

# WESTERN CRIMINOLOGY REVIEW

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# Western Criminology Review

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## Erratum

In the December 2008 issue (vol. 9, no. 2), the correct email address for Carl Keane should be [keanec@queensu.ca](mailto:keanec@queensu.ca) (see “Family Structure and Parental Behavior: Identifying the Sources of Adolescent Self-Control” by Phythian, Keane, and Krull).



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## Conceiving of Sex as a Commodity: A Study of Arrested Customers of Female Street Prostitutes

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**Abstract:** *Framing prostitution as an economic exchange, this paper evaluates some of the consequences of conceiving of sex as a commodity rather than as an aspect of an intimate interpersonal relationship among the customers of prostitutes. Subjects were 700 men arrested while trying to hire street prostitutes. Questionnaires were administered prior to intervention programs designed to discourage re-offense in San Francisco, California (N=588); Portland, Oregon (N=82); and Las Vegas, Nevada (N=30). Significant predictors of conceiving of sex as a commodity included being unmarried, having served in the military, and more frequent visits to prostitutes. Conceiving of sex as a commodity significantly predicted rape myth acceptance, attraction to violent sexuality, less frequent use of condoms while with prostitutes, support for prostitution, and the attitude that prostitution is positive for women. We argue that that conceiving of sex as a commodity has a number of negative implications for the men involved, their sexual partners, and for gender relations in general.*

**Keywords:** Prostitution; Customers; Male Sexuality

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Though researchers and the popular media have shown great interest in prostitution and prostitutes themselves, very little attention has been paid to their male customers. Shrage (1992:42) notes the "relative absence of scientific studies concerned with the motivation and social characteristics of the customers of prostitutes." The scant research that does exist has tended to focus on health-related issues (Freund, Lee, and Leonard, 1991; Freund, Leonard and Lee, 1989) or has relied on small qualitative samples (Armstrong, 1978; Holzman and Pines, 1982; Prasad, 1999) or second-hand accounts (Boyle, 1995; Diana, 1985). There are several explanations for this neglect of male customers. Davis (1993) argues that the neglect of customers by researchers and policy-makers reflects a sexual double-standard in which women are seen as responsible for men's deviance. Prasad (1999) argues that the neglect of customers is consistent with the assumption that demand for prostitution is natural and inevitable among men. Other scholars emphasize the difficulty of collecting data on customers, who often make an effort to conceal their activities (McKeganey and Barnard, 1996; Special Committee on Prostitution and Pornography, 1985).

Recently there has been increased interest in men's contribution to the problems associated with prostitution.

Several communities now sponsor workshops or classes for men arrested while trying to hire prostitutes. The best known of these "john schools" is San Francisco's First Offenders Prostitution Program (FOPP), which sometimes has classes of over 50 men (Monto, 2000; 2004). This study employs data collected from the men attending these classes. This unprecedented access to a previously hidden population should allow us to step beyond conceptions of prostitution customers based on anecdotal accounts or theoretical assumptions.

Framing prostitution as an economic exchange, this article evaluates the consequences of conceiving of sex as a commodity rather than an aspect of an intimate interpersonal relationship among the arrested customers of female street prostitutes. We explore factors associated with the development of a conception of sex as a commodity and the consequences that such an orientation has on customers' attitudes toward prostitution, prostitutes, sexuality, and violence. While recognizing that conceiving of sex as a commodity is not an inevitable outcome of patronizing prostitutes, we argue that this orientation has a number of negative implications for the men involved, their sexual partners, and for gender relations in general.

## PROSTITUTION AS AN ECONOMIC EXCHANGE

Framing prostitution as an economic exchange provides a potentially rich source of insight into the nature of prostitution and the larger contexts in which the prostitution exchange takes place. Prostitution is the exchange of something of value, usually money or drugs, for the sexual use of a person's body. Though this is a basic economic exchange, using an economic model to understand prostitution has become laden with political and ideological implications.

Describing prostitution as an economic exchange has often been associated with calls for decriminalization, legalization, or normalization of prostitution. Posner (1992), in *Sex and Reason*, argues that economic exchanges between consenting adults, such as those involving prostitution, warrant intervention only in circumstances in which the market is not operating efficiently. Jenness (1993) chronicles the prostitutes' rights movement in the appropriately titled *Making it Work*, describing the redefinition of prostitution from sex as sin to sex as work. Among the movement's fundamental arguments is the idea that women have the constitutional right to sex work and to legal protection from violence in the conduct of their work.

Feminist anti-prostitution activists have generally rejected framing prostitution as an economic exchange on the grounds that it tends to normalize an activity that is intrinsically exploitative (Hunter, 1993). Dworkin (1993) rejects the conceptualization of prostitution as work on the grounds that it is used to normalize an activity that constitutes violence against women. Norma Hotaling, director of San Francisco's SAGE (Standing Against Global Exploitation) Project, turns the old cliché on its head by calling prostitution "the oldest oppression."

However, framing prostitution as an economic exchange need not rule out exploitation (O'Connell Davidson, 2002). Theorists, such as Giddens (1971), point to a fundamental sociological principle developed in the early writings of Marx that economic exchanges must be understood as occurring within a definite set of social relationships. According to Giddens (1971:10):

(It is a fallacy that) purely "economic" relations can be treated *in abstracto*. Economists speak of "capital," "commodities," "prices," and so on as if these had life independently of the mediation of human beings. This is plainly not so....Any and every "economic" phenomenon is at the same time always a social phenomenon, and the existence of a particular kind of "economy" presupposes a definite kind of society.

The prostitution exchange must be understood in a particular social and historical context. Forces beyond the immediate encounter affect the value of the commodities being exchanged as well as the capacities of the parties in

the exchange to impose conditions on the exchange or to refuse the exchange.

Recognizing that the parties in the prostitution exchange often differ in terms of power and resources, Shrage (1992) argues that feminists need to oppose the legal prohibition of prostitution but should support societal regulation on the grounds that some prostitutes are working involuntarily and many are exposed to serious risks. Recognizing the same principle, Gauthier (1999) argues against legalization on the grounds that "consent" to engage in prostitution often takes place under coercive conditions. The prostitute may be compelled to participate because of dire economic circumstances or fear of violence from a partner or pimp. According to Gauthier (1999), just as federal regulations regarding health and safety, administered by the Occupational Health and Safety Administration (OSHA), acknowledge that there are some working conditions that are unacceptably unhealthy or unsafe even if workers "consent" to them, so should prostitution be seen as work that is too risky and harmful to be legally accepted, even if women choose to participate.

We argue that prostitution takes place, not in "a social context," but in a variety of social contexts that affect the exchange relationship. Though we live in a patriarchal society (Anderson, 1993), this macro-social pattern translates into varying degrees of inequality within specific interactions. If a prostitute is a minor, an immigrant, a runaway, a drug addict, is under threat of violence, or is a victim of prior physical or sexual abuse, the prostitution encounter is fraught with greater resource inequality than if the prostitute is economically independent and defines prostitution as a chosen form of sexual expression.

Much of human interaction may be seen as consisting of exchanges. Armstrong (1978) argues that the exchanges involved in prostitution differ little from conventional behavior. Similarly, the distinction between prostitution and other exchanges involving sexuality is not recognized in many societies. However, prostitution warrants special consideration because multiple categories of resources are being exchanged, and because people are products in the exchange. Foa and Foa (1974) defined six categories of resources that can potentially be exchanged, including love, status, information, money, goods, and services. Exchange relations are governed by social norms, and certain categories are more acceptable for exchange than others (Foa and Foa, 1974). The exchange of love for love is generally more consistent with the social norms governing exchange than the exchange of love for money (Foa and Foa, 1974; Prasad, 1999). Prostitution involves the exchange of money for a service, but it is a service often associated with love, especially under their broad conception of love including "expression of affectionate regard, warmth, or comfort" (Donnenworth and Foa, 1974:786).

One of the reasons that prostitution is an issue of public concern is that the sale of this love/service represents a challenge to our social norms regarding exchange and sexuality by redefining the sexual use of the body as a commodity available for exchange. Although Kinsey, Pomeroy, and Martin's (1948) pioneering study seemed to indicate that visiting prostitutes was relatively common among men, with 69 percent reporting at least one visit, prostitution has never gained widespread acceptance in the United States. In fact, more recent, methodologically-sound research conducted as part of the National Health and Social Life Survey in 1992 indicates that only about 16 percent of men in the U.S. have ever visited a prostitute, and that only about 0.6 percent of men in the U.S. visit prostitutes each year (Michael, Gagnon, Laumann, and Kolata, 1994). More recent results from the General Social Survey confirm that less than one-fifth of adult males report ever having had sex with a prostitute (NORC, 2001). While customers themselves may use market-oriented rationale to defend the morality of prostitution (Prasad, 1999), and while pornography has become more acceptable for exchange, the commodification of "hands-on" sexual acts remains illegal and inconsistent with dominant cultural norms.

Most research on the commodification of essentially human qualities sees the process as highly negative, resulting in the dehumanization of the participants, particularly those who are commodified (Altheide, 1987; Erickson, 1986; Hill and Hirschman, 1996). In the extreme, commodification can include slavery or the sale of body parts. Though prostitution is by definition the commodification of sexuality and the human body, men who patronize prostitutes may conceive of sex as a commodity to a greater or lesser degree. Previous research indicates that customers have a range of understandings regarding prostitution (Monto, 2000), with some seeking prostitution because of a desire for intimate relationships with women (Jordan, 1997). Newer research based on internet bulletin boards clearly reveals a consumer mentality among these regular customers (Holt and Blevins, 2007; Kern, 2000). This study attempts to measure the degree to which prostitution customers conceive of sex as a commodity rather than as an aspect of an intimate interpersonal relationship. Rather than taking for granted the negative consequences of commodification, we evaluate this issue by exploring the relationship between conceiving of sex as a commodity and several potentially negative attitudes and inclinations.

What factors might be associated with conceiving of sex as a commodity? Service in the predominantly male military is associated with having visited a prostitute (Sullivan and Simon, 1998). Additionally, military service could promote a male-oriented sexual socialization that sees women as outsiders or "others" and sex as a commodity to be acquired. Childhood physical abuse, sexual abuse, or emotional trauma caused by divorce could

limit one's ability or inclination to establish intimate relationships and lead to an understanding of sex as a commodity. Indeed, many customers cite a desire to avoid the obligations and intimacy of a conventional relationship (Monto, 2000). An attitude of sexual liberalism, a tendency to be non-judgmental about sexual practices or an "anything goes" attitude, could lead to seeing intimacy as less essential for sexual activity (Monto, 2004) and is present in the published accounts of customers (Loebner, 1998). Being married indicates the capacity to establish at least one relatively intimate relationship and hence might reflect a lesser tendency to conceive of sex as a commodity.

Finally, because prostitution by definition involves the commodification of sexuality, we would expect a strong association between frequency of prostitution visits and conceiving of sex as a commodity. This orientation is clearly present among regular users as evidenced by interviews (Coy, Harvath, and Kelly, 2007) and online accounts (Holt and Blevins, 2007). However, the direction of causality is unclear. A conception of sex as a commodity could lead one to pursue prostitution encounters. Conversely, prostitution encounters could lead to the development of such a conception.

What are the consequences of conceiving of sex as a commodity among the customers of prostitutes? Such a conception is likely to be related to greater acceptance of prostitution and an inclination to see prostitution as more positive for prostitutes, as is seen in the accounts of regular users (Holt and Blevins, 2007; Loebner, 1998). If conceiving of sex as a commodity reflects a tendency to see the prostitute herself as a commodity rather than as a person, there might be other more negative consequences. Such an orientation could be associated with less frequent condom use with prostitutes, attraction to violent sexuality, and acceptance of "rape myths," attitudes believed to be associated with violence against women (Burt, 1980; Monto and Hotaling, 2001).

