

DECISION MAKING OF INMATES: TESTING SOCIAL INFORMATION PROCESSING CONCEPTS USING VIGNETTES

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Empirical research has established social information processing (SIP) theory as a prominent theory of youth aggression. However, little research on the theory exists in the criminological research. The purpose of this study is to conduct a partial test of SIP theory on a sample of 330 adult offenders using vignettes. Specifically, utilizing hierarchical generalized linear modeling (HGLM), we examine self-reported situational decision making (anger, intentions, goals, and response generation) and person-level variables (anger and hostile attribution bias) in predicting reported outcomes to high risk for violence vignettes. Results indicate that SIP and anger variables are important to further examine with the adult criminal population.

Keywords: social information processing, theory, anger, hostile attribution bias

In past theoretical and empirical works, identifying the decision-making process of offenders has been difficult as the cognitive process underlying this phenomenon is not readily observable (Glockner & Betsch, 2008). While in criminology decision-making research often is grounded in assumptions about rational choice and free will, researchers in psychology have attempted to articulate this decision-making process focusing on social and cognitive factors. These criminological theories of decision making are often challenged for being overly simplistic and failing to account for individual differences in rationality and important situational variables. This is particularly important when thinking about how individuals interact with others in situations that could result in violence. In these situations, it is necessary to understand the perspective of the individuals making the decision, the individuals' interpretations of the situations they encounter, and their goals in these situations (Jacobs & Wright, 1999; Katz, 1988). As a result, decision-making theories

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like SIP are better for understanding how individuals interpret and respond to situations. The purpose of this study is to conduct a partial test of SIP theory on an adult criminal population using vignettes or scenarios reflecting real life events. Specifically, we examine self-reported, situational decision making (anger, intentions, goals, and response generation) and important person-level variables (anger and hostile attribution bias) in predicting reported outcomes to high risk for violence vignettes.

SOCIAL INFORMATION PROCESSING THEORY

Crick and Dodge's (1994) reformulated SIP theory holds promise for understanding adult decision making in a situational context. The theory is a social cognitive approach based on the assumption people "come to a social situation with a set of biologically limited capabilities and a database of memories of past experiences" (p. 76). In addition to accessing these capabilities and memories, people also take cues from other person(s) and their immediate environment in each situation. This theory identifies the process individuals use to arrive at a judgment during these situations and what takes place during these steps (Ybarra, 2002).

Social information processing theory articulates the mental operations used to create a behavioral response during social interaction situations (Crick & Dodge, 1994). These operations include attending to social cues which are selective to each individual, identifying intent characteristics, generating a goal, accessing scripts of past behavior from memory, making a decision, and enacting the decision through behavioral responses (Dodge & Rabiner, 2004; Zelli, Dodge, Laird, & Lochman, 1999). The theory suggests all individuals use six, sequential, processing steps, which are relatively independent of each other, in a social situation to come to a decision (See Figure 1). The first steps of the processing involve cognitions about input; whereas, the later steps involve cognitions about output (Lansford et al., 2006). The current research focuses primarily on steps two, three, and four.

