminogenic knowledge structure during the transition to young adulthood (waves V and VI). The reliability of this composite measure using Nunnally’s formula for a linear combination of measures was .88.

Criminogenic Settings

Risky Activities. At wave VI, we assessed the extent to which respondents spend their free time in a range of potentially risky activities. Respondents were asked to think about how they “spend [their] time on a typical weekend evening or night” and then to indicate how often (1=never, 5=weekly) they engage in each of 19 activities (e.g., go bowling, go to a movie, watch TV or listen to music at a friend’s house). A focus group with young African American adults was used to generate the list of activities. Eight of these activities, including bar hopping, clubbing, hanging out at pool halls or strip clubs, and drinking or getting high, were identified as risky activities that increase the probability of interactions involving provocation, threat, or criminal opportunity. These items were summed to form a measure of risky activities. Cronbach’s alpha for the 8-item index was .79. Due to right skew, we use the logged version of this variable in all models.

Criminogenic Activity Space. Following the questions regarding risky activities, respondents were asked to indicate which activity they do most often and the area of town in which they engage in said activity. This area indicates the respondents’ primary leisure activity space, about which they were asked to
answer a series of questions regarding its norms and social controls. Because we conceptualize activity spaces as criminogenic to the extent that they have low informal social control, a high incidence of criminal and deviant behavior, and a collective commitment to the street culture, respondents were asked about each of these components.

The first component, *lack of informal social control* was assessed with 6 items similar to those utilized in the community context measure (e.g. “Adults in the area would call the police if they saw someone breaking the law.”). Responses ranged from 1 “Very true” to 3 “Not at all true,” and Cronbach’s alpha for the index was .79. The second component, *criminal activity*, was also assessed via 6 items, each asking about the frequency of criminal and deviant behaviors that took place in the activity field and of which the respondent and his/her friends were a part. These criminal and deviant behaviors included things like fighting with a weapon, the selling of drugs, a sexual assault or rape, and a robbery or mugging. Responses ranged from 1 “Never” to 3 “Often,” and Cronbach’s alpha for the index was .85. Finally, *commitment to a street culture* was assessed via another 6 items that asked respondents how strongly they felt people in the activity field would agree with statements like the following: “People tend to respect a person who is tough and aggressive,” and “It is important to show other people that one cannot be intimidated.” Responses ranged from 1 “Strongly disagree” to 4 “Strongly agree,” and Cronbach’s alpha for the index was .94. In addition to these three subscales, respondents were asked 1 question concerning how often they hung out in “tough and dangerous” neighborhoods.

To form a composite measure of *criminogenic activity spaces*, the low informal social-control, crime, and street culture subscales, along with the “tough and dangerous” frequency item, were standardized and then summed. Confirmatory factor analysis indicated that the three subscales loaded on a common factor with all loadings greater than .50, and reliability of this composite measure calculated using Nunnally’s formula was .94.
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Perception of the Situation
Criminogenic Situational Definitions. Situational definitions were assessed with 12 items designed to test SST at wave VI. Respondents were asked to indicate how often during the past year that they had encountered each of 12 different situations that have been described in ethnographic research as fostering violent and antisocial behavior (e.g., Katz, 1988; Collins, 2008). Half of the items tap into perceived provocations and threats (e.g. “When you are out and about, how often do you encounter situations where you feel the other people are not treating you with respect?”) and half relate to perceived opportunities for getting over someone or an easy score (e.g. “When you are out and about, how often do you encounter situations where you become aware that there is an opportunity to help yourself at some sucker’s expense?”). Responses ranged from 1 “Never” to 5 “This happens all the time.” Given that <5% of respondents indicated a 4 “Very often” or a 5 “This happens all the time”, responses were top-coded to range from 1 “Never” to 3 “Frequently.” These items were summed to form the measure of criminogenic definitions. Cronbach’s alpha was high at .90.

Control Variables. In all the models we present, the sex of the respondent is controlled. This variable is coded as 1 = female and 0 = male. Further, as indicated above, we control for prior offending at waves III and IV when predicting wave VI crime to assess the change in offending in light of persistent exposure to environments.4

Analytic Strategy

Structural equation modeling (SEM) was used to test our proposed model. Such an approach allows both for the estimation of substantive parameters simultaneously in the context of a full-information model and provides tests of significance for specific and general indirect effects. All analyses were conducted using the statistical program MPlus, Version 6.0 (Muthén & Muthén, 2010). Because our dependent variable, crime,

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4 We also estimated the model controlling for prior offending at wave V using the same instrument used to assess wave VI offending as well as without any control for prior offending. The pattern of results from these models are identical to that presented here and the former is presented in Appendix A.
is an overdispersed count measure, we utilized a negative binomial equation model to account for this non-normally distributed outcome. Further, rather than utilize latent variables, which would unnecessarily complicate an already complex and large model, we chose simply to treat the composite measures described above as observed and specify, rather than estimate, their measurement error (Muthén & Muthén, 2008; see Figure 3 for an example). With the exception of sex and crime, we adjust all variables in the model for error in this way.

To assess overall model fit, we utilize criteria for the comparative fit index (CFI) and root mean square error of approximation (RMSEA) proposed by Hu and Bentler (1999). A CFI greater than .95 and an RMSEA smaller than .05 indicate good model fit.\(^5\) To compare models during the model reduction process as well as paths constrained and unconstrained by gender, we conduct Chi-square difference tests using Satorra-Bentler Scaled Chi-Square with robust standard errors (Muthén & Muthén, 2012). Given the non-normality of our count outcome variable, the Satorra-Bentler Chi-Square with robust standard errors divides the Chi-square by a scaling correction factor to approximate the Chi-square under conditions of non-normality.

