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PERSONALITY AND
INDIVIDUAL DIFFERENCES

Personality and Individual Differences 41 (2006) 381–392

www.elsevier.com/locate/paid

The role of violent cognition in the relationship between personality and the involvement in violent films and computer games

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Received 11 November 2005; received in revised form 6 January 2006; accepted 16 February 2006

Available online 2 May 2006

Abstract

The study investigates the relationship between empathy and attitudes towards violence and real-life exposure to violent films and computer games. It is hypothesised that low empathy and attitudes that predispose people towards violence are more strongly related to exposure to violent films and computer games than to superordinate personality traits (e.g., EPQ psychoticism, extraversion, antisocial personality traits), or subtraits, such as sensation-seeking. Four hundred and thirty-three students in further education completed three personality questionnaires, a questionnaire of attitudes towards violence, and reported on their use of violent computer games, films and videos. Multivariate analyses in the form of ordinary least squares (OLS) models were used to test the primary hypotheses. Acceptance of violence, as measured by the Maudsley Violence Questionnaire (MVQ), was the strongest and most consistent predictor of violent media use. Superordinate personality traits were generally fully mediated by acceptance of violence. The findings emphasise the importance of general acceptance of violence in the consumption of violent games and films.

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Some gender differences emerged; particularly in relation to the use of violent computer games. Empathy had no significant effects for either males or females.

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Keywords: Empathy; Proviolence attitudes; Antisocial personality traits; Maudsley Violence Questionnaire; Gender differences

1. Introduction

There is considerable empirical evidence from experimental, cross-sectional, and longitudinal research suggesting that exposure to violent television, movies and computer games has negative effects on aggressive behaviour, aggressive cognition, aggressive affect, physiological arousal and prosocial behaviour (Anderson, 2004; Anderson & Bushman, 2001; Uhlmann & Swanson, 2004). From a public-health perspective, violent video and computer games are thought to “heighten the possibility of violent thoughts, feelings, and physiological arousal in the short-term and aggressive beliefs, attitudes, violent schema, and behavioural patterns in the long-term” (Browne & Hamilton-Giachritsis, 2005, p. 708).

Research on the mediating influence of personality in the effects of media violence is important (Zillmann & Weaver, 1997). Weaver (1991) found that participants who scored high on EPQ psychoticism (P) displayed greater preference for graphically violent horror movies. Zukerman and Little (1986) found that interest in morbid, violent and sexual events in the media and sport was significantly related to EPQ P and the Disinhibition Scale of the Sensation Seeking Scale (Zukerman, Kolin, Price, & Zoob, 1964). These findings have been replicated by Aluja-Fabregat (2000).

Bushman (1995) found that people with high levels of trait aggressiveness, as measured by the Aggression Questionnaire (Buss & Perry, 1992), displayed more interest in the depiction of violence than low aggressive participants, and responded more aggressively to provocation. Zillmann and Weaver (1997) found that the consumption of gratuitous violence fostered greater acceptance of violence as a means of conflict resolution in high P scorers, but not in low P scorers. The authors suggested that the aggressive disposition of high P score is strengthened by frequent exposure “to conflict-resolving coercive action” (P 625), which was thought to be due to insufficient empathy in such men eliciting distress by the victimization involved, and failure to experience moral misgivings over the violence involved. This study suggests that antisocial personality traits, such as a high P score, predisposes people to interests in gratuitous media violence and the acceptance of it, whilst making them particularly susceptible to the reinforcing effects of media violence. If true, this indicates that there is a bi-directional relationship between personality and media habits (Donnerstein, Slaby, & Eron, 1994).

It has been proposed that repeated exposure to real-life and entertainment violence may alter people’s cognitive, affective and behavioural processes, resulting in desensitisation (Funk, Baldacci, Pasold, & Baumgardner, 2004). In this context, desensitisation means the attenuation or elimination of cognitive, emotional, and behavioural responses to a stimulus (e.g., media or real-life violence). The key variables, according to Funk et al. (2004), are reduced empathy and increased proviolence attitude (e.g., acceptance of violence).

The main purpose of the present study is to investigate the relationship between the role of empathy and attitudes towards violence and real-life exposure to violent films and computer games. It is hypothesised that low empathy and attitudes that predispose people towards violence are more strongly related to exposure to violent films and computer games than are superordinate personality traits, such as psychoticism (P) and extraversion (E), or subtraits or primary scales, such as sensation-seeking, empathy, impulsivity, and proviolence attitudes. Levine and Jackson (2004) have shown how primary scales of disrespect for rules, feeling depressed, and need for stimulation were better predictors of self-reported offending than Eysenck's super factors. We similarly argue that primary scales related to proviolence attitudes and empathy are more relevant predictors of violent media interests than the broader factors of personality.