## METHODS

### Subjects

Subjects were 700 men arrested while trying to hire street prostitutes. Questionnaires were administered while men were gathered together immediately prior to intervention programs designed to discourage re-offense in San Francisco, California (N=588); Portland, Oregon (N=82); and Las Vegas, Nevada (N=30). Questionnaires were entirely anonymous. About 80 percent of men gathered for these programs completed questionnaires. Though refusals probably account for the largest proportion of the remaining 20 percent, language problems, late arrivals, and misunderstandings also account for a substantial proportion. The subjects of this study are not a representative sample of prostitution customers. Virtually all were arrested while trying to hire a

street prostitute rather than while patronizing escort services or indoor establishments. Additionally, they were arrested in three Western cities known for the availability of commercial sex. Nevertheless, the data gathered represent an opportunity to move beyond idiosyncratic impressions and anecdotal accounts and to evaluate current understandings of the prostitution customer in light of a large body of data collected from a previously inaccessible population.

Regarding the background characteristics of the sample, 61 percent of the respondents were white, 18 percent Hispanic, Chicano, or Latino, 13 percent Asian, 4 percent Black, and 4 percent some other ethnicity or a combination of ethnicities. Forty-two percent had completed a bachelor's or higher degree, while 35 percent reported attending some college, and 23 percent reported a high school education or below. Forty-one percent were currently married, 36 percent had never married, 16 percent were divorced, 5 percent were separated, and 2 percent were widowed. Ages ranged from 18 to 84, with a mean of 38 and a median of 37. Most were working full-time (81%). About 26 percent reported serving or having served in the military, similar to the proportion of adult men in the United States who have served. Thirty-four percent reported having had their parents divorce when they were children, and a small proportion reported that they were physically hurt for no reason (14%) or touched sexually by an adult (14%) during childhood.

Ninety-four percent of respondents reported having exclusively female sexual partners, while about 1 percent reported having exclusively male partners and 5 percent reported having had both male and female partners during their lifetime. About 10 percent reported having had no sexual partners during the past year, while 34 percent, the largest single proportion, reported having had one sexual partner. Thirty-three percent reported having had from two to four sexual partners in the past twelve months, and 23 percent reported having had five or more partners during this period.

Overall, 64 percent of the men who completed surveys reported that they had sexual relations with a prostitute at least once over the last 12 months. Twenty-one percent reported one episode, while 31 percent reported having had sexual relations with a prostitute more than one time but less than once per month. Nine percent reported having had sexual relations with a prostitute one to three times per month, and 3 percent reported having had sexual relations with a prostitute once or more per week. Seventeen percent claimed never to have had sexual relations with a prostitute, indicating that their only experience had been propositioning the police decoy, while 19 percent reported that they had not had sexual relations with a prostitute during the past year.

## Measures

Because of the need to establish a wide range of basic understandings about the customers of street prostitutes, more specific issues, such as the conception of sex as a commodity, were not optimally measured by the questionnaire. For the purposes of this article, the degree to which respondents conceived of sex as a commodity rather than as an aspect of an intimate interpersonal relationship is operationalized by nine indicators. Though the first four of these items ask about behavior, they are intended as indicators of an orientation. The nine items include the following:

**1) *Number of sexual partners.*** Greater numbers of partners increase the likelihood that some of the sexual liaisons are impersonal exchanges, and having large numbers of partners is one of the motives for seeking out prostitutes among some customers (Monto, 2000). Sex can be seen by customers as an accomplishment attained through purchase, like getting a good deal at a sale or collecting a complete set of some item (Coy, Horvath, and Kelly, 2007; O'Connell Davidson, 1998). Greater numbers also decrease the likelihood that individual partners are close intimates of the respondent.

**2) *Having more than one sexual partner but no regular partner.*** This indicates that respondents are not participating in a committed sexual relationship and may not see intimacy as a requirement of sexuality, an orientation more likely to be found among customers than among men in the general population (Monto and McRee, 2005). One body may be seen as interchangeable with another (Barry, 1995), with women as products rather than people.

**3) *Frequency of pornographic magazine use.***

**4) *Frequency of pornographic video use.*** Although many men view pornography, frequent use of pornography reflects an inclination to meet sexual needs through purchase. Even more than prostitution, which inevitably involves another human, pornography involves sex as a commodity, and the frequency of its use may reflect a commodified view of sexuality.

**5) *Preference for prostitution over conventional relationships.***

**6) *The belief that one does not have time for a conventional relationship.***

**7) *Not wanting the responsibilities of a conventional relationship.*** As described earlier, these three items, often motives for seeking prostitution (Monto, 2000), reflect a preference for interactions with individuals who can meet respondents' needs without demanding time or intimacy. Meeting needs without being obligated to others and

Table 1. Response Frequencies for Items in the Sex as Commodity Measure

Item	Percentage Each Response	Corrected Item-Total Correlation
How many sex partners have you had in the last 12 months?		.32
None	10.1	
One	34.0	
Two	15.2	
Three	10.2	
Four	7.3	
Five to Ten	14.9	
Eleven to Twenty	5.4	
Twenty-one to 100	2.3	
More than 100	.4	
(For those with more than one partner) Was one of the partners your husband or wife or regular sexual partner?		.23
Yes	88.4	
No	11.6	
On the average, how often do you look at pornographic magazines?		.31
Never	31.6	
Less than once a month	39.8	
One to a few times a month	19.8	
One to a few times a week	6.9	
Every day	1.6	
Several times a day	.3	
On the average, how often do you watch pornographic movies or videos?		.32
Never	35.6	
Less than once a month	34.6	
One to a few times a month	20.7	
One to a few times a week	5.8	
Every day	3.0	
Several times a day	.3	
I would rather have sex with a prostitute than have a conventional relationship with a woman.		.42
Agree Strongly	4.2	
Agree Somewhat	15.1	
Disagree Somewhat	18.1	
Disagree Strongly	62.6	
I don't have the time for a conventional relationship.		.41
Agree Strongly	14.0	
Agree Somewhat	19.3	
Disagree Somewhat	19.7	
Disagree Strongly	47.0	
I don't want the responsibilities of a conventional relationship.		.39
Agree Strongly	11.4	
Agree Somewhat	18.1	
Disagree Somewhat	17.5	
Disagree Strongly	53.0	
I like to be in control when I'm having sex.		.26
Agree Strongly	12.3	
Agree Somewhat	29.5	
Disagree Somewhat	31.1	
Disagree Strongly	27.1	
I need to have sex immediately when I am aroused.		.33
Agree Strongly	8.2	
Agree Somewhat	27.9	
Disagree Somewhat	30.3	
Disagree Strongly	33.6	

without their being motivated by a sense of obligation is consistent with impersonal commodity exchange.

**8) Wanting to be "in control" during sex.**

**9) The belief that one needs to have sex immediately when aroused.** These two attitude items reflect a conception of sex as a need to be met rather than as an aspect of an intimate relationship. Getting what one wants immediately and being in control are more consistent with a purchase at the convenience store than with the complexity and unpredictability of an intimate or romantic relationship (Blanchard, 1994; Coy, Harvath, and Kelly, 2007).

The items were selected conceptually, based on the rationale described above as well as exploratory factor analysis and correlation analyses, which were used to evaluate relationships between variables. It should be

noted that, because of strong correlations between particular pairs of variables within the measure, the items do not load primarily on one factor. As Kim and Mueller (1989) note, while factor analysis can be a useful tool for scale creation, the inclusion of minor factors that are of little theoretical or conceptual concern can have significant effects on the results. Each item was transformed into a z-score and added together. Though individually, these items reflect a variety of issues, together they form an adequate measure of the degree to which respondents conceived of sex as a commodity. Using a collection of indirect indicators to measure a construct is consistent with other efforts to measure social psychological issues, such as modernity (Inkeles, 1974) and many others. The alpha reliability coefficient for the measure was .66. Given the exploratory nature of this study and the fact that the questionnaires were not originally designed to study

commodification, we see this as adequate reliability. Table 1 depicts the response frequencies as well as the corrected inter-item total correlations after standardization.

Five of the six variables that were evaluated as possible predictors of conceiving of sex as a commodity were measured using single items and dichotomous coding, including whether or not respondents were

married, whether or not they had been touched sexually by an adult while they were children, whether or not they had been hit for no reason as children, whether or not their parents had been divorced as children, and whether or not they had ever served in the military (See Table 2). A sixth variable, sexual liberalism was measured using four items from the General Social Survey. Each item asked whether

Table 2. Complete Wording for Multi-Item Measures and Their Correlations with Sex as Commodity

Correlation with Sex as Commodity	Items
.11*	Sexual Liberalism There's been a lot of discussion about the way morals and attitudes about sex are changing in this country. If a man and woman have sex relations before marriage, do you think it is... What if they are in their early teens, say 14 to 16 years old? In that case, do you think sex relations before marriage are... What about sexual relations between two adults of the same sex--do you think it is... What is your opinion about a married person having sexual relations with someone other than the marriage partner--is it...
.24***	Rape Myth Acceptance What percentage of women who report a rape would you say are lying because they are angry and want to get back at the man they accuse? What percentage of reported rapes would you guess are merely invented by women who discovered they were pregnant and wanted to protect their own reputation? A woman who goes to the home or apartment of a man on their first date implies that she is willing to have sex. When women go around braless or wearing short skirts and tight tops, they are just asking for trouble. In the majority of rapes, the victim is promiscuous or has a bad reputation. If a girl engages in necking or petting and she lets things get out of hand, it is her own fault if her partner forces sex on her. Women who get raped while hitchhiking get what they deserve. A woman who is stuck-up and thinks she is too good to talk to guys on the street deserves to be taught a lesson.
.25***	Attraction to Violent Sexuality I like rough hard sex. Sex is more fun if the woman fights a little. Some women like to be smacked around a little during sex. Being angry makes me more likely to want sex.
.22***	Support/Normalization of Prostitution Prostitution creates a lot of problems for the world. (reversed) I think that the cops should crack down on prostitution. (reversed) Prostitution doesn't really harm anybody. There is nothing wrong with prostitution. If I were thinking about getting married, I wouldn't mind marrying a prostitute. Prostitution should be legalized. Prostitution should be de-criminalized. It would be OK if my daughter grew up to be a prostitute. It would be OK if my son went to prostitutes. Most men go to prostitutes once in a while.
.16**	Prostitution Positive for Women I think prostitutes like sex more than other women. Most prostitutes make a lot of money. Women are prostitutes because they want to be. It's their choice. Prostitutes enjoy their work. Prostitutes genuinely like men.
-.15**	Married
.04	Divorced as a Child
.08	Sexually Touched as a Child
.11*	Physically Hurt as a Child
.11*	Military Service
-.19***	Frequency of Condom Use with Prostitutes

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

certain sexual behaviors were wrong, including sex before marriage, sex between adults of the same sex, sex between teenagers, and sex with someone other than the marital partner while married. Responses ranged from "always

wrong" to "never wrong," with higher scores given to "never wrong." The items were standardized and added to form a measure of sexual liberalism with an alpha reliability coefficient of .67. The items comprising the

sexual liberalism measure as well as the correlation of the measure with conceiving of sex as a commodity are presented in Table 2.