RESULTS

DESCRIPTIVE INFORMATION

Table 1 presents the means, standard deviations, and range for all study variables for the analytic sample. Also shown in this table are the zero-order correlations between variables. The number of criminal acts committed by respondents ranges from 0 to 10, with a mean of .46 at wave VI. At this later wave, the majority of respondents committed zero violent crimes. Roughly half (47.66\%) of those who committed any crimes, however, engaged in 2 or more different acts, representing significant individual variation in

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\(^5\) Given that the negative binomial estimator requires numerical integration, indirect effects and model fit statistics cannot be calculated. Hence, model fit indices and the calculation of indirect effects are based on a continuous model with a non-normality robust estimator (MLM). Such a model allows for our indirect effects to more closely approximate the effects in the negative binomial models. Indirect effects are calculated for the unconstrained model that includes paths from all adolescent predictors to all endogenous variables.
offending. As expected, the wave III/IV deviance and wave VI crime measures are significantly correlated at .19 ($p < .001$).

Other zero-order correlations among study variables are largely as expected. All variables are significantly correlated with the dependent variable, crime. Exclusive of prior crime, these correlations range from -.10 to .34. Further, all of the adolescent social-environmental variables are significantly related to adult criminogenic knowledge structure in the expected directions. Perhaps most importantly, however, criminogenic knowledge structure is significantly and positively related to both measures of criminogenic setting (risky activities: $r = .44$, $p < .001$; activity field: $r = .48$, $p < .001$) and to criminogenic definitions of the situation ($r = .53$, $p < .001$). Lastly, as expected, both risky activities ($r = .42$, $p < .001$) and activity field ($r = .45$, $p < .001$) are significantly associated with criminogenic definitions.

SEM RESULTS
Given that the model to be tested is an expansion of the SAT framework and of past work (Simons & Burt, 2011), we began our analyses with the full structural model. We then proceeded to improve model fit by dropping non-significant paths ($t < 1.5$) and by adding paths that were not part of the hypothesized model but were indicated in the modification indices to be significant. Given that Chi-square difference tests based on log likelihood values and scaling correction factors indicated that the model in which effects were free to vary by sex did not fit the data better than the constrained model ($\chi^2 = 22.26$, $p > .05$), Figure 3 displays the results of the best fitting model for the full sample. With few exceptions, this final model maps onto the hypothesized model fairly well. Although model fit indices are not available for the negative binomial model, the fit indices for the continuous model with the non-normality robust MLM estimator indicate that the model fits the data well (CFI = .996; RMSEA = .045).\(^6\)

\(^6\) We also compared this model to the fully saturated model using the Satorra-Bentler Scaled Chi-Square with robust standard errors. The nonsignificant Chi-square test ($\chi^2 = 6.819$, $p > .05$) indicates that the reduced model presented here fits no worse than the fully saturated model in which all paths are estimated.
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Given the complexity of this model, we progress through a discussion of the results in four stages. First, we focus on the left side of the model to explore the effects of persistent exposure to harsh, unpredictable environments on the development of a CKS. Doing so aids in our understanding of the developmental process whereby individuals acquire schemas conducive to crime. Second, we move toward the right side of the model to explore the extent to which criminogenic situational definitions mediate the impact of the CKS on crime. This mediating effect was explicitly hypothesized by Simons and Burt (2011) and is an essential, yet untested, element of SST. Third, keeping to the right side of the model, we examine the extent to which both criminogenic situational definitions and crime are a function of the characteristics of the setting. Hence, we discuss paths linking the CKS to risky activities and criminogenic activity spaces and those linking these two variables to both criminogenic definitions and crime. Finally, we examine if and how the CKS interacts with characteristics of the setting to enhance criminogenic definitions. We close out our presentation of results with a discussion of the mediation results.

With respect to the development of the CKS, Figure 3 shows that all of the adolescent social-environmental variables are significantly associated with criminogenic knowledge structure as predicted. Whereas both criminogenic community context and racial discrimination are positively associated with this knowledge structure ($\gamma = .235$ and $.103$, respectively), supportive parenting is negative in its association ($\gamma = -.269$). In addition to these socialization variables, both sex ($\gamma = -.223$) and prior delinquency ($\gamma = .112$) are significantly related to the CKS. Importantly, with the exception of prior delinquency, none of the adolescent social-environmental variables maintains a direct effect on crime in young adulthood. Rather, as shown in Tables 1 and 2 and as will be discussed in greater detail later, their effects are indirect, largely

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7 The models presented here contain some overlap with regards to developmental periods (that is, adolescence is measured as waves III through V, emerging adulthood as wave V, and early adulthood as wave VI. It should be noted that the pattern of findings in models with no overlapping waves is similar to that presented here. We opted to present results for the overlapping waves (1) given the increased sample size it afforded and (2) to capture the process of developmental change over time.
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through criminogenic knowledge structure. Such findings are consonant with those of Simons and Burt (2011) and consistent with the SST model that past experiences influence future offending through their effects on cognitive schemas about the value of delaying gratification, the wisdom of following conventional rules, and the trustworthiness and intentions of others.

SST predicts that criminogenic situational definitions account for the link between the CKS and offending. That is, the development of a CKS is expected to enhance perceptions of provocation, threat, and opportunity, thereby increasing the likelihood of crime. Consistent with this idea, Figure 3 reveals that the robust link between the CKS and crime can be explained largely by criminogenic definitions of the situation. As can be seen on the right side of the model presented in Figure 3, the CKS is positively associated with criminogenic definitions ($\beta = .346, p < .001$), which, in turn, is positively associated with crime ($\beta = .475, p < .01$). As shown in Table 2, this indirect effect is highly significant, and renders the direct effect from criminogenic knowledge structure to crime nonsignificant.