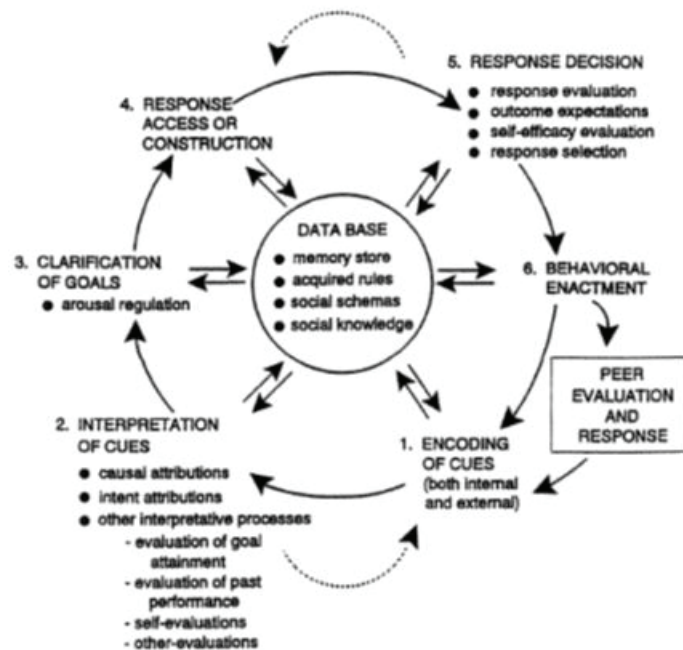


Figure 1. Reformulated Social Information Processing Theory. Adapted from “A Review and Reformulation of Social Information-Processing Mechanisms in Children’s Social Adjustment” by N. R. Crick and K. A. Dodge, 1994, *Psychological Bulletin*, 115(1), p. 76. Copyright 1994 by the American Psychological Association, Inc.

The first step of the theory is the encoding of cues, both internal and external, in a situation (Crick & Dodge, 1994). Internal cues are brought into the situation by an individual, while external cues refer to those taken from the immediate situation (Lansford et al., 2006). The second step, interpretation of social cues, may consist of several things including inferences about other individuals’ intent and perspectives regarding the situation (Crick & Dodge, 1994). It is at this step that the motive/intent of others’ behaviors is interpreted (Lansford et al., 2006). The interpretation(s) can be influenced by the immediate situation, or database information stored in memory. In the study of violence, this is particularly important. How another’s intention is interpreted can determine whether the situation will remain civil or escalate to violence. Previous research has shown that aggressive children and adolescents have difficulty recognizing specific intentions and tend to attribute more hostile intentions to others (see Lansford et al., 2006; Losel, Bliesener, & Bender, 2007; Zelli et al., 1999).

The third step in SIP theory is the clarification of goals in a situation. “Goals are focused arousal states which function as orientations toward producing (or wanting to produce) particular outcomes” (Crick & Dodge, 1994, p. 76). Crick and Dodge state that individuals bring goals to a social situation, but they can revise the goals or construct new goals in response to immediate social stimuli. It is assumed that aggressive individuals select more intrapersonal, rather than interpersonal goals in a situation (Lansford et al., 2006).

Intrapersonal or instrumental goals are self-serving and promote individual gains (Crick & Dodge, 1994; Lansford et al., 2006; Losel et al., 2007). These intrapersonal goals tend to be more egocentric and antisocial. These individuals tend to dominate an interaction and try to maximize their own gains at the risk of injury to others (Losel et al., 2006).

During step four, individuals access possible responses from memory or construct new behaviors based on the immediate social situation. Responses in memory are mental representations of the individual's behavioral responses stored in long-term memory and integrated with other memories into a general mental structure. These responses may or may not be triggered by the selected goal (Crick & Dodge, 1994). Consistent with this, previous research has found aggressive children and adolescents generate fewer behavioral responses compared to non-aggressive individuals in social situations (Crick & Dodge, 1996; Lansford et al., 2006) and produce more hostile and aggressive response alternatives (Bliesener & Losel, 2001).

Step five is the response decision. At this stage, an individual evaluates the previous responses (from memory or constructed) and selects the most favorably evaluated response to enact during the social interaction. This decision can be made based on factors such as (a) the expected outcomes based on previous experiences; (b) the degree of confidence the individual has in his or her ability to enact the specific response (self-efficacy); and (c) an evaluation of the response appropriateness (response evaluation). The sixth and last step is the behavioral enactment of such response (Crick & Dodge, 1994). Individuals choose a behavior which seems most appropriate to achieve their goals (Losel et al., 2007).