Frequency of prostitution encounters was measured by a single item that asked how often respondents had visited prostitutes over the past year, with responses ranging from none to five or more times per week. Variables that were evaluated as possible consequences of conceiving of sex as a commodity were all ordinal. Frequency of condom use while with prostitutes was measured by a single item with five responses ranging from never to always. The other variables were all measured using multiple items that were standardized then added. The items comprising each measure as well as the correlation of each measure with the "sex as commodity" measure are presented in Table 2. Rape myth acceptance, a set of attitudes believed to be associated with violence against women, was measured using eight items from Burt's (1980) scale, yielding an alpha reliability coefficient of .85. An attraction to violent sexuality was measured with four items including 1) liking rough hard sex, 2) liking it when a woman fights a little, 3) believing that some women like to be smacked, and 4) admitting that being angry makes sex more appealing. The alpha reliability coefficient for this measure was .62. Support for prostitution was measured using ten attitude items, such as "prostitution doesn't really harm anybody"

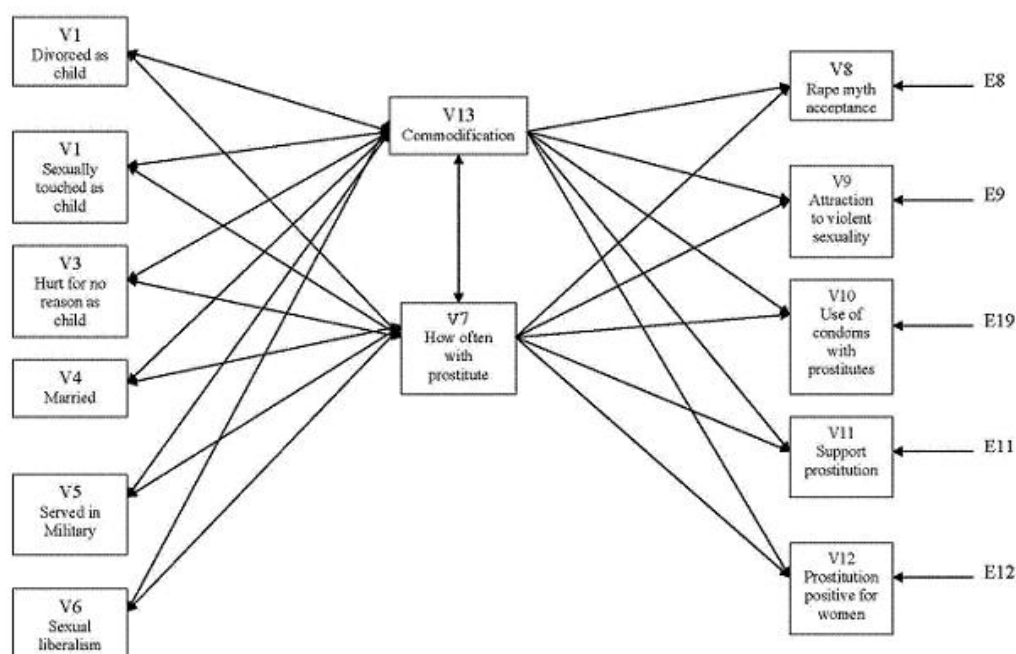
and "it would be okay if my daughter grew up to be a prostitute," many developed by Sawyer, Rosser, and Schroeder (1998). The measure had an alpha reliability coefficient of .82. Finally, seeing prostitution as positive for women was measured by four items including "prostitutes enjoy their work" and "most prostitutes make a lot of money," yielding an alpha reliability coefficient of .69.

## Analysis

Simple frequencies of the items comprising the sex as commodity measure were calculated to provide information about the distribution of indicators and the degree to which respondents conceived of sex as a commodity (see Table 1). The correlations between this orientation and all of the other variables of interest were also calculated (see Table 2). Correlations between the background characteristics of the respondents and conceiving of sex as a commodity were also conducted. None of these was statistically significant, and they are excluded here for the sake of brevity.

A path model (see Figure 1) was created to evaluate the relationship between the six variables being evaluated as possible predictors of conceiving of sex as a commodity and the five variables being evaluated as possible

Figure 1. Initial Path Model  
Elliptical Re-weighted Least Squares Method



consequences of this orientation. Predictor variables included whether the respondent's parents divorced when he was a child, whether he was sexually touched by an adult while a child, whether he was physically hurt by an

adult for no reason while he was a child, whether he was married (and non-separated) at the time of the survey, whether he had ever served in the military, and his level of sexual liberalism. These six variables were also evaluated

as predictors of the frequency of prostitution encounters. Covariance between the sex as a commodity measure and frequency of encounters was also evaluated. Variables potentially predicted by conceiving of sex as a commodity and by frequency of prostitution encounters included acceptance of rape myth attitudes, attraction to violent sexuality, frequency of condom use while with a prostitute, level of support for prostitution, and degree to which prostitution was seen as positive for women.

The dichotomous predictor variables (whether they were married, whether they had served in the military, whether they were physically punished for no reason as children, whether they were sexually touched by an adult while children, and whether their parents divorced while they were children) were dummy coded 0 for the negative response and 1 for the affirmative response and treated as ordinal variables, which is not an ideal practice but necessary for their inclusion in the path model. The model was evaluated using EQS, a structural equation modeling program. One of the advantages of this program is that it allows for the evaluation of data that is not normally distributed. Parameters were calculated using an elliptical re-weighted least squares method. This method relaxes the requirement that data be distributed normally and recalculates the weight matrix following each iteration, rather than calculating it once from the input data. However, re-weighting was not an issue because the model converged in one iteration. The conventional maximum likelihood solution was run for comparison, yielding virtually identical results (not reported here).

Two variations of the model were run. The first (results not shown) included all six potential predictor variables, each co-varying with both the sex as commodity measure and the frequency of prostitution encounters. The sex as commodity measure and frequency of prostitution encounters were each allowed to predict the five dependent variables. A second model included only significant paths. All of the variables and paths that were removed from the complete model were statistically insignificant.

## RESULTS

As mentioned earlier, although prostitution is by definition the commodification of sex, prostitution customers differ in the degree to which they regard sexuality as a commodity. For each individual item comprising the measure of the degree to which respondents conceived of sex as a commodity, the responses of the majority of these men arrested for trying to hire street prostitutes did not indicate conceiving of sex as a commodity. Table 1 reports the frequencies for each response. For four of the five attitude items (not having time for a conventional relationships, not wanting the responsibilities associated with conventional relationships, wanting to be in control during sex, and the need to have sex immediately when aroused), fewer than half of the respondents agreed strongly or somewhat. For the fifth attitude item (preference for prostitution over conventional

relationships), only 19.3 percent agreed somewhat or strongly. Pornographic magazine and video use was reported to have taken place "less than once per month" or "never" by about 70 percent of respondents. Fifty-nine percent of respondents reported two or fewer sexual partners over the past year, and of those with more than one partner, only 12 percent report having had no regular sexual partner.

If a large number of respondents had answered all nine of the items in ways that did not indicate conceiving of sex as a commodity, then the measure would lack the variability ideal for most analyses of ordinal variables. Fortunately, the measure showed adequate variability. Only 76 of 700 respondents chose responses on all nine items that did not indicate conceiving of sex as a commodity. Not surprisingly, only three chose responses that reflected conceiving of sex as a commodity on all nine indicators.

Four of the six variables evaluated as possible predictors of conceiving of sex as a commodity had statistically significant correlations with that construct, though correlations were small. Table 2 presents these correlations. Being married was associated with a lesser degree of conceiving of sex as a commodity ( $r = -.15$ ;  $p < .001$ ). Sexual liberalism ( $r = .11$ ;  $p < .05$ ), being hurt for no reason as a child ( $r = .11$ ;  $p < .05$ ), and having served in the military ( $r = .11$ ;  $p < .05$ ) were all associated with a greater degree of this conception.

Higher scores on the sex as commodity measure were moderately correlated with more frequent visits to prostitutes ( $r = .40$ ;  $p < .001$ ). Part of this relationship may be explained by measurement effects, as "number of sexual partnerships" was one of the indicators of conceiving of sex as a commodity. However, in separate analyses measuring sex as commodity minus this indicator, the relationship between conceiving of sex as a commodity and frequency of prostitution visits remained moderate ( $r = .32$ ;  $p < .001$ ).

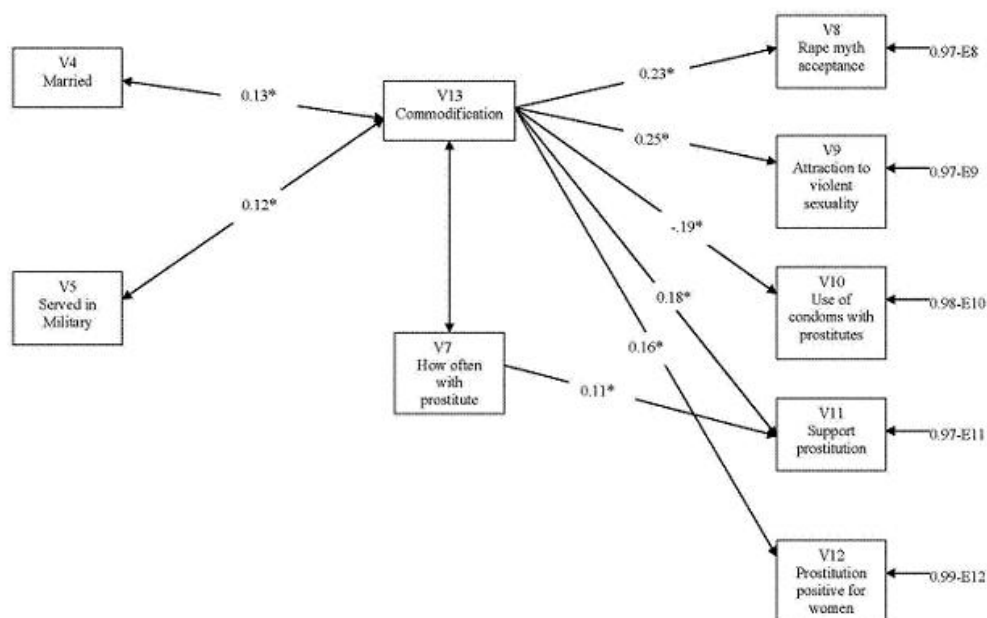
Relationships between the sex as a commodity measure and the variables being evaluated as consequences of this orientation were also moderate. Conceiving of sex as a commodity was significantly correlated with rape myth acceptance ( $r = .24$ ;  $p < .001$ ), attraction to violent sexuality ( $r = .25$ ;  $p < .001$ ), and less frequent use of condoms while a prostitute ( $r = -.19$ ;  $p < .001$ ). Not surprisingly, conceiving of sex as a commodity was also associated with support for prostitution ( $r = .22$ ;  $p < .001$ ) and the attitude that prostitution is positive for women ( $r = .16$ ;  $p < .01$ ).

The path model also yielded results consistent with predicted relationships. Figure 2 shows the selected model as well as the standardized path coefficients. Being married and having served in the military were significant predictors of the degree to which respondents conceived of sex as a commodity. Interestingly, with sex as a commodity included in the equation, none of these variables was a significant predictor of frequency of prostitution encounters. Frequency of prostitution

encounters was however, strongly associated with the sex as a commodity measure, indicating that, although men who visit prostitutes vary in the degree to which they conceive of sex as a commodity, more frequent prostitution encounters reflect and possibly contribute to commodification. Conceiving of sex as a commodity was a significant predictor of rape myth acceptance, attraction to

violent sexuality, less frequent condom use while with prostitutes, seeing prostitution as acceptable or normal, and seeing prostitution as positive for women. Interestingly, with sex as a commodity in the model, frequency of prostitution encounters was significantly associated only with seeing prostitution as positive or normal.

Figure 2. Selected Model  
Standardized Parameter Estimates  
Elliptical Re-weighted Least Squares Method



## DISCUSSION

The nature of prostitution and the social policies related to it have been the subject of impassioned debate reflecting conflicting understandings of sexuality, gender relations and the exchange itself (Giobbe, 1994; Weitzer, 1991, 1993). Supporters of prostitution and the sex industry argue that women should be allowed to freely make decisions concerning their bodies and that prostitution is a legitimate form of sexual expression (Jenness, 1993). Opponents argue that the decision to enter prostitution is often not made freely or that prostitution is intrinsically exploitative and degrading (Dworkin, 1993; Hunter, 1993; MacKinnon, 1987). The purpose of this article is not to resolve these ethical disputes but to shed light on a neglected aspect of the phenomenon, the customers of prostitutes. If prostitution is conceived of as an economic exchange, one of the glaring omissions in

prostitution research and theory is on the demand side of the supply-demand equation.

