

RELATIONSHIP OF ROLE-PLAYING GAMES TO SELF-REPORTED CRIMINAL BEHAVIOUR¹

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Summary.—Fantasy role-playing games have been portrayed by the media and various social organizations as being linked to, and causing, socially maladaptive behaviour including criminality. Based on this social perception it was hypothesized that role-playing experience should be positively correlated with self-reported criminality. 20 experienced role-playing gamers and 25 nonplayers completed the Eysenck Personality Questionnaire, a demographic questionnaire, and a 20-item criminality measure. Regression analysis indicated that role-playing experience did not relate to self-reported criminality; however, Psychoticism, which was higher in the nonplayers, did predict criminality.

The popularity of role-playing games has increased dramatically since Gary Gygax first introduced Dungeons and Dragons into the game market in 1973. Dungeons and Dragons (D & D) is now only one among many role-playing games but it is among the bestsellers with over eight million copies sold (Brooke, 1985). As part of the game players take on the personality and actions of characters they invent and then guide the characters through imaginary worlds in search of adventure, experience, wealth, and power (Gygax, 1978).

Supporters of these games (Bonilla, 1978; Dear, 1984; Johnston, 1980) have claimed that these games attract highly imaginative and intelligent people as well as improve the social skills and grades of the players. The Association for Gifted-Creative Children suggested that D & D encourages players to read quality literature by Asimov, Tolkien, and Shakespeare (Adler & Doherty, 1985) and Sullivan (cited in Mather, 1986) described a psychiatrist's use of the fantasy role-playing computer game *Wizardry* to build self-esteem in an uncommunicative, emotionally disturbed boy.

However, some people are concerned that role-playing games reduce the ability of players to distinguish between fantasy and reality. The National Coalition on Television has linked the games to 29 suicides and murders since 1979 (Schuster, 1985). One woman blamed her son's suicide on his involvement with Dungeons and Dragons. Because of this she formed the organization Bothered About Dungeons and Dragons (B.A.D.D.) to call attention to its perceived ill effects (Schuster, 1985). The Christian Informa-

¹This study, carried out by the first author under the supervision of the second, was submitted to the University of Manitoba in partial fulfillment of the requirement for the honours degree in psychology. Requests for reprints should be sent to James J. Forest, Department of Psychology, University of Manitoba, Winnipeg, Manitoba, Canada R3T 2N2.

tion Council has stated that, "Playing these games can desensitize players to murder, suicide, rape, torture, robbery, the occult, or any other immoral or illegal act . . ." (Brooke, 1985, B-1).

There is very little empirical evidence to help decide between these two views. Simon (1987) examined the claim by game detractors that D & D was connected to emotionally unstable behaviour such as suicides and homicides. His results indicated that role-players showed a mundane profile lacking in the emotional instability associated with suicide and homicide. He also found that claims that role-playing games attract highly intelligent individuals were not valid. He concluded that role-players had healthy psychological profiles and that previous experience with D & D may have been an incidental rather than etiological factor in an individual's display of unstable behaviour.

DeRenard and Kline (1990) investigated feelings of alienation in a group of role-players and nonrole-players. They found that, in general, there were few differences between players and nonplayers although fewer role-players reported feelings of meaninglessness than those who had never played, and there was a positive correlation between commitment to Dungeons and Dragons among role-players and feelings of general alienation. The authors conclude that media speculations regarding the possible harmful effects of role-playing games are not supported by research.

The present study expanded on this research by focusing on personality and socioeconomic measures of role-players and nonrole-players, and their relationships with criminal activity. Detractors of role-playing games appear to have focused on a few major incidents, and from these negative events they have assumed a causal connection between role-playing and criminality. They have not considered the possibility that other factors besides role-playing may be involved in the expression of the criminal behaviour. Their view requires a positive correlation between fantasy role-playing and criminality that cannot be explained by either personal or social factors. Using the detractor viewpoint, it was predicted that role-playing game experience would be positively correlated with self-reported criminality after controlling for personality and socioeconomic factors.

