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# *EXPOSURE TO VIOLENCE AND TRAUMA*

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## Personality, Parental, and Media Influences on Aggressive Personality and Violent Crime in Young Adults

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**ABSTRACT.** Debate remains regarding the interaction between predictor variables for aggression, including family environment, media violence, and personality. The current study examined the contributions of gender and personality, exposure to physical abuse and violence in the family, and exposure to media violence in both television and in video games on violent criminal activity. Data from young adults ( $n = 355$ ) indicated that personality characteristics and direct physical abuse significantly predicted violent crime. Exposure to television and video game violence were not significant predictors of violent crime. These results elucidate the complex interplay between multiple factors related to the etiology of violent crime. These results also call into question the belief that media violence is involved in the etiology of violent crime.

**KEYWORDS.** Violent crime, aggression, personality, family violence, media violence, computer games, television, mass media

## INTRODUCTION

Despite decades of research, the origins of violent criminal behavior remain a hotly debated issue in the scientific literature as well as in the public consciousness. Popular explanations for violent crime may vary with both the scientific paradigms of the era as well as the specific nature of the crime. This is evident in cases of high-profile crimes. For example, in cases in which mothers kill their children, such as the Andrea Yates case, genetics or mental illness are common explanations for these crimes (U.S. Department of Justice, 2001). In contrast, in cases of violence by teenagers, media violence exposure is more often discussed as being responsible (e.g., Lawrence & Birkland, 2004). It remains unclear whether these public and scientific discussions are grounded in current scientific information or whether these discussions are informed more by stereotype, culture, and even strongly held beliefs in the scientific community. Violent criminal behavior is a complex phenomenon, and too often, potential causes are studied in an isolated manner. As a result, scientists and laypersons alike may be presented with scattered, contradictory, and confusing information that does little to illuminate specific mechanisms that lead to violent criminal behavior. The current study is designed to examine potential correlates of crime from a multivariate perspective in order to examine which variables, when presented in combination, are most predictive of violent behavior.

## *Environmental Effects on Crime*

It is beyond the scope of the present article to present an in-depth explanation of all of the research examining various causes and predictors of criminal violence. Arguably, one main theme through much of the literature regards the extent to which environmental variables such as family violence exposure and media violence can influence violent behavior. Unfortunately such studies often examine only direct relationships between two variables and do not control for third variables. For example, many correlational studies of media violence find small but positive relationships between exposure to media violence and aggressive behavior (a much more general term than violent criminal behavior). As noted in Paik and Comstock (1994), the effect sizes decrease significantly the closer the dependent measures of aggression approximate real-life aggressive behaviors (from  $r = .31$  for all studies to  $r = .1$  for studies of violent crime specifically, a 90% reduction in explained variance). As such it remains unclear whether the overall effect sizes discussed in Paik and Comstock generalize adequately to real-world violence. Given that the relationships between viewing television violence and violent behavior tend to be weak, media violence studies should examine family violence as well. It may well be that exposure to family violence increases violence proneness within individuals, and also makes them inclined to view more violent media.

Evidence to support environmental causes of violent criminal behavior varies in regards to the specific cause. Arguably exposure to family violence, and physical abuse specifically, benefits from the widest body of supportive literature (Anda et al., 2006; Herrera & McCloskey, 2003; Stanley & Goddard, 2004; Straus & Yodanis, 1996). This relationship appears to hold true for crimes of domestic violence (Straus & Gelles, 1990), child abuse (Giles-Sims, 1985), and serial murder (Burgess, Hartman, Ressler & Douglas, 1986). Research has suggested that exposure to childhood abuse may exacerbate neurogenetic propensities toward the development of borderline personality disorder (Minzenberg, Poole & Vinogradov, 2008) and other personality disorders (Dudeck, Spitzer, Stopsack, Freyberger & Barnow, 2007), which may place individuals at higher risk for commission of violent crimes. The combination of exposure to abuse and genetic predisposition may contribute to adult attachment difficulties commonly seen in some personality disorders (Minzenberg et al., 2008), which may reduce capabilities for solving interpersonal problems peacefully. It is worth noting, however, that a recent surgeon general's report

(U.S. Department of Health and Human Services, 2000) concluded that both family violence and media violence factors leading to youth violence are weak.