Using an economic orientation to understand sexuality is not a new idea in the social sciences. Exchange theorists have pointed out that heterosexual partnerships may be based on the exchange of wealth and power for beauty and sexual access (Davis, 1990). Most articles invoking the concept of "commodification" tend to treat it as a problematic quality of some contemporary phenomenon (Castile, 1996; Martin and Hummer, 1987). Consistent with this perspective, the present study acknowledges that prostitution is, by definition, the commodification of sexuality. However, this article makes creative use of the concept of commodification by reconceiving it as a social psychological variable reflecting the degree to which male customers of female street prostitutes conceive of sex as a commodity rather than as an aspect of an intimate interpersonal relationship.

If, as Prasad (1999:205) claims, "the degree of opposition to prostitution in any society is an index of the lack of universality of liberal commodity exchange ideals," then these ideals have clearly not been embraced wholeheartedly in the United States. Based on interviews with 26 people who had purchased sexual services from prostitutes and 13 who had considered doing so, Prasad (1999) demonstrates that prostitution customers often use market-oriented rationale to justify their behavior. Using ideals of commodity exchange to justify prostitution is clearly consistent with the conception of sex as a commodity evaluated in this study. However, indicators used in the present study, though imprecise, suggest that customers vary greatly in the degree to which they conceive of sex as a commodity.

While it may seem that prostitution would be consistent with the norms of a capitalist society like ours and the trend toward greater commodification of essentially human qualities, prostitution remains marginalized (Prasad, 1999). Perhaps opposition to prostitution reflects its inconsistency with another apparent social trend, the movement toward sexual norms based on individual consent and pleasure. Frank and McEneaney (1999) argue that while sexual norms have historically focused on preserving the family, there has been a more recent shift toward norms based on protecting the right of individuals to participate in sexual activities they find pleasurable and to be free from sex that is non-consensual. Because prostitutes are not motivated by sexual pleasure (Gauthier, 2000) and because the issue of consent is problematic, especially for women who are minors or victims of abuse, prostitution occupies an uncomfortable place within our culture.

Results indicate a significant relationship between frequency of prostitution encounters and conceiving of sex as a commodity. Instead of seeing one as a cause of the other, conceiving of sex as a commodity and patronizing prostitutes may be mutually reinforcing. If sex is depersonalized and conceived of merely as a need to be met, then prostitution would seem to follow. Additionally, men with a conception of sex as a commodity might have difficulty establishing the intimate relationships that are often prerequisite to sexuality. On the other hand, impersonal sexual encounters, in which the customer is no more than a customer, no more than his money, could lead the customer to internalize that attitude and see sexuality as an economic exchange.

While one would expect to find a relationship between prostitution encounters and conceiving of sex as a commodity, not all men who have been arrested for trying to hire a street prostitute display this orientation. In fact, about 11 percent of the respondents did not respond to any of the indicators in ways that reflect a conception of sex as a commodity. How can it be that some of these men, arrested while trying to exchange money for sex, did not conceive of sex as a commodity? For many arrested

customers, prostitution is an occasional activity rather than their primary way of meeting their sexual needs. Most are involved in conventional sexual relationships with a regular partner. Others may downplay the monetary exchange present in prostitution, preferring to think of prostitutes as women who find them personally appealing or who have sex because they enjoy it (Holzman and Pines, 1982; Jordan, 1997). Additionally, there are many possible motives for seeking prostitution. Some include the desire for companionship, intimacy, or love (Jordan, 1997). More often, men are attracted to prostitution by the desire to participate in sexual acts that they could not receive from their partners, the desire to have sex with a larger number of sexual partners, an attraction to specific physical characteristics, an interest in only limited emotional involvement, and excitement due to the illicit nature of the act (Holzman and Pines, 1982; Jordan, 1997; Monto, 2000), motives that are compatible with a conception of sex as a commodity. But even men who seek prostitution for these reasons may desire sexuality with an intimate partner as well.

Rather than assuming the "essentialist perspective" (Satz, 1995) that there is something intrinsically wrong with impersonal sex or the exchange of sex for money, this article looks at the empirical consequences of conceiving of sex as a commodity. As might be expected, this orientation is associated with support or acceptance of prostitution and the belief that prostitution is positive for women. Were these variables unrelated, it would be reasonable to question the construct validity of the measure. More disturbing are the strong relationships between conceiving of sex as a commodity and rape myth acceptance, attraction to violent sexuality, and less frequent use of condoms while with prostitutes. All of these would seem to indicate that this orientation could be linked to a lack of respect for prostitutes or even violence against them.

Previous research indicates that acceptance of rape myths or rape supportive attitudes is associated with reported participation in sexual assault, willingness to commit rape if one would not be caught, and aggression against females in a laboratory setting (Malamuth, 1983; Malamuth, Sockloskie, Koss, and Tanaka, 1991). Perhaps most powerfully, Marolla and Scully (1986), in their comparison of the attitudes of convicted rapists with the attitudes of other felons, found an association between status as a rapist and the support of rape myths.

Though the measure of attraction to violent sexuality has not been used in other studies, it would also seem to indicate a greater inclination toward violence. Consistent with this inclination, the failure to use condoms while with prostitutes may reflect a lack of concern over whether the prostitute is exposed to risk of pregnancy and disease. Additionally, while customers may or may not know that sexually transmitted diseases are more easily transmitted to women than men and often cause more severe problems

for women, they may well recognize that failure to use a condom while with a prostitute may expose their wives or regular partners to infection.

Empirical research and narrative accounts consistently reveal that prostitutes are frequent victims of violent crime, including beating and rape (Horgard and Finstad, 1992; Silbert and Pines, 1982), most of which is never reported to police (McKeganey and Barnard, 1996; Silbert, 1981). This is not to say that most customers are violent. Because of the large number of encounters prostitutes have with customers, it is probable that only a small proportion of customers are violent (Monto, 2004). The tendency for men who more frequently patronize prostitutes to conceive of sex as a commodity may help to explain this violence. Interestingly, frequency of prostitution encounters was not significantly independently associated with rape myth acceptance, attraction to violent sexuality, or failure to use condoms while with prostitutes when the sex as a commodity measure was also included in analyses. The results seem to indicate that it is not prostitution itself, but the orientation that often goes along with it, that is associated with these negative consequences.

The policy implications of these findings could be interpreted in many ways. One could argue that the current legal status of prostitution supports the cultural distinction between good and bad women, marginalizing prostitutes, reinforcing the idea that they are merely commodities, and ultimately making them more vulnerable to violence. Making prostitution illegal has forced it underground, removing it from public scrutiny and leaving prostitutes with little legal protection.

On the other hand, proponents of legalization or decriminalization must acknowledge that prostitution is strongly associated with conceiving of sex as a commodity, which in turn is associated with other disturbing attitudes. Experiments with legalization, like those in some counties of Nevada, do little to contradict the idea that prostitution is associated with commodification. Legal brothels are large businesses in which prostitutes are reduced to mere fast food workers, appearing periodically as part of the menu to be chosen on the basis of appearance alone. While conversation and the expression of emotion are part of the performance, genuine intimacy and sharing are not typically aspects of the exchange.

Prostitution policy has emerged haphazardly in the United States, as police target the most visible forms that cause the greatest nuisance to neighborhoods (Weitzer, 1999). However, new strategies have emerged over the past ten years specifically targeting the customers (Monto, 2004), including public shaming by publishing the names, pictures, or license plate numbers of arrested customers on television or on the web. The most thoughtfully conceived of these new strategies focusing on the demand side of the supply-demand equation are "john schools," post-arrest programs designed to discourage customers from re-

offending. Conceiving of sex as a commodity is associated with a number of problematic attitudes and behaviors. The findings of this study, suggest that john schools are on the right track in their efforts to humanize prostitutes and break down the pervasive belief among some men that prostitution is merely a harmless exchange between consenting adults. A recent evaluation of San Francisco's program, funded by the National Institute of Justice, indicates that this particular program is effective in reducing demand (ABT Associates, 2008).

Though this article has focused on the consequences of conceiving of sex as a commodity among the customers of prostitutes, it is likely that coming to define their bodies to a lesser or greater degree as commodities has a host of implications for prostitutes themselves. Fredrickson and Roberts (1997) argue that internalizing the observer's (or in this case, the consumer's) perspective toward one's body can contribute to habitual body monitoring, shame and anxiety, and mental health problems. Future research should evaluate the degree to which prostitutes internalize an understanding of their bodies as commodities and the consequences of such an orientation.

When prostitution is treated as an abstract issue, a mutually beneficial exchange of the sexual use of someone's body for something of value, its problematic qualities may not be readily apparent. However, the strong relationship between prostitution and conceiving of sex as a commodity reveals that prostitution is not merely an abstract exchange. Conceiving of sex as a commodity is associated with a host of disturbing attitudes that may well have a negative impact on the lives of women, both prostitutes and non-prostitutes alike, and the customers themselves. The measure used in this study reflects a conception of sexuality that would tend to objectify and dehumanize women and reduce sex to a consumer exchange. It is associated with an attraction to violence, belief in rape myths, decreased use of condoms, and the naive belief that prostitution is positive for the women involved. Though one can legitimately argue on ethical grounds that people should have the legal capacity to make decisions about their bodies, including the decision to sell sex, proponents of legalization should consider the social implications of the commodification of sexuality and its social psychological concomitants that would almost certainly accompany such legitimization of prostitution.

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## Internet Scallywags: A Comparative Analysis of Multiple Forms and Measurements of Digital Piracy

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**Abstract:** *Internet-based digital piracy has recently become a widespread occurrence. Despite this growth, few studies have attempted to apply criminological theory to the crime. This study tests the explanatory power of two criminological theories, general deterrence and differential association, on Internet piracy of music, software and movies. Data used in this study were collected from 541 undergraduate college students from a mid-Atlantic university. Separate models were estimated for willingness to and involvement in digital piracy. The results show that variables derived from differential association theory, such as peer activity and parental support, as well as several control variables including gender, connection speed, income, and place of residence, are predictive of digital piracy. Distinctions between willingness and actual involvement are discussed. Implications for future research and potentially more effective prevention strategies are also addressed.*

**Keywords:** differential association; social learning; deterrence; digital piracy; cybercrime

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In recent years, copyright violations in the form of digital piracy have increased dramatically. This has been especially true since peer-to-peer (P2P) programs became popularized in 1999. One study found that the United States, despite having a relatively low and stable rate of piracy, experienced a loss of over \$6.8 billion in 2005 from software piracy alone (Business Software Alliance 2006). Music piracy is also quite prevalent with more than 27 billion media files transferred each year through P2P programs (House of Representatives 2004). Studies of changing piracy rates indicate several benefits from decreasing the prevalence of piracy. For example, a decrease by ten points in the piracy rate of the United States could add over 100,000 new jobs and increase tax revenue by \$21 billion (IDC 2005). Despite the widespread occurrence and great financial impact of digital piracy, however, very few empirical studies have systematically assessed factors related to digital piracy.

The primary purpose of this study is to test the explanatory power of two criminological theories, general deterrence and differential association, on digital piracy of music, software and movies. This study theoretically and methodologically advances research on digital piracy in

several related areas. First, while measures of general deterrence and differential association theories have been previously examined in a handful of studies (e.g., Higgins and Makin 2004a; Skinner and Fream 1997), prior research has been limited in the types of piracy assessed. Online music piracy, for example, has only rarely been included in tests of criminological theories (e.g., Hinduja 2006). It is thus unclear whether findings from previous research can be applied to all variations of piracy or only the specific type investigated.

