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## Evaluating the Competing Assumptions of Gottfredson and Hirschi's (1990) *A General Theory of Crime* and Psychological Explanations of Aggression

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### ABSTRACT

*Gottfredson and Hirschi's (1990) A General Theory of Crime, argues individual criminal propensity manifests itself as a general tendency to engage in a variety of criminal and delinquent acts. In contrast, Psychological explanations of aggression assume that the causal processes explaining individual variation in aggression are somehow different from those explaining other forms of crime and deviance. The current work assessed the relative strength of the assumptions of these two positions by testing the relationships among hostile attributional bias, self-control, and three indicators of criminal intent. Hostile attributional bias is an individual characteristic important in psychological research on social information processing models of aggression. As defined by Gottfredson and Hirschi (1990), self-control represents a general tendency towards a variety of criminal and delinquent acts. Results support the assumptions of both general theories and act-specific explanations of aggression. When demographic control variables and self-control are accounted for, hostile attributional bias is uniquely associated with aggressive intent. However, when compared to hostile attributional bias, self-control explains a larger amount of variation in all intent measures including aggression.*

**KEYWORDS:** aggression; generality; criminological theory.

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Gottfredson and Hirschi's (1990) *A General Theory of Crime*, argues that individual criminal propensity, as defined by self-control, is linked to variation in a broad variety of behaviors termed 'crime and analogous acts'. Crime and analogous acts are acts that tend to offer immediate benefit coupled with the potential for long-term consequence. Included in this general category of behavior are serious crimes such as murder and robbery, less serious acts such as larceny and drug use, and non-criminal behaviors including alcohol abuse, cheating on tests, and accidents. This definition of individual criminal propensity as a general tendency towards a variety of criminal and delinquent acts calls into question the utility of act-specific explanations of problem behavior.

Gottfredson and Hirschi's assumptions are in contrast to those underlying psychological research on aggression. Explanations with an explicit focus on aggression assume that the causal processes explaining individual variation in aggression are different in some way from those explaining other forms of crime and deviance. For example, social learning models of aggression (Bandura 1973) predict that positive reinforcement for acts of aggression will lead to additional aggression without a necessary increase in other forms of problem behavior. Similarly, the frustration aggression hypothesis (Berkowitz 1989; Dollard et al. 1939) argues that frustration increases the likelihood of aggression without a similar increase in

the likelihood of other types of crime and delinquency. Implicit in both of these explanations' focus on aggression is the assumption that there is something about aggressive acts that distinguishes these acts from other forms of crime and delinquency.

The relative strength of the assumptions of general explanations of crime and delinquency, such as Gottfredson and Hirschi's (1990), and the assumptions of act-specific explanations of aggression can be explored through the incorporation of characteristics representing these two positions in a single causal model. To this end the current work incorporates hostile attributional bias, a construct important to recent psychological work on aggression, in a model including a measure of self-control, a general predictor of crime and delinquency. Hostile attributional bias is defined as a tendency to attribute hostile intent to an actor in an ambiguous social situation. Research has shown that this characteristic is related to aggressive behavior in normal, clinical, and criminal justice system samples (for a review of this literature see Crick and Dodge 1994).

The incorporation of hostile attributional bias in a model with a general predictor of crime and deviance allows an initial exploration of the relative contribution of act-specific and general processes to the explanation of diverse forms of crime and delinquency. While a number of different patterns of relationship between self-control, hostile attributional bias and different types

of crime and delinquency are possible, this work will focus on addressing two key questions: 1) what is the pattern of relationship between hostile attributional bias and diverse forms of crime and delinquency when a general predictor of crime and delinquency, self-control, is included in the model, and 2) what is the relative contribution of self-control and hostile attributional bias to the explanation of diverse forms of crime and delinquency? Prior to these tests the current work reviews research with implications for the assumptions of general and act-specific explanations of crime and delinquency.

### **OFFENSE SPECIALIZATION AND THE FACTOR STRUCTURE OF CRIME AND DEVIANCE**

Tests of offense specialization inform the extent to which general causal processes are sufficient to explain variation in diverse forms of crime and delinquency. Specialization refers to the tendency of an offender to follow an offense of a particular type at time  $t$  with an offense of the same type at time  $t+1$ .<sup>2</sup> Tests of offense specialization demonstrate there is a great deal of versatility in offending (Blumstein, et al. 1988; Bursik 1980; Farrington 1988; Kempf 1987; Klein 1984; Lattimore, Visher, and Linster 1994; Piquero et al. 1999). Offenders do not tend to repeat offense types; they tend to switch among them. This preponderance of evidence for offense versatility is complemented by a small but significant tendency to specialize. While offenders are more likely to switch to another offense type than they are to repeat the same offense, in the majority of cases committing an offense of a given type increases the probability relative to chance that the offense type will be repeated.