Each event or decision can be conceptualized as a constant recycling of the six steps. Due to the complexity of social situations, individuals are continually engaged in this process. In the reformulated theory, it is proposed that "even though processing is simultaneous for each of these steps, the path from a particular stimulus (such as a single provocation by a peer) to a behavior response (such as retaliation) logically follows a sequence of steps" (Crick & Dodge, 1994, p. 77). Past research suggests that individuals progress through the six steps automatically and with little reflection (Losel et al., 2007). Additionally, emotions may be present at each step, playing a vital role in the mental operations in each decision (Crick & Dodge, 1994; Dodge, 1991; Dodge & Rabiner, 2004). Anger, for example, is an emotion hypothesized to interact at different steps of the model, potentially increasing the chances of aggressive and violent behavior. However, the theory does not articulate the specific role these factors play (see Crick & Dodge, 1994).

Deficits in one or more of the decision-making steps can result in socially unacceptable behavior in a situation (Losel et al., 2007). Researchers have found negative intent interpretation, socially unacceptable goal attainment, and limited response generation can result in aggressive behavior (Bowen, Roberts, Kocian, & Bartula, 2014; De Castro, 2004; Dodge, 1980, 1993; Dodge, Lochman, Harnish, Bates, & Pettit, 1997).

Past Research on SIP Utilizing Vignettes

Research has shown aggressive children display numerous processing deficiencies across situations. Several longitudinal studies have found support for these patterns of de-

viant processing leading to aggressive responses across development (Zelli et al., 1999). However, the majority of this longitudinal and cross-sectional research sampled children and adolescents over adults (see Crick & Dodge, 1996; Crozier et al., 2008; Losel et al., 2007; Quiggle, Garber, Panak, & Dodge, 1992; Shahinfar, Kupersmidt, & Matz, 2001; Zelli et al., 1999). To date, this model has been effective in accounting for aggression in this youthful population (e.g., Dodge, Pettit, Bates, & Valente, 1995; Fontaine, Burks, & Dodge, 2002).

There have been a few studies testing SIP with late adolescent and adult aggression and violence. The use of vignettes to capture individuals' SIP is the standard to test the theory (see Crozier et al., 2008; Lansford et al., 2006; Shahinfar et al., 2001; Vranceanu, Gallo, & Bogart, 2006). For example, Crozier et al. (2008) studied 585 adolescents (16 to 18 years old) over a three-year period. This was the first study of its kind to examine the relationship between processing patterns and antisocial behavior in late adolescent individuals. Antisocial behavior was assessed through a mailed behavioral questionnaire during each of the three years of the study. The researchers assessed the respondents' SIP by using six videotaped vignettes in a laboratory setting. The researchers found that deviant SIP throughout every step predicted antisocial behavior and proactive aggression. The results also demonstrated that SIP measures predicted future antisocial behavior, even when controlling for past behavior(s).

Similarly, Losel and colleagues (2007) conducted a prospective design on a sample of 102 adolescent boys in Germany. The researchers studied the boys in seventh and eighth grade, and again in ninth and tenth grade. Using vignettes that presented respondents with conflicts that could trigger different levels of aggressive-prone, cognitive schemata, the researchers found SIP variables explained approximately 20 to 34 percent of the individuals' differences in aggression after 20 months. The researchers categorized answers as attribution of hostility, aggressive-egocentric, and aggressive-impulsive. The retrieval of aggressive-impulsive response schemata seemed to be the central importance of the SIP model in predicting aggressive and delinquent acts. Individuals rated as being aggressive-impulsive "frequently fought and quarreled with others" and "produced more aggressive-impulsive responses in the conflict scenarios" (p. 338). These individuals also evaluated aggressive behavior as being a successful response in social contexts.

Lansford et al. (2006) conducted a 12-year prospective study, one of the largest studies to date, to assess SIP on a community sample of 576 children in kindergarten, with follow-up assessments in grades 3, 8, and 11. Using video vignettes to assess SIP of the respondents at each point, the researchers found SIP problems in eighth grade predicted externalizing behaviors in 11th grade. Externalizing behaviors were measured by a 113-item Child Behavior Checklist (which included measures of delinquency and aggression) completed by the children's mothers.