Second, only a small number of control variables have been considered in previous research. This study takes into account the effects of ten relevant variables, several of which, such as income and place of residence, have not been included in prior research of digital piracy. Finally, prior studies have used involvement in piracy and willingness to pirate interchangeably. This study conceptually distinguishes the former from the latter and empirically tests both under separate models to produce comparable results, thus enhancing our understanding of factors that lead to digital piracy and offering valuable implications for policy makers and practitioners.

## THEORIES OF AND RESEARCH ON DIGITAL PIRACY

In the broadest of terms, digital piracy is the act of duplicating digital files without the permission of the copyright holder. More specifically, piracy is typically considered any act of reproducing a copyrighted work in violation of U.S. copyright law (Copyright Act of 1976). *Digital piracy*, by extension, is a specific variant of this broad category involving computers as a means to commit the act and generally includes music, software, and movie infringements, though other forms exist such as reproductions of books. Though many criminological theories could be applied to digital piracy, this study specifically focuses on two: differential association and general deterrence. Elements of these theories have been assumed to be relevant to piracy by popular literature and government reports (e.g., House of Representatives 2004) and have been empirically tested in previous studies of digital piracy (e.g., Higgins and Makin 2004a; Skinner and Fream 1997). Though these theories have received much attention in empirical studies of crime in general, it is unclear whether tests of traditional street crime are applicable to digital crimes. Some authors have considered digital piracy a form of white collar crime (e.g., Higgins and Wilson 2006), yet many definitions of white collar crime are restrictive enough to exclude it. Sutherland's (1940:1) definition, for example, defines white collar crime as "crime in the upper or white-collar class, composed of respectable or at least respected business and professional men..." Though later research has noted that such respectability can be faked (Shapiro 1990), respectability or the appearance thereof remains an integral part of white collar crime. Online piracy, which involves only a computer and minimal technical ability, requires no such respectability. Therefore, digital piracy can be considered a unique crime in that it is neither traditional street crime nor white collar crime. As such, the applicability of criminological theories remains questionable. Though recent studies of digital piracy (e.g., Higgins and Wilson 2006; Higgins, Wilson, and Fell 2005; Hinduja 2006; Skinner and Fream 1997) have provided empirical tests of various criminological theories, there is still much progress to be made in this aspect of digital piracy.

### *Differential Association*

One of the first social learning theories used to specifically explain crime, differential association (Sutherland and Cressey 1960/2003), views crime as the result of social interaction. According to the theory, an individual is only able to commit a crime after being exposed to an excess of definitions favorable to the violation of law. These definitions include the motives, attitudes, and techniques supportive of crime. The most

powerful definitions come from intimate primary groups, such as family and peers. Secondary groups, such as schools and government officials, transmit less powerful definitions. The theory has received various revisions throughout the years since its inception (Akers 1985; Burgess and Akers 1966), yet the concept of differential association has remained one of the main posits of the theory even in the most recent reformulations (Akers 1998). Moreover, it has received strong support empirically as applied to more traditional crimes (e.g., Hoffman 2003; Matsueda 1982; Orcutt 1987) and, in summarizing the empirical support for the theory, it was stated by Mark Warr that there is "no... better predictor of criminal behavior than the number of delinquent friends an individual has" (Warr 2001:186).

Applying the theory to the explanation of piracy, the theory predicts that individuals learn how to engage in piracy and moral justification for piracy primarily from friends and family. Not only might peers introduce the idea of downloading without cost, an act that is obviously not advertised, they may also share various neutralizations for the theft. In fact, interviews and focus groups have shown that digital pirates hold many beliefs about the ethics of their behavior and find solidarity with other pirates sharing these beliefs (Gantz and Rochester 2005). It is quite likely that these justifications and neutralizations are transmitted through the process of differential association.

The empirical evidence for using differential association indicates that the theory holds promise as an explanation for involvement in piracy. Previous studies applying differential association to digital piracy have focused predominately on the effect of peer involvement in piracy and found that high levels of peer involvement led to more frequent engagement in piracy (Limayem, Khalifa, and Chin 1999; Higgins 2005; Higgins, Fell, and Wilson 2006; Higgins and Makin 2004a; Higgins and Makin 2004b; Higgins and Wilson 2006; Hinduja 2006; Skinner and Fream 1997). Though less research attention has been paid to the influence of family on piracy, findings tend to support this link as well (Skinner and Fream 1997). These studies have primarily focused on software piracy and, to a lesser extent, movie piracy. With only the occasional exception (e.g., Hinduja 2006), criminological research has largely ignored the more prevalent crime of music piracy.

### *General Deterrence*

The theory of general deterrence dates back to the work of Cesare Beccaria in the 1760s (Beccaria 1764/1985). The original theory applied to the general populace as a whole and predicted that increases in the severity, certainty, and celerity of punishment would cause crime rates to decrease, as people would not choose to commit crimes if they believe punishment is immediate, certain, and severe. More recent works (e.g., Clarke and Cornish 2001) have applied this theory to individuals and

acknowledged that not everyone shares the same experience and knowledge. Therefore, it is each person's individual perception of punishment that can serve as an inhibitor if he or she believes punishment to be likely and severe. In its application to traditional street crimes, general deterrence has received moderate empirical support (e.g., Paternoster 1988). Though punishment severity has received mixed support, perception of punishment certainty is typically a significant predictor of crime, which is actually consistent with Beccaria's prediction that certainty is the more important element (1764/1985). Moreover, general deterrence has been successfully applied to non-traditional crimes, such as tax evasion and noncompliance (Klepper and Nagin 1989).

Specific to piracy, a combined general deterrence and rational choice perspective would predict that individuals engage in piracy because of the potential benefit of gaining the copyrighted works without a financial cost. If the potential loss due to a threat of punishment outweighs the potential gain, an individual is considerably less likely to engage in such an action. Thus, an individual is less likely to engage in piracy if he or she perceives that the repercussion for piracy, whether by government authorities or by actions through civil law, outweighs the benefits in the illegal act. Interestingly, general deterrence has received mixed support in recent empirical studies of digital piracy. Qualitatively, it is quite clear that statements by pirating individuals on the topic of punishment are consistent with deterrence. Specifically, the pirates interviewed reported very little fear of prosecution, believing that "prosecution is extremely uncommon, and the most severe penalty... is deactivation of Internet access" (Cooper and Harrison 2001:87). Conversely, quantitative studies (Higgins et al. 2005; Skinner and Fream 1997) have found only weak or non-significant effects by punishment on piracy. It is quite possible that these reported differences in findings are actually describing the same conclusion; both pirates and non-pirates seem to agree that prosecution is unlikely. As with empirical studies of differential association, the quantitative studies (Higgins et al. 2005; Skinner and Fream 1997) of deterrence have focused almost exclusively on software piracy, unlike the audio piracy discussed in the qualitative study (Cooper and Harrison 2001).

### **Statistical Control**

Despite statistical controls being commonplace in regression analyses, few of the existing studies of digital piracy include multiple statistical controls. The most frequently used control variable in statistical studies of piracy is gender. One of the earliest studies of digital piracy (Skinner and Fream 1997) found gender to be a significant predictor of software piracy with males more likely to engage in the illegal act. The evidence of gender as an important control variable is mixed among recent

research. Two recent studies investigating software piracy found gender to be a non-significant predictor (Higgins and Makin 2004a; 2004b), while a third found gender to be a strong predictor of intentions to pirate software with males once again more likely to pirate (Higgins et al. 2005). For music piracy, gender significantly predicts involvement in illegal downloading, also with males having a greater likelihood of pirating (Hinduja 2006). Age has also occasionally been used for control purposes in statistical analyses of digital piracy. Studies using age as a control variable found that age is not predictive of piracy in regression analyses (Higgins and Makin 2004a; Higgins and Makin 2004b; Higgins et al. 2005), with only one exception in a study of music piracy that found older college students less involved in piracy (Hinduja 2006). Unfortunately, with regard to these demographic variables, these studies do not present a theoretical explanation for their relationship to piracy and simply interpret the direction and significance of the coefficients without explaining the relationship. Hohn, Muftić and Wolf (2006) speculate that these relationships may be similar in nature to other crimes, such as an aging out effect to explain the age relationship. They also suggest that the gender gap is smaller than normally seen in crime research, as piracy is considered a minor crime by the general population, and minor crimes typically have smaller gender differences in prevalence rates (Smith and Visser 1980).

Other, less commonly used, control variables have included race, major of study, and technical ability. An initial study involving race indicated that Asian students had a higher likelihood of engaging in software piracy according to bivariate analyses (Hinduja 2003). Ethnicity as a dichotomous variable, however, was found to be non-significant in predicting piracy when used in multivariate analyses (Higgins et al. 2005; Hinduja 2006). Technical ability has also been previously tested and found to be a non-significant predictor of software piracy (Higgins and Makin 2004b; Higgins and Wilson 2006). Both of these studies, however, adapted the measure from a computer use scale (Igbaria and Chakrabarti 1990) developed nine years prior to the P2P popularity of the late 1990s. Participants were asked how often they used software such as a word processor, the Internet, and email with possible responses of never, sometimes, often, and a lot. With all of these activities commonplace among college students, the population under study, it is not surprising that the measure was not a significant predictor of piracy. Finally, a single study including major of study by Hinduja (2003) noted that students majoring in business or social sciences are less likely to engage in piracy based on several measures of software piracy.

There are several additional potential control variables that have not been previously included in piracy research. First, because piracy is a form of theft, a measure of financial wealth may be of importance. Those with less disposable income may be more inclined to take the free, if

illegal, path of downloading files without paying the cost. To be sure, focus groups have indicated that the high cost of music CDs, or more precisely the high financial cost perceived by college students, is a driving force toward piracy (Gantz and Rochester 2005) and those with greater disposable income may be less likely to resort to illegally avoiding market prices. Similarly, having a broadband (high speed) connection has not previously been used as a control variable despite its face validity as a predictor of piracy given the reduction in time required to download files illegally. For example, the time to commit a single act of music piracy is reduced from 11 minutes per song to less than one minute when a broadband connection such as those offered by universities is present (Cooper and Harrison 2001).

One other variable, residing on-campus, has also not been previously addressed by piracy literature despite the college experience having long been associated with piracy (e.g., Im and Koen 1990) and college dormitories being part of that experience for many students. Thus, based on a social learning theory, the increased exposure to an environment in which piracy is common would be expected to increase involvement with the crime. Conversely, these institutions are attempting to decrease piracy through enforcement mechanisms and anti-piracy education and information, often in response to or anticipation of legislation or lawsuits mandating such enforcement (e.g., College Opportunity and Affordability Act of 2007). Thus, though the direction if any is unclear, residing on-campus may have ramifications on pirating behaviors.

### ***Willingness and Involvement***

In studying digital piracy, there appears to be two distinct categories of ways to measure piracy. The first category relates to actual violations of copyright law. For example, Skinner and Fream (1997) asked participants whether they ever used, made, or gave an illegal copy of software. Similarly, Hinduja (2001; 2003; 2006) also asked directly about the number of piracy related infractions within a given period of time. Conversely, most other studies tend to measure piracy in the form of the respondent's willingness to pirate. One study (Shore et al. 2001), for example, developed nine ethical scenarios and asked participants, using a Likert-like scale, whether they would do the described act. Higgins and colleagues (Higgins and Makin 2004a; Higgins and Makin 2004b; Higgins et al. 2005) have also utilized several of these scenarios in their research of piracy.

