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Predicting Adolescent Deviant Behavior in Hong Kong

A Comparison of Media, Family, School, and Peer Variables

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Abstract

Juvenile and adolescent delinquent behavior has been a popular topic in both mass media effect research and criminological research. One of the limitations of these two types of research has been the lack of analyses using a combination of media variables and variables that are derived from delinquency theories pertaining to family, school, and peers in the explanation of adolescent deviant behavior. Based on a self-report study of a sample of 1,139 secondary school students in Hong Kong in 1986, this paper estimates the strengths of media variables (frequency of exposure, preference for violent/obscene content, imitation of media characters), family variables (attachment to parents, parents' negative labeling, parents' deviant behavior), school variables (attachment to school, teachers' negative labeling, academic performance), and peer variables (peers' deviant behavior, peers' negative labeling, peers' disapproval of deviant behavior) in the prediction of adolescent deviant behavior. Results show that the equation containing frequency of media exposure, preference for violent/obscene content, imitation of media characters, parents' deviant behavior, teachers' negative labeling, peers' deviant behavior, and peers' disapproval of deviant behavior explained the greatest amount of variance of adolescent deviant behavior. Implications of these and other findings for future research are discussed.

Introduction

Juvenile and adolescent deviant behavior is one of the most researched areas in both criminological research and mass media effect research. There is no shortage of carefully conceptualized and empirically tested theories of adolescent delinquency in the criminological literature. Nor is there any lack of attempts in media studies to unravel the possible impact of the media on the

development of deviant values and the involvement in deviant behaviors among adolescents. What is surprising, therefore, is the conspicuous neglect by criminologists of the role of mass media in their theories of crime causation (Garfalo, 1981; Thornton and Voigt, 1984). The purpose of this paper is to bring both media variables and variables derived from criminological theories into an analysis of adolescent deviant behavior in Hong Kong.

Failure to take media into account entails obvious drawbacks in adolescent delinquency theories. In the U.S., television, the most popular of all media, has long become "the central cultural arm of American society" (Gerbner and Gross, 1976), and television viewing has been preeminent over other out-of-school activities of children and teenagers in the U.S. (Comstock et al., 1978; Timmer et al., 1985). The pervasiveness of television, universal across different societies and cultures (Szalai, 1972), has enabled television to become a "new" socializing agent (Gerbner and Gross, 1976; Adler et al., 1980). Indeed, television competes with the family, school, and peers in shaping the attitudes and behaviors of adolescents. The influence of television and other media is too important to be left out in any analysis of adolescent aggressive and deviant behavior.

One of the most enthusiastically studied topics in media effect research is the relationship between exposure to violent media content and viewer's subsequent violent or antisocial behavior. Thus far, research findings have not been conclusive (Wright, 1986:174-177). Until the 1970s, studies were mostly laboratory experiments, and most of these studies in one way or another demonstrated that viewing of violent television content triggers imitative aggressive behavior in viewers (for reviews, see, e.g., Comstock, 1980; Liebert and Schwartzberg, 1977). The major limitation of laboratory studies is the lack of generalizability of their results to the real world (Singer, 1971; Andison, 1977; Phillips, 1982).

In order to avoid the artificiality of laboratory experiments, more and more researchers have turned to more naturalistic research designs, of which the survey is the most popular. Many

survey studies have found various degrees of association between media exposure and self-reported aggressive or delinquent behavior (e.g., McLeod et al., 1972a, 1972b; Belson, 1978; Atkin et al., 1979; Thornton and Voigt, 1984; for a recent review, see Comstock and Paik, 1991), although some studies either did not find a significant association (e.g., Pfuhl, 1970), or were not certain about the presence of a significant association (e.g., Milavsky et al., 1982). The greatest limitation of surveys or other naturalistic studies is the difficulty of drawing causal inferences from their data (Comstock et al., 1978; Phillips, 1982). In a recent review, Comstock and Paik (1991) added the positive note that survey data consistent with laboratory results may be viewed as lending substantial "external validity" (implications for everyday life) to the causal relationship established in experiments.

A different line of research has attempted to demonstrate the effect of mass media on violence by the quasi-experimental approach of examining mortality data in relation to media portrayal of violence. Time-series analyses performed by Phillips, for example, provided what he considered as evidence that violent, fictional television soap operas triggered imitative suicides (Phillips, 1982), and that televised heavyweight championship boxing matches were conducive to the increase in the number of homicides (Phillips, 1983). However, such studies have been criticized for a number of weaknesses, including the establishing of causality without sufficient methodological ground, and the making of inferences about individual behavior from aggregate data (Baron and Reiss, 1985).

This paper is an analysis of data from a self-report survey of deviant behavior of a sample of secondary school students in Hong Kong. Its objective is twofold: (1) to find out if there exists any association between mass media exposure and deviant behavior in adolescents, and (2) to compare the contribution of media variables with those of variables derived from delinquency theories pertaining to the family, school and peers, in the explanation of the variance of adolescent deviant behavior in Hong Kong.