Similar to aggressive children and adolescents, aggressive and violent adults have expressed skewed interpretations of social situations. Topalli (2005) utilized videotaped Point Light Displays (PLD) to conduct a quasi-experiment with three adult groups (i.e.,

known offenders, individuals matched on demographics of the offender group, and college students) to compare how each group perceived different situations presented. Known offenders perceived the PLDs to be more aggressive than college students, and individuals matched to the offenders based on demographics. The offender group and the group demographically matched to the offenders similarly perceived crimes taking place in the PLDs at 72 percent and 69 percent of the time, respectively, compared to college students perceiving a crime taking place 12 percent of the time. The study demonstrated the importance of perceptions in social situations and brought social cognitive decision making into the criminal justice literature. However, the study failed to measure the process of the respondents' decision making (Topalli, 2005).

Developmentally, as individuals' age, their situational experiences and knowledge increase (Crick & Dodge, 1994). Hypothetically, adults have more in their cognitive database, and each processing step will be more advanced than in children, thereby increasing speed and efficiency in the processing of information (De Castro, 2004; Crick & Dodge, 1994). Studies utilizing adult samples are needed to test SIP. Linking SIP theory to violent crime has been extremely difficult due to an inadequate exploration of adult respondents. To date, there has been an absence of criminological and psychological studies using SIP to understand criminal and/or violent decision making. Due to prior literature finding such strong support for the theory in regards to child and adolescent aggressive and antisocial behavior, linking the theory to adult decision making processes is needed.

The Role of Anger and Hostile Attribution Bias

Anger and hostile attributions are hypothesized to both be present at different steps of the SIP model and to increase the chances of aggressive and violent behavior. However, the theory does not articulate the specific role these factors play (see Crick & Dodge, 1994). Anger has been widely studied in relation to aggressive and violent outcomes with a wide variety of populations. It has been positively correlated with aggressive behavior and with the inability to solve problems (see Chen, Coccaro, & Jacobson, 2012) and also has been found to be associated with hostile attribution bias and violent behavior (Arsenio & Lemerise, 2004; Clements & Schumaker, 2010; De Castro, 2004). In a meta-analysis, Chereji, Pintea, and David (2012) found a large effect size examining both the relationship between anger and violence, and the relationship between cognitive distortion and violence. Theoretically, anger can distort cognitive processes, increasing the likelihood that an individual will focus on perceived threats in a situation over other factors (Novaco, 2011).

Crick and Dodge (1994) did hypothesize that aggressive children focused more on hostile cues (versus non-hostile) in situations, increasing the likelihood of an aggressive response. The negative intent attribution (coined hostile attribution bias) has been found to correlate with youth misinterpreting the social cues of others (see for example, Arsenio, Adams, & Gold, 2009; Arsenio & Lemerise, 2004). Like anger, hostile attribution bias has been correlated positively with aggressive behavior and inabilities of aggressive youth to regulate and express emotion (see Chen et al., 2004; Lemerise & Arsenio, 2000). Lemerise and Arsenio (2000) theoretically hypothesized that emotionality and regulatory abilities would affect decision-making processes. Past research has found that aggressive youth in

ambiguous situations are more likely to attribute hostile intentions to others in the situation (see De Castro, Veerman, Koops, Bosch, & Monshouwer, 2002; Halligan, Cooper, Healy, & Murray, 2007). This suggests a possible link of trait hostile attribution bias to aggression.

However, other studies on hostile attribution bias have been mixed or inconclusive. In Horsley, De Castro, and Van der Schoot's (2010) study focusing on encoding of cues in SIP, aggressive youth spent less time attending to hostile cues compared to non-hostile ones. Fontaine and colleagues (2010) found that hostile attribution was mediated by adolescents' assessment of aggressive response options, suggesting the relationship between hostile attribution bias and aggression is more complicated.