The extensive generality in offending found in tests of offense patterns suggests a general causal process is sufficient to explain the strong majority of variation in offense type patterns. A general causal process may also explain the small amount of specialization that compliment this extensive generality. Evidence of specialization is widely distributed across offense type. This distribution indicates elements specific to a given offense type are not necessary to account for specialization. Consistent with this suggestion, Gottfredson and Hirschi (1990) argue specialization occurs as a function of environmental consistencies. For example, "an individual who lives next to a shopping area that is approached by pedestrians will have repeat opportunities for purse snatching, and this may show in his record" (Gottfredson and Hirschi 1990:92).

Tests of the factor structure of crime and deviance also inform the extent to which general casual processes are sufficient to explain diverse forms of crime and delinquency. These tests assess the factor structure

underlying criminal offenses and other types of problem behavior. The results of these tests show much of the variation in diverse criminal and delinquent behaviors is attributable to a single underlying factor (Donovan and Jessor 1985; Donovan, Jessor, and Costa 1988; Rowe and Flannery 1994). However, more complicated factor structures have resulted in significant improvements in model fit (Gillmore et al. 1991; Osgood et al. 1988). Again, as with results of tests of specialization, general causal process is sufficient to explain these results. A single factor explains a substantial proportion of the variation in diverse forms of crime and delinquency, showing that there is a great deal of commonality in the explanation of these apparently diverse behaviors. This commonality is not undermined by the additional variation explained by more complicated factor structures, as this variation may be caused by consistencies in the environment rather than individual characteristics.

### **INDIVIDUAL CHARACTERISTICS AND AGGRESSION**

Studies of offense patterns and tests of the factor structure of crime and deviance clearly indicate that there is a great deal of generality in offending, demonstrating that a general causal process is capable of explaining much of the variation in apparently diverse forms of crime and delinquency. Despite this, it remains possible that act-specific processes explain significant amounts of variation in aggression. While informative, studies of offense patterns and tests of the factor structure of crime and deviance are influenced by both individual and environmental characteristics. Tests focusing on the relationship between individual characteristics and different types of problem behavior, including aggressive acts, have a more direct bearing on the question at hand. If individual characteristics uniquely associated with aggressive acts exist, it would suggest that general causal processes are not sufficient to fully explain variation in aggressive acts, supporting the assumptions of psychological explanations of aggression.

Comparisons of groups of nonviolent frequent offenders and violent offenders assess the extent to which the characteristics predicting violent offending are different from those predicting nonviolent frequent offending. Such comparisons have explored potential differences across a number of domains including family functioning, child development, biological risk, prior behavior, and IQ. With a single exception these studies show that the individual characteristics predicting violent offending also predict nonviolent offending (Capaldi and Patterson 1996; Farrington 1991; Piquero 2000), providing further evidence for the sufficiency of a general explanation of all forms of crime and deviance including aggression. Piquero

(2000) offers the single exception to this trend, finding that the Wechsler Intelligence Scale for Children (WISC), a measure not included in prior studies of this type, discriminated among frequent offenders, violent offenders, and frequent and nonviolent offenders. This suggests the WISC may measure an individual characteristic that is uniquely related to violent acts, providing some support for assumptions of psychological explanations of aggression. The importance of the ability of the WISC to discriminate between groups is limited by the large number of contrasts in studies comparing groups of violent and nonviolent offenders. A single finding of statistical significance may be a function of the large number of contrasts.

Gottfredson and Hirschi (1994) also directly explore the relationship between individual characteristics and different types of criminal behavior. Specifically, they test the relationships among aggression, theft, drug use, and three measures borrowed from general criminological theory: parental supervision, amorality, and ambition. Correlations estimated by Gottfredson and Hirschi (1994) are reproduced in Table 1.