We use a multivariate model to test the relationship between antisocial personality traits of (i.e., we used two overlapping measures: EPQ P and a low score on the Gough Socialisation Scale; GSS, Megargee, 1972) violence consumption in the form of watching violent films and the use of violent computer games. We also study how empathy, sensation-seeking and acceptance of violence mediate the relationship between these personality traits and violence consumption.

In view of the apparent differences between males and females in relation to both personality and offending (Gudjonsson, Einarsson, Bragason, & Sigurdsson, *in press*) and proviolence attitudes (Walker, 2005), when appropriate separate analyses were carried out for males and females. However, no specific hypotheses were tested in relation to possible gender differences.

2. Method

2.1. Participants

The participants were 433 students in further education in seven colleges in the Greater Reykjavik (Capital) area in Iceland. There were 191 (44%) males and 242 (56%) females. The average age for the entire sample was 18.3 years (range 15–25, $SD = 2.0$), 18.2 ($SD = 1.9$) and 18.3 ($SD = 2.0$) for males and females, respectively. No one refused to participate in the study, but some of the participants provided incomplete questionnaires that could not be included in the analysis. This explains the different number of participants in the different statistical analyses.

2.2. Instruments

(1) *The Maudsley Violence Questionnaire* (MVQ; Walker, 2005; Walker & Gudjonsson, 2006). This newly developed questionnaire is intended to assess the attitudes and beliefs that predispose or legitimise violence. It consists of 56 statements, rated 'true' or 'false', covering a range of cognitions (beliefs, rules, distortions and attributions) about violence or attitudes toward violence. It comprises two factors: 'Machismo' (M, 42 items) and 'Acceptance' of violence (A, 14 items). The 'Machismo' factor includes items about embarrassment over backing down, justification of violence in response to threat and attack, violence as part of being a male and strong and the weakness associated with fear and non-violence. The 'Acceptance' of violence factor includes items relating to overt enjoyment and acceptance of violence (in the media and in sport) and approval of violence as an acceptable behaviour. According to Walker (2005) both factors, Machismo and

Acceptance, have satisfactory internal reliability with Cronbach alpha coefficients of 0.74 and 0.91 for the two factors, respectively. The two factors are significantly correlated for both males ($r = 0.438$, $p < 0.001$) and females ($r = 0.554$, $p < 0.001$).

(2) *The Eysenck Personality Questionnaire* (EPQ; Eysenck & Eysenck, 1975). This 101-item Questionnaire has been translated into Icelandic and standardized (Eysenck & Haraldsson, 1983). It measures three main personality dimensions, psychoticism (P), extraversion (E), and neuroticism (N) and a socially desirable response set or lie (L).

(3) *The Adult Impulsiveness, Venturesomeness and Empathy Questionnaire* (IVE; Eysenck & Eysenck, 1991). This is a 54-item questionnaire measuring three personality traits, impulsiveness (I), venturesomeness (V) and empathy (E). Here, I has the highest alpha coefficient (0.82–0.85), followed by V (0.78–85) and E (0.64–0.69). E is positively correlated with EPQ N and negatively with P.

(4) *Gough Socialisation Scale* (GSS, Megargee, 1972). This 54-item scale is one of the best measures of proneness to anti-social behaviour (Blackburn, 1993) and measures the extent to which an individual has internalised the values of society. The lower the score the more likely the person is to possess antisocial personality traits. This additional measure of antisocial personality traits was used, because it was found in a previous Icelandic study to be superior to the EPQ P in predicting self-reported offending (Gudjonsson et al., in press).

(5) A questionnaire of seven items about gender, age, video film watching and computer game playing was specially constructed for the purpose of this study (An English translation of the questionnaire is available from the first author upon request). In relation to films and videos the participants were asked how much time on average they spent each week watching them, how many violent films they watched each month, the amount of time each week they spent playing computer games, how much time they spent on average each week playing violent computer games, and how much time they spent each week in the company of others playing computer games. The definition of violence used in relation to films, videos and computer games was that it contained torture or brutal methods of killing humans or animals. This definition was clearly stated in the questionnaire.