SST proposes that criminogenic situational definitions are a function both of an individual’s CKS as well as features of the setting, and that individuals with a high CKS select themselves into criminogenic activity spaces and risky activities. Consonant with these predictions, Figure 3 reveals that the CKS is significantly and positively associated with both involvement in risky activities ($\beta = .507, p < .001$) and criminogenic activity spaces ($\beta = .401, p < .001$), and both of these both of these variables go on to influence criminogenic situational definitions. More specifically, both risky activities ($\beta = .193, p < .001$) and criminogenic activity field ($\beta = .198, p < .001$) significantly and positively predict criminogenic situational definitions. SST further predicts that situational definitions fully mediate the effects of both the CKS and criminogenic contexts for action on offending. Although the effect of activity spaces on crime is

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8 MPlus has two options, the delta and bootstrapping methods, for calculating the standard errors for indirect effects. Analogous results were found across methods (bootstrap with 1000 replications). Hence, we present significance levels based on the default delta method.
wholly indirect through criminogenic definitions (see Figure 3), the measure of risky activities continues to have a direct association with crime. In fact, independent of criminogenic definitions, a 1 standard deviation increase in the logged risky activities scale predicts more than a twofold increase in the expected count of violent crimes. We return to this unexpected direct path in the discussion.

Finally, SST predicts that individuals with a high CKS are more likely to attend to criminogenic features of the situation. This implies an interaction effect, specifically that the CKS amplifies the effects of criminogenic settings on criminogenic situational definitions. Consistent with this expectation, and as shown by the dashed lines in Figure 3, the CKS augments the associations between risky activities and situational definitions and between criminogenic activity spaces and situational definitions. These moderating effects are illustrated in Figures 4 and 5, respectively, and indicate that the association between risky activities and criminogenic definitions ($\beta = .097$, $p < .05$) as well as that between activity field and criminogenic definitions ($\beta = .069$, $p < .05$) are stronger for those with more criminogenic knowledge structures.

With the exception of a direct effect of risky activities on crime, the findings to this point are largely as predicted by SST. However three other findings shown in Figure 3 were unexpected. First, racial discrimination had a direct positive effect on criminogenic situational definitions unmediated by the CKS ($\gamma = .147$, $p < .001$). Hence, independent of criminal propensity, the experience of discrimination appears to enhance the degree to which young African Americans define situations as provocative and opportunistic. Second, although generally supportive of a self-selection effect with regards to characteristics of the setting, our model also suggests that, independent of the CKS, the community context in which one lives appears to constrain one’s choice of leisure activity spaces, as the direct path from community context to activity spaces is substantial and significant ($\gamma = .233$, $p < .001$). Finally, unsurprising albeit not predicted, the
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direct effect from sex/gender to risky activities is significant and negative. This indicates that, independent of the CKS, females engaged in these risky activities less frequently than did males ($\gamma = -0.162, p < .001$).

Aside from the few unexpected findings, the results presented in Figure 4 provide much support for the SST model. Moreover, it should be noted that the model explains a significant portion of variance in all of our endogenous variables. The proportion of variance explained ranged from 19% for our outcome measure (although this statistic is based on the continuous model rather than the more appropriate negative binomial one) to 45% for criminogenic definitions of the situation. Further, Tables 2 and 3 reveal that most total and specific indirect effects in the model were statistically significant. For instance, as shown in Table 2, all of the effect of CKS on crime was indirect. In looking at the specific indirect effects from Table 3, one can see that criminogenic definitions mediated about 25% of this effect (indirect effect through CDS = .052/total effect of .205 = .254), while risky routine activities mediated nearly 60% (indirect effect through activities = .121/total effect of .205 = .590). Thus, these findings support SST contentions about both the important factors and the mechanisms through which these individual and contextual factors influence the development of criminal propensity and actual offending.

DISCUSSION

Criminological theories tend to focus on either the role of factors related to the development of criminal propensity or the situational factors conductive to criminal events but rarely incorporate both (Wikström & Sampson 2003; but see Wikström et al. 2012). Furthermore, criminological theories tend to emphasize either identifying salient criminogenic factors or the processes that link such factors to criminal behavior. As a result, despite having a rich body of theories, indeed what some would consider a surfeit of theories, criminology finds itself in a theoretical morass. We argue that in moving forward criminology needs more general unifying theories that identify key criminogenic factors and link these to criminal propensity and
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events in a relatively parsimonious manner. We embrace a holistic approach that gives priority to the mechanisms underlying social influences on both criminal propensity and offending. The social schematic theory (SST) presented by Simons and Burt (2011) is intended to be such a theory. It is grounded in the learning paradigm but improves upon existing learning theories in a number of ways, especially by being more precise regarding the key sites of learning and the messages learned and by linking learning to criminal propensity and events in a life-course model.

The present study represented a theoretical elaboration of SST and a test of the model and its extensions. In particular, two extensions were examined. First, with the addition of theoretical measures of criminogenic definitions of the situation to the FACHS, we were able to test the key idea that criminogenic situational definitions mediate the link between individual propensities (the CKS) and offending. Furthermore, the SST model was broadened to include the role of contexts for action in addition to the previous incorporation of contexts for development. These extensions, tested with waves III through VI of the FACHS data, are discussed below. This is followed by a consideration of the limitations of the present study, the implications of these findings, and directions for future research.

Consistent with prior tests of SST, the results provide strong support for the theoretical model. The social-environmental factors we examined, which are theorized to vary in the key dimensions of supportiveness and predictability versus hostility and dangerousness, were all strongly associated with the development of the CKS. Specifically, persistent exposure to supportive parenting was negatively linked to the CKS, while racial discrimination and criminogenic community contexts produced an increase in the CKS. Additionally, and consistent with SST, being female and prior delinquency were also associated with a lower and higher CKS, respectively.