Media violence effects remain a considerably more controversial field. Some researchers (e.g., Anderson et al., 2003) assert that a consensus has been reached regarding the causal impact of media violence on aggression (including violent crime), whereas other scholars almost paradoxically assert that little to no relationship between media violence and violent crime exists (e.g., Ferguson, 2007; Freedman, 2002; Pinker, 2002; Savage, 2004). The debate hinges largely on the effects produced by much of the research. Some authors have argued that the effect sizes produced by media violence research are similar to those found in many medical studies, such as those on smoking and lung cancer (Bushman & Anderson, 2001). However, these conclusions are based on a method of effect size calculation from medical data that has been known to be flawed for some time (e.g., McGraw, 1991). Block and Crain (2007) suggest the effect size for smoking and lung cancer is near to  $r = .9$  and not  $r = .4$  as suggested by Bushman and Anderson. Block and Crain's statistics are supported by those provided by the American Cancer Society (2008) stating that smoking accounts directly for 87% of lung cancer cases. As mentioned earlier, Bushman and Anderson used the effect size from Paik and Comstock that best supports their position ( $r = .31$ ), while ignoring that effect sizes for more valid aggression measures, such as violent criminal behaviors, that are much lower ( $r = .1$ ).

In relation to the statistical significance of many studies of media violence, statistical significance exists as a binary "up or down vote" that can be rather easily affected by large sample sizes that produce positive significance from weak effects (see Cohen, 1994). As such, it is unclear whether small effects, such as those commonly found in media violence studies, are indicative of important phenomena or merely the byproduct of the weaknesses of a focus on "statistical significance" rather than "effect size." As an example, a study of 2,228 high school students (DuRant, Champion & Wolfson, 2006) found a significant link between watching professional wrestling and aggressive behaviors, such as "date fighting" or carrying weapons to school. However, inspection of the statistics reveals that all of the statistically significant correlations were quite trivial. Many correlations are less than  $r = .1$  and none are as high as  $r = .2$ , meaning that the effect size for these relationships (here denoted  $r^2$ ) is never as high as 4%, and often is essentially 0%. Because family violence was not considered, it is worth asking if

these small correlations would have remained significant had family violence been taken into account.

### ***Personality and Crime***

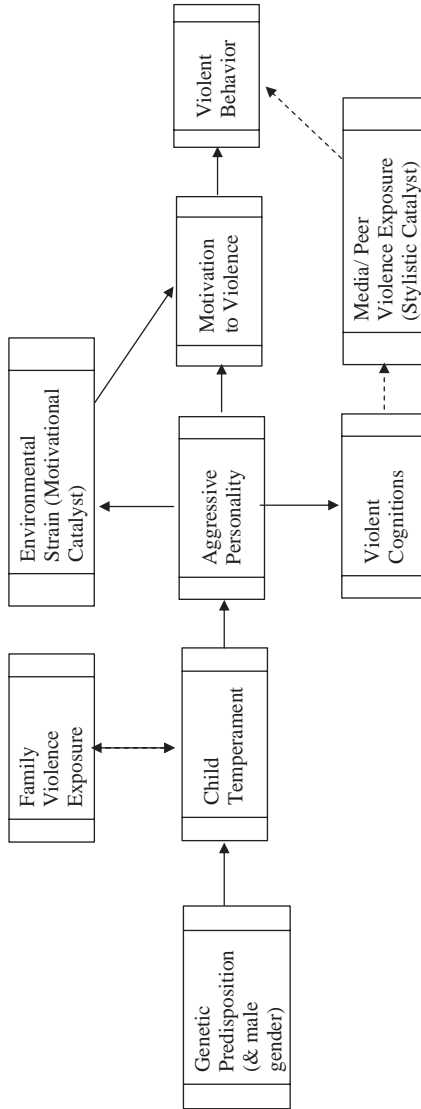
Few studies of either family violence or media effects seriously consider the potential role of individual personality as an independent factor in the development of violent criminal behaviors. However, recent research from twin studies (e.g., Ferguson, in press; Larsson, Andershed, & Lichtenstein, 2006) has suggested that genetic and personality factors may be as powerful as environmental factors in explaining antisocial and violent behaviors, and that genetic and environmental risk factors may interact in significant ways (Caspi et al., 2002). Indeed, it could be argued that much of the link between environmental risk factors such as family or media violence exposure can be explained by underlying genetic determinants. Much research has focused on the concept of aggressive or antisocial personality, which may be related to frontal lobe deficits, as a cause of criminal activity (Hare, 1993). For example, van Ousem et al. (2006) found that aggressive and antisocial traits distinguished violent offenders, including sexual offenders, from nonoffending juveniles.

