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

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Abstract

Despite decades of research, much debate remains regarding the influences that internal and external variables have on the development of violent criminal behavior. The current study examined the relative 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. Three hundred and fifty-five young adults were included in the present analysis. Results indicated that the greatest degree of predictive value in regards to violent crime was found for hereditable personality characteristics, and direct physical abuse. Exposure to television and video game violence were not significant predictors of violent crime. These results help elucidate some of the complex interplay between multiple factors seen in the etiology of violent crime. These results also call into question the commonly held belief that media violence is involved in the etiology of violent crime.

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

Despite decades of research, the origins of violent criminal behavior remain a hotly debated issue in both the scientific literature as well as in the public consciousness. Popular explanations for violent crime may vary with both the scientific dogma of the era as well as the specifics 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 and/or mental illness are common explanations for these crimes (US Department of Justice, 2001) whereas in cases of violence by teenagers, media violence exposure is more often discussed as being responsible (e.g. Lawrence and Birkland, 2004). It remains unclear whether these public and scientific discussions reflect the nature of current scientific information, or whether these discussions are informed more by stereotype, culture and even scientific dogmatism. 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 which does little to illuminate specific mechanisms that lead to violent criminal behavior. The current study is designed to examine potential causes of crime from a multivariate perspective in order to examine which variables, when presented in combination, retain explanatory power and which do not.

Causes of Crime

It is beyond the scope of the present paper to present an in depth explanation of all of the research examining various causes and predictors of criminal violence. In short,

however, most research tends to focus on three main variables: exposure to family violence or abuse, exposure to various forms of media violence, and genetics. With the possible exception of the twin-study method of genetics research, most research in each of these three areas is "factor specific" meaning that the research examines only one factor, seldom two and very rarely all three. However such univariate studies, limited in scope, fail to illustrate whether relationships between variables are necessarily causal, or could be better explained by a third variable. For example, many (but arguably not as many as oftentimes believed, see Freedman 2002) 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). These results hold in meta-analyses of television (Paik & Comstock, 1994) and video game (Sherry, 2001) studies. However, given that these relationships tend to be weak, it is unfortunate that few media violence studies 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 consume more violent media. Controlling for family violence may render the relationship between media violence and violent criminal behavior negligible. Even such a relationship between family violence and violent crime must be considered with caution. Though it is tempting to think that such a relationship is due to social learning, it may instead reflect a genetic pathway from parent to child.

Evidence to support each of these three broad "factors" varies. Of the three, arguably exposure to family violence and physical abuse specifically, benefit from the widest body of supportive literature (Straus & Yodanis, 1996). This relationship appears to hold true for domestic violence (Straus & Gelles, 1990), child abuse (Giles-Sims,

1985) and serial murder (Burgess, Hartman, Ressler & Douglas, 1986). Several cautionary notes are worth relating, however. The first is that many studies examining the relationship between adult offenders and abuse which occurred in their past are self-report in nature. The possibility exists that offenders may inflate their recollections of having been abused in order to cast themselves in a less responsible light. This may be less of a problem in anonymous studies of non-offenders (i.e. those not currently under arrest or incarceration for a violent crime), but this phenomenon may overall cause an overestimation of the effect size for exposure to family violence on subsequent violent crime. Secondly it is worth noting that many individuals who suffer physical abuse do not go on to become violent criminals, and for many violent criminals there is no particular evidence that they have experienced physical abuse.

Media violence effects remains a considerably more controversial field with some researchers (e.g. Anderson et al., 2003) asserting that a consensus has been reached regarding the causal impact of media violence on aggression (including violent crime) and other researchers rather paradoxically asserting that little to no relationship between media violence and violent crime exists (e.g. Savage, 2004; Pinker, 2004; Freedman, 2002). The debate hinges largely on the weak effects produced by much of the research. Because "statistical significance" exists as a binary "up or down vote" that can be rather easily manipulated by increasing sample size to produce positive significance from weak effects (see Cohen, 1996) it becomes unclear whether small effects, such as those commonly found in media violence studies, are indicative of important phenomenon or merely the byproduct of the weaknesses of modern statistics. As an example, a study of 2228 high school students (DuRant, Champion & Wolfson, 2006) purported to have

found a significant link between watching professional wrestling and aggressive behaviors such as "date fighting" or carrying weapons to school. However, a close look at the statistics finds that all of the statistically significant correlations are arguably quite trivial. Many correlations are less than $\underline{r} = .1$, and none are as high as $\underline{r} = .2$, meaning that the effect size for these relationships (here denoted r^2) is never as high as 4% and often essentially 0%. Thus it can be argued that these findings owe more to the effects of a high sample size than to a psychologically important phenomenon. Once again, since family violence was not considered, it is worth asking if these small correlations would have remained significant had family violence been taken into account?