The findings also provide preliminary support for our extensions of the SST model. First, consistent with core proposition of the SST model that crime results when individuals come to define situations as requiring, compelling, or excusing offending, findings indicated that much of the effect of both the CKS
(and hence contexts for development) and contexts for action on offending is through criminogenic situational definitions. For example, criminogenic definitions mediated 25.4%, 13.5%, and 100% of the effect of CKS, risky activities, and activity spaces, respectively, on crime.

The results are also consonant with SST’s context for action arguments, as they show that both criminal propensities and settings influence; moreover, propensity and settings interact such that individuals with a high CKS are more likely to attend to and respond to potentially criminogenic situational cues with offending. Contrary to the with the SST model, however, risky activities continued to have a direct effect on offending after controlling for criminogenic situational definitions. Although this finding was not expected, it is understandable. The SST model proposes that situational definitions mediate all of the effects of social and individual factors on offending. We argue that even at a rapid or reflexive level or when acting out of habit, individuals encode and respond to situational cues when acting and reacting. However, capturing all of the potential situational definitions that might result in criminal behavior is an impracticable task in rather large surveys. Thus, we would argue that this finding is due to the inherent limitations in measuring situational definitions. Even so, the measure of situational definitions had a robust effect in the model, with 25.4% of the CKS and 100% of criminogenic activity spaces on offending being mediated through such definitions.

Three other significant pathways were not consonant with the SST model presented in Figure 1. First, not all of the effects of the criminogenic contexts for development were through the CKS. Consistent with Simons and Burt (2011), the effect of racial discrimination was not fully mediated by the CKS, as it had a direct effect on criminogenic situational definitions. Such a finding is consistent with recent theorizing that suggests that racial discrimination increases offending through factors that are unique to the worldview of African Americans, such as through schemas about the injustices of the criminal justice system (e.g., Unnever & Gabbidon 2011). This implies that racially specific factors are operative that are not captured in the SST model.
In addition to its effects through the CKS, criminogenic community context had a direct positive effect on respondents’ involvement in criminogenic activity spaces. Although not hypothesized, we believe this effect is likely due to structural constraints, which manifest in two different ways. First, individuals who reside in highly disadvantaged, dangerous, and often isolated communities likely have less mobility. Moreover, such communities are themselves generally surrounded by similarly situated neighborhoods given patterns of concentrated disadvantages and spatial interdependence (e.g., Sampson 2012). This finding is thus consistent with Sampson’s (2012) argument that ecologically concentrated neighborhood disadvantage affects individual offending “through the interplay of structure and purposeful choice” (p.64), and “social choices are governed by spatial proximity” (p.239).

Furthermore, being female was also not fully mediated by the CKS as it had a direct effect on participation in risky contexts. Although speculative, we believe that this effect is likely due at least in part to the higher degree of monitoring of females (e.g., Hagan, Simpson, & Gillis 1979) as well as their greater risk aversion (e.g., Byrnes, Miller & Schafer 1999). Finally, only part of the effect of prior offending was mediated through the CKS. This finding deserves further research attention and may be due to structural effects of offending that are not captured in the current model and or related to peer affiliations, which was not included for reasons discussed below. Overall, however, the findings generally replicated prior studies of SST.

The study is, of course, not without limitations, and several, in particular, deserve mention. First, with regard to our measures, all of our constructs, with one exception, relied upon respondents’ self-reports. The exception was the parenting scales, which employed both primary caregiver and child reports. While individuals’ experiences and perceptions are central to our model thus necessitating the use of self-reports for a number of our constructs, to the extent possible future research should incorporate more objective reports of community and situational conditions. Further, our assessments of situational definitions, routine activities, activity spaces, and crime were all taken in the same wave of data collection.
because of the multiyear intervals between waves. Thus, causal priorities cannot be established in the
present study. Ideally, we would have had multiple waves of data separated by shorter lengths of time so
that causal priorities could have been more clearly established.

Another limitation that needs to be mentioned is the homogeneity of our sample. All of the
respondents were African American and residing in Iowa and Georgia at the first wave. While this raises
issues regarding the generalizability of findings, it is also the case that there is a need for research on the
causes of offending among African Americans given that past research has established that they suffer from
higher rates of crime than other ethnic groups. Use of an African American sample also had the benefit of
allowing us to incorporate racial discrimination into the model; a factor that recent research indicates is an
important predictor of crime among African Americans (e.g., Burt, Simons, & Gibbons, 2012; Simons et
al., 2006; Unnever, Cullen, Mathers, McClure, & Allison, 2009). Although we cannot think of any reason
why our results would be specific to African Americans, our findings clearly need to be replicated with
more diverse samples.

Finally, the SST model we tested did not include deviant or criminal peers. Despite our belief that
peers do influence both propensity and context, we decided not to include peers given their potential
reciprocal relationship with all of the factors in the model, as well as the fact that our measure of peers is a
perceptual measure, which has been shown to be rather biased (e.g., Young et al. 2011). Future research
needs to examine the interplay of peers with all of the facets of the SST model in a way that recognizes both
peer effects and individual selection into peer groups.

Despite these limitations, in addition to providing support for the SST model, this study contributes
to criminological knowledge more broadly by supporting an integrative, holistic approach that combines
explanations of propensity and action into a unified developmental model. We believe that criminology
needs an updated learning theory that better integrates extant findings into a life-course model, and that
SST can fill this gap in theoretical knowledge. Much more work remains to be done. In addition to testing
Contexts and Knowledge Structures

the theory in different and especially more diverse samples, the model can be extended in a number of ways. For example, the model might incorporate biosocial findings about differential susceptibility to environmental factors, thus elucidating individual differences in the effects of social contexts. In particular, this line of work suggests that some individuals will be more responsive to environmental conditions, whether supportive or hostile, and thus will evidence more change in response to such social factors (Belsky & Pluess, 2009; Simons, Beach, & Barr, 2012). The SST model might also be refined to incorporate the relevance of “sensitive periods for change” in response to social conditions, as well as a consideration of factors that might be more salient at one developmental stage than another (e.g., Burt, Sweeten, & Gibbons forthcoming; Ellis et al. 2012).