Media and Adolescent Delinquency Studies
in Hong Kong

The earliest major academic research on juvenile and adolescent delinquency in Hong Kong dates back to the 1970s; it was characterized by simple univariate comparisons between young offenders of violent crimes selected from official records and young non-offenders selected from the general population on a number of variables derived from Hirschi's (1969) control theory (Ng, 1975, 1980).[1] Results lent support to control theory. Offenders were found to be less attached to the family and school, to be more attached to delinquent peers, to be more involved in unconventional activities, and to hold more unconventional beliefs.

In 1982, the first set of self-report survey data on deviant behavior of 1,464 secondary students was collected in a survey of the mentality of adolescents. The report by one of the investigators of the project (Mok, 1985) examined univariate differences between "problem students" and "promising students" in a variety of attitudinal, behavioral, and social relational dimensions. Results of Mok's analysis also supported control theory.

Secondary analyses of this set of data (M.K. Cheung, 1985; Qiu, 1987) tested a number of criminological theories, including control theory, in integrated models. A more rigorous test of delinquency theories was performed when data from the second self-report survey of 1,139 secondary school students were available in 1986 (Cheung and Ng, 1988).

In these multi-theory testing efforts, differential association theory was found to offer the strongest explanatory power in the explanation of adolescent deviant behavior, followed by control theory and labeling theory. Strain theory did not receive significant empirical support. In other words, the most important variables were, in order of explanatory power, variables concerning association with delinquent peers, those pertaining to attachment to family and school, and those concerning evaluation from parents and teachers. A similar conclusion was reached in a recent

survey of a sample of 173 adolescents identified by outreaching social workers (Ngai, 1993).

At about the same time as the above-mentioned Cheung and Ng's study, another self-report survey of a sample of 1,668 secondary school students was conducted. Data from this survey were used to scrutinize not only the effects of family and school variables on adolescent delinquency, but also those of more psychological variables such as self-concept and locus of control (Lau and Leung, 1992a, 1992b; Leung and Drasgow, 1986; Leung and Lau, 1989).

While the above studies represent the major efforts made in the last one or two decades to uncover the social and psychological factors in adolescent deviant behavior in Hong Kong, mass media variables have received very little attention in these analyses, even though the earliest study by Ng (1975) did report that young offenders were more likely than non-offenders to enjoy martial arts TV programs and movies and to adore martial arts film stars. The present study fills this gap in media and delinquency studies in Hong Kong and compares the strengths of a number of media variables with those of some commonly used delinquency variables in explaining adolescent deviant behavior in Hong Kong.

Data and Methods

The Sample

Data were extracted from the Behavior and Attitude of Hong Kong Adolescents Survey, of which the author was co-investigator. The survey was conducted in 1986 and was funded by The Chinese University of Hong Kong through the (then) Centre for Hong Kong Studies. A sample of students was selected from ten secondary schools in Hong Kong. The choice of schools was made according to two criteria: type of school (government, subsidized, and private), and area (urban, new town, and rural). Five schools

were randomly selected from all schools in the urban areas, among which two were government schools, two were subsidized ones, and the remaining one was private. Four schools were randomly selected from all schools in new towns, and these included one government, two subsidized, and one private. Lastly, only one school was randomly selected from the relatively small number of schools in rural areas, and the one chosen was a subsidized one. Each participating school was required to randomly assign three classes of different forms (from Form 1 to Form 4) for data collection. A questionnaire was administered to students in the classroom setting, where no teachers would be present. The final sample consisted of 1,139 students.

In studies of adolescent and juvenile delinquency in the West, the self-report method has been shown to be a reliable and valid measure of deviant behavior (e.g., Hardt and Peterson-Hardt, 1977; Shapland, 1978; Hindelang et al., 1982; Hagan, 1985; Cheung, 1980). In Hong Kong, Mok (1985) has demonstrated the validity of the self-report method in his study of problem behavior of adolescents, and in an earlier analysis using data from the present study, Cheung and Ng (1988) have also confirmed the validity of the method in this Survey.

Selection and Measurement of Variables

Four sets of independent variables (media, family, school, and peer) are used in the present analysis, each set consisting of three variables. The dependent variable is adolescent deviant behavior.

Independent Variables

(1) *Media Variables*
The media variables chosen for this analysis are (i) frequency of exposure, (ii) preference for violent/obscene content, and (iii) imitation of media characters. These are three common variables in studies of media effects on deviant or aggressive behavior. In this

paper, media include television, movie, and newspaper/magazine.

Frequency of exposure is measured with four questionnaire items: "On the average, how many hours a day do you spend on watching TV?" "On the average, how many movies do you go to see every three months?" "How often do you read newspapers?" and "How often do you read magazines?" Response categories for these four questions are combined to form a frequency scale with scores ranging from 0 (lowest) to 3 (highest).[2]

Exposure as used in this analysis does not refer to violent/obscene contents in particular. It is assumed that, in general, the longer the time spent on the media, the more violent/obscene contents that the viewer may be exposed to.