Although genetics research is not inherently new, the extent to which genetics research on violent criminal behavior has been embraced by the scientific community has varied over time. As noted by Pinker (2002) there has been much resistance to genetics research as applied to human behavior including research related to violent behavior. However, recent research from twin studies (e.g. Larsson, H., Andershed, A., & Lichtenstein, in press) has suggested that genetic links with violent and antisocial behavior may be more powerful than environmental predictors. Other research (e.g. Retz et al., 2004) has begun to pinpoint some of the genes which may be involved in violent behavior, although such research remains in its early stages. Arguably, genetics research should be a standard component of research on violent crime. However, genetics research is expensive, and particularly in relation to genetic testing, involves skill sets not commonly available to social scientists. It may be possible, however, to build upon previous genetic literature to examine personality variables that have been linked to

genetics and not environment as a rough estimate of the genetic contribution to violent crime in non-medical studies.

The Current Study

This current study aims to build upon previous research by examining potential contributors to violent crime in a multivariate format. The influence of biological sex, genetically hereditable 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, the relative contribution of each variable when all variables are considered may be helpful in illuminating which variables directly contribute to violent crime and which are merely trivial or spurious relationships. It is hypothesized in particular that media violence effects will lose predictive value once family violence and hereditable personality influences are controlled.

Methods

Participants

Participants in this study included 355 undergraduate students from a regional comprehensive university. This study represents an extension of an ongoing study of media violence effects that had previously focused exclusively on video games. Regarding the gender of the participants, 168 (47.3%) were male and 187 (52.7%) were female. Regarding ethnicity, 195 (54.9%) were Caucasian, 94 (26.5%) were Hispanic, 35 (9.9%) were African-American, 20 (5.6%) were Asian, and 10 (2.8%) identified themselves as “other”. The mean age of the participants was 19.6 (SD = 2.9) and all

participants were over the age of 18. Their mean years of education were equivalent to a college freshman.

Measures

Innate Personality:

The NEO-FFI (Costa & McCrae, 1992) was employed as a brief 60-item measure of general personality. This instrument measures personality traits consistent with the "Big-5" model (see Costa & McCrae, 1992) of personality. This measure has been demonstrated to have good reliability coefficients for the 5 personality domains (r-values ranging between .68 and .86), good convergent validity with other measures of general personality. In our sample, internal consistency for neuroticism was (alpha = .74), for extraversion (alpha = .67), for openness (alpha = .62), for agreeableness (alpha = .56) and for conscientiousness (alpha = .65). Because of the low level of reliability for agreeableness, this scale was not considered further in subsequent analyses. A recent large multinational twin study concluded that the "Big 5" model has a solid genetic basis and represents a shared species-wide genetic heritage that influences personality (Yamagat et al., 2006). As such, in the absence of medical genetic testing, the NEO-FFI can be used to provide a "rough" estimate of genetic effects on personality development.

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 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 Lykert scale, ranging from

Not At All Like Me, to Completely Like Me, with higher scores indicating more aggressiveness. Based on the normative sample reported in the manual, the AQ-sf obtained an alpha coefficient of .90 for the total score. 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 (Fellsten & 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 the individual is asked to estimate how many times in the last year they have committed those behaviors. Anderson & Dill (2000) describe a procedure for developing an index of violent crime from eight of those items, and this 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 twelve 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 of a low base rate for recent commission of crimes in a population of current adult college students, although some of those students may have committed crimes earlier as juveniles. Anderson & 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 twelve months, although consistent with our concerns here we were not able

to independently verify the reliability of this 12-month estimate scale. 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

Although a variety of child trauma and family environment scales exist, none of these specifically address components of family violence exposure or the degree to which these behaviors related to how loved the child felt in his or her family. As such, this study made use of a relatively new scale, currently in development. Specifically, the Family Conflict Scale (FCS) is a 49-item questionnaire designed to look at specific components of family violence exposure, including sub-scales for direct physical and sexual abuse, witnessing domestic violence, neglect and failure to provide for basic needs, exposure to drug abuse, use of spanking in discipline, verbal abuse and insulting language, and the degree to which education was valued in the family. This measure also included a sub-scale regarding the degree to which the respondent felt loved by his or her parents or caregivers. Scales used in the current study included those for physical abuse (alpha = .62), witnessing domestic violence in the family (alpha = .80), use of spanking in the family (alpha = .64), verbal abuse (alpha = .76) whether problem drinking and drug use was present in the family (alpha = .67), whether education was valued by the family (alpha = .67) and the degree to which the child felt loved by his or her parents (alpha = .83).