Much of the discussion concerning the exact role anger and hostile attribution bias have with SIP theory and aggression has been based theoretically. There is limited research testing these variables. As part of this study, we examine self-reported person and situational level variables, including anger and hostile attribution bias, in predicting reported outcomes to high risk for violence vignettes.

METHODOLOGY

The purpose of this study was to partially test SIP, anger, and hostile attribution bias utilizing vignettes with an adult criminal sample. The current research was part of a larger study of violence utilizing 330 newly incarcerated males, age 18 and older, in four county jails in Western Pennsylvania. For this study, newly incarcerated male offenders, regardless of offense committed, were those housed in these four facilities for three months or less. The sampling decision was grounded largely in the research that has shown it is ideal to ask offenders about their past behaviors in a timely manner for the best recall (see Bradburn, Rips, & Shevell, 1987; Wells & Horney, 2002). Every respondent ($N=330$) interviewed for the study was asked to respond to a variety of individual level questions along with three standardized vignettes. Therefore, there are 990 vignette responses.

Very rarely are situations experienced by one person identical to those experienced by another. Vignettes are standardized examples of situations that ask the respondent to put themselves in the particular situation given, thereby allowing all respondents to artificially experience the same situation that is not bounded by individual opportunities. This allowed the researchers to directly compare the responses across all individuals who participated in the study.

Each vignette represented an ambiguous situation, and the respondent was asked to think about what he would do in these situations. The vignettes utilized were taken from Horney's (2001) study. The three hypothetical scenarios take place in a bar setting, at the respondent's house, and in a parking lot (see Appendix 1).

Independent Variables

At the individual level, respondents answered a variety of questions related to demographics, education, and criminal history. Age, arrests, convictions, and education are all continuous variables included in the analysis, while the other demographic informa-

tion are used solely for descriptive purposes. Two, additional, individual-level variables included in the analysis are trait anger and trait hostile attribution bias. Trait anger is measured using a 10-item scale originally developed by Spielberger et al. (1983) and updated by Spielberger (1999). Included on the trait anger scale are items such as “You are quick tempered,” “You have a fiery temper,” and “You get angry when you are slowed down by others’ mistakes.” Responses range from (1) “Almost Never” to (4) “Almost Always” and are summed to form the final score. Score ranges on this scale are from 10 (for a respondent who marked “Almost Never” on all items) to 40 (for a respondent who marked “Almost Always” on all items). The trait anger scale had a Cronbach’s Alpha of 0.87. Topalli and O’Neal (2003) originally utilized the state hostile attribution bias (HAB) scale in their study on provocation and retaliatory motivation. For the purposes of this study, we changed the wording slightly in order to create the five-item Trait HAB scale. For the Trait HAB scale items, the respondent was asked to report how he perceives most people feel about him most of the time. Examples include, “Most people are angry with you,” and “Most people are hostile with you.” The statements were answered on a five-point Likert scale of “Strongly Disagree (1)” to “Strongly Agree (5).” The score range for both scales is 5 to 25, with higher scores representing more hostile attribution bias. The internal consistency of the Trait HAB scale was moderate with a Cronbach’s alpha of .81.

There were four situational independent variables for each vignette. The first three variables measure steps two, three, and four of SIP theory. Measuring step two (Intent Interpretation), the respondent was asked to interpret the social cues of the opponent in the vignette on an 11-point scale. Zero indicated “Negative,” while 5 was “Neutral,” and 10 was “Positive” intentions. To measure step three of SIP, the respondent’s goal (*Goal*), an open-ended question, asked “At this point in the situation, what would your goal be?” Responses were then coded as intrapersonal (0) or interpersonal (1). Intrapersonal goals are self-serving and tend to be more egocentric; whereas, interpersonal goals seek positive interactions and outcomes between all individuals involved. An example of an intrapersonal goal is to confront someone, while an interpersonal goal would be to diffuse the situation and apologize.