*Table 1. Correlations of Aggressive Behavior and Alternative Measures of Low Self-Control for White Males (Richmond/Seattle).*

Variable	Theft		Violence		Drugs	
	R	S	R	S	R	S
Parental Supervision	-.28	-.23	-.23	-.25	-.29	-.30
Amorality	.29	.30	.25	.30	.28	.28
Ambition	-.24	-.23	-.18	-.19	-.27	-.29
Theft	--	--	.43	.48	.42	.56
Violence	--	--	--	--	.31	.44

Note: These data represent original analyses from the Richmond (California) Youth Project described in Hirschi (1969) and the Seattle Youth Study described in Hindelang, Hirschi, and Weis (1981). N=1,034-1,052 for the Richmond sample; N=640 for the Seattle sample. Reprinted by permission of Transaction Publishers. From 'Aggression' by M. Gottfredson and T. Hirschi, in *The Generality of Deviance*, Copyright (1994) by Transaction Publishers.

Gottfredson and Hirschi note that the correlations between the different measures of criminal and delinquent acts are all "high enough to question the assumption that aggression is independent of a more general construct encompassing violence, theft, and drug use" (1994:39). Additionally, measures of parental supervision, amorality, and ambition fail to discriminate among the measures of theft, violence, and drug use. Based on these results Gottfredson and Hirschi concluded that, "there is thus every reason within these

sets of data to treat aggression as an idea indistinguishable from the more general idea of criminality" (1994:39). Finding that violence is indistinguishable from other forms of crime and delinquency demonstrates that a general causal process should be sufficient to explain variation in a wide variety of criminal and delinquent acts including aggression.

In a test particularly relevant to the current work, Dodge et al. (1990) assessed the relationship between hostile attributional bias and both violent and nonviolent crime in a sample randomly selected from a population of volunteers in a maximum-security prison for juvenile offenders. Subjects ranged in age from 14 to 19. Measures of criminal behavior were based on official prison files. Violent crime was quantified as the total lifetime frequency of arrest for murder, assault, sexual assault, kidnapping, robbery, and weapons crime. Nonviolent crime was quantified as the total lifetime frequency of arrest for escape, fraud, negligence, drug offenses, theft, obstructing justice, arson, and miscellaneous minor offenses. Stepwise regression models found hostile attributional bias was significantly associated with violent crime net of the effect of race, socio-economic status, intelligence, and the number of nonviolent crimes committed. In contrast, hostile attributional bias was not significantly related to nonviolent crime net of control variables.

The unique association between hostile attributional bias and violent acts suggests that some act-specificity in the explanation of aggression is warranted. However, the strength of the conclusions of Dodge et al. (1990) is limited by methodological considerations. The pattern of relationships between hostile attributional bias and the two crime measures may be explained by the systematic distribution of measurement error among official measures of violent crime. The measures of violent and nonviolent crime used by Dodge et al. (1990) were based on official prison records. Measures of less serious crime that are based on official data are more prone to measurement error than measures of serious crime based on official data (Weis 1986). If measures of less serious crime are measured with more error and increases in measurement error weaken the strength of relationships, then the lack of a relationship between hostile attributional bias and nonviolent crime may be attributable to the increased amount of measurement error associated with the nonviolent crime measure.

**METHOD**

To offer an initial exploration of the relative strength of general and act-specific explanations of crime and delinquency, the current work incorporates hostile attributional bias in a model including a general predictor of acts of crime and deviance, self-control.

Specifically, this study tests the relationships among self-control, hostile attributional bias, and three indicators of criminal intent. The intent indicators used herein measure intent to behave aggressively, commit theft, and use drugs. These measures avoid the systematic distribution of measurement error by offense seriousness found in official measures of crime and delinquency. If hostile attributional bias explains variation in intent to commit aggressive acts beyond that explained by self-control and is uniquely associated with aggressive intent, it would suggest that the complication associated with theories offering act-specific explanations of aggression is justified. Further, the relative importance of general and act-specific explanations will be informed by the amount of variation in intent explained by hostile attributional bias relative to the amount of variation explained by self-control.

### Participants

Data for this test were gathered using a survey administered in two undergraduate criminology courses at a major East Coast University (N=312). All but one of the students in attendance on the day of the survey agreed to participate. The sample ranged in age from 18 to 28, with a mean of 19. Approximately 53 percent of the sample was male. The racial distribution of the sample was 11.6 percent African American, 15.5 percent Asian, 61.6 percent Caucasian, 4.8 percent Hispanic, and 6.5 percent other. There is reason to anticipate that prevalence rates for behaviors considered by this study are reasonably high in this sample. For instance, the 1997 National Household Survey on Drug Abuse found that 41.5 percent of people between the ages of 18 and 25 had used marijuana. Of these, 12.8 percent had used in the past month (SAMHSA 1999). Additionally, data from the Uniform Crime Report (UCR) show that in 1994 arrest rates for violence peaked at age 18 (Cook and Laub 1998). Thus, the sample was captured shortly after that age at which rates of violent behavior among this sample reach their highest point. It is important to note, however, that the base rates of many criminal behaviors including violence may be lower in a sample of university students than in the overall population. This potentially limits the generalizability of the current work. Generalizability concerns are discussed further in the conclusions section.