The SST model might also be elaborated to include the role of highly traumatic or memorable events that may have a much greater influence on the individual than routine daily situations. To be sure, such potential experiences are already incorporated into the model in the form of community criminal victimization, but other traumatic or memorable positive events may affect the individual and his or her knowledge structures in powerful ways. Future theorizing and research might consider the effects of such events. Finally, the model might be expanded to include consideration of transitions and potential turning points and their effects on offending. As we have noted, one study has already shown that a key adult role transition, involvement in a satisfying romantic relationship, reduces offending by decreasing the CKS (Barr & Simons 2012). Future work might incorporate and test the effects of other salient life transitions such as work, incarceration, or having a child.

In sum, we believe that SST provides a needed step in the direction moving criminological explanations in the direction of more comprehensive, integrated, and developmental theories that recognize both cumulative continuity as well as the capacity for change. There is clearly more theoretical work to be done in explaining and understanding crime, and we present SST in this spirit: “It is better to forge ahead
Contexts and Knowledge Structures

and fail than to ignore the hard questions” (Sampson 2012: 23). We hope this work stimulates more scholars to work towards this end whether by challenging or improving upon our efforts.
Table 1: Correlations and Descriptive Statistics for All Study Variables (N = 623)

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
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</thead>
<tbody>
<tr>
<td>1 Crime (w6)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2 Prior deviance (w3-4)</td>
<td>.188***</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3 Female</td>
<td>-.096*</td>
<td>.008</td>
<td>1.000</td>
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</tr>
<tr>
<td>Supportive Parenting</td>
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<td>-.207***</td>
<td>-.073†</td>
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<tr>
<td>4 Community Context (w3-5)</td>
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</tr>
<tr>
<td>5 Discrimination (w3-5)</td>
<td>.166***</td>
<td>.124**</td>
<td>-.066†</td>
<td>-.134***</td>
<td>.211***</td>
<td>1.000</td>
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<td></td>
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</tr>
<tr>
<td>6 Activity Fields (w6)</td>
<td>.295***</td>
<td>.213***</td>
<td>-.159***</td>
<td>-.146***</td>
<td>.309***</td>
<td>.110**</td>
<td>1.000</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>7 Risky Activities (w6)</td>
<td>.285***</td>
<td>.097*</td>
<td>-.241***</td>
<td>-.094*</td>
<td>.091*</td>
<td>.110**</td>
<td>.390***</td>
<td>1.000</td>
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<td></td>
</tr>
<tr>
<td>8 Criminogenic Definitions of the Situation (w6)</td>
<td>.327***</td>
<td>.218***</td>
<td>-.186***</td>
<td>-.189***</td>
<td>.243***</td>
<td>.233***</td>
<td>.453***</td>
<td>.421***</td>
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<tr>
<td>9 Criminogenic Knowledge Structure (w5-6)</td>
<td>.339***</td>
<td>.245***</td>
<td>-.200***</td>
<td>-.333***</td>
<td>.290***</td>
<td>.209***</td>
<td>.480***</td>
<td>.442***</td>
<td>.528***</td>
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<td>Mean</td>
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<td>.234</td>
<td>.592</td>
<td>.015</td>
<td>1.384</td>
<td>-.015</td>
<td>-.033</td>
<td>2.643</td>
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<td>Std. Deviation</td>
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<td>.555</td>
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<td>2.419</td>
<td>.419</td>
<td>.812</td>
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<td>5.063</td>
<td>2.225</td>
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<td>.000</td>
<td>-9.766</td>
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<td>-1.232</td>
<td>-3.961</td>
<td>2.079</td>
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<td>2.814</td>
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<td>Reliability</td>
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<td>.720</td>
<td>.939</td>
<td>.790</td>
<td>.900</td>
<td>.876</td>
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†p<.10; *p<.05; **p<.01; ***p<.001 (two-tailed tests)
Table 2: Total and Indirect Effects

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<thead>
<tr>
<th>Predictors</th>
<th>Crime IE</th>
<th>Crime Total</th>
<th>CDS IE</th>
<th>CDS Total</th>
<th>Risky Activities IE</th>
<th>Risky Activities Total</th>
<th>Activity Fields IE</th>
<th>Activity Fields Total</th>
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<td>Female</td>
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<td>-.090</td>
<td>-.159***</td>
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<td>-.273</td>
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<td>-.045</td>
<td>-.107***</td>
<td>-.107</td>
<td>-.152***</td>
<td>-.152</td>
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<td>-.121***</td>
</tr>
<tr>
<td>Community Context</td>
<td>.046†</td>
<td>.168</td>
<td>.158***</td>
<td>.231</td>
<td>.132***</td>
<td>.132</td>
<td>.105</td>
<td>.417***</td>
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<td>Discrimination</td>
<td>.046*</td>
<td>.109</td>
<td>.047</td>
<td>.171</td>
<td>.058†</td>
<td>.085</td>
<td>.046</td>
<td>.046†</td>
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<td>.064</td>
<td>.060*</td>
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<td>.086†</td>
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<tr>
<td>CKS</td>
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<td>.521</td>
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<tr>
<td>Risky Activities</td>
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<td>.251</td>
<td></td>
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<td>Activity Fields</td>
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**NOTES:** Standardized indirect effects reported. Indirect effects calculated using the continuous, noninteractive SEM with a non-normality robust MLM estimator. Indirect effects calculated with unconstrained model.