Preference for violent/obscene content is measured with two items: "Do you like violent contents on TV, in movies, newspapers or magazines?" and "Do you like obscene contents on TV, in movies, newspapers or magazines?" For each of these items, "not at all" scored 0, "not very much" scored 1, "undecided" scored 2, "somewhat" scored 3, and "very much" scored 4. The preference score is a summation of the scores for the two items. The scale has an alpha value of .69, which indicates that it has a sufficient degree of reliability and internal consistency.

While the exposure variable does not directly assess the amount or types of violent or obscene contents the viewer is exposed to, this variable asks about the specific preference for such contents.

For **imitation of media characters**, respondents were asked: "Have you ever tried to imitate the behaviors of characters on TV, in movies, newspapers, or magazines?" Response categories were: "Never" (scored 0), "seldom," "sometimes," "often," and "very often" (scored 4).

Like exposure, imitation does not ask about specific violent/obscene media characters that the viewer may imitate. It is assumed that viewers with higher tendency to imitate media characters are more likely to imitate violent/obscene characters than those with lower tendency to imitate.

(2) *Family Variables*

For many years, the family has occupied a central place in the study of adolescents' attitudes and behaviors.[3] In deviant behavior, a number of delinquency theories look at the role of the family in facilitating or preventing adolescent deviance. Control theory holds that what restrains people from becoming deviant is the social bond. Nye's (1958) research shows that the family contributes to the creation of social bond through the provision of internalized controls, indirect controls, direct controls, and need satisfaction. In Hirschi's (1969) version of control theory, attachment to others is one of the four elements of the social bond.[4] The most important category of "others" for attachment is parents. Therefore, the first family variable in the present analysis is **attachment to parents.**

To measure the degree of attachment to parents, three questions were asked about how good is the respondent's relationship with his/her father, how much his/her father understands him/her, and how often does he/she confide in his/her father when he/she has problems. The same questions were repeated for mother.[5] The attachment to parents scale has an alpha value of .82.

Labeling theory also has bearings on the influence of the family on adolescents' behavior. To labeling theorists, deviance is not a quality of behavior but is a result of the social application of the deviance label. The labeling of deviance produces subsequent deviant behavior on the part of the person so labeled (Tannenbaum, 1938; Becker, 1963; Lemert, 1967). For adolescents, one of the sources of the negative label is parents. The poorer the evaluation from parents as perceived by the adolescent, the greater may be the negative effects of such labeling on him/her (e.g., Matsueda, 1992).

Thus, the second family variable is **parents' negative labeling.** Respondents were asked: "In general, what does your father (and then mother) think of you as a son/daughter?" ("Very good" scored 0, "good," "don't know," "poor," and "very poor" scored 4). The alpha value of this scale is .82.

Most of studies of family and deviant behavior have focused on the positive side of influence from parents, so that attachment to parents, parents' positive labeling, and the like are assumed to be necessarily protective factors in adolescents' inclination to commit deviant behavior. This view of the family ignores the important fact that parents could also be sources of deviant models. Parents who exhibit a large amount of deviant behavior may serve as negative role models for their children. Attachment to such parents may facilitate the learning, and reinforcement, of deviant values and behaviors from them, a process of learning compatible with that described by social learning theory (Akers et al., 1979).

The last family variable is, therefore, **parents' deviant behavior.** This variable is measured by asking the respondent: "How often does your father (and then mother) do the following?" ("Never" scored 0, "seldom," "sometimes," "often," and "very often" scored 4). Eleven deviant behavior items were given.[6] The scores of the parents' deviant behavior scale range from 0 to 88. The scale has an alpha value of .73.

(3) *School Variables*

Like attachment to parents, attachment to school is an important part of the "attachment" dimension of Hirschi's social bond. For **attachment to school**, respondents were asked whether they agreed or disagreed on eight items concerning different aspects of the school.[7] The lowest score for the attachment to school scale is 0, and the highest score is 32. The alpha value for this scale is .60.

Just as poor evaluation from parents may be conducive to deviant behavior in adolescents, negative labeling from teachers may produce similar adverse effects. Thus, the second school variable is **teachers' negative labeling.** Respondents were asked: "In general, what do your teachers think of you as a student?" ("Very good" scored 0, "good," "don't know," "poor," and "very poor" scored 4).

The last school variable is **academic performance**. For adolescents, poor academic results may generate a low self-concept and a low perceived personal control, which may, in turn, be conducive to involvement in delinquency (e.g., Lau and Leung, 1992a, 1992b). Respondents were asked: "What was the total average mark for all your subjects last year?" In the response categories, each category consisted of five marks, with "30 or below" scoring 0 and "96 or above" scoring 13.