2.3. Procedure

The participants were approached in class and asked to participate in a study that was concerned with the relationship of attitudes and personality characteristics with self-reported frequency of video and film watching and computer game playing. They were tested in scheduled classes or an assembly room in the schools, with a maximum of 30 participants being tested at any one time. The participants were told that their responses were anonymous and confidential. The administration of the tests took between 30 and 60 min. The tests were administered in the following order: MVQ, IVE, GSS, the background questionnaire, and EPQ.

3. Results

Of the 433 participants in the study 212 (49%) reported playing computer games on average every week. Of those 107 (51%) spent 1–4 h a week playing computer games, 40 (19%) 5–8 h a

week, and 63 (30%) more than 8 h a week. Out of the 212 computer game players, 99 (47%) reported playing violent computer games.

A highly significant difference appeared between males and females, both in playing computer games and violent computer games, with 151 (79%) of the males and 59 (25%) of the females playing computer games ($\chi^2 = 123.88, p < 0.001$) and 96 (50%) of the males and 8 (3%) of the females playing violent games ($\chi^2 = 128.97, p < 0.001$).

Those who reported playing computer games were significantly younger than those who did not, although the difference was rather small, with the mean age of 18.1 (SD = 1.9) and 18.5 (SD = 2.1), respectively ($t = 2.07, p < 0.05$). No age difference appeared between those who reported playing violent computer games and those who did not play violent games, with mean age of 18.2 (SD = 1.8) and 18.0 (SD = 1.9), respectively.

Of the 433 participants in the study 385 (89%) reported watching violent films or videos at least once per month, 285 (74%) watched 1–3 violent films per month, and 100 (26%) watched more than four violent films each month on average.

A highly significant difference appeared between males and females in terms of watching violent films or videos with 10 (5%) of the males in contrast to 38 (16%) of the females reporting not watching violent films or videos ($\chi^2 = 11.87, p < 0.001$).

3.1. Means and standard deviations for the psychological tests

Table 1 gives the mean scores and standard deviations for males and females on the psychological tests. The α for the psychological scales (total sample) varied between 0.71 for the EPQ P and

Table 1

Mean scores and standard deviations on the psychological tests for males and females, t -values, effect size and Cronbach alpha coefficients

Psychological test	Males ($N = 191$) Mean (SD)	Females ($N = 242$) Mean (SD)	t -value	Effect size	Alpha
Maudsley Violence Questionnaire					
Machismo	7.3 (6.5)	3.8 (4.4)	6.61**	0.64	0.91
Acceptance of violence	8.7 (3.4)	5.0 (2.8)	12.25**	1.19	0.83
Eysenck Personality Questionnaire					
Psychoticism	4.1 (3.0)	2.5 (2.4)	6.09**	0.59	0.71
Extraversion	14.3 (4.4)	14.4 (4.0)	-0.25	0.02	0.83
Neuroticism	11.1 (5.1)	14.1 (5.3)	-5.83**	0.58	0.86
Lie	9.6 (4.7)	10.2 (4.5)	-1.15	0.13	0.78
Eysenck Impulsiveness Questionnaire					
Impulsiveness	8.4 (4.3)	8.5 (4.5)	-0.06	0.02	0.82
Venturesomeness	11.5 (3.2)	9.8 (3.6)	5.00**	0.50	0.77
Empathy	12.0 (3.3)	14.8 (2.8)	-9.49**	0.92	0.72
Gough Socialisation Scale	33.5 (6.2)	35.0 (6.4)	-2.47*	0.24	0.75

* $p < 0.05$.

** $p < 0.01$.

0.91 for MVQ M. Therefore, all the psychological tests had satisfactory internal consistency. *t*-tests showed significant gender differences on seven of the ten tests, with the exceptions being extraversion, lie and impulsiveness. Females scored significantly lower than males on both of the MVQ scales, indicating less favourable attitudes towards violence among females. They also scored significantly lower on P and V and higher on N, E and the GSS, indicating more pro-social behaviours, less risk-taking behaviours and more empathy, but they were more emotionally labile. Using Cohen's *d* (Cohen, 1988), the effect sizes for these significant findings ranged from small to large (range = 0.24–1.19), with highest for acceptance of violence and empathy (i.e., large effect size).