### Measurement

Elements of the survey instrument included: 1) three scenarios each describing in detail an opportunity to commit a crime, 2) a measure of hostile attributional bias, and 3) a measure of self-control. The scenarios and the measures of hostile attributional bias are included in the Appendix. The survey also included

single item indicators of the respondent's gender, age and race.

**Offense scenario method and intent indicators.** The scenario method of measurement is widely used in psychological research (for a review see Fishbein and Azjen 1975) and has been employed in tests of rational choice and deterrence theories (see for example Klepper and Nagin 1989a, 1989b; Nagin and Paternoster 1993, 1994; Piquero and Tibbetts 1996). The principle difference between the offense scenario method and traditional methods of data collection is the use of an indicator of intent as the dependent variable. The validity of intent measures are supported by a number of studies demonstrating that measures of intent are correlated with actual behavior.<sup>3</sup>

Through the use of intent indicators, the current study avoids the systematic distribution of error across measures varying by offense seriousness that limits the implications of the results of Dodge et al. (1990). Scenario based intent indicators also avoid questionable assumptions about the appropriate lag interval between exogenous and endogenous variables (Nagin and Paternoster 1993). In the current work, separate scenarios were used to quantify intent to commit acts of aggression, theft, and drug use. Scenarios were sample-specific and intended to elicit a response variable correlated with behavior in the population under consideration. Intent to commit a given act was assessed as a single item response ranging from 0 'definitely would not' to 10 'definitely would.'

**Individual characteristics.** The current work included a measure of hostile attributional bias and a measure of self-control. The measure of hostile attributional bias, derived from the work of Crick and Dodge (1996), consisted of two scenarios each describing a provocation situation in which the intent of the provocateur was ambiguous. For each scenario, respondents were asked to answer two questions. In the first, respondents judged the likelihood that the provocation was intentional. In the second, they judged whether or not the intent of the provocation was aggressive. Response categories ranged from 0 'not at all likely' to 10 'very likely.' The two responses for each scenario were combined in a single four item hostile attributional bias scale. The items in the hostile attributional bias scale had a Chronbach's alpha of .72. Factor analysis found one factor with an eigen value over one.

Self-control was measured using Grasmick et al.'s (1993) 24 item self-control scale. Responses to these items were based on a five point likert scale ranging from "never" to "very often". The complete self-control scale had a Chronbach's alpha of .84. Factor analysis revealed six factors with eigen values over one. The largest drop-off between factors was clearly the gap between the first and second, demonstrating that the

Table 2. Descriptive Statistics (N=312).

Variable	Mean	S.D.
Hostile Attributional Bias Scale (HAB)	5.45	2.17
Self-Control Scale	3.40	.42
Intent to act aggressively	4.02	3.14
Intent to commit theft	.91	2.09
Intent to use drugs	3.06	3.81

strong majority of variation in scale items was explained by a single factor.

Other measures of individual characteristics included single item indicators of age, gender, and race. Age was coded as a continuous variable. Gender was coded male = 0, female = 1. Race was coded as non-African American = 0, African American = 1. Descriptive statistics for the variables included in the analysis are presented in Table 2.

**Analysis**

To offer an initial exploration of the tenability of the assumptions of act-specific explanations of aggression and general explanations of crime and delinquency, this analysis explores the incorporation of hostile attributional bias in models testing the relationship between self-control and three different types of criminal intent. Two questions motivate the analysis: 1) what is the pattern of relationship between hostile attributional bias and diverse forms of criminal intent when a general predictor of crime and delinquency, self-control, is included in the model, and 2) what is the relative contribution of self-control and hostile attributional bias to the explanation of intent towards different forms of crime and delinquency? Should hostile attributional bias be uniquely associated with aggressive intent when a general predictor of crime and delinquency and control variables are accounted for, it would offer initial support for the assumptions of act-specific explanations of aggression. The relative importance of general and act-specific explanations will be informed by the amount of variation in the intent measures that self-control and hostile attributional bias account for.