Regarding more general personality traits, aside from those specifically used to describe antisocial behaviors, Wiebe (2004) notes that among the "Big Five" components of trait personality, agreeableness and conscientiousness have been found to be predictive of criminal behavior. Heaven (1996) found neuroticism in addition to agreeableness and conscientiousness to be predictive of delinquent behaviors. Unfortunately studies of both personality and exogenous variables such as media effects often do not employ multivariate analyses to consider the effects from multiple influences. It would be desirable to examine the extent to which potential influences, such as family violence exposure, media violence, and personality, interact with each other in the development of violent criminal behavior.

### ***A Multivariate Model of Biological and Learning Influences on Violent Behavior***

Ferguson et al. (2008) have presented a model for understanding multivariate influences on violent behavior. This model is presented in Figure 1. According to this model, the development of a violence-prone personality occurs in part through a biological pathway in which genetic predisposition (particularly in males) leads directly to an aggressive child temperament

FIGURE 1. The Catalyst model of violent crime.



and ultimately to an aggressive adult personality through maturation. Family violence exposure moderates the influence of this biological risk, which is consistent with data from Caspi et al. (2002). Indeed, an increasingly widening body of literature suggests that neurogenetic and environmental abuse factors interact to increase the risk of the development of violence-prone personalities (Minzenberg et al., 2008). A brain that is already genetically hard-wired for more violent behaviors may increasingly mold neurological pathways emphasizing violence in response to environmental abuse (National Child Traumatic Stress Network, 2003). Childhood abuse may hamper the development of appropriate attachment relationships, increasing feelings of isolation and decreasing emotional regulation, potentially increasing the violence risk (Cloitre, Stovall-McClough, Zorbas, & Charuvastra, 2008).

This model also suggests that individuals who develop an aggressive personality are increasingly at risk for engaging in violent behavior during times of environmental stress. Thus, although the immediate environment does not cause a propensity toward violence, times of stress may act as catalysts for violent acts in an individual already prone to them. Financial and social problems caused by divorce, legal troubles, and similar events are all examples of environmental strain. Although the basic propensity to respond to events violently is brought about primarily through biological factors and family violence, the environment can supply the immediate motive for violence. Moreover, individuals with higher violence proneness are likely to require less environmental stress to engage in violent behavior.

Media violence is not a cause of violent behavior according to this model, and its role occurs further down the theoretical chain. Rather, violent media may act as *stylistic catalysts*. When an individual high in violence proneness decides to act violently, he or she may then model violence that he or she has seen in the media. As such, the style or form of violence may be socially modeled, but not the desire to act violently itself. Thus a predilection for media violence is caused by a developed personality style (itself caused by genetics and family violence) rather than vice versa.

To the extent that violent behavior is influenced by social learning in the catalyst model proposed by Ferguson et al. (2008), the individual is an "active" modeler. This means that the individual, predisposed (or not) to violent behavior due to genetic factors, begins to actively seek out modeling opportunities that are consistent with an innate motivational system. This model predicts that an individual predisposed to violence would be

more prone to model violence even when presented with contrasting (violent and nonviolent) modeling opportunities, whereas an individual less predisposed to violence would be prone to actively seek out nonviolent models. Information from twin studies already provides basic confirmation of the genetic transmission of violent behavior, although this does not rule out environmental (which refers to nongenetic rather than “learned” *per se*) effects (Eley, Lichtenstein, & Moffitt, 2003; Ferguson, *in press*; Larsson et al., 2006). Previous research on family and media influences on crime has supported the catalyst model’s ability to explain data on violence causation in contrast to other models of aggression (Ferguson et al.)

### *The Current Study*

The current study aims to build upon previous research by examining potential contributors to violent crime in a multivariate format. The influence of biological sex, personality characteristics, exposure to family violence and physical abuse, and exposure to television and video game violence will be examined as potential predictors of violent crime. As these variables will be considered in a multivariate format, knowing the predictive contribution of each variable to violent crime when all variables are considered may be helpful in illuminating which variables directly contribute to violent crime. It is hypothesized that the predictive ability of media violence on violent crime will be negligible above the predictive ability of family violence and personality characteristics. This hypothesis was made based on the premise of the catalyst model proposed by Ferguson et al. (2008).