(4) *Peer Variables*

The influence of delinquent peers on adolescents' involvement of deviant behavior has been most extensively dealt with by differential association theory (Sutherland and Cressey, 1978).[8] Following the tradition of the social learning perspective, this theory states that criminal behavior is learned in interaction with other people, especially intimate ones. The learning includes not only the techniques of committing the crime, but also motives and attitudes supporting criminal behavior, which have much to do with the definitions of the legal code as favorable or unfavorable. "A person becomes delinquent because of an excess of definitions favorable to violation of law over definitions unfavorable to violation of law" (Sutherland and Cressey, 1978:81). For adolescents, the peer group is the most important context in which the learning and reinforcement of values and behaviors take place. Association with delinquent peers becomes an important source of definitions favorable to violation of the law.

Differential association theory has been extensively tested and supported by research findings conducted both locally (e.g., Cheung and Ng, 1988; Ngai, 1993; M.K. Cheung, 1985; Qiu, 1987) and overseas (e.g., Short, 1957; Jensen, 1972; Krohn, 1974; Elliott et al., 1985; Johnson, 1979; Matsueda, 1982). In this analysis, the variable pertaining to differential association theory is **peers' deviant behavior** (the same as "association with deviant friends" used in Cheung and Ng (1988)). This variable is measured by the respondent's knowledge of friends' deviant behavior, rather than

friends' delinquent attitudes or number of delinquent friends.[9] Respondents were asked: "As far as you know, have your friends done the following in the past year?" Eight items of deviant behavior were used.[10] Response categories were: "Never" (scored 0), "seldom," "sometimes," "often," and "very often" (scored 4). Scores of this scale range from 0 to 32. The alpha value is .89.

Two other peer variables are included in the present analysis: **peers' negative labeling** and **peers' disapproval of deviant behavior**. The former looks at the effect of negative evaluation from friends, and is measured with the question: "In general, how well-liked are you by your friends?" ("Don't like me at all" scored 0, "don't quite like me," "so-so," "quite like me," "like me very much" scored 4.) The latter assesses the presence of informal social control from friends, and is measured with the question: "If you were shoplifting and your best friend saw you, would you feel embarrassed?" ("Not at all" scored 0, "not very much," "a little," "somewhat," and "very much" scored 4.)

Dependent Variable: Adolescent Deviant Behavior

Deviant behavior is measured with a scale consisting of eight items of different forms of deviant or delinquent behavior.[11] For each item, respondents were asked how frequent they have done that in the past year ("Not even once" scored 0, "once or twice," "several times," "quite a number of times," and "many times" scored 4). The scores of the deviant behavior scale range from 0 to 32. The scale has an alpha value of .75. Because of a highly skewed distribution, the logged value of the score of this deviant behavior scale is used in the analysis.

Data Analysis

To find out and compare the strength of each of the independent variables in predicting adolescent deviant behavior, OLS multiple regressions are performed. Regression results are used to determine the combination of independent variables that form the best model for the present data.

Results

Before multiple regressions are performed, the correlation between deviant behavior and each of the independent variables is reported (Table 1).

Table 1   Bivariate Correlations between Deviant Behavior and
Independent Variables (N=858)

Dependent variable: Deviant behavior

Independent variables	r
Media variables	
Frequency of exposure	.277***
Preference for violent/obscene content	.555***
Imitation of media characters	.403***
Family variables	
Attachment to parents	-.192***
Parents' negative labeling	.264***
Parents' deviant behavior	.267***
School variables	
Attachment to school	-.255***
Teachers' negative labeling	.303***
Academic performance	-.206***
Peer variables	
Peers' deviant behavior	.672***
Peers' negative labeling	.045
Peers' disapproval of deviant behavior	-.359***

*** p < .001.

Deviant behavior is significantly related to most of the four sets of independent variables. For peer variables, while peers' negative labeling is the only variable not significantly related to

deviant behavior, peers' deviant behavior yields the strongest of not only peer variables but also of all other correlation coefficients with deviant behavior (r=.672; p<.001). The more the deviant behavior committed by friends, the higher the adolescent's involvement in deviant behavior as well. Peers' disapproval of deviant behavior, a form of social control by peers, is moderately and negatively correlated with deviant behavior (r=-.359; p<.001). The more likely is the adolescent to be embarrassed if seen shoplifting by best friends, the less likely he/she is to commit deviant behavior.

All media variables are significantly (p<.001) and positively related to deviant behavior. Preference for violent/obscene content is strongly correlated (r=.555), and so is imitation of media characters (r=.403). Frequency of exposure is moderately correlated (r=.277). The higher the preference for violent/obscene content, the higher the tendency to imitate media characters, and the longer the time spent on the media, the more likely will the adolescent be engaged in deviant behavior.