The reasons for such a divide are not altogether clear. Shore and colleagues justify the method by stating, "Scenarios provide opportunities to obtain a response to a controlled situation that is constant across all subjects" (Shore et al. 2001:570). Their study, however, was exclusively interested in comparing beliefs about piracy among different cultures. Is the effectiveness of scenarios

similar when using willingness as a proxy for involvement? Higgins and colleagues similarly endorse a likelihood measure stating that the scenario provides "opportunity equal for all of the students in the study" (Higgins and Makin 2004a:22). Yet, their study clearly discusses the findings in terms of effects on actual software piracy. Does equalizing opportunity among participants in some way bias or alter the results? A later study furthers the justification for using willingness as a proxy by stating that likelihood "captures an individual's intentions or readiness to perform a behaviour, which some have considered a proxy for actual behaviour" (Higgins and Wilson 2006:81). If intentions are to be used as a proxy, why, then, not simply measure the behavior rather than the proxy?

There are several potential reasons for using proxies rather than the actual behavior of study not discussed by the piracy literature. Involvement in crime is obviously a delicate issue, and there is potential for that to bias responses. Even with anonymity guaranteed, participants may be reluctant to divulge deviant behavior. Additionally, more pragmatic reasons (e.g., an institutional review board) may prevent questions directly addressing involvement in crimes. Essentially, there may very well be justification for using a proxy such as willingness, but the validity of such measures is undocumented in relation to modern digital piracy.

### ***Present Study***

This study seeks to answer three main questions. First, are measures derived from differential association and deterrence theory predictive of piracy behaviors, and are these effects uniform across multiple forms of piracy? Prior studies (e.g., Higgins and Makin 2004a; Skinner and Fream 1997) have shown strong support for differential association and only weak support for deterrence. However, most of this prior research has exclusively studied software piracy. Will similar results be found when investigating distinctive types of piracy? In other words, this study will attempt to determine the degree to which conclusions reached about one form of piracy (e.g., software) can be extended to another (e.g., music).

Second, have significant control variables been overlooked by prior research? Theory testing studies of piracy have typically been limited to two or three control variables at most. Would including additional control variables, such as broadband Internet access and personal income, alter the significance of effects of theoretical variables? Finally, are willingness to pirate and involvement in piracy influenced by similar or different factors? Using likelihood variables as a proxy for actual behavior seems commonplace in piracy literature, but an empirical comparison of the two piracy measures to assess their interchangeability has not been attempted.

## METHODS

### *Data Collection and Sample*

Prior research has postulated that perceptions of punishment can best be ascertained through vignettes describing the criminal act being studied (e.g., Bachman, Paternoster, and Ward 1992; Klepper and Nagin 1989). Therefore, participants were presented with three vignettes each describing an individual committing a specific act of piracy.<sup>1</sup> Several questions followed each vignette and addressed the likelihood of punishment, severity of punishment, similarity to peer behavior, technical ability to engage in the act, and parental support for such behavior. To minimize confusion between piracy and legal downloading, participants were explicitly told prior to responding that the scenarios and questions in the questionnaire are not instances of legal downloading (e.g., iTunes, shareware, demos, etc.).

Prior research has found that piracy rates are especially high among college student populations, and a decline in music sales has been linked to areas with college campuses (Deloitte LLP 2004). Moreover, it has been suggested that this may be related to the most common types of piracy (music, movies, and software) being

popular in college settings, as well as the technological ability and access present in the setting (Hohn et al. 2006). Thus, though a college sample would limit generalizability, studying data from college students may be more appropriate given their unique environment and characteristics. As such, data used in this study were collected through survey questionnaires from undergraduate students in a mid-Atlantic, moderately sized, public university. The sample was a nonrandom sample of 548 undergraduates enrolled and present on the day of administration in one of eleven selected courses during the spring 2006 semester. The courses were selected based on their varying enrollment size, level, and topic. Seven students opted not to partake in the study, and 28 submitted incomplete questionnaires. Thus, the final sample had 513 participants and a response rate of approximately 94 percent.

The demographics of the sample are displayed in Table 1. Gender, race, and class year appear to be roughly representative of the institution from which the sample was drawn. Official statistics about the population from which the sample was drawn are provided next to the sample demographics in Table 1. With regard to the chosen majors of study of the participants, the sample is over

*Table 1. Sample Demographics*

Variables	Percent	N	Population Percent
<b>Gender</b>			
Male	43.7	224	42.2
Female	56.3	289	57.8
<b>Race/Ethnicity</b>			
White	86.5	444	84.4
Black	5.1	26	5.6
Hispanic	4.1	21	4.1
Asian	2.5	13	3.5
Other/Mixed	1.8	9	2.4
<b>Class Year</b>			
Freshman	32.7	168	28.8
Sophomore	26.1	134	25.1
Junior	18.3	94	23.0
Senior	22.6	116	23.2
Graduate/Other	0.2	1	
<b>Major</b>			
Business-related	13.6	70	
Computer Sciences	0.8	4	
Criminal Justice	22.6	116	
Natural Sciences	8.6	44	
Psychology	8.6	44	
Sociology	6.6	34	
Other Social Science	10.1	52	
Other	29.1	149	

representative of the social sciences and under representative of the computer sciences, though specific population statistics for major of study were unavailable.

### Variables

Six dependent variables are used for this study. The first three of these variables measure the participants' involvement in piracy. Participants were asked how often they downloaded files without paying for them. For music piracy, responses included: (1) never, (2) 1-5 songs per month, (3) 6-15 songs per month, and (4) more than 15 songs per month. For movie piracy, responses included: (1) never, (2) 1-3 movies per month, (3) 4-6 movies per month, and (4) more than 7 movies per month. Finally, for software piracy, responses included: (1) never, (2) 1-3 programs per year, (3) 4-6 programs per year, and (4) more than 7 programs per year.<sup>2</sup> The second set of three dependent variables measures participants' willingness to

pirate. In response to three vignettes describing the illegal downloading of music, software, and movies, participants were asked how likely it is that they would do the described act. Response categories included: (1) extremely unlikely, (2) unlikely, (3) likely, and (4) extremely likely.

The analysis also includes four main independent variables. Each of these was measured three times, once for each vignette. Two variables, peer activity and parental support, were constructed to measure differential association. Drawing upon the work of Skinner and Fream (1997), peer activity was measured by asking how many of the respondent's friends would do the described act (e.g., downloading music without paying for it). Responses included: (1) none, (2) few, (3) about half, or (4) most or all. Parental approval was measured by asking if the respondent's parents would approve if they did the act illustrated in the vignette. The possible responses ranged from (1) strongly disapprove to (4) strongly approve.

Table 2. Descriptive Statistics

Variables	Mean	SD	Min	Max
<b>Dependent Variables</b>				
Piracy Involvement				
Music	2.48	0.593	1	4
Software	1.41	0.691	1	4
Movies	1.22	0.593	1	4
Piracy Willingness				
Music	3.04	0.903	1	4
Software	2.42	0.935	1	4
Movies	2.34	0.925	1	4
<b>Independent Variables</b>				
Peer Activity	3.66	0.630	1	4
	2.68	0.949	1	4
	2.80	0.897	1	4
Parental Support	2.55	0.697	1	4
	2.38	0.746	1	4
	2.36	0.745	1	4
Punishment Certainty	1.91	0.627	1	4
	2.10	0.699	1	4
	2.12	0.694	1	4
Punishment Severity	0.56	0.497	0	1
	0.63	0.483	0	1
	0.65	0.476	0	1
<b>Control Variables</b>				
Gender (0 = Females)	0.44	0.359	0	1
Race (0 = Non-White)	0.87	0.342	0	1
Class Year	2.31	1.156	1	4
Parental Income	4.12	1.056	1	5
Personal Income	3.21	1.144	1	6
Business Major	0.14	0.344	0	1
Social Science Major	0.48	0.500	0	1
Technical Ability	0.95	0.224	0	1
	0.74	0.441	0	1
	0.83	0.379	0	1
Broadband Internet	0.94	0.239	0	1
Residing On-Campus	0.59	0.493	0	1

Two common deterrence variables, punishment certainty and punishment severity, were also measured using the vignettes. Based on the work of Skinner and Fream (1997), punishment certainty was measured by asking how likely it was that the described act would result in the individual being "caught and punished," with responses ranging from (1) extremely unlikely to (4) extremely likely. Punishment severity was also constructed using a single item that asked participants about what the punishment would be if "caught." The original response categories described different categories of punishment identified by prior research (e.g., Cooper and Harrison 2001) and included: nothing, small fine, loss of Internet access, heavy fines/lawsuit, or jail/prison. The responses were collapsed to (0) not severe for responses of nothing, small fine or loss of Internet access and (1) severe for heavy fines/lawsuit or jail/prison.<sup>3</sup> Ten control variables were selected for this study. Gender, race, technical ability, access to broadband speed Internet access, and residence are dichotomous variables with 1 representing male, non-white, having technical ability, having broadband speed Internet access, and residing on campus. Students' majors are divided in three groups for the analysis: business major, social science major, and non-business, non-social science major. The first two groups are the most common majors among participants and also represent areas previously linked to a decreased involvement in piracy (Hinduja 2003). Dummy variables were created to represent these groups, and the last group (non-business and non-social science) is treated as the comparison group in the analysis.

Other control variables, including class year, parental income, and personal income, were constructed as either categorical or ordinal variables. Class year is a categorical variable: (1) freshman, (2) sophomore, (3) junior, and (4) senior. Though class year has not been included in prior studies per se, it may serve as a proxy for age, which has been addressed previously (e.g., Higgins et al. 2005). Parental income (per year) was measured with the following responses: (1) under \$25,000, (2) \$25,000 to \$39,999, (3) \$40,000 to \$64,999, (4) \$65,000 to \$84,999, and (5) \$90,000 or greater. Similarly, personal income (per year) was measured with responses including (1) under \$200, (2) \$200 to \$999, (3) \$1,000 to \$3,999, (4) \$4,000 to \$7,999, (5) \$8,000 to \$14,999, and (6) \$15,000 or greater.<sup>4</sup> The descriptive statistics for all variables are displayed in Table 2. The correlations among explanatory variables were examined. None of the correlation coefficients exceed .56, suggesting that collinearity is not a concern.

### **Analysis**

To determine the effect of each variable on piracy, 12 ordinal logistic regression analyses are performed. The data analysis involves two steps. First, only the four theoretically driven variables (i.e., peer involvement, parental support, punishment certainty, punishment

severity) are entered (into the A models) as predictors of actual piracy activity. This allows an independent assessment of the explanatory power of theoretically related variables. Second, the ten control variables are added (into the B models) and the results compared to the first model. This will determine if the addition of the control variables alters the significance of any relationships. The two steps are then repeated, but with piracy willingness as the dependent variable instead of piracy activity.

The results from these models will be used to determine findings in two key areas. First, the results from models predicting piracy involvement will be used to determine whether the introduction of additional control variables potentially related to digital piracy alters the significance of any theoretically driven variables. Second, results from models predicting piracy willingness will be compared to the previous models predicting involvement. Because the models being compared contain identical independent variables and data, the results should be identical or quite similar if willingness serves as a proxy for involvement as previously implicated (Higgins and Wilson 2006). In cases such as this, simply comparing the statistical significance of variables is not sufficient, as doing so would not indicate if one coefficient is significantly higher or lower than its counterpart. Thus, the test of regression coefficient equality (Paternoster et al. 1998) will be used to determine if any coefficients significantly increase or decrease after changing the dependent variable to willingness.

## **RESULTS**

The results of the ordinal logistic regressions for piracy involvement are presented in Table 3. Looking at Models 1A, 2A and 3A first, both measures of differential association, peer activity and parental support, appear to be significant predictors of all three types of piracy. Specifically, students who have more friends involved in music, software and movie privacy and who have strong parental support for such behavior are significantly more likely to engage in piracy. These findings are consistent with the results from prior research that incorporated differential association variables (e.g., Higgins and Makin 2004a; Skinner and Fream 1997). Although differential association variables exert a consistent and significant impact on piracy, deterrence variables are much less predictive of piracy. Punishment severity is not a significant predictor in all three models, and punishment certainty is a significant predictor in only one of the three models (i.e., model 2A). Students who perceive punishment to be likely are less engaged in software piracy. A prior study of software piracy also noted this significant relationship (Higgins et al. 2005). The four independent variables together account for 11.6 percent of the variance in music privacy, 27.3 percent of the variance

in software piracy, and 13.7 percent of the variance in movie piracy.