## **METHODS**

### *Participants*

Participants included 355 undergraduate students from a comprehensive state university in the South. Regarding the sex of the participants, 168 (47.3%) were male and 187 (52.7%) were female. Regarding ethnicity, 195 (54.9%) were White (non-Hispanic), 94 (26.5%) were Hispanic or Latino/a, 35 (9.9%) were African American, 20 (5.6%) were Asian American, and 10 (2.8%) self-identified as “other.” The mean age of the participants was 19.6 years ( $SD = 2.9$ ) and all participants were over the age of 18 years. The mean number of years of education was equivalent to a college freshman.



## Measures

### *General Personality*

The NEO-Five Factor Inventory (NEO-FFI; Costa & McCrae, 1992) was employed as a brief 60-item measure of general personality. This instrument measures personality traits (e.g., agreeableness, conscientiousness, openness, neuroticism, extraversion) consistent with the “Big Five” model (see Costa & McCrae, 1992) of personality. This measure has been demonstrated to have good reliability coefficients for the five personality domains (internal consistency ranging between .68 and .86) and good convergent validity with other measures of general personality.

### *Aggressive Personality*

To measure trait aggressiveness (i.e., aggressive personality), participants completed the Aggression Questionnaire-Short Form (AQ-sf; Buss & Warren, 2000). The shortened version of the AQ consists of the first 15 items of the original 34-item version and was designed to measure the degree to which respondents endorse statements about their levels of aggression. Items are responded to using a 5-point Likert scale ranging from *not at all like me* to *completely like me*, with higher scores indicating more aggressiveness. Based on the current sample of participants, this measure demonstrated a coefficient  $\alpha$  reliability of .87. The AQ has been demonstrated to have good predictive validity (Felsten & Hill, 1999) and convergent validity with other measures of trait aggression (Garcia-Leon et al., 2002).

### *Violent Criminal Behavior*

Measurement of self-reported violent crime was obtained using the National Youth Survey (Elliot, Huizinga, & Ageton, 1985), a measure first developed in conjunction with the National Institute of Mental Health. This measure is a 45-item self-report measure of violent and nonviolent crimes in which individuals are asked to estimate how many times in the last year they have committed those behaviors. Anderson and Dill (2000) describe a procedure for developing an index of violent crime from eight of those items and that procedure was followed here. Items on this scale include estimates of how often in the past a respondent has committed acts such as “hit a parent or caregiver” or “attacked/seriously injured someone on purpose” within the prior 12 months. In addition to the 12-month estimate for violent crime, a “total past” estimate of crime

commission was included. This was added out of concern for the low base rate for recent commission of crimes in a population of young adult college students, although some of those students may have committed crimes earlier as juveniles. Anderson and Dill report that the internal consistency of the National Youth Survey violent crime items in their sample was .73 for the reporting of crimes committed in the prior 12 months, although, consistent with concerns expressed here, the current study was not able to independently verify the reliability of this 12-month estimate scale ( $\alpha$ s obtained were unacceptably low). Thus the 12-month estimate scale was dropped from further analysis. However the "total past" version of this scale proved to have good internal consistency. Coefficient  $\alpha$  for this 7-item index of total past commission of violent crime with the current sample was .77.

### *Family Violence Exposure*

Family violence was measured using the Family Conflict Scale (Ferguson et al., 2008). This measure is a 49-item forced choice measure designed to assess a variety of issues related to family violence exposure and consisting of the following subscales: direct physical and sexual abuse, witnessing domestic violence, parental neglect, use of spanking, verbal abuse, family alcohol and drug use, family values about education, and perceived parental affection. The initial report used standard coefficient  $\alpha$  reliability estimates, demonstrated adequate overall reliability, and correlated in expected ways with measures of aggressive behavior. Because of the dichotomous nature of the items, internal reliability was estimated on the current sample using tetrachoric  $r$ . Reliability coefficients were good for all scales, with all having  $r \geq .86$ .

### *Video Game Habits*

A measure adapted from that described in Anderson and Dill (2000) was used to measure video game playing habits. This Likert scale self-report measure has been demonstrated to be a reliable approach to measuring video game violence exposure. Participants reported on the top five games that they regularly played and also rated the violent content of each game. Participants were also asked to report how many hours per week they played video games recently, as well as during high school and middle school. This allowed for a general measure of video game playing habits in participants. In our sample, the measure of exposure to violent video games obtained a coefficient  $\alpha$  of .88.