Compared with peer and media variables, family and school variables are significantly (p<.001), but only moderately, related to deviant behavior. In the family, parents' deviant behavior wields the greatest influence on the adolescent's deviant behavior (r=.267). Adolescents whose parents exhibit more deviant behavior are more likely to commit deviant behavior themselves. Parents' evaluation means quite a lot to the adolescents too, as more deviant behavior is found in those who are more poorly evaluated by their parents (r=.264). Surprisingly, attachment to parents is the weakest family variable, yielding only a small, and negative, correlation (r=-.192) with deviant behavior.

School variables do not fare much better than family variables. Teachers' negative labeling matters most (r=.303), followed by attachment to school (r=-.255) and academic performance (r=-.206). Those who are poorly evaluated by teachers, are less attached to school, and receive poor grades, are more likely to commit deviant behavior.

The above analysis shows only the bivariate relationship between adolescent deviant behavior and each of the independent variables. Just how useful are these four sets of independent variables as predictors of deviant behavior? Has there been any spuriousness in these relationships? Would some of the correlations diminish in value, or even become statistically insignificant, when other variables are controlled for? In order to answer these and other questions, OLS regressions are performed. Table 2 shows the regression of deviant behavior on all the twelve independent variables.

Table 2   Multiple Regression of Deviant Behavior on All Media, Family, School, and Peer Variables (N=858)

Dependent variable: Deviant behavior

Independent variables	Standardized Beta (b)	SE	t
Media variables			
Frequency of exposure	.072**	.024	3.022
Preference for violent/obscene content	.247***	.027	9.198
Imitation of media characters	.132***	.025	5.312
Family variables			
Attachment to parents	-.031	.027	-1.132
Parents' negative labeling	.030	.027	1.136
Parents' deviant behavior	.090***	.025	3.634
School variables			
Attachment to school	.021	.026	.820
Teachers' negative labeling	.098***	.026	3.741
Academic performance	-.031	.027	-.880
Peer variables			
Peers' deviant behavior	.414***	.028	15.542
Peers' negative labeling	-.020	.024	-.840
Peers' disapproval of deviant behavior	-.057*	.025	-2.277
Constant (Unstandardized beta = -.383***)			-3.412

Multiple R = .757
Adjusted R^2 = .568
F = 94.760***

* p < .05;   ** p < .01;   *** p < .001.

When other variables are controlled for, only seven out of the twelve variables remain statistically significant. All media variables yield significant standardized partial regression coefficients (betas). The beta for preference for violent/obscene content is .247 (p<.001), and those for imitation of media characters and frequency of exposure are .132 (p<.001) and .072 (p<.01), respectively. Obviously, the importance of frequency as a predictor of deviant behavior diminishes when it is compared with content preference and imitation.

Among the family variables, the relationships between deviant behavior and attachment to parents and parents' negative labeling become insignificant in the multiple regression. Parents' deviant behavior yields a significant, but small, beta (.090; p<.001).

Like family variables, only one of the school variables — teachers' negative labeling — remains significant when other variables are controlled for. Its beta is small (.098; p<.001).

Those two peer variables that have been found earlier to be significantly correlated with deviant behavior, remain significant when other variables are controlled for. Peers' deviant behavior yields the largest beta in the regression (.414; p<.001). Peers' disapproval of deviant behavior, though still significant in the regression, has only a small beta (-.057; p<.05).

Altogether, the twelve variables explain as much as 56.8% of the variance of deviant behavior.

Since only seven out of twelve independent variables remain statistically significant after the regression, another regression containing only these seven variables should be performed. In order to ensure that the equation containing these seven variables represents the best model for the data, several regressions are run, eliminating the insignificant independent variables one by one. Table 3 shows the results.

In Table 3, Equation I excludes parents' negative labeling in the regression. The seven variables that were significant in the previous regression continue to be significant, and the other four previously insignificant variables (attachment to parents, attachment to school, academic performance, and peers' negative label-

Table 3   Multiple Regressions of Deviant Behavior on Selected Independent Variables (N=858)

Dependent variable: Deviant behavior

Independent variables	Standardized Beta				
	Equation (I)	Equation (II)	Equation (III)	Equation (IV)	Equation (V)
Media variables					
Frequency of exposure	.072**	.069**	.068**	.070**	.071**
Preference for violent/obscene content	.247***	.244***	.245***	.247***	.247***
Imitation of media characters	.133***	.134***	.135***	.133***	.134***
Family variables					
Attachment to parents	-.040	-.034			
Parents' negative labeling					
Parents' deviant behavior	.092***	.093***	.103***	.103***	.103***
School variables					
Attachment to school	.022				
Teachers' negative labeling	.106***	.102***	.105***	.110***	.108***
Academic performance	-.023	-.021	-.022		
Peer variables					
Peers' deviant behavior	.415***	.414***	.414***	.416***	.416***
Peers' negative labeling	-.018	-.019	-.012	-.012	
Peers' disapproval of deviant behavior	-.060*	-.058*	-.059*	-.058*	-.058*
Constant (Unstandardized beta)	-.351***	-.300***	-.371***	-.401***	-.411***
Multiple R	.757	.757	.756	.756	.756
Adjusted R^2	.568	.568	.567	.567	.568
F statistic	103.222***	113.509***	125.792***	141.427***	161.730***

* $p < .05$;   ** $p < .01$;   *** $p < .001$.

ing) remain insignificant. The adjusted R^2 for this equation is .568, the same as that for the full equation with all twelve variables (see Table 2). This shows that eliminating parents' negative labeling does not result in any loss in the amount of variance of deviant behavior explained.