Table 4. Results for OLS Regression Models Exploring the Relationship between Individual Characteristics and Intent Indicators.

Independent Variable	Aggressive Intent (N=302)			Theft Intent (N=301)			Drug Use Intent (N=302)		
	B	Beta	Sig.	B	Beta	Sig.	B	Beta	Sig.
HAB	.20	.14	.01	.10	.10	.08	-.00	-.00	.99
Self-Control	-2.45	-.32	.00	-1.25	-.25	.00	-2.37	-.26	.00
Gender	-1.13	-.18	.00	-.01	-.00	.98	-.15	-.02	.73
Age	.21	.09	.07	.09	.06	.27	-.35	-.13	.02
Race	2.95	.30	.00	.44	.07	.24	-1.29	-.11	.05
R <sup>2</sup>			.25			.08			.11

**RESULTS**

Bivariate correlation coefficients are presented in Table 3. Results show self-control is a general predictor of diverse forms of criminal intent. There is a strong inverse correlation between the self-control scale and each of the different intent types. This pattern is consistent with that predicted by Gottfredson and Hirschi (1990). The pattern of correlation between hostile attributional bias and the different intent indicators offers mixed support for act-specific explanations of aggressive behavior. Correlations suggest hostile attributional bias is an important predictor of aggression and theft, but not drug use.

Table 3. Correlation between Individual Characteristics and Intent Indicators.

Construct	Intent Indicator		
	Aggression	Theft	Drug Use
HAB	.20**	.14*	.03
Self-Control Scale	-.33**	-.25**	-.29**
Age	.05	.02	-.17**
Gender	-.20**	-.05	-.07
Race	.25**	.04	-.14*

Note: HAB refers to Hostile Attributional Bias Scale; N=306-312; \*p<.05; \*\*p<.01.

The pattern of correlation between intent indicators and the demographic characteristics included in Table 3 also varies. There is a significant inverse correlation between age and intent to use drugs, race and intent to use drugs, and gender and intent to commit acts of aggression. There is also a significant positive correlation between race and intent to commit acts of aggression.

A series of ordinary least squares regression models assessed the relationship between hostile attributional bias, self-control, and the different types of criminal intent. These models also test the relative explanatory power of self-control and hostile attributional bias. The results of these models are presented in Table 4. Self-control is a significant predictor of all three intent types

after demographic control variables and hostile attributional bias are accounted for. The measure of hostile attributional bias is uniquely associated with aggressive intent. The relationship between hostile attributional bias and theft intent is not statistically significant, and the relationship between hostile attributional bias and drug use intent is trivial.<sup>4</sup>

The relative amount of variation in each of the intent types explained by the measures of self-control and hostile attributional bias is assessed with the change in R<sup>2</sup>. Change in R<sup>2</sup> represents the amount of variation in the dependent variable explained by a given independent variable. Results are presented in Table 5. Across all types of intent the measure of self-control explains a much larger amount of the variation in intent indicators than the measure of hostile attributional bias.

Table 5. Change in R<sup>2</sup> with the inclusion of a Measure of Self-Control and a Measure of Hostile Attributional Bias.

Intent Measure	Change in R <sup>2</sup>	
	Self-Control	HAB
Aggressive intent	.06	.02
Theft intent	.06	.01
Drug use intent	.10	.00

## DISCUSSION

In support of the assumptions of Gottfredson and Hirschi (1990), the results presented here find that the measure of self-control explains a substantial portion of the variation in each of the intent measures. However, results also provide support for the assumptions of act-specific explanations of aggression. When demographic control variables and the self-control scale are included in regression models, the hostile attributional bias measure is uniquely associated with an aggressive intent. Assessing the change in R<sup>2</sup> that occurs with the inclusion of self-control and hostile attributional bias shows that self-control explains a larger amount of variation in all of intent measures including aggression.

## CONCLUSIONS

Gottfredson and Hirschi (1990) use self-control to define general individual criminal propensity as a tendency towards “crime and analogous acts”. In contrast, psychological explanations of aggression, including social information processing models, assume that there are causal processes unique to the explanation of aggression. The results presented here offer support for both of these positions, finding that while a measure of self-control explained a relatively substantial amount of the variation in all the intent types, the hostile attributional bias measure explained a small but significant amount of the variation in aggressive intent. It seems models emphasizing general causal processes

may benefit from some attention to act-specific explanations, and models emphasizing act-specific explanations may be advanced through the consideration of general causal processes.