### *Television Habits*

A measure of television viewing habits similar to that for video game playing habits was also developed for this study. As with the video game questionnaire, composite scores were obtained across the shows the participants regularly watched. Participants provided ratings of violent content in each of the shows watched. Participants were also asked to report how many hours per week they watched television over the past year as well as during high school and middle school. This allowed for a general measure of television viewing habits in participants. In our sample, the measure of exposure to violent television obtained a coefficient  $\alpha$  of .77.

### *Procedure*

Undergraduate students were approached in an introductory psychology class, with prior permission from the instructor, to volunteer for participation in the study in exchange for extra credit. All students older than 18 years of age were eligible to participate. All students were informed verbally and on the consent form about the nature of the questions they would be asked and were assured of the anonymity of their responses. Questionnaires were administered in group format. Total administration time averaged approximately 30 minutes. The results were analyzed with hierarchical multiple regression using SPSS software (SPSS Inc., Chicago, IL). Variables in the hierarchical regression were entered in an order consistent with the catalyst model (Ferguson et al., 2008). Two main regressions were conducted: The first examined which elements of innate personality, exposure to family violence, and media violence exposure influenced the development of an aggressive personality style; the second examined which of these factors were related to the commission of violent crimes.

## **RESULTS**

Table 1 presents bivariate correlations between all predictor and outcome variables. Because of multiple comparisons, a Bonferroni correction was applied with a minimal  $p$  value for significance set at  $p = .000367$  for the bivariate correlational analyses.

In order to examine the predictive ability of personality characteristics, family violence exposure, and media violence exposure on trait aggression,

TABLE 1. Zero-order correlations between outcome and predictor measures

Variable	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1) Sex	.12	.16	-.08	.12	.10	.03	.12	-.06	.15	.10	.03	-.18	-.45*	-.09	-.18	-.03
2) Neuroticism	1.00	.01	.22*	.12	.00	.09	.11	-.03	.28*	.04	-.03	-.17	.05	.08	.30*	.03
3) Extraversion		1.00	.25*	.37*	.45*	.06	.06	.09	.06	.02	.26*	.17	-.09	.08	-.10	.03
4) Openness			1.00	.36*	.30*	.09	.02	.05	.11	.01	.01	-.01	.16	.06	.00	-.02
5) Agreeableness				1.00	.40*	.04	.02	.07	.06	-.02	.04	-.04	.06	.01	-.10	-.01
6) Conscientiousness					1.00	.09	.05	.06	.03	.02	.17	.12	-.04	.05	-.11	-.02
7) Physical abuse						1.00	.46*	.48*	.41*	.13	-.21*	-.31*	.04	.12	.23*	.39*
8) Domestic violence							1.00	.28*	.52*	.26*	-.19*	-.29*	-.04	.00	.15	.29*
9) Spanking								1.00	.20*	.08	-.12	-.13	.08	.08	.12	.14
10) Verbal abuse									1.00	.21*	-.19*	-.41*	-.01	.04	.24*	.24*
11) Alcohol and drug use										1.00	-.10	-.04	-.03	-.01	.12	.11
12) Education value											1.00	.62*	-.03	-.07	-.16	-.14
13) Parental affection												1.00	.10	-.04	-.21*	-.22*
14) Video game violence													1.00	.30*	.16	.03
15) Television violence														1.00	.14	.12
16) Aggressive personality															1.00	.22*
17) Violent crime																1.00

Note.  $n = 355$ .

\*  $p \leq .00367$ .

a hierarchical multiple regression was performed with trait aggression as the dependent variable. Sex was entered at the first step of the regression, “Big 5” personality traits at step two, family violence exposure variables at step three, and media violence exposure variables at step four. Collinearity statistics were satisfactory; tolerance levels did not go below .5 and variance inflation factor (VIF) levels did not go above 2.0. Table 2 presents the  $\beta$  weights and significance levels for all entered variables.

Results indicated a positive predictive relationship, multiple  $R^2 = .24$ ,  $F(15, 339) = 7.10$ ,  $p \leq .001$ . Male sex ( $\beta = .20$ ) and neurotic personality ( $\beta = .30$ ) were significant predictors of trait aggression, as was exposure to physical abuse ( $\beta = .13$ ). Exposure to violent video games, violent television, or exposure to family violence other than direct physical abuse was not predictive of trait aggression.