Video Game Habits

A measure of video game playing habits adapted from that described in Anderson and Dill (2000) was used to measure video game playing habits. Because some video games may have violent content but relatively nonviolent (e.g. no blood or dismemberment) graphics and vice versa, separate measures of storyline and graphic violence were obtained. Participants were asked to report on the top 5 video games that they most regularly played, noting how often they played these games, how violent the "story" of the game was, and how violent the graphics of the game were using Likert-scale items. Composite scores were obtained across the games the participants played. 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. Anderson and Dill (2000) reported a coefficient alpha of .86 for the scores of video game violence rating and .84 for time spent playing video games. In our sample, the measure of exposure to violent video game storyline obtained a coefficient alpha of .88, whereas the measure of exposure to violent video game graphics also obtained a coefficient alpha of .88. Agreement between the measures of storyline violence and graphics violence was .98.

Television Habits

A measure of television viewing habits similar to that for video game playing habits was also developed. Because some television programs may have violent content but relatively nonviolent (e.g. no blood or dismemberment) graphics and vice versa, separate measures of storyline and graphic violence were obtained. Participants were asked to report on the top 5 television shows that they most regularly watched, noting how often they watched these shows, how violent the "story" of the show was, and how

violent the graphics of the show were using Likert-scale items. Composite scores were obtained across the shows the participants regularly watched. Participants were also asked to report how many hours per week they watched television recently 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 storyline obtained a coefficient alpha of .77, whereas the measure of exposure to violent television graphics obtained a coefficient alpha of .75. Agreement between the measures of storyline violence and graphics violence was .95.

Procedure

Undergraduate students were approached in class, with prior permission of the instructor, to volunteer for participation in the study in exchange for extra credit. All students were informed verbally and on the consent form of the nature of the questions they would be asked to answer and assured of the anonymity of their responses. Questionnaires were administered in group format. Total administration time averaged approximately 30 minutes. Results were analyzed with hierarchical multiple regression using SPSS software. Two main regression were conducted, the first regarding what elements of innate personality, exposure to family violence and media violence exposure influenced the development of an aggressive personality style, and secondly which of these factors were related to the commission of violent crimes.

Results

Due to multiple regressions run with similar variables, a Bonferroni correction was applied (minimum p – value for significance set to $p = .025$).

In order to examine the effects of innate personality, family violence exposure and media violence exposure on trait aggression, a hierarchical multiple regression was performed with trait aggression scores as the dependent variable. Gender was entered on the first step of the regression, innate "Big 5" personality traits on step two, family violence exposure variables on step three, and media violence exposure variables on step four.

Results indicated a positive predictive relationship $\underline{R} = .50$ ($\underline{R}^2 = .25$) which was statistically significant $F(17, 337) = 6.48$, $\underline{p} \leq .001$. Results indicated that male gender ($\beta = .20$) and neurotic personality ($\beta = .30$) were significant predictors of trait aggression. Exposure to violent video games, violent television, or exposure to family violence was not predictive of trait aggression. Table 1 presents the beta-weights and significance levels for all entered variables.

In order to examine the effects of innate 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. Gender was entered on the first step of the regression, innate "Big 5" personality traits on step two, family violence exposure variables on step three, media violence exposure variables on step four, and trait aggression on step five.

Results indicated a positive predictive relationship $\underline{R} = .46$ ($\underline{R}^2 = .21$) which was statistically significant $F(18, 336) = 5.05$, $\underline{p} \leq .001$. Results indicated that exposure to physical abuse in childhood ($\beta = .31$) was a significant predictor of violent crime. At the adjusted $\underline{p} \leq .025$ level for significance, trait aggression ($\beta = .12$) and witnessing domestic violence ($\beta = .13$) were borderline predictors of violent crime. Exposure to

violent video games, or violent television was not predictive of trait aggression. Table 2 presents the beta-weights and significance levels for all entered variables.

Discussion

The purpose of the present study was to examine whether endogenous personality variables or exogenous family and media violence variables were capable of predicting violent crime in young adults. This was done by using hierarchical multiple regressions to predict both trait aggression as well as self-reported violent crime commission.

Results indicated that trait aggression, or a tendency to respond to both threatening and ambiguous circumstances with heightened hostility was best predicted by innate factors such as biological sex and the personality trait neuroticism. In particular results seem to suggest that aggressiveness is most common among males who exhibit a neurotic or "depressive" personality style marked by worry and pessimism. According to the present results, this aggressive response style appears to be largely innate and is not highly affected by any form of exogenous exposure to violence, whether in the form of family violence or media violence.

Actual self-reported violent crimes presented a somewhat different picture, with direct exposure to physical abuse presenting the best predictive value for violent crime commission. Aggressive personality and witnessing domestic violence in the family were "borderline" predictors of violent crime commission, in accordance with the adjusted maximal p-value of .025. Thus commission of violent acts may be most common among individuals who have an innate tendency toward aggression, 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.