By the same token, Equation II excludes one more previously insignificant variable, Equation III excludes a total of three variables, and Equation IV excludes four insignificant variables. The adjusted R^2 for Equation II is also .568, whereas those for Equation III and Equation IV even slightly decrease to .567. These results suggest that none of Equations II, III, and IV is the best equation for the present data.

Equation V excludes all five previously insignificant variables (parents' negative labeling, attachment to parents, attachment to school, academic performance, and peers' negative labeling), and only previously significant variables are introduced into the regression. The adjusted R^2 is .568, the same as that for the full equation (Table 2). Since Equation V, with only seven of the twelve variables, explains the same amount of variance as does the full equation with all twelve variables, it is more **parsimonious** than the full equation. Therefore, Equation V is the best equation for the present data.

When the regression leaves out previously insignificant independent variables in the equation, the values of the standardized partial regression coefficients will not be exactly the same as obtained in the regression for the full equation. This is because in the regression for the full equation, the standard errors for significant independent variables would have been affected by the presence of insignificant variables in the regression. In the present case, as can be seen from Table 3, on the whole the adjustments have been very minor, so that the final betas are very similar to those obtained in the regression for the full equation.

Lastly, the three media variables are tested for possible interaction effects. The correlation between preference for violent/obscene content and deviant behavior may be greater in adolescents who have a higher tendency to imitate media characters,

and in those who are exposed to media more frequently. There-fore, two interaction terms are added to the best equation (Equation V in Table 3), and another regression is performed. In Table 4, Equation B includes the interaction between preference and imitation, Equation C includes the interaction between preference and frequency, and Equation D includes both of these interactions. The best equation — Equation V in Table 3 — appears again in Table 4 as Equation A for comparison purposes.

Table 4   Multiple Regressions of Deviant Behavior on Selected Independent Variables and Interaction Terms (N=858)

Dependent variable: Deviant behavior

Independent variables	Standardized Beta			
	Equation (A)	Equation (B)	Equation (C)	Equation (D)
Frequency of exposure	.071**	.071**	.085	.072
Preference for violent/obscene content	.247***	.294***	.252***	.294*
Imitation of media characters	.134***	.198**	.134***	.198**
Parents' deviant behavior	.103***	.101***	.103***	.101*
Teachers' negative labeling	.108***	.108**	.108***	.108*
Peers' deviant behavior	.416***	.422***	.417***	.422*
Peers' disapproval of deviant behavior	-.058*	-.059*	-.058*	-.059*
Interactions:				
Preference x Imitation		-.095·		-.095
Preference x Frequency			-.017	-.000
Constant (Unstandardized beta)	-.411***	-.463***	-.417***	-.463***
Multiple R	.756	.756	.756	.756
Adjusted R^2	.568	.568	.568	.567
F statistic	161.730***	141.627***	141.361***	125.742***

* p < .05;   ** p < .01;   *** p < .001.

From Table 4, it can be seen that all of the betas for the interaction terms in Equations B, C and D are very small, and none of them is statistically significant. Moreover, the adjusted R^2 is .568 for Equation B, and .567 for both Equation C and Equation D. None of these adjusted R^2 exceeds that for Equation A. These results show that the interactions between the media variables are not significant, and the inclusion of these interaction terms in the regression does not improve Equation A by contributing to an increase in the amount of variance of deviant behavior explained.

Summary and Discussion

In the earliest academic research on juvenile and adolescent delinquency in Hong Kong, Ng (1975) had shown by univariate comparisons that young offenders of violent crimes were more likely than non-offenders to enjoy martial arts TV programs and movies, and to adore martial arts film stars. Since then, this crude and preliminary finding surprisingly had not caught the imagination of subsequent researchers to further explore the impact of mass media on adolescent deviant behavior in Hong Kong. While the increase in theoretical and methodological sophistication of studies of adolescent delinquency in Hong Kong in the past decade has been an encouraging sign, it is disappointing that the relationship between mass media and adolescent deviant behavior has never received the research attention it deserves.

This paper has attempted to shed some light on the relationship between media and adolescent deviant behavior by introducing three media variables into a multivariate analysis that includes, apart from media, three other sets of variables (family, school, and peer), each set consisting of three variables. Previous multivariate analyses of adolescent deviant behavior in Hong Kong (Cheung and Ng, 1988; Ngai, 1993; M.K. Cheung, 1985; Qiu, 1987) have shown that peers exert greater influence on deviant behavior than the family and school.