In order to examine the predictive ability of personality (including trait aggression), family violence exposure, and media violence exposure on violent crime commission, a hierarchical multiple regression was performed with violent criminal activity as the dependent variable. Sex was entered at the first step of the regression, “Big 5” personality traits at step two, family violence exposure variables at step three, media violence

TABLE 2. Trait aggression regression:  $\beta$  weights and significance of entered variables

Variable	<i>b</i>	$\beta$ Weight	<i>t</i> test	Significance
Sex	4.13	.20	3.62	.001**
Neuroticism	.41	.30	5.70	.001**
Extraversion	.01	.01	0.11	.91
Openness	-0.12	-.08	-1.41	.16
Agreeableness	-0.13	-.09	-1.57	.12
Conscientiousness	-0.06	-.04	-0.71	.48
Physical Abuse	1.52	.13	2.18	.03*
Domestic Violence	-0.10	-.02	-0.26	.79
Spanking	0.15	.02	0.33	.74
Verbal Abuse	0.54	.09	1.49	.14
Alcohol and Drug Use	0.74	.09	1.78	.08
Education Value	-0.39	-.03	-0.48	.63
Parental Affection	-0.70	-.08	-1.14	.26
Video Game Violence	0.03	.05	0.94	.35
Television Violence	0.03	.06	1.24	.22

\* $p \leq .05$ .

\*\* $p \leq .001$ .

TABLE 3. Violent crime regression:  $\beta$  weights and significance of entered variables

Variable	<i>b</i>	$\beta$ Weight	<i>t</i> test	Significance
Sex	0.46	.05	0.80	.42
Neuroticism	-0.04	-.06	-1.15	.25
Extraversion	.04	.05	0.85	.40
Openness	-0.04	-.05	-0.88	.38
Agreeableness	0.14	.02	0.32	.75
Conscientiousness	-0.03	-.04	-0.66	.51
Physical Abuse	1.77	.32	5.05	.001**
Domestic Violence	0.40	.13	2.07	.04*
Spanking	-0.36	-.09	-1.55	.12
Verbal Abuse	0.04	.01	0.20	.84
Alcohol and Drug Use	0.10	.03	0.50	.62
Education Value	0.08	.01	0.20	.84
Parental Affection	-0.36	-.08	-1.16	.25
Video Game Violence	0.00	-.02	-0.32	.75
Television Violence	0.02	.08	1.50	.14
Trait Aggression	0.06	.13	2.27	.02*

\* $p \leq .05$ .

\*\* $p \leq .001$ .

exposure variables at step four, and trait aggression at step five. Collinearity statistics were satisfactory; tolerance levels did not go below .48 and VIF levels did not go above 2.0. Table 3 presents the  $\beta$  weights and significance levels for all entered variables.

Results indicated a positive predictive relationship, multiple  $R^2 = .21$ ,  $F(16, 338) = 5.62$ ,  $p \leq .001$ , which was statistically significant. Results indicated that exposure to physical abuse in childhood ( $\beta = .32$ ) was a significant predictor of violent crime, as were trait aggression ( $\beta = .13$ ) and witnessing domestic violence ( $\beta = .13$ ). Exposure to violent video games or violent television was not predictive of trait aggression.

## DISCUSSION

The purpose of this study was to examine whether personality characteristics, family violence, and media violence variables would predict violent crime in young adults. It was hypothesized that violent media exposure would not significantly add to the predictions of violent crime

above the predictive ability of sex, personality characteristics, and family violence exposure. The data supported the hypothesis. Results indicated that trait aggression, or a tendency to respond to both threatening and ambiguous circumstances with heightened hostility, was best predicted by endogenous factors such as biological sex and the personality trait of neuroticism. Exposure to physical violence, an exogenous variable, was also predictive of trait aggression. In particular, the results suggest that aggressiveness is most common among males who exhibit a neurotic or "depressive" personality style marked by worry and pessimism. Aggressiveness may be further exacerbated by exposure to physical abuse in childhood. According to the present results, this aggressive response style appears to be uninfluenced by media violence exposure.

Actual self-reported violent crimes presented a somewhat different picture, with direct exposure to physical abuse being the strongest predictor of violent crime commission. Aggressive personality and witnessing domestic violence in the family were also significant predictors of violent crime commission. Thus the commission of violent acts may be most common among males who have an aggressive personality, but who also are exposed to physical abuse (and to a lesser extent domestic violence) as children. Other family variables such as the use of spanking, alcohol and drug use, and verbal abuse were not predictive of violent crime. Media violence, either in the form of television or video games, was not predictive of violent crime.