The results of the current work parallel findings from studies of offense specialization (Blumstein et al. 1988; Bursik 1980; Farrington 1988; Klein 1984; Kempf 1987; Lattimore et al. 1994; Piquero et al. 1999) and tests of the factor structure of crime and deviance (Donovan and Jessor 1985; Donovan et al. 1988; Gillmore et al. 1991; Osgood et al. 1988; Rowe and Flannery 1994). Collectively, this body of work finds strong evidence for versatility in offending, demonstrating that at a minimum general processes explain much of the variation in a variety of criminal and delinquent acts. Consistent with this evidence, the current work found a single characteristic, self-control, is a strong predictor of three different types of criminal intent. Beyond strong evidence for versatility, studies of offense specialization and tests of the factor structure of crime and deviance also find that there is a small but significant tendency to repeat specific types of crime and delinquency. The current work suggests that in addition to environmental consistencies some of the tendency to repeat aggressive acts may be attributable to individual characteristics.

While the research reviewed here and the results of the current work offer strong evidence of generality in offending, there is some indication that individual characteristics related to specific forms of crime and delinquency may be reliably and consistently identified. Piquero (2000) found the WISC was capable of discriminating between frequent offenders, violent offenders and frequent and non-violent offenders, suggesting WISC scores index an individual trait differentially related to violent acts. Similarly, the current work and that of Dodge et al. (1990) find hostile attributional bias is uniquely associated with aggressive/violent acts. The presence of hostile attributional bias may lead to an increase in the individual tendency towards aggressive acts without a concurrent increase in the likelihood of theft and drug use.

The weight given the current results is tempered by methodological considerations. The current work used the offense scenario method. As a consequence, the dependent variable was a single item indicator of intent to commit an act rather than a direct measure of the commission of that act. Measured in this way, intent to commit an act described in a scenario may not reflect actual propensity towards a specific type of crime. In addition, if respondents use heuristics in predicting their responses to hypothetical situations or display stable individual differences in their endorsement of statements that present them in a positive or negative

light, this systematic bias may explain relationships found in the current work. While the use of intent indicators is an important consideration, similarities between the findings of this work and those of Dodge et al. (1990) suggest that the results presented here are not solely a function of the use of a measure of intent as a dependent variable. Dodge et al. (1990) used official measures of crime and found a pattern of statistical significance similar to that in the current results. Nonetheless, the strength of conclusions that may be drawn based on the results of the current work is conditioned by the use of intent indicators.

The implications of the current work are also conditioned by the use of a convenience sample of college students. Results based on a sample of college students may not generalize to the larger population of offenders. However, just as the work of Dodge et al. (1990) informs concerns regarding the use of intent indicators this work also has implications for a consideration of the generalizability of the current study. Dodge et al. (1990) found similar results using a sample of volunteers from a maximum-security prison for juvenile offenders. This indicates that the results presented here are not entirely unique to a convenience sample of college students. Despite this, strong conclusions regarding the overall generalizability of the current results await a replication in a sample representative of the broader population.

Other methodological considerations include the measurement of self-control employed and the potential impact of variables not included in the regression models. Gottfredson and Hirschi (1990) argue in favor of behavioral measures of self-control. The inclusion of such a measure may alter the substance of the results found here. Additionally, the inclusion of other known correlates of crime may also substantively change the results. For instance, a measure of delinquent peers may account for some portion of the explained variance attributed to self-control or hostile attributional bias. Further, other measures of individual characteristics including survey measures of other psychological characteristics and assessments of autonomic functioning/neuroimaging may provide further support for the assumptions of act-specific explanations of aggression. Finally, studies employing measures of specific forms of aggression such as spouse, child, or sexual abuse may find these measures uniquely associated with specific individual characteristics.

Clearly, support for the generality of crime and deviance is preponderant. However, in light of the limited research supporting act-specificity, the potential implications of individual characteristics differentially related to specific forms of crime and deviance are briefly considered. Individual characteristics differentially related to particular behavior types do not suggest that act-specific criminological theories need to

be developed. However, such characteristics do suggest that the parsimony of general theory should be relaxed slightly to account for variation in the individual tendency towards particular types of crime and deviance. Such a model would emphasize the large degree of generality that has been demonstrated by tests of specialization, studies of the factor structure of crime and deviance, and comparisons of non-violent frequent offenders and violent offenders, while also incorporating individual processes allowing for a small but significant degree of act-specificity.