METHOD

Subjects

Role-playing subjects were 20 male and female students at the University of Manitoba with a minimum of two years experience with Dungeons and Dragons who were recruited through ads and personal contact. Non-role-playing subjects were 25 male and female introductory psychology students who received course credit for participation. Twenty-three male and female introductory students were recruited to rate the seriousness of the 20 items of criminal behaviour on the criminality questionnaire. An additional

45 introductory psychology students participated in an experiment measuring the test-retest reliability of the criminality questionnaire.

Materials

The Eysenck Personality Questionnaire contains 90 true-false items measuring Extraversion, Neuroticism, Psychoticism, and Lying. The test-retest reliabilities for these scales are .78, .89, .86, and .84, respectively (Eysenck & Eysenck, 1975).

The criminality measure consisted of 20 yes-no items measuring criminal behaviour ranging from traffic violations to sexual assault. Subjects also indicated the approximate year in which the behaviour had occurred. Test-retest reliabilities were high for 15 items ($\phi > .90$), moderate for two items ($\phi > .80$), and low for two ($\phi = .54$ and $.35$).

An 8-item demographic questionnaire obtained data on age, sex, role-playing experience, job activity, and parents' occupations. Parental occupations in conjunction with information from Statistics Canada (Statistics Canada, 1986a, 1986b) was used to judge the subjects' socioeconomic status in 1 of 18 wage-income brackets.

Procedure

Forty-five subjects served in a test-retest study of the criminality questionnaire. Individuals were told the general aim of the study in Session 1 and then completed both the criminality measure and the demographic questionnaire. They returned in 3 weeks for Session 2 during which they completed the same questionnaires.

Twenty-three subjects each received the 20 criminal behaviours from the criminality questionnaire printed on index cards and were asked to sort the cards from most to least serious. The average of these ratings for each behaviour were used as a measure of the perceived seriousness of the crimes by university students.

In the main experiment, subjects participated in group sessions lasting approximately one-half hour. Subjects were told the general purpose of the study, then signed a consent form and completed the three questionnaires in the following order: (a) Eysenck Personality Questionnaire, (b) criminality questionnaire, and (c) demographic questionnaire.

RESULTS

The data were analyzed using SAS/STAT release 6.03 (SAS Institute, Inc., 1988). Means and standard deviations for the Eysenck Personality Questionnaire scales, age, years of role-playing experience, income group, crime, and weighted-crime are presented in Table 1. The crime score represents the total number of items scored "yes" on the criminality measure. Weighted-crime represents the total number of items scored "yes" on the criminality measure multiplied by an item's seriousness rating.

TABLE 1
 MEANS AND STANDARD DEVIATIONS BETWEEN ROLE-PLAYERS AND NONROLE-PLAYERS
 FOR PREDICTOR AND DEPENDENT VARIABLES

Variable	Role-players, <i>n</i> : 20		Nonrole-players, <i>n</i> : 25	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Psychoticism	2.55	2.13	4.16	4.06
Neuroticism	9.30	4.76	12.32	5.03
Extroversion	14.35	4.20	14.00	4.88
Lie Scale	6.40	4.28	7.16	3.48
Years Role-playing	6.85	2.30	.12	.33
Income Group	10.65	3.78	10.04	3.75
Age	21.00	2.47	19.00	2.21
Crime	3.40	2.78	3.64	3.01
Weighted-crime	20.32	23.27	24.22	24.27

t tests of the differences between role-players and nonrole-players for the predictor scores indicated a significant difference on Neuroticism ($t_{43} = 2.04$, $p < .05$), age ($t_{43} = -2.74$, $p < .01$), and years of role-playing ($t_{19.6} = -12.9$, based on approximate *t'* because variances were unequal). As well, there was a significant difference between the variances of role-players and nonrole-players on Psychoticism.