3.2. Differences in the use of computer games

Table 2 gives the means and standard deviations on the psychological tests for: (a) those participants who reported not playing computer games, (b) those who played non-violent computer games, and (c) those who played violent games at least on a weekly basis. A multivariate analysis of variance (MANOVA) showed a significant overall effect of the three groups (Wilks' Lambda = 0.886; $F = 2.32$, $p < 0.001$) as well as significant gender effect (Wilks' Lambda = 0.804; $F = 9.1$, $p < 0.001$). The table shows a significant univariate effect on seven of the psychological measures, but these were reduced to only two significant effects (MVQA and GSS) when the interaction of gender was taken into account.

Table 2

Mean scores, standard deviations and *F*-values on the psychological tests for the three groups, those who do not play computer games, those who do and those who play violent computer games

Psychological test	Do not play games (<i>N</i> = 193) Mean (SD)	Play games (<i>N</i> = 92) Mean (SD)	Play violent games (<i>N</i> = 85) Mean (SD)	<i>F</i> -value Group	Adjusted <i>R</i> ²	<i>F</i> -value Gender	<i>F</i> -value adjusted for gender
Maudsley Violence Questionnaire							
Machismo	4.1 (4.7)	4.7 (5.3)	7.8 (6.6)	16.96 ^{***}	0.12	18.63 ^{***}	2.68
Acceptance of Violence	5.3 (3.0)	6.6 (3.6)	9.5 (3.0)	53.61 ^{***}	0.30	41.82 ^{***}	11.33 ^{***}
Eysenck Personality Questionnaire							
Psychoticism	2.7 (2.5)	3.1 (2.2)	4.5 (3.0)	14.90 ^{***}	0.11	13.70 ^{***}	2.77
Extraversion	14.5 (3.8)	14.7 (4.2)	14.0 (4.5)	0.47	0.00	0.35	0.70
Neuroticism	13.4 (5.1)	13.2 (5.7)	10.6 (5.2)	12.01 ^{***}	0.08	17.40 ^{***}	1.54
Lie	10.3 (4.3)	9.9 (5.2)	9.0 (4.6)	1.98	0.01	0.61	2.65
Eysenck Impulsiveness Questionnaire							
Impulsiveness	8.4 (4.4)	8.8 (4.3)	8.4 (4.5)	0.31	0.01	0.40	0.41
Venturesomeness	10.0 (3.7)	10.9 (3.4)	11.5 (3.1)	6.56 ^{***}	0.04	7.97 ^{**}	0.62
Empathy	14.4 (3.0)	13.6 (3.2)	11.9 (3.2)	25.92 ^{***}	0.17	36.16 ^{***}	1.14
Gough Socialisation Scale	35.5 (6.1)	34.1 (6.7)	32.2 (6.3)	5.12 ^{***}	0.03	0.00	4.85 ^{**}

** $p < 0.01$.

*** $p < 0.001$.

Table 3

Mean scores, standard deviations and *F*-values on the psychological tests for the three groups, those who do not play or watch violent films or videos, those who watch 1–3 violent films per month, and those who watch four or more violent films

Psychological test	No violent films (<i>N</i> = 40) Mean (SD)	1–3 violent films (<i>N</i> = 253) Mean (SD)	More than 4 violent films (<i>N</i> = 81) Mean (SD)	<i>F</i> -value Group	Adjusted <i>R</i> ²	<i>F</i> -value Gender	<i>F</i> -value three groups adjusted for gender
Maudsley Violence Questionnaire							
Machismo	3.2 (3.9)	4.7 (5.2)	7.6 (6.6)	19.61***	0.13	33.34***	6.29**
Acceptance of Violence	3.7 (2.2)	6.5 (3.5)	8.3 (3.6)	55.11***	0.30	102.33***	14.39***
Eysenk Personality Questionnaire							
Psychoticism	2.1 (1.8)	3.1 (2.4)	4.4 (3.3)	18.34***	0.12	27.98***	7.12***
Extraversion	12.3 (4.7)	14.8 (3.8)	14.2 (4.5)	4.27	0.03	0.30	6.40*
Neuroticism	13.4 (5.3)	12.7 (5.2)	12.6 (6.0)	11.09***	0.08	32.60***	0.49
Lie	12.1 (4.4)	10.0 (4.6)	8.5 (4.4)	6.14	0.04	0.02	8.83***
Eysenk Impulsiveness Questionnaire							
Impulsiveness	7.7 (4.3)	8.4 (4.3)	9.0 (4.8)	1.12	0.00	0.61	1.62
Venturesomeness	9.0 (3.0)	10.5 (3.5)	11.5 (3.7)	8.82***	0.06	13.00**	3.72*
Empathy	14.5 (2.7)	13.8 (3.3)	12.7 (3.4)	26.54***	0.17	68.39***	0.83
Gough Socialisation Scale	36.9 (5.7)	34.7 (6.4)	32.2 (6.3)	5.77***	0.04	0.19	6.20**

* $p < 0.05$.