Measuring step four of the theory (Response Generation), the respondent was asked to choose “yes” or “no” in response to if he thought of other ways to react in the situation. Lastly, situational anger was measured on an 11-point scale. Each inmate was asked how angry they would be in each situation. A 0 indicates “Not at All” angry, while 5 indicates “Somewhat” angry, and 10 is “Extremely” angry. These variables were collected for all three vignettes presented to the inmates.

Dependent Variable

Each respondent reported how he would react to each vignette by choosing the best standardized response. Since this was part of a larger violence study about robbery and assaultive situations, standardized response choices allowed the researchers the ability to compare responses. Vignette one had four response choices, while the final two vignettes had five response choices. These response choices were coded as passive responses (0) if

the respondent indicated that he would “apologize” or “walk away” and as active responses (1) if he chose aggressive or violent behaviors like “shove him” or “punch him.”

Analysis

Since this study collected data on vignette situations that are nested within individuals, there was a need for hierarchical modeling. Hierarchical linear modeling (HLM) provides a means to test individual- and situational-level data simultaneously. Specifically, due to the dichotomous outcome variable Reaction Type (0=Passive, 1=Active), hierarchical generalized linear modeling (HGLM) was applied (see Raudenbush & Bryk, 2002). This statistical technique was utilized to address the lack of independence in situation reports, as one respondent completed three vignettes. The level-1 model in the current analysis contains the vignette or situational variables; whereas, the level-2 model contains the individual level variables, such as the respondent’s demographics, trait anger, and Trait HAB.

RESULTS

Table 1 provides descriptive statistics regarding the sample of 330 respondents that completed the three vignettes. The average respondent in the sample was 30 years old, had been arrested five times, and reported a median of three convictions. The study sample was predominately comprised of Caucasians (60.6%) and African Americans (33.3%). Concerning education, half of all respondents received a high school diploma or GED, while over 27% had not completed eleventh grade, and approximately 22% of respondents attended college. Concerning socioeconomic status, the majority of respondents identified as either lower or working class (66.1%), with the remainder identifying as middle or upper class (33%). Concerning marital status, half of the respondents identified as single, 11.5% identified being married, and 37.9% reported having a partner. Lastly, many respondents had multiple charges against them. Of these charges, 19.05% of respondents were charged with a person-related offense. These types of charges include attempted homicide, robbery, attempted robbery, assault, and rape. Many respondents have property charges (17.81%), which included burglary or theft, while 17.28% and 6.35% of respondents have drug and alcohol-related charges, respectively. Approximately 12% of respondents were charged with a probation or parole violation, while 27.51% of respondents have other charges, including harassment, disorderly conduct, and conspiracy.

Table 1. *Sample Descriptive Statistics*

VARIABLE	FREQUENCY	PERCENT
RACE/ETHNICITY		
Caucasian/White	200	60.60
African American/Black	110	33.30
Other	20	6.00
EDUCATION		
8th Grade or less	4	1.20
9th-11th Grade	86	26.00
HS Diploma or GED	165	50.00
Some College	65	19.70
College Graduate	5	1.50
Post-Grad Study	5	1.50
FINANCIAL STATUS		
Lower Class/Working Class	218	66.66
Middle Class	100	30.58
Upper Class	9	2.75
MARITAL STATUS		
Single	167	50.60
Partner	125	37.90
Married	38	11.50
OFFENSE TYPE		
Person	108	19.05
Property	101	17.81
Drugs	98	17.28
Alcohol	36	6.35
Probation/Parole Violation	68	11.99
Other	27.51	27.51
VARIABLE	<i>M</i>	<i>SD</i>
Age	30.41	10.37
VARIABLE	<i>Mdn</i>	<i>SD</i>
Arrests	5	19.35
Convictions	3	5.90

Table 2 displays the descriptive results of the responses to the vignettes. Step 2 of SIP (Intent Interpretation), anger (trait and situational level), and hostile attribution bias were measured using scales. The mean intent interpretation in the situations was 3.36, while the mean situational anger was 5.32 or somewhat angry. At the trait level, the mean score for anger was 19.25, and hostile attribution bias was 9.33.