Models 1B, 2B and 3B in Table 3 represent the result of the regressions of piracy involvement with the control variables entered into the analyses. The results are nearly identical to the previous models with regard to peer and parental influence. There are some small fluctuations in the coefficients, but overall the differential association variables remain as significant predictors in all three models. Noteworthy, however, is the change in the

relationship between punishment certainty and software piracy. The significant effect of punishment certainty on software piracy disappears (model 2B), suggesting that significant impact of punishment certainty may be spurious. A new significant connection emerges in model 3B. Punishment certainty becomes a significant predictor of movie piracy. Contrary to deterrence theory, however, students who believe punishment is certain are more likely to engage in movie piracy.

Table 3. Ordinal Logistic Regression Results for Piracy Involvement

Variables	Music		Software		Movies	
	Model 1A	Model 1B	Model 2A	Model 2B	Model 3A	Model 3B
<b>Independent Variables</b>						
Peer Activity	.81*** (.14)	.62*** (.15)	.80*** (.12)	.77*** (.14)	.71*** (.17)	.80*** (.18)
Parental Support	.45*** (.12)	.51*** (.13)	.56*** (.16)	.67*** (.17)	.71*** (.19)	.84*** (.21)
Punishment Certainty	.01 (-.13)	.19 (-.15)	-.57*** (-.18)	-.29 (-.19)	.19 (-.20)	.47*** (-.21)
Punishment Severity	.14 (-.16)	.20 (-.17)	.18 (-.22)	.37 (-.24)	-.01 (-.26)	.22 (-.29)
<b>Control Variables</b>						
Gender (0 = Female)		.52*** (.18)		.94*** (.23)		1.67*** (.31)
Race (0 = Non-White)		-.49*** (.25)		-.28 (.32)		-.81*** (.36)
Class Year		-.15* (.09)		.09 (.12)		.26* (.15)
Parental Income		.04 (.08)		.10 (.11)		.13 (.14)
Personal Income		.07 (.07)		.20*** (.10)		.23* (.12)
Business Major		-.15 (.26)		-.73*** (.36)		-.16 (.43)
Social Science Major		.04 (.18)		-.16 (.24)		.28 (.31)
Technical Ability		1.72*** (.49)		1.83*** (.44)		2.19*** (1.05)
Broadband Internet		1.24*** (.40)		.23 (.52)		-.59 (.63)
Residing On-Campus		.21 (.22)		.83*** (.29)		1.09*** (.37)
Nagelkerke R <sup>2</sup>	.116	.198	.273	.383	.137	.298

Note: Entries are unstandardized regression coefficients with standard errors in the parentheses.

\*p < .10, \*\*p < .05, \*\*\*p < .01

Two control variables in models 1B, 2B and 3B, gender and technical ability, are significant predictors of all three types of piracy. First and foremost, male college students are clearly more likely to be involved in music, software, and movie piracy than female college students. This finding was not unexpected, as previously research of computer crime has indicated a greater presence of piracy among males (Hinduja 2006; Skinner and Fream 1997). Similarly, technical ability is also a significant predictor with the more technically able students more likely to

engage in piracy of all types. This finding is contrary to the non-significant findings involving technical ability measured with the frequency of computer use (Higgins and Makin 2004b; Higgins and Wilson 2006).

Four other control variables, race, class status, personal income, and on-campus residence, are significant predictors of two of the three types of piracy. First, race is a significant predictor of music and movie piracy (models 1B and 3B). As indicated by the results, individuals who identified themselves as White were less involved in

piracy than those who identified with any other race/ethnicity. Interestingly, closer inspection of the data shows that this effect is limited to individuals not or only slightly involved in piracy. Moderate and heavy involvement seems to be equally prevalent across races and ethnicities. Second, class year is also a significant predictor of music and movie piracy. Specifically, students in the latter years of their college career are more likely to be involved in movie piracy, while students beginning the college experience are more likely to be involved in music piracy. This finding differs from those of analyses using age, which found no significant influence on piracy (e.g., Higgins et al. 2005). Third, personal income is a significant predictor of software and movie piracy (models 2B and 3B). Its effects, however, are not in the direction that one would expect for a theft-based crime. Respondents who made more money separate from their family income are more likely to pirate software or movies. Finally, residing on campus is also a significant predictor of software and movie piracy involvement. The exact reason for this is not quite clear, especially when controlling for broadband Internet connections, which are more common in on-campus housing, but seems to indicate that university anti-piracy measures are not affecting university network-using students' opportunity to download illegally.

Two control variables, business major and broadband Internet access, are predictive of only a certain type of piracy. Compared to non-business, non-social science major students, business major students are significantly less likely to engage in software piracy. This finding is in line with findings from Hinduja (2003), yet the non-significant effect of social science major on piracy is contrary to the prior study's conclusions. Not surprisingly, broadband Internet access significantly influences music piracy. Students with broadband Internet are more likely to commit music piracy. Unexpected is the non-significant relationship between broadband Internet speed and software and movie piracy. This is especially surprising given the strong relationship with music piracy, in which students with faster Internet connections were more likely to pirate music, as software and movie piracy can require much more time with a slow connection speed in comparison to music piracy. The non-significant relationships, however, are possibly the result of few respondents (6%) possessing less than broadband connection speeds and software/movie piracy being relatively less common in comparison to music piracy. Overall, the three models with controls are moderately more successful at predicting piracy involvement than the models without control variables. The independent and control variables explain 19.8 percent of the variance in music piracy, 38.3 percent of the variance in software piracy, and 29.8 percent of the variance in movie piracy.

Looking now toward the results of the willingness analyses in Table 4, similar results can be found for the

theoretically driven variables. As shown in models 4A, 5A and 6A, both differential association variables, peer activity and parental support, continue to be strong predictors of all three types of piracy. Students with pirating friends and supportive parents have a higher willingness to pirate. The deterrence variables, punishment certainty and punishment severity, continue to show only weak effects with only one of six effects significantly influencing piracy willingness. Students who believe punishment is more likely tend to have a lower willingness to pirate software. Compared to the four variables in models 1A, 2A and 3A, the same set of predictors have a stronger explanatory power. Together, they explain 26.2 percent of the variance in music piracy, 48.3 percent of the variance in software, and 50.4 percent of the variance in movie piracy.

Whereas the theoretical variables, especially differential association variables, exert similar effects on piracy in the involvement and willingness models, the control variables in the full models for willingness are not as predictive of piracy. Sixteen out of 30 relationships are significant when predicting involvement in piracy, while, as shown in models 4B, 5B, and 6B, only four are significant in predicting willingness. More specifically, technically able students generally have a higher willingness toward music and software piracy, while non-White students typically have a higher willingness to pirate movies. Class year also continues to significantly predict movie piracy, with students in the latter years of college having a lower willingness to pirate movies.

Overall, the explanatory power of the models increases when the dependent variable is changed from actual involvement in piracy to willingness. For the full models with statistical controls, the variance explained in music piracy increases to 29.6 percent, software piracy to 51.0 percent, and movie piracy to 51.9 percent. This increase appears to generate largely from changes in the coefficients of differential association variables. Using a test of regression coefficient equality (Paternoster et al. 1998), the substantive significance of coefficients in models 1A-3B was compared to their counterparts in models 4A-6B. Of the twelve coefficients estimated for the effects of peer activity and parental support on willingness, seven were significantly higher than their respective piracy involvement counterparts. In addition to the differential association variables, several other relationships experienced significant substantive increases and decreases. With the exception of punishment certainty's effect on movie piracy, all of these changes are among control variables becoming non-significant or having reduced effects in the willingness models, including gender in all models; broadband access in 1B; business major, technical ability, and residing on-campus in 2B; and class year and residing on-campus in 3B.

Table 4. Ordinal Logistic Regression Results for Piracy Willingness

Variables	Music		Software		Movies	
	Model 4A	Model 4B	Model 5A	Model 5B	Model 6A	Model 6B
<b>Independent Variables</b>						
Peer Activity	1.14*** (-.15)	1.02*** (-.15)	1.22*** (-.12)	1.17*** (-.12)	1.60*** (-.13)	1.61*** (-.13)
Parental Support	.92*** (-.14)	.97*** (-.14)	1.03*** (-.14)	1.04*** (-.15)	.97*** (-.14)	.94*** (-.14)
Punishment Certainty	-.06 (-.14)	.05 (-.15)	-.32*** (-.18)	-.17 (-.15)	-.12 (-.13)	-.14 (-.14)
Punishment Severity	.10 (-.17)	.08 (-.17)	-.14 (-.18)	-.17 (-.19)	-.09 (-.18)	-.10 (-.19)
<b>Control Variables</b>						
Gender (0 = Female)		.02 (-.18)		.26 (-.18)		.08 (-.19)
Race (0 = Non-White)		-.36 (-.26)		-.27 (-.26)		-.46* (-.26)
Class Year		.02 (-.09)		-.10 (-.09)		-.16* (-.09)
Parental Income		-.01 (-.08)		-.03 (-.09)		-.07 (-.09)
Personal Income		.07 (-.08)		.06 (-.08)		.04 (-.08)
Business Major		-.01 (-.27)		.30 (-.28)		.31 (-.28)
Social Science Major		.09 (-.19)		-.07 (-.19)		-.03 (-.19)
Technical Ability		1.68*** (-.41)		.77*** (-.23)		.30 (-.25)
Broadband Internet		.00 (-.37)		.10 (-.38)		-.48 (-.39)
Residing On-Campus		.11 (-.22)		-.33 (-.22)		-.25 (-.23)
Nagelkerke R <sup>2</sup>	.262	.296	.483	.510	.504	.519

Note: Entries are unstandardized regression coefficients with standard errors in the parentheses.

\*p < .10, \*\*p < .05; \*\*\*p < .01

## DISCUSSION

This study investigated several aspects of Internet-based digital piracy. First, the empirical validity of differential association and deterrence as explanations for music, movie and software piracy was tested. Second, statistical controls were added to ascertain their importance in theory testing with digital piracy. Third, the results using piracy involvement were compared with the results of piracy willingness.

Several general conclusions can be drawn from the findings of this study. First, similar to prior research (e.g., Higgins and Makin 2004a; Skinner and Fream 1997), this study provides strong empirical support for differential association as a predictor of digital piracy. Specifically, peer activity and parental support are consistently strong predictors of piracy in all models. General deterrence, conversely, received very little empirical support. Punishment severity is not a significant predictor of the three types of piracy, while punishment certainty is a significant predictor of only software piracy in the two initial models.

Second, the analyses show that the conclusions reached regarding the effects of criminological antecedents of digital piracy may vary depending on which type of

piracy is under study. Only four predictors, peer activity, parental support, gender, and technical ability, were significant predictors of all three types of piracy analyzed. The remaining significant predictors (punishment certainty, major, class year, etc.), conversely, varied in their statistical significance among differing types of piracy. This discrepancy implies music, software, and movie piracy are not entirely identical crimes, and such a difference may extend to different techniques of piracy as well. Thus, conclusions reached regarding one type of piracy (e.g., downloading software) may require additional empirical verification before being reached in regard to other types of piracy (e.g., downloading music). It should be noted that this study investigated only online piracy via downloading, and this is not necessarily synonymous with offline piracy, such as trading files with friends or ripping compact discs and digital video discs; nor is it synonymous with providing or uploading files.