Results of the present analysis are consistent with previous findings: peers' deviant behavior is the **best** predictor for adolescent deviant behavior. When other variables are controlled for, its beta is almost four times as large as the most significant family variable and the most significant school variable. The two other peer variables — peers' negative labeling and peers' disapproval of deviant behavior — yield either insignificant or small betas.

Among the three family variables, parents' deviant behavior is the best predictor of deviant behavior, as the other two (attachment to parents and parents' negative labeling) do not yield significant betas in the regression. However, the beta for parents' deviant behavior is a lot smaller than that for peers' deviant behavior.

The best predictor among the school variables is teachers' negative labeling. The betas for the other two school variables — attachment to school and academic performance — are insignificant in the multiple regression. In an earlier analysis of the same set of data, Cheung and Ng (1988) tested labeling theory by combining the negative labeling from father, mother and teachers to form a negative labeling scale. Measured that way, the variable of negative labeling yielded relatively strong total effects on deviant behavior in a path analysis. In this paper, negative labeling from parents and teachers were dealt with separately, and negative labeling from peers was also examined. Results show that among the three sources, negative labeling from teachers had the most significant relationship with deviant behavior.

In the present analysis, the media variables are better predictors of adolescent deviant behavior than those of family and school, as all of them remain significantly correlated with deviant behavior when other variables are controlled for. The best media predictor is preference for violent/obscene content, which has a beta more than twice as large as those for parent's deviant behavior and teachers' negative labeling. Imitation of media character yields a beta that is slightly larger than those of parents' deviant behavior and teachers' negative labeling. Frequency of exposure is the weakest media variable.

Results of this analysis have several implications for future research. First, the strong association between media and deviant behavior found in this analysis ascertains that the impact of media on adolescents' deviant behavior is too important to be left out in future adolescent delinquency research. This is a pertinent issue in Hong Kong, where different forms of media have penetrated into many households (Chan and Lee, 1992), and the level of consumption of media, especially TV, radio, newspaper, and magazines, is very high among young people (So and Chan, 1992).

That preference for violent/obscene content and imitation of media characters are significantly associated with deviant behavior is evidence that TV and other media are strong reinforcers of deviant values and behaviors in adolescents with a deviant disposition. Future research should closely examine the socialization and reinforcement functions of the media in order to gain a better understanding of the process by which the media contribute to adolescent deviant behavior in Hong Kong. To delineate the effects of media, more aspects of media use should be included, such as type of TV programs/movies/printed media frequently exposed to, the degree of violence/obscenity in the content, and the "social circumstances" (watching TV alone or in the company of others, with or without parents' supervision, etc.) surrounding the adolescent's use of TV and other media. Moreover, future research should include media which have become popular in Hong Kong since the conduct of the present survey in 1986, such as VCR tapes and laser discs, which are easily available from rental outlets.

Second, this analysis has also demonstrated that parents' deviant behavior is the most significant family variable that is conducive to the adolescent's deviant behavior. This is not a surprising finding in the context of the present family in Hong Kong. Although several decades of increasing industrial growth and modernization have posed tremendous challenges to the traditional Chinese family in Hong Kong, many traditional traits in regard to authority structure and social relations in the Chinese family are accommodated within a modern nuclear family

framework (Chan and Lee, forthcoming). To the adolescent, the family today still serves very important affective and social support functions (Lee, 1991), and parents are still the most trusted persons (Lau, 1984).

Against this backdrop, parents are important role models for adolescents in Hong Kong. In the language of social learning theory, through intimate association with deviant parents, adolescents learn deviant values, motives, and the techniques of committing deviant behavior, and their deviant practices are further reinforced by their parents. Future research on family and adolescent delinquency should include adolescents' knowledge of parents' deviant behavior, and their evaluation of such behavior, in a more comprehensive framework of the family that takes into account both the positive and negative aspects of parental influence.

Third, four of the independent variables that each had significant bivariate correlation with deviant behavior (i.e., attachment to parents, parents' negative labeling, attachment to school, and academic performance) became insignificant when other variables were controlled for. This, however, does not mean that these variables necessarily have no effects at all on deviant behavior. While part of the relationship between each of these variables and deviant behavior might have been spurious, so that the spurious part disappeared when other variables were controlled for in the regression, the variable might still have exerted **indirect** effects on deviant behavior, via other variables. For example, in Cheung and Ng's (1988) analysis of the same data set, the effects of attachment to parents and attachment to school on deviant behavior were totally indirect effects, exerted through negative labeling, association with deviant friends, and deviant values. Future research should employ causal modeling methods to rigorously estimate both direct and indirect contributions of each of the media, family, school, and peer variables in the explanation of adolescent deviant behavior in Hong Kong.