To test the hypothesis that role-players would report more criminal activity than nonrole-players a standard regression analysis was carried out on both the crime and weighted-crime score using the seven predictor variables. It was predicted that the role-playing variable would be a significant predictor of self-reported criminality after the effects of socioeconomic status (as measured on the income variable), personality (as measured on the Eysenck Personality Questionnaire), and age were controlled. The seven-predictor regression model for the dependent variable crime was nonsignificant ($F_{7,37} \approx 1.24$, $p < .31$, $R^2 = .19$; Adj. $R^2 = .04$). The only parameter of the regression equation to be significantly different than zero was Psychoticism ($t_{37} = 2.03$, $p < .05$). The seven-predictor regression model for the dependent variable weighted-crime was also nonsignificant ($F_{7,37} = 1.14$, $p < .36$, $R^2 = .18$; Adj. $R^2 = .02$). The only parameter of the regression equation significantly different from zero was Psychoticism ($t_{37} = 2.24$, $p < .03$). These analyses dichotomized subjects into game-players and nongame-players. The same two analyses were carried out using the variable years-of-game-playing which is a continuous variable. The results were the same; both *F* ratios were nonsignificant and the only parameter of the regression equation that was significantly different from zero was Psychoticism.

The above analyses are appropriate for assessing the unique contribution of the game-playing variable to self-reported criminality after controlling for the other variables in the regression equation; however, if game-playing correlates highly with several other variables, it may predict criminality if entered

early in the regression model. To examine this possibility additional *post hoc* regression analyses were carried out using a forward selection procedure (entry level set at .5), a maximum R^2 selection procedure, and a stepwise procedure (significance level for remaining in model was .15). The forward selection procedure adds variables to the regression model based on selecting the variable having the largest F of the variables not yet in the model. The stepwise procedure is similar to the forward procedure except that variables already in the model can be dropped if they do not produce a significant F . The maximum R^2 procedure tries to create the best one-variable, two-variable, etc., regression model by adding and subtracting variables to determine which lead to the greatest increase in R^2 . The results of 24 analyses were identical to those of the previous regression analyses for both the crime and weighted-crime dependent measures; all F ratios were nonsignificant at the .05 level and the only regression parameter that was significantly different from zero was Psychoticism. Psychoticism entered each regression model first and remained in all models. Indeed, in the stepwise analysis it was the only variable that entered the model; all others were nonsignificant.

DISCUSSION

The results of this study do not support the detractor hypothesis of the connection between role-playing experience and criminal behaviour. The role-playing variable was so unimportant that it could not even pass the liberal entry standard set in the forward selection procedure for a four-variable regression model. The only variable to enter the regression models consistently and predict criminality responses was the Psychoticism factor. Eysenck and Eysenck (1975) describe the characteristics of a person scoring very high on the Psychoticism scale as an individual who may be solitary, troublesome, not caring for people, and lacking in sympathy and feeling. The Psychoticism scale has been shown by Eysenck and Eysenck to be significantly higher in both male and female prisoners. In the present study it was the nonrole-players who reported more criminal activity and obtained the higher Psychoticism scores although their Psychoticism scores were not in the range of those for male prisoners ($M = 5.72$, $SD = 3.56$) or even above their age norms (16 to 19) for male university students ($M = 4.63$, $SD = 3.27$). The underlying significance of the inverse relationship between Psychoticism and role-playing experience is somewhat unclear since the Psychoticism scale has lower reliability and internal consistency than the other scales (Eysenck & Eysenck, 1975). Further, the generality of these conclusions are limited by the sample sizes in this experiment and by the self-report nature of the measure of criminality.

The failure to find a positive relationship between fantasy role-playing and maladaptive behaviour in this study or in previous research leads one to ask why the negative view arose and continues to be expounded. It may be

that negative, and perhaps even positive, views of fantasy games among certain groups may be due in part to the use of the availability heuristic (Matlin, 1989). The availability heuristic is used when the frequencies or probabilities of events are estimated on the basis of how easily examples come to mind. This method of estimating frequencies can be biased by the vividness of the events (e.g., suicides), illusory correlations between variables (e.g., role-playing experience and suicides), and the causal models used by people to explain events (e.g., play-acting murders lead to real life murders).

Researchers interested in fantasy role-playing games need to (a) obtain nonverbal measures of behaviour from gamers and nongamers to complement the current findings and (b) examine the decision-making processes by which the detractors and proponents of fantasy games evaluate the effects of playing such games.

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