**ABBREVIATIONS:** IE = Indirect effect
†p ≤ .10, *p ≤ .05, **p ≤ .01, ***p ≤ .001 (two-tailed tests)
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<td></td>
<td>--&gt; CDS --&gt;</td>
<td>.052*</td>
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<td></td>
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<tr>
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<td>--&gt; Fields --&gt; CDS --&gt;</td>
<td>.012†</td>
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<td>Community Context</td>
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<td>-.003†</td>
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</table>

**NOTES:** Standardized indirect effects reported. Indirect effects calculated using the continuous, noninteractive SEM with a non-normality robust MLM estimator. Indirect effects calculated with unconstrained model.

†p ≤ .10, *p ≤ .05, **p ≤ .01, ***p ≤ .001 (two-tailed tests)
Figure 1. Elaboration of the Social Schematic Theory from Early Adolescence to Young Adulthood.

Adolescence

- Quality of Parenting
  - Warmth/support
  - Hostility
  - Effective discipline

- Community Context
  - Victimization
  - Crime
  - Collective efficacy

- Racial Discrimination

Emerging Adulthood

- Criminogenic Knowledge Structure
  - Immediate gratification
  - Disengagement from conventional norms
  - Hostile view of people and relationships

- Risky Activities
  - Bar hopping, visiting strip clubs, partying

Early Adulthood

- Criminogenic Definitions of the Situation
  - Provocation & Threats
  - Criminal opportunity

- Criminogenic Activity Spaces
  - Crime
  - Street culture
  - Low social control

- Crime
Figure 2. Adjusting observed variables for error.

\[ \text{Error} = (1 - \text{reliability}) \times \text{variance} \]
Figure 3. Reduced Negative Binomial Model Predicting All Crime: All Mediating Paths

Waves 3-5

- Female
- Supportive Parenting
- Criminogenic Community Context
- Racial Discrimination
- Prior Delinquency (w3-4)

Waves 5-6

- Criminogenic Knowledge Structure (R² = .305)
- Risky Activities (R² = .314)
- Criminogenic Definitions of Situation (R² = .451)
- Criminogenic Activity Spaces (R² = .327)

Wave 6

- Crime (R² = .186)

NOTES: Standardized coefficients presented. Exponentiated unstandardized coefficients (IRRs) in parentheses. Female and prior delinquency controlled on all endogenous variables; only significant paths shown. All exogenous variables correlated.

p = .078; CFI = .996; RMSEA = .045

†p ≤ .10, *p ≤ .05, **p ≤ .01, ***p ≤ .001

b. Fit stats taken from continuous, non-interactive model using Satorra-Bentler Scaled χ² and Robust Standard Errors.
c. R² for this count outcome taken from continuous, noninteractive model using Satorra-Bentler Scaled χ² and Robust Standard Errors.
Figure 4. Effect of Risky Activities on Criminogenic Definitions at High and Low Levels of CKS
Figure 5. Effect of Criminogenic Activity Spaces on Criminogenic Definitions at High and Low Levels of CKS
REFERENCES


Mplus Version 6: Base program and combination add-on. Muthen & Muthen, Los Angeles, CA.


### APPENDIX A: MEASURES

<table>
<thead>
<tr>
<th>Index</th>
<th>Items</th>
<th>Wave</th>
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<tbody>
<tr>
<td><strong>Crime</strong></td>
<td>How many times in the past year did you…</td>
<td>VI</td>
</tr>
<tr>
<td></td>
<td>Break into a building or house?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Steal something inexpensive (like clothes or a small amount of cash)?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Steal something expensive (like a stereo or TV)?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Purposely damage or destroy property?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Take a car for a drive without the owner's permission?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Get into a fight with someone with the idea of seriously hurting him or her?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Carry a hidden weapon such as a knife or a gun?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pull a knife or gun on someone?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Use a weapon in a fight?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Shoot or stab someone?</td>
<td></td>
</tr>
<tr>
<td><strong>Criminogenic Definitions</strong></td>
<td>When you are out and about, how often do you encounter situations where you feel the other people…</td>
<td>VI</td>
</tr>
<tr>
<td></td>
<td>Would take advantage of you if they could?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Need to be taught a lesson?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cannot be trusted?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Are lying to you?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Are not treating you with respect?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Are testing you?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>There is an opportunity to make some easy money if you're willing to bend the rules a little bit?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>There is an opportunity to get back at someone who wronged you?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>There is an opportunity to help yourself at some sucker's expense?</td>
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<td></td>
<td>There is an opportunity to gain respect by behaving as a &quot;badass&quot;?</td>
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<td></td>
<td>There is an opportunity to have some fun if you are willing to bend the rules a bit?</td>
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<td></td>
<td>There is an opportunity to get over on someone if you play your cards right?</td>
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<tr>
<td><strong>Risky Activities</strong></td>
<td>We are particularly interested in how you spend your time on a typical evening or night when you go out, and recognize that you may do several things in several locations during a single evening. Below is a list of activities that other young adults have identified – please indicate how often you engage in each of the activities on the list. How often do you…</td>
<td>VI</td>
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<tr>
<td></td>
<td>Go bar hopping?</td>
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<tr>
<td></td>
<td>Go to bars/clubs with the hope of hooking up?</td>
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<tr>
<td></td>
<td>Go to a pool hall?</td>
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<tr>
<td></td>
<td>Go to strip clubs?</td>
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<td></td>
<td>Drink or get loaded (high) at someone’s house/apartment?</td>
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<tr>
<td></td>
<td>Go to a party at someone’s house/apartment?</td>
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<tr>
<td></td>
<td>Go dancing at a club?</td>
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<td></td>
<td>Stay out until 2 or 3 o’clock in the morning?</td>
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</tbody>
</table>
Criminogenic Activity Spaces (Activity Field)

Social control

In the area of town where you [DO MOST COMMON ACTIVITY]:

- Adults in the area would call the police if they saw someone breaking the law.
- Adults in the area would not tolerate someone being aggressive toward others.
- If individuals get loud or disorderly, the adults in the area would tell them to behave.
- The adults in the area would not hesitate to call the authorities if a group of individuals were fighting with each other.
- The adults in the area would not tolerate public intoxication or drug use.
- The police patrol the area on a regular basis.