Notes

1. For reviews of adolescent delinquency studies in Hong Kong, see Y.W. Cheung (1985) and Leung and Fan (forthcoming).

2. For number of hours spent on watching TV, "7 hours or less" was designated as "low," and "over 7 hours" as "high." For number of movies seen every three months, "1-3" was classified as "low," and "4 or more" as "high." For reading newspapers, "once a week or less" was designated as "low," and "once every 2 or 3 days/daily" as "high." Lastly, for reading magazines, "never/seldom/sometimes" were classified as "low," and "often/very often" as "high." The "low" and "high" categories of these four items were combined to form the categories for the Frequency of Exposure variable as follows:

   1 (Lowest): "Low" in all 4 items; or "Low" in any 3 items and "High" in 1 item.
   2: "Low" in TV, movie, or newspaper-or-magazine and "High" in the other 2 items.
   3 (Highest): "High" in TV, movie, and newspaper-or-magazine.

3. For a recent review of studies on family and the adolescent, see Gecas and Seff (1990).

4. The other three elements of the Hirschi's social bond are: commitment to conventional activities, involvement in conventional activities, and belief in conventional values.

5. The questions are:
   (i) "On the whole, how is your relationship with your father/mother?"
   — "Very bad" (scored 0), "bad," "fair," and "very good" (scored 4).
   (ii) "Does your father/mother seem to understand you?"
   — "Doesn't understand at all" (scored 0), "doesn't understand much," "undecided," "somewhat understands," and "understands very much" (scored 4).
   (iii) "When you have problems, how often do you confide in your father/mother?"
   — "Never" (scored 0), "seldom," "sometimes," "yes, somewhat," and "yes, very much" (scored 4).

   Altogether there are six questions, and the scores of the scale range from 0 to 24.

6. These eleven items are: Smoke, drink, speak foul language, quarrel with neighbors, shout at others at home, bang up things at home, slap others at home, visit gambling store, read pornography, play majong, and bet on horse racing. Although some of these behaviors may not be "deviant" for adults if not practiced excessively (e.g., smoke, drink, play majong), they become so if learned and practiced by adolescents.

7. These eight items are:

    (i)   "In general, I enjoy school."
    (ii)   "Schools teach good citizenship."
    (iii) "I am a serious student and concerned about grades."
    (iv)   "School restrictions of student behavior are often unreasonable."
    (v)   "Students should join more extra-curricular activities."
    (vi)   "The pressure from school work is too great."
    (vii) "Academic performance is not related to career success."
    (viii) "Most teachers are hypocrites."

    Response categories are: "Strongly disagree," "disagree," "undecided," "agree," and "strongly agree." For items (i), (ii), (iii), and (v), "strongly disagree" carries the lowest score (0), whereas "strongly agree" carries the highest score (4). The opposite scoring system is applied to items (iv), (vi), (vii), and (viii).

8. For a brief review of the theory, see Matsueda (1988).

9. Peer's deviant behavior is preferred to peers' deviant attitude because, as Warr and Stafford (1991) pointed out, peers' deviant behavior is a better indicator than peers' delinquent attitude in measuring the variable of association with delinquent peers in differential association theory. Number of delinquent friends is not an accurate indicator because the respondent may not know that a certain friend is a triad member or has been picked up by the police (Cheung and Ng, 1988:29).

10. These eight items are the same as those used to measure the variable of deviant behavior. See Note 11 for these items.

11. These items are:

    (i)   "Taking things that do not belong to you."
    (ii)   "Banging up or destroying things of some value on purpose."
    (iii) "Fighting with someone with a weapon."
    (iv)   "Smoking cigarette."
    (v)   "Getting drunk."

    (vi)   "Speaking foul language."
    (vii) "Having sexual contact with someone of the opposite sex."
    (viii) "Reading pornography."

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預測香港青少年越軌行為：
媒介、家庭、學校及友儕變項之比較

張越華著

（中文摘要）

青少年越軌行為是媒介效應研究及犯罪學研究的一個常見題目。此兩類研究有一個局限，就是在分析上很少把有關媒介的變項與有關家庭、學校和友儕的犯罪學變項結合起來解釋青少年越軌行為。本文根據一項對一千一百三十九名香港中學生所作的自我陳述式調查，來比較媒介變項（包括展露頻率、對暴力／猥褻內容之偏好、對媒介人物之倣效）、家庭變項（對家庭之依附、父母之負性標誌、父母之不良行為）、學校變項（對學校之依附、教師之負性標誌、功課表現），以及友儕變項（友儕之越軌行為、友儕之負性標誌、友儕對越軌行為之不贊成）對青少年越軌行為的預測能力。結果顯示能解釋最多青少年越軌行為的方差的方程式，所包括的變項是：展露頻率、對暴力／猥褻內容之偏好、對媒介人物之倣效、父母之不良行為、教師之負性標誌、友儕之越軌行為及友儕對越軌行為之不贊成。本文亦討論是項及其他研究結果對將來研究的啟示。