** $p < 0.01$.

*** $p < 0.001$.

3.3. Differences in watching violent films or videos

Table 3 gives the means and standard deviations on the psychological tests between those participants who: (a) reported not watching any violent films, (b) those who watched 1–3 violent films, and (c) those who watched more than four violent films each month.

A multivariate analysis of variance (MANOVA) showed a significant overall effect of both group (Wilks' Lambda = 0.850; $F = 3.05$, $p < 0.001$) and gender (Wilks' Lambda = 0.665; $F = 18.13$, $p < 0.001$). The table shows significant univariate effects on seven of the psychological measures, but only five of those remained significant after interactions with gender were taken into account. In addition, E and L became significant after the gender adjustment, whereas N and E became non-significant.

3.4. Multivariate analysis

In order to estimate the predicting effect of the two antisocial personality trait measures, P and GSS, on violence consumption in the form of watching violent films and playing violent computer games, we executed 24 ordinary least squares (OLS) regression models (separate 12 for each of the genders) with acceptance of violence, empathy, and sensation-seeking as mediating variables. This pre-analysis (results not shown here) indicated that empathy and sensation-seeking have virtually no predicting effect on the consumption of violent computer games or watching violent films, with

or without the personality measures. This led us to execute a further 12 OLS models (8 for males and 4 for females) leaving out empathy and sensation-seeking all together.

3.5. Predicting the use of violent computer games

Tables 4 and 5 below show the results from the OLS regression models for males (no analysis was performed for females due to the low number of participants who had played violent computer games). Table 4 reveals that P does not predict the use of violent computer games among males. Neither in Model 1 or Model 2 is P significant as a predictor for the use of violent computer games. Moreover, acceptance of violence predicts the use of violent computer games when controlling for the effect of P among males (beta = 0.30) as shown in Model 2.

Table 5 reveals the relationship between level of antisocial personality and the use of violent computer games. Models 1 and 2 indicate that higher levels of antisocial personality among males does not predict the use of violent computer games. Acceptance of violence, however, does predict the use of violent computer games, as shown in Model 2 (beta = 0.29).

Table 4
OLS regression models

	Males	
	Model 1	Model 2
<i>F</i> -test (ANOVA)	1.405	7.84**
Psychoticism	0.09 (0.020)	−0.02 (0.021)
Acceptance		0.30** (0.019)
Adjusted <i>R</i> ²	0.008	0.075

EPQ P on playing violent computer games. Standardized beta coefficients (standard errors in parentheses). No analysis was performed for females due to the low number of participants who had played violent computer games.

* $p < 0.05$.

** $p < 0.01$.

Table 5
OLS regression models

	Males	
	Model 1	Model 2
<i>F</i> -test (ANOVA)	1.817	8.620**
Antisocial personality	−0.10 (0.010)	−0.03 (0.010)
Acceptance		0.29** (0.018)
Adjusted <i>R</i> ²	0.004	0.092

GSS antisocial personality on playing violent computer games. Standardized beta coefficients (standard errors in parentheses). No analysis was performed for females due to the low number of participants who had played violent computer games.

* $p < 0.05$.

** $p < 0.01$.

3.6. *Predicting watching violent films or videos*

Tables 6 and 7 below show the results from the OLS regression models for males and females separately. First, we look at the relationship between P and watching violent films. For males, the *F*-test in Model 1 is not significant ($F = 2.77$), indicating that P has no effect on watching violent films. That is, a higher score on P does not result in increased consumption of violent films among males. In Model 2, acceptance of violence is added to the equation. This result is significant ($F = 4.69$). For males then, acceptance of violence positively predicts greater consumption of violent films (standardised beta = 0.18). For females, Model 1 shows that higher level of P positively predicts increased consumption of violent films (beta = 0.22) before acceptance of violence is added to the model. However, Model 2 reveals that when acceptance of violence (beta = 0.23) is added to the OLS regression, the effect of P turns out non-significant. Hence, for females, acceptance of violence fully mediates the effect that P has on watching violent films or videos.