Commitment to street culture

Based on what you see and hear in the areas of town where you [DO MOST COMMON ACTIVITY], how strongly do you feel people in those places would agree or disagree with the following statements?

- It is sometimes necessary to use physical force or violence to defend one’s rights.
- It is sometimes necessary to threaten people in order to get them to treat one fairly.
- People do not respect a person who is afraid to fight physically for his or her rights.
- It is important to show other people that one cannot be intimidated.
- People tend to respect a person who is tough and aggressive.
- It is important to let others know that if they do something wrong to you, you will make them pay for it.

Crime

I am going to describe some events that may have happened in the areas where you [DO MOST COMMON ACTIVITY]. Please indicate whether they happened often, sometimes, or never during the past year.

- Was there a fight in which a weapon like a gun or knife was used?
- Was there selling of drugs?
- Was there a car stolen?
- Was there a sexual assault or rape?
- Was there a robbery or mugging?
- How often was there a burglary?

Criminogenic Knowledge Structure

Immediate gratification

You could do something most people would consider dangerous like driving a car fast.

You enjoy taking risks.

You would do almost anything for a dare.

Life with no danger would be dull for you.

When you promise to do something, people can count on you to do it.

When you ask a question, you often jump to something else before getting an answer.

You stick with what you're doing until you've finished with it.
You have to have everything right away.  
When you have to wait in line, you do it patiently.  
You have to be reminded several times to do things.  
You have a lot of accidents.  
You would rather have a small gift today than a large gift tomorrow.  
You could be described as careless.  
You like to switch from one thing to another.  
If you find that something is really difficult, you get frustrated and quit.  
You usually think before you act.

**Disengagement from conventional norms**

How wrong do you think it is for someone to hit someone with the idea of hurting them?

How wrong do you think it is for someone to steal something inexpensive (like clothes or a small amount of cash)?

How wrong do you think it is for someone to use marijuana?

How wrong do you think it is for someone to steal something expensive (like a stereo or a TV)?

How wrong do you think it is for someone to shoplift something from a store?

How wrong do you think it is for someone to lie to an employer?

How wrong do you think it is for someone to sell marijuana or other illegal drugs?

How wrong do you think it is for someone to use illegal drugs other than marijuana?

How wrong do you think it is for someone to have casual sex (intercourse with multiple partners)?

How wrong do you think it is for someone to cheat on their romantic partner?

**Hostile view of relationships**

You have often been lied to.  
When people are friendly, they usually want something from you.  
Some people oppose you for no good reason.  
Sometimes you have to use physical force or violence to defend your rights.  
People will take advantage of you if you don’t let them know how tough you are.  
Sometimes you need to threaten people in order to get them to treat you fairly.  
People do not respect a person who is afraid to fight physically for his or her rights.

Behaving aggressively is often an effective way of dealing with someone who is taking advantage of you.

If you don’t let people know you will defend yourself, they will think you are weak and take advantage of you.

It is important to show other people that you cannot be intimidated.  
People tend to respect a person who is tough and aggressive.
It is important to let others know that if they do something wrong to you, you will make them pay for it. If someone uses violence against you, it is important that you use violence against him or her to get even. Being viewed as tough and aggressive is important for gaining respect. It is important not to back down from a fight or challenge because people will not respect you. It is important to show courage and heart and not be a coward in a fight or challenge in order to gain or maintain respect. It is okay to disrespect or beat up others (even if they have done nothing to you) if it will bring you respect.

### Discrimination

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
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</thead>
<tbody>
<tr>
<td>In the last year how often has someone said something insulting to you just because of your race or ethnic background?</td>
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<tr>
<td>In the last year how often has a store-owner, sales clerk, or person working at a place of business treated you in a disrespectful way just because of your race or ethnic background?</td>
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<tr>
<td>In the last year how often have the police hassled you just because of your race or ethnic background?</td>
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<tr>
<td>In the last year how often has someone ignored you or excluded you from some activity just because of your race or ethnic background?</td>
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<td>In the last year how often has someone suspected you of doing something wrong just because of your race or ethnic background?</td>
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<tr>
<td>In the last year how often has someone yelled a racial slur or racial insult at you just because of your race or ethnic background?</td>
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<tr>
<td>In the last year how often has someone threatened to harm you physically just because of your race or ethnic background?</td>
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<tr>
<td>In the last year how often have you encountered people who are surprised that you, given your race or ethnic background, did something really well?</td>
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<tr>
<td>In the last year how often have you been treated unfairly just because of your race or ethnic background?</td>
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<tr>
<td>In the last year how often have you encountered people who didn't expect you to do well just because of your race or ethnic background?</td>
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<tr>
<td>In the last year how often has someone discouraged you from trying to achieve an important goal just because of your race or ethnic background?</td>
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<tr>
<td>In the last year how often have your close friends been treated unfairly just because of their race or ethnic background?</td>
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<tr>
<td>In the last year how often have members of your family been treated unfairly just because of their race or ethnic background?</td>
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</table>

### Community Context

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
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<tbody>
<tr>
<td>Community crime During the past year in the neighborhood surrounding where you lived for most of the past 12 months: How often was there a fight in which a weapon like a gun or knife was used?</td>
<td></td>
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</tbody>
</table>
How often was there selling of drugs?
How often was there a car stolen?
How often was there a sexual assault or rape?
How often was there a robbery or mugging?
How often was there a burglary?
How often was there a fight in which a weapon like a gun or knife was used?
How often was there selling of drugs?
How often was there a car stolen?
How often was there a sexual assault or rape?
How often was there a robbery or mugging?
How often was there a burglary?