Results from this study generally support the belief that innate genetic personality factors are of primary importance in the development of aggressive traits, given that the "Big 5" personality factors have been shown to be dependent upon genetics (Yamagat et al., 2006). Environmental factors appear to have little influence on the development of an aggressive personality style. However, the expression of this aggressiveness, particularly in regards to violent crime, may be dependent upon exposure to family violence. It may be that many persons with aggressive personality tendencies may develop "pro-social" means of expressing their aggression, through particular career choices, or through sports or other means of expressing aggression in a non-criminal manner. For persons with aggressive tendencies who are also abused as children, these pro-social pathways for expressing aggression may be blocked, 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 genetically susceptible to violent behaviors. Many individuals who are abused, but do not possess the critical genetic traits toward violence, may simply not learn to act violently themselves, whereas the genetic trait may be less likely to express itself in a criminal form in the absence of early violence exposure.

Despite the controversy and intense debate on the subject, media violence appears to be unrelated to actual violent crime. Persons who were exposed either to greater amounts of violent television or violent video games were no more likely to act in a criminally violent manner than those individuals who were not so exposed. 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 "pro-social" behaviors (such as cooperative aggressive play, venting of emotion, assertiveness, competitiveness, etc). Many media violence also use unreliable measures, and may tend to exaggerate the positive results from their studies (Freedman, 2002). The risk of continuing an overfocus 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 blame. Media violence as a cause of violent crime may also hold the promise of an easy solution (by simply eliminating such media) wherein child abuse, and particularly genetics, appear to be more difficult problems to solve. Indeed, were genetics to be identified as a primary cause of violent crime, a number of legal and ethical issues would be raised, both in regards to the responsibility for criminal acts, and as to medical procedures targeted against genetically aggressive individuals.

Regarding the policy implications of this study, social workers and others involved in the prevention of violent crime may have more targeted information as to what sorts of violence 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, where as 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 the child. 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.

Future research would benefit from focusing on two particular areas. The first would be including better tests for genetic effects. The present study only examined genetics in an indirect manner, by considering genetically determined personality traits. 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 which would help explain gender differences in violent crime. Further, longitudinal studies of violence prediction in youth that focus on multiple factors (genetics, family violence, media violence) would be helpful in examining the relative role of each of these factors, while avoiding the spurious results that have tended to dominate some of these fields, particularly media violence.

This study was designed to move forward 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 having a positive effect on the scientific discourse.

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Table 1

Trait Aggression Regression: Beta Weights and Significance of Entered Variables

Variable	b	Beta-Weight	t-test	Significance
Gender	4.02	.20	3.53	.001*
Neuroticism	.42	.30	5.78	.001*
Extraversion	.01	.01	0.15	.88
Openness	-0.12	-.08	-1.46	.14
Agreeableness	-0.13	-.09	-1.50	.13
Conscientiousness	-0.06	-.04	-0.68	.50
Physical Abuse	1.44	.13	2.05	.04
Domestic Violence	-0.07	.01	-0.19	.85
Spanking	0.17	.02	0.37	.71
Verbal Abuse	0.54	.09	1.51	.13
Alcohol and Drug Use	0.76	.09	1.80	.07
Education Value	-0.48	-.04	-0.59	.56
Parental Affection	-0.68	-.08	-1.10	.27
Video Game Violence	-0.15	-.32	-1.37	.17
Violent Graphics	0.20	.40	1.66	.10
Television Violence	0.11	.22	1.37	.17
Television Graphics	-0.08	-.17	-1.03	.30

* $p \leq .025$

Table 2

Violent Crime Regression: Beta Weights and Significance of Entered Variables

Variable	b	Beta-Weight	t-test	Significance
Gender	0.48	.05	0.82	.41
Neuroticism	-0.04	-.06	-1.10	.27
Extraversion	.04	.05	0.87	.39
Openness	-0.04	-.05	-0.88	.37
Agreeableness	0.11	.02	0.27	.78
Conscientiousness	-0.03	-.04	-0.63	.53
Physical Abuse	1.73	.31	4.93	.001*
Domestic Violence	0.40	.13	2.11	.033+
Spanking	-0.34	-.08	-1.46	.14
Verbal Abuse	0.03	.01	0.17	.87
Alcohol and Drug Use	0.13	.03	0.60	.55
Education Value	0.03	.01	0.07	.94
Parental Affection	-0.33	-.08	-1.08	.28
Video Game Violence	-0.01	-.01	-0.04	.97
Violent Graphics	-0.01	-.01	-0.02	.99
Television Violence	0.11	.22	1.45	.15
Television Graphics	-0.07	-.17	-1.03	.31
Trait Aggression	0.06	.12	2.21	.028+

* $\underline{p} \leq .025$

+ borderline significant at $\underline{p} \leq .025$