At step 3 of SIP, the overwhelming majority of respondents predicted they would have interpersonal goals in the vignettes (73.40%). In only 37.10% of the vignettes did respondents think of multiple ways to respond in the situations (step 4). Of those, most respondents said they would respond in another passive (53.30%) rather than active (39.40%) manner. Finally, concerning the outcome/dependent variable, most of the respondents identified their initial reaction type in the given vignettes would be passive (78.20%).

Table 2. *Variables Descriptive Statistics*

VARIABLE	FREQUENCY	PERCENT
GOALS		
Intrapersonal	263	26.60
Interpersonal	727	73.40
REACTION TYPE		
Passive	774	78.20
Active	215	21.70
MULTIPLE RESPONSE GENERATION		
No	623	62.90
Yes	367	37.10
IF YES, WHICH REACTION TYPE		
Passive	196	53.30
Active	145	39.40
Both	27	
VARIABLE <i>M</i>		
Trait Anger	19.25	6.13
Trait HAB	9.33	4.36
Sit. Anger	5.32	3.48
Int. Interpretation	3.36	2.87

As shown in Table 3, the HGLM model, the situational level (level 1) predictors for SIP were intent interpretation, goal, and response generation. Situational anger also was measured at this level. The individual level (level 2) predictors were trait anger and trait hostile attribution bias. It is important to note that all results are presented in odds ratios.

At the individual level, the findings indicated that trait anger of the respondent was a statistically significant predictor of outcome type. As the respondent's trait anger increased, the odds of an active response increased by over 14%. Although trait hostile attribution bias was not statistically significant, an increase in HAB yielded a decrease in the odds of an active response by approximately 1%.

Two of the four situational level variables were statistically significant and one additional variable approached significance ($p < .10$) in the model. As Step 2 of SIP suggests,

if the respondent interpreted the opponent's intentions as more positive, the odds of an active response decreased by more than 7%. This intent interpretation variable approached significance at .074. Regarding Step 3 of SIP, when the respondent reported an interpersonal (versus intrapersonal) goal, there was approximately a 99% decrease in the odds that the respondent would react in an active reaction. The goal variable was significant at the .01 alpha level. With regards to Step 4 of SIP, if the respondent reported multiple response generations for dealing with the hypothetical situation, there was an approximately 13% increase in the odds that the respondent would react in an active reaction. This variable, however, was not statistically significant. Last, a one unit increase in the respondent's situational anger yielded an approximately 7% increase in the odds of an active response. The anger variable was statistically significant at the .05 alpha level.

Table 3. *HGLM Model Results*

Variable	Coefficient	SE	OR
INDIVIDUAL			
Intercept	-1.9514	.1405	0.1420
Trait Anger	0.1447**	.0223	1.1557
Host. Att. Bias	-0.0107	.0325	0.9893
VIGNETTES			
Intent Interpretation	-0.0785	.0438	0.9244
Goal	-4.3362**	.4552	0.0130
Response Generation	0.1207	.2560	1.1282
Anger	0.0686*	.0336	1.0710

Note: ** $p < .01$ and * $p < .05$

DISCUSSION

This research sought to test three steps of SIP theory, and the role that anger and hostile attribution bias play in an adult criminal population using ambiguous high risk for violence vignettes. Before discussing the implications of the current findings, we first address a key limitation of this study. Generalizability for the current study is restricted due to the use of jailed inmates in four county facilities in Pennsylvania. These inmates may have different cognitive and emotional capabilities compared to other members of society, specifically, members who have not committed a crime. Though not generalizable to the entire population, the individuals in this study have substantial contact with the criminal justice system and represent a group that are important for researchers to study. Additionally, these individuals were jailed for numerous different offenses, violent and non-violent, increasing the diversity of criminal respondents.