Now we look at the relationship between the levels of GSS score and consumption of violent films and videos. For males, increased level of antisocial personality (lower score) positively predicts more consumption of violent films or videos as indicated in Model 1 (beta = -0.17). However, when the acceptance of violence measure is added to the equation, the effect of antisocial

Table 6
OLS regression models

	Males		Females	
	Model 1	Model 2	Model 1	Model 2
<i>F</i> -test (ANOVA)	2.77	4.69**	11.896**	11.809**
Psychoticism	0.12 (0.014)	0.10 (0.015)	0.22** (0.015)	0.13 (0.016)
Acceptance		0.18* (0.013)		0.23** (0.013)
Adjusted R^2	0.010	0.041	0.044	0.085

EPQ P on watching many violent films. Standardized beta coefficients (standard errors in parentheses).

* $p < 0.05$.

** $p < 0.01$.

Table 7
OLS regression models

	Males		Females	
	Model 1	Model 2	Model 1	Model 2
<i>F</i> -test (ANOVA)	5.743*	5.688**	7.821**	11.146**
Antisocial personality	-0.17^* (0.007)	-0.12 (0.007)	-0.18^{**} (0.006)	-0.10 (0.006)
Acceptance		0.19* (0.013)		0.25** (0.013)
Adjusted R^2	0.025	0.050	0.028	0.079

GSS antisocial personality on watching many violent films. Standardized beta coefficients (standard errors in parentheses).

* $p < 0.05$.

** $p < 0.01$.

personality turns out non-significant as shown in Model 2 for males. This means that the effect of antisocial personality on watching violent films or videos is fully mediated through acceptance of violence as shown in Model 2. The same applies to the females. Increased antisocial personality traits significantly predict more consumption of violent films or videos ($\beta = -0.18$). This relationship, however, turns out insignificant when acceptance of violence is added to the equation as shown in Model 2 in Table 7.

4. Discussion

The findings from this study suggest that acceptance of violence, as measured by the MVQ, is much more strongly associated with the use of violent computer games and films than any of the other personality measures. The acceptance of violence factor measures the extent to which people admit to overt enjoyment and acceptance of violence (in the media and in sport) and approve of it as acceptable behaviour in everyday life. Even where the subordinate personality traits (EPQ P and a low score on the GSS) were significantly related to watching violent films or videos this effect was fully mediated through acceptance of violence for both males and females. For exposure to violent computer games, the findings were similar. However, the use of computer games, and particularly violent ones, was very infrequent among the females and due to this no regression analysis was presented in the final model (Table 5). For example, only 3% of the females reported weekly use of violent computer games in contrast to 50% of the males. The gender difference was far less marked in relation to the regular watching of violent films and videos. It seems that the use of violent computer games is almost exclusively a male activity. What is needed is to study a much larger sample of females who regularly watch violent computer games.

Whilst the present findings emphasise the importance of attitudes (e.g., the general acceptance of violence) in relation to violent media habits, the cross-sectional methodology does not enable us to differentiate between the cause and effect (i.e., the extent to which acceptance of violence predisposes people to interests in gratuitous media violence, whilst repeated exposure to real-life and entertainment violence may increase people's acceptance of media violence). However, the present findings support the General Aggression Model (Anderson & Bushman, 2002) that the internal state of the person (i.e., thinking and feeling) is important in influencing their interest and exposure to violent computer games, films and videos. The findings can also be similarly interpreted within the 'downward spiral model' that exposure to violent media reinforces and exacerbates aggressive attitudes and tendencies (Slater, Henry, Swain, & Anderson, 2003). Repeated exposure to real-life and entertainment violence may alter people's cognitive, affective and behavioural processes, resulting in desensitisation to violent stimuli. The key to this process may be, as Funk et al. (2004) suggest, reduced capacity for empathy and increased proviolence attitude (e.g., acceptance of violence). The present findings only support possible changes in proviolence attitudes. Empathy was not found to have any significant effect. This could be due to empathy being more difficult than proviolence attitudes to measure by self-report or that empathy is a more complex construct in relation to the desensitisation to violent stimuli.

The strength of this study is that it examines the relative predictive value of a number of personality dimensions against attitudes towards violence. The findings demonstrate the powerful role of violent attitudes in violent media use. It raises important issues about the distinction be-

tween super factors and primary traits in predicting some behavioural outcomes, such as delinquency and media violence use. Acceptance of violence may be an experientially learned personality trait, like disrespect for rules, which makes it responsive to behavioural interventions (Jackson & Lawty-Jones, 1996).

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