The results from this study generally support the view that personality factors are critical to the development of aggressive traits. Environmental factors appear to have less influence on the development of an aggressive personality style. However, the expression of this aggressiveness, particularly in regards to violent crime, may depend upon exposure to family violence. It may be that many individuals with aggressive personality tendencies engage in "prosocial" activities to express their aggression, such as through particular career choices, sports, or perhaps through other non-criminal means. For persons with aggressive tendencies who are also abused as children, these prosocial pathways for expressing aggression may be rendered unavailable, increasing the likelihood that these individuals may engage in violent criminal activities. As such, violent crime may be conceived as being due to learning pathways that occur specifically in individuals who are already endogenously susceptible to violent behaviors. Many individuals who are abused, but do not possess the critical endogenous traits toward violence, may simply not learn to act violently themselves, whereas the aggressive trait may be less likely to express

itself in a criminal form in the absence of early violence exposure. Generally the results from this study were supportive of a multivariate framework for understanding violent behavior, such as that suggested by the catalyst model (Ferguson et al., 2008).

Despite the controversy and heated debates on this subject, media violence appears to be unrelated to actual violent crime. Persons who were exposed to either greater amounts of violent television or violent video games reported being no more likely to act in a criminally violent manner than those who were less exposed to media violence. Although this would appear to contradict the claims of many media violence researchers, this may be because many studies of media violence, both experimental and correlational, use measures of "aggression" that include perfectly legal and even prosocial behaviors, such as cooperative aggressive play, venting of emotion, assertiveness, and competitiveness (Freedman, 2002; Savage, 2004). Many media violence studies also use unstandardized/unreliable measures and may tend to exaggerate the positive results from their studies (Ferguson, 2007; Freedman); the researchers may "cherry pick" results that best support their hypotheses while ignoring results that do not (e.g., Anderson & Dill, 2000). The risk of overfocusing on media violence as a potential cause of criminally violent offending is that media violence may come to act as a scapegoat or "straw man," which distracts from legitimate causes of criminal violence such as child abuse or genetics. It may be tempting to place blame on the media specifically, due to its unspecific and amorphous nature, wherein no one individual need actually take the blame. Media violence as a cause of violent crime may also hold the promise of an easy solution (by simply eliminating such media), whereas child abuse, and particularly genetics, appear to be more difficult problems to solve.

Regarding the clinical implications of this study, social workers and others involved in the prevention of violent crime may have more specific information as to what sorts of violent exposures contribute to violent crime in youths and young adults. Direct physical abuse and possibly exposure to domestic violence are predictors of future violent crime, whereas more "minor" forms of aggression in the family, such as the use of spanking, verbal abuse, and withdrawal of affection, do not seem to lead to violent acts in children. This may help practitioners identify which children are at greater risk for committing violent acts, given the problem behaviors that exist within a family unit.

Efforts to reduce violent crime by focusing on media content appear unlikely to be productive, particularly in cases in which funding and



personnel resources are being diverted from preventative efforts that might be better directed toward families. Although focusing on media content may “play” well in political spheres, this study does not support the contention that media violence is a significant contributor to violent crime.

One limitation of this study was the reliance on self-reported behaviors that are commonly used in media violence research (e.g., Anderson & Dill, 2000). Participants’ ratings of their exposure to media violence may be subjective, distorted, or inaccurate. It would be valuable to examine the relationship between media exposure, personality, and family violence using objective ratings whenever available. A further weakness is the use of a college sample. Although college samples have been used with success in similar aggression research in the past (e.g., Anderson & Dill), findings for this sample may not generalize well to populations of criminal offenders.

Future research would benefit from focusing on two particular areas. The first would be to include better tests for genetic effects. Direct genetic testing, aimed at examining which specific genes are predictive of violent crime, would be most helpful. In particular, it seems possible that a recessive gene or genes on the X-chromosome may be predictive of violence, a finding that would help explain gender differences in violent crime (see Caspi et al., 2002, for one such study). Also, longitudinal studies of violence prediction in youth that focus on multiple factors (personality, genetics, family violence, media violence) would be helpful in examining the relative role of each of these factors, thereby avoiding the spurious results that have tended to dominate some of these fields, particularly media violence. This study was designed to advance the discussion on the etiology of violent crime from a multivariate perspective. It is hoped that this study will be useful in informing policy and have a positive effect on the scientific discourse.

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