Crick and Dodge's (1994) SIP theory shows promise in understanding situational aggression and violence. Vignettes in which respondents reported poor or ineffective SIP were more likely to result in an active or aggressive outcome. When active outcomes were chosen, respondents were more likely to report more negative intent interpretations and

more intrapersonal goals, supporting steps two and three of SIP. An unexpected finding of this research was that, although the majority of the sample did not generate multiple responses to the vignettes, over 45% of the individuals who did said they would have generated an active response. This finding goes against previous SIP research. As part of a larger study, many of these inmates were asked about violent and avoided violence real situations they had been involved in prior to being jailed. The results of that study contradict this response generation variable (see Bowen et al., 2014). Specifically, multiple response generation in actual situations decreased the odds of violence. Additionally, fewer respondents generated multiple responses and, those who did, overwhelmingly suggested violence could have been avoided (61.90%) (Bowen et al., 2014). Future research should examine this variable both in vignettes and real situations of individuals to better understand response generations.

Anger, at both the trait and situational level, played an important role in the vignette outcomes. This adds to the research that suggests anger is critical in understanding decision making in situations. For example, Lemerise and Arsenio (2000) suggest that negative emotions, such as anger, can make it difficult for effective response generation to occur. Additionally, other researchers (see Novaco, 2011) have suggested that angry people actually may seek out or choose hostile situations. Thus, it is important to consider that not only do certain situational factors influence a person's emotion (i.e., anger), but certain people may actually seek out conflictual and risky situations. Future research should examine the role anger does play in SIP theory, particularly if it is a separate variable or if it plays a factor in one or more of the decision-making processes as Lemerise and Arsenio (2000) suggest.

Trait level hostile attribution bias, although not significant in the model, had an interesting correlation with the outcome variable suggesting further research into the area. It is important to keep in mind that the mean score on the Trait HAB scale was very low suggesting that most of our sample did not attribute hostile attribution to most people in these vignettes. These results are surprising since the studied population is thought to be more aggressive than the general population; these results also contradict past research with children and adolescents. The findings in this study suggest a complicated relationship between HAB and aggression.

Additionally, future research should examine decision making, not only in known adult criminal populations, but with the general population to compare differences, if any, in the cognitive processes. Research like this could provide valuable insight into possible atypical decision making in individuals who commit criminal acts. Vignettes might be the best means available for this type of research, since the general population does not get involved in high risk situations frequently. Vignettes would produce adequate sample sizes and possess the ability to standardize situations and measures. This type of research has been conducted on children and has produced a wealth of information.

The results of the present study suggest that utilizing vignettes to study decision making in the adult criminal population warrants further attention. Ideally, vignettes should be used in combination with studying real life situations these criminals experience. In this

study, the vignette research did produce similar results to the real life situations (except for the “response generation” variable) examined as another component of this study (see Bowen et al., 2014). However, more research should be conducted to explore the accuracy of vignettes in predicting real life situations of violence. Future research should use vignettes with samples of both criminal and non-criminal individuals.

In conclusion, the findings of this study provide partial support for SIP theory as an explanation for aggression in a sample of adult offenders. Social information processing theory seems to be a well-rounded and well-supported theory that has been understudied in the field. Understanding situational decision making in the criminal population is important and utilizing social information processing theory may provide the necessary means to study this complex phenomenon.

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APPENDIX 1. VIGNETTES

Now I'd like to read three descriptions of situations that could occur in real life. Although you may not have ever been in a situation like the ones described below, please pick the response that best fits what you think you would do.

Scenario #1

You start a conversation with an attractive woman at the bar. You don't realize she's with somebody. Suddenly her boyfriend comes from across the room and grabs your arm. He angrily asks what you are doing. You've never seen this guy before.

Scenario #2

You and several friends are listening to music at night with the volume turned up pretty high. A neighbor you don't know well comes to your door and starts yelling "turn the music down before I have to do something about it."

Scenario #3

You are waiting in your car in a parking lot. A man you don't know gets out. He's not paying attention and bangs his car door into yours leaving a big dent. You yell at the man to come back. He looks back and then ignores you and continues to walk into the store.