Criminal victimization

Has anyone in the neighborhood surrounding where you lived for most of the past 12 months ever used violence, such as in a mugging, fight, or sexual assault, against you?
Has anyone in the neighborhood surrounding where you lived for most of the past 12 months ever used violence, such as in a mugging, fight, or sexual assault, against one of your friends?

Collective efficacy

In the neighborhood surrounding where you lived for most of the past 12 months:
Adults in the area would call the police if they saw someone breaking the law.
Adults in the area would scold a teenager who showed disrespect to an adult.
If teenagers got loud or disorderly, the adults in the area would tell them to behave.
The adults in the area would not hesitate to call the authorities if a group of teens were fighting with each other.
The adults in the area would not tolerate public intoxication or drug use.
When there was a problem, the people in the area got together and dealt with it.
The people in the area were a fairly close-knit group.
When you get right down to it, no one in the area really cared much about what happened to anyone else.
There were adults in the area that teens looked up to.
People were willing to help each other out.
Many of the adults didn't get along with each other.
People in the area shared the same values.
People trusted each other.
People in the area mostly went their own way.

Supportive Parenting

Effective discipline

When you do something your [PRIMARY CAREGIVER] likes or approves of, how often does [HE/SHE] let you know [HE/SHE] is pleased about it?
How often does your [PRIMARY CAREGIVER] give you a reward like money, or something you would like, when you get good grades, do
your chores, or something like that?
On a weekly basis, how often do you and your [PRIMARY CAREGIVER] have serious arguments? Is it...
How often do the same problems between you and your [PRIMARY CAREGIVER] come up again and again and never seem to get solved? When you and your [PRIMARY CAREGIVER] have a problem, how often can the two of you figure out how to deal with it? How often do you talk to your [PRIMARY CAREGIVER] about things that bother you? How often does your [PRIMARY CAREGIVER] ask what you think before deciding on family matters that involve you? How often does your [PRIMARY CAREGIVER] give you reasons for [HIS/HER] decisions? How often does your [PRIMARY CAREGIVER] ask you what you think before making a decision about you? When you don’t understand why your [PRIMARY CAREGIVER] makes a rule for you to follow, how often does [HE/SHE] explain the reason? How often does your [PRIMARY CAREGIVER] discipline you by reasoning, explaining, or talking to you?

Hostility During the past 12 months when you and your [PRIMARY CAREGIVER] have spent time talking or doing things together, how often did your [PRIMARY CAREGIVER]:
  Get angry at you? Was it...
  Get so mad at you that [HE/SHE] broke or threw things? Was it...
  Shout or yell at you because [HE/SHE] was mad at you? Was it...
  Threaten to hurt you physically? Was it...
  Criticize you or your ideas? Was it...
  Push, grab, hit, or shove you? Was it...
  Argue with you whenever you disagreed about something? Was it...
  Slap or hit you with [HIS/HER] hands? Was it...
  Strike you with an object? Was it...
  Boss you around a lot? Was it...
  Throw things at you, was it...
  Insult or swear at you? Was it...
  Tell you [HE/SHE] is right and you are wrong about things? Was it...
  Give you a lecture about how you should behave? Was it...

Warmth During the past 12 months when you and your [PRIMARY CAREGIVER] have spent time talking or doing things together, how often did your [PRIMARY CAREGIVER]:
  Help you do something that was important to you?
  Let you know [HE/SHE] really cares about you?
  Listen carefully to your point of view?
  Act supportive and understanding toward you?
  Act loving and affectionate toward you?
  Have a good laugh with you about something that was funny?
Let you know that [HE/SHE] appreciates you, your ideas or the things you do?
Tell you [HE/SHE] loves you?
Understand the way you feel about things?

<table>
<thead>
<tr>
<th>Prior Delinquency</th>
<th>In the last year, have you/were you/did you…</th>
<th>III-IV</th>
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<tbody>
<tr>
<td>Bullied someone- you know, hitting or threatening or scaring someone who is younger or smaller than you or somebody who won’t fight back?</td>
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<td>Started a physical fight in which someone was hurt or could have been hurt?</td>
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<td>Hurt someone with a weapon like a bat, brick, broken bottle, knife, or gun?</td>
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<td>Tried to hurt someone badly or been physically cruel to someone?</td>
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<td>Physically cruel to animals?</td>
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<td>Attach someone in order to steal from them?</td>
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<td>Secretly stolen things from other people?</td>
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<td>Force someone to do something sexual with you that they didn’t want to do?</td>
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<td>Start a fire to cause damage or hurt someone?</td>
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<td>Broken or damaged somebody else’s things on purpose?</td>
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<td>Broken into a house, a building, or a car?</td>
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<td>Lied to get things you wanted or to get out of things?</td>
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<td>Stay out late without permission?</td>
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<td>Run away from home overnight?</td>
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<td>Skip school?</td>
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Appendix B. Reduced Negative Binomial Model Predicting All Crime while Controlling for Wave V Crime (N = 574)

NOTES: Standardized coefficients presented. Exponentiated unstandardized coefficients (IRRs) in parentheses. Female and prior delinquency controlled on all endogenous variables; only significant paths shown. All exogenous variables correlated. p=.088; CFI = .992; RMSEA = .031
†p ≤ .10, *p ≤ .05, **p ≤ .01, ***p ≤ .001