Before the parsimony of general explanations of crime and delinquency is sacrificed, individual characteristics that are differentially related to particular forms of crime and deviance must be clearly identified. To inform the extent to which the complication of processes allowing for act-specific propensity is necessary, work in this area should continue to assess the relationship between individual characteristics and different types of crime while controlling for indicators of general criminal propensity. Additionally, this work should attempt to specify the relationship between general propensity and those individual characteristics differentially related to specific offense types. Tests should also continue to use a variety of samples and a variety of measurement methods in order to develop a body of research upon which strong theoretical inference may be based.

## ENDNOTES

1. Thanks to one of the anonymous reviewers for offering this extension of the existing discussion of the limitations of intent indicators.

2. Specialization is typically quantified with the FSC. The calculation of the FSC relies on an offense transition matrix containing the joint distribution of offense types for two consecutive occasions. For instance, the offense transition matrix for the first offense transition contains the joint distribution of offense types for the first and second arrests. An FSC is calculated for each of the diagonal cells of an offense transition matrix:

$$FSC = \frac{O - E}{R - E}$$

where O is the observed number of cases in the diagonal cell, E is the number of cases that would be expected in the cell by chance alone, and R is the number of cases in the row. The Forward Specialization Coefficient (FSC) ranges from zero to one, assuming a value of zero when there is complete versatility in offending and a value of one when there is perfect forward specialization.

3. Fishbein and Ajzen (1975) argue a person's intent to engage in a particular behavior will be highly



correlated with their actual performance of that behavior when measured correctly. This argument is supported by research finding intentions to commit sexual assault are correlated with actual aggression (Malamuth 1981), intentions to use marijuana are related to future marijuana use (Murray and Erickson 1987), and scores on a behavioral intention scale are significantly correlated ( $R=.71$ ) with prior behavior scale scores (Grasmick and Green 1980). Using a two-wave panel design, Green (1989) provided strong evidence for the validity of intent measures, finding behavioral intentions were highly correlated with the actual performance of deviant behavior ( $r = .85$ ). Kim and Hunter's (1993) meta-analysis provides further evidence for the validity of intent indicators, finding strong relationships among attitude, intention, and behavior.

4. One of the anonymous reviewers suggested the results would be more robust if models were estimated for the different gender and ethnic groups. When such models were estimated no substantive differences were found across groups.

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**APPENDIX**

**Drug Use Intent Scenario**

It's Friday night. You and some friends go to a party at another friend's house. There are a lot of people there and plenty of beer. Everyone is hanging out and seems to be having a good time. Towards the end of the evening you notice that there are a couple of groups of people smoking marijuana. Minutes later someone passes you a joint. Do you think you would smoke marijuana under these circumstances?

**Theft Intent Scenario**

You are a college sophomore living in the dorms. You wake up and decide to take a shower. You go to the shower room which consists of about a half dozen shower stalls and a separate changing room. It's about 7:00 A.M. on a Monday morning and there aren't many people up and about. The two other people in the shower room are already showering. As you start to undress, you see a \$20 bill sticking out of the pocket of someone's jacket. Do you think you would take the money under these circumstances?

**Aggressive Intent Scenario**

You are out in College Park on a Saturday night. It's late and you have had quite a bit to drink. The bar you are in is really crowded. As you are talking to a friend you are pushed from behind. You turn around and there is someone (same sex as you) right in your face. They step to you and ask 'You got a problem?' Do you think you would act in a physically aggressive (punch, shove) manner in this situation?

**Hostile Attributional Bias Scenario One**

You are driving down a road that has two lanes in both directions. You are in the far right lane. It is rush hour and there is a lot of traffic. All of a sudden a car traveling in the lane to your left cuts in front of you. You have to slam on the brakes to avoid a collision.

1. What are the chances the driver of the other car cut you off on purpose?
2. What are the chances the driver of the other car was acting in an intentionally aggressive manner when they cut you off?

**Hostile Attributional Bias Scenario Two**

You are arguing with your roommate. He/she borrowed twenty dollars from you some time ago and refuses to pay you back. You leave your residence to get something to eat. When you get back you find your roommate has broken your radio.

1. What are the chances your roommate intentionally broke your radio?
2. What are the chances your roommate broke the radio because he/she was mad at you for arguing with him/her?