Third, it appears that the introduction of additional control variables may alter findings relating to theoretical variables, a prospect that has been unaccounted for in prior research. In addition to identifying several statistically significant variables that have previously been untested (e.g., class year, residing on-campus), this study also found punishment certainty to be predictive of software piracy

only in the absence of statistical controls. This finding casts doubt on the importance of punishment certainty in deterring piracy as previously reported (Higgins et al. 2005).

Fourth, the discrepancy between willingness and involvement suggests that the two measures are quite similar, but not as synonymous as previous research (Higgins and Wilson 2006) has implied. Though the theoretically derived variables, punishment certainty notwithstanding, indicated no differences in statistical significance when tested with both of the measures, the amount of variance they explained increased with the willingness variable. More specifically, the majority of differential association coefficients increased in the willingness models. This would result in overestimating the substantive effects of these variables should willingness be used as a proxy for behavior. Additionally, the influences of control variables displayed quite distinctive results. Sixteen of 30 relationships were found to be significant with piracy involvement, but only four were significant when using the willingness measure. Overall, these findings indicate that willingness is quite similar to involvement in statistical analyses of digital piracy, yet a few noteworthy differences prevent it from truly being synonymous.

The key policy implication of this research is the importance of differential association. Obviously, association with deviant peers is not something that can easily be stopped. However, it appears that programs designed to educate students of the ethical aspects of piracy may benefit from encouraging communication with other students. Essentially, supporting differential association unfavorable to the violation of piracy laws may be a useful way to combat a social environment conducive to supporting piracy.

Unlike differential association, deterrence received very little empirical support in this study. This is not necessarily evidence against deterrence theory, however. Few participants felt that punishment was both certain and severe. Even if deterrence theory is applicable to digital piracy, a deterrence effect would not be possible until punishment severity and certainty increase and more students begin to perceive it as such. As long as most people perceive punishment as unlikely and weak, a deterrence effect will not occur regardless of the validity of deterrence theory. Based on this, it would seem that drastic changes to current policy and practices are required for a deterrence effect to even be possible.

A few limitations to this research must also be discussed. First, the data used are all self-reported. This may be problematic, especially for differential association variables, which ask participants about the behavior of others. It seems unlikely that participants intentionally falsified their responses. It is possible, however, that the responses were inaccurate perceptions of parental support and peer activity. Students may be unaware of their parents' beliefs relating to minor crimes rarely discussed.

Thus, they may have simply guessed an answer that coincides with their own actions to normalize their behavior. Second, the data used in this study were cross-sectional. While it is quite unlikely that one would select peers based on a relatively minor and secretive part of one's life, these cross-sectional data do not disprove such a notion. Had punishment certainty and severity been significant predictors of piracy, time-order would be a greater concern, as individuals may become increasingly aware of the anonymity involved after experimenting with piracy. A related concern is that the conclusions drawn may not generalize beyond college students given that the sample was strictly drawn from a higher learning setting. Finally, rational choice research (Bouffard 2002) has indicated that subject-generated consequences may be a more viable method for measuring consequences and punishment. Though the responses for severity were partially based on the findings of prior research (Cooper and Harrison 2001), investigating additional potential consequences is beyond the scope of this study.

Future research on piracy should place an added emphasis on including statistical controls in analyses. Most prior research has been limited to three or fewer control variables when testing piracy. This study indicates that such inclusion may alter the significance of theoretically derived variables in some cases. It is clear that several control variables are related to piracy and have the potential to increase our understanding of the causes of piracy. Additionally, an effort should be made to better distinguish between willingness and involvement. The findings of this study indicate willingness may be easier to explain and may overestimate the effects of certain variables (e.g., differential association) while underestimating the effects of others (e.g., gender). This does not, however, mean that willingness is uninteresting. Rather, it simply indicates that involvement in piracy and a mindset conducive to piracy are part of the same phenomena, but are not completely identical.

## Endnotes

1. Participants were presented with each of the following vignettes separately: 1) Daniel considers buying a new CD, but instead decides to download the songs for free; 2) John considers buying software, but instead decides to download it for free; 3) Hector considers buying a movie, but instead decides to download it for free. The scenarios were kept brief to prevent the introduction of mitigating circumstances in the hopes that the participant would respond to the crime and not specific events surrounding the particular scenario. For example, the vignettes used in prior studies describe the difficulties associated with finding and legitimately purchasing the media (Higgins, Fell, and Wilson 2006), reference high prices (Shore et al. 2001), or even directly state that it is unaffordable and required to pass a class (Higgins, Wilson, and Fell 2005). By introducing a specific neutralization,

the respondent may be more likely to respond favorably to the behavior. Moreover, even more mundane details, such as the type of music, may cause variation in responses. The method of download, too, could affect the responses, with high frequency offenders more likely to use (and, by extension, respond favorably to) more complex programs and transmission methods. Though longer vignettes may be useful for other purposes (e.g., a factorial design to determine the impact of introducing neutralization to the scenario), it would adversely affect the data in this particular case.

2. Because the willingness variable had to be measured with ordinal responses due to the hypothetical nature of the scenario, using an ordinal scale for involvement allows the two dependent variable categories to be comparable and allows the same type of regression analysis to be performed on each. Ranges such as these have been used previously (Skinner and Fream 1997), though the exact ranges have been adjusted to reflect more modern involvement levels.

3. Two primary reasons justify the recoding of the responses. First, not all of the categories could be logically ranked. Loss of Internet access, for example, could be more or less severe than a small fine depending on the particular respondent's perspective. Prior studies have indicated that both punishments are typically considered trivial (e.g., Cooper and Harrison 2001) and are thus included in the same group. Second, the categories of nothing and jail/prison were selected by relatively few of the participants (1.5%), suggesting that separate coding for the two categories may not be needed. Preliminary analyses indicated that the coding of severity had only minor influences on the significance of its relationship with piracy.

4. The controls for income incorporate two variables, as college students might not rely on a single source for financial support and a combination of personal earnings and parental support may play roles in a student's disposable income. Measures of parental income and personal income are admittedly somewhat crude. Because no prior studies of digital piracy have measured income among college students and their parents, these response categories were created without the benefit of prior research. Descriptive statistics for these variables imply the responses were chosen with moderate success. Though parental income responses indicated a higher social class than expected (with nearly half of students indicating a parental income in the highest category), the responses for personal income appear to be roughly normally distributed.

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## The Effects of Race on Relationships with the Police: A Survey of African American and Latino Youths in Chicago

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**Abstract:** *Race is one of the most powerful variables explaining public attitudes toward the police. The majority of studies on race and perceptions of the police have explored differences between African Americans and Whites. The emphasis of previous research on black-white comparisons has left unanswered many questions about minority group differences in attitudes toward the police, especially differences between Latinos and African Americans. The present study explored whether the police-related views of African American and Latino students differ. We compared African American and Latino youths on their attitudes, feelings, and behavioral intentions toward the police. Our independent measures included prosocial values, commitment to school, and contact with the police. We found several similarities between Latino and African American students on the dependent measures. We discuss the implications of our findings for police practices.*

**Keywords:** Police Relations; Youths; Minorities and Police; Trust in Police; Vicarious Experiences

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Race is one of the most powerful variables explaining public attitudes toward the police (Skogan 2006). The majority of studies on race and perceptions of the police have explored differences between African Americans and Whites, concluding generally that African Americans are less satisfied with the police than are Whites (Browning, Cullen, Cao, Kopache, and Stevenson 1994; Ho and McKean 2004). The emphasis of previous research on black-white comparisons has left unanswered many questions about differences in minority group attitudes toward the police, especially differences between Latinos and African Americans (Martinez 2007). For example, do Latinos and African Americans have similar views of the police? Do minority groups have different perceptions about whether the police care about their neighborhoods?

Are Latino and African American youths similarly stopped and treated disrespectfully by the police? In the current study, we pose these and other questions to a sample of minority students in Chicago's Public School System.

Recent population estimates show that Latinos are now the largest and fastest-growing minority group in the United States (Schaefer 2006). The Latino population in Chicago has been soaring since 2000 (Little 2007). Although considered a heterogeneous population, most Chicago Latinos have their roots in either Mexico or Puerto Rico. According to Schaefer (2006), Latinos differ from one another in their immigration experiences and cultural identities. Although they are brought together by a common language and shared media outlets (e.g., cable TV stations), most Latinos eschew panethnicity or solidarity

among ethnic subgroups, preferring instead to be characterized as Mexican American, Cuban, or Puerto Rican. However, the members of these different Latino ethnic groups appear to have quite similar views about the police (Skogan and Steiner 2004).

Evidence suggests that African Americans and Latinos harbor different attitudes and perceptions regarding the police. For example, Skogan and Hartnett (1997) found that awareness of, participation in, and support for Chicago's community policing initiative, Chicago Alternative Policing Strategy (CAPS), were considerably lower among Latinos, as a whole, than among African Americans. Non-English-speaking Latinos in Chicago had particularly unfavorable views of the police and rarely communicated with the police. Skogan and Steiner (2004) also found that although Spanish-speaking residents live in the city's most troublesome communities with high rates of crime and disorder, they are the least likely group to initiate contact with the police. Walker, Spohn, and DeLone (2000) suggested that non-English-speaking Latinos are reluctant to communicate with the police because of the language barrier. Others fear that calling the police will trigger investigations of the immigration status of community residents.

On the one hand, African Americans and Latinos have historically had little in common other than membership in a subordinate class (Schaefer 2006). On the other hand, while African Americans and Latinos in Chicago have competed against each other for jobs and housing, social scientists and political pundits have observed that they have basic mutual interests that include fear of crime, safety in their neighborhoods, and the way they are treated by police officers (Skogan and Hartnett 1997). In the present study, we investigate whether direct contacts with the police affect young minorities' views of officers on key dependent measures.

Peterson and Krivo (2005) highlighted the relative absence of Latinos from criminological and criminal justice research and how this absence limits our understanding of the sources of racial and ethnic disparities in violent crime and criminal justice processing and our knowledge of broader racial and ethnic differences in residents' views of and relationships with police officers (Rosenbaum, Schuck, Costello, Hawkins, and Ring 2005). As Hagan, Shedd, and Payne (2005:384) noted, "While police attention to African American youth is frequent and therefore familiar (Anderson, 1999; Young, 2004), little is known about how Latino youth respond to their experiences with the police—perhaps in part because their experiences with the police are assumed to be less common."

The tremendous growth of the Latino population in the United States has changed the face of communities and has revealed as "obsolete" and simplistic police studies of race that focus on only black-white comparisons (Martinez 2007:57). In response to Martinez's (2007:62) persuasive

recommendation to include Latinos in future "research on police treatment," the present investigation compared African American and Latino youths' feelings, attitudes, and behavioral intentions toward the police.

## **IMPORTANCE OF STUDYING RACE**

In terms of citizens' attitudes toward the police, race is perhaps the most studied of all personal characteristics, by itself and in interaction with other variables (e.g., age, gender, previous victimization) (Hurst 2007). Skogan (2006:101) maintained that, "All research on American's [sic] views of the police begins with race." Twenty independent studies, between the late 1960s and the 1970s, showed that African Americans had less favorable attitudes toward the police than did Whites (Peek, Lowe, and Alston 1981). For example, in an early study on the effects of race on perceptions of the police, Smith and Hawkins (1973) reported that African Americans of all ages had unfavorable attitudes toward the police whereas among Whites, older people had more favorable attitudes toward the police than younger people. We cite only a small sample of more recent studies in this vast literature.

African Americans are more likely than members of other racial groups to be victims of crime. They are also more likely to have negative contacts with the police, to be stopped disproportionately by the police, and to report incidents of police harassment and mistreatment (Anderson 1990, 1999; Erez 1984; Schaefer, Huebner, and Bynum 2003; Tuch and Weitzer 1997). Skogan (2006) found that 70 percent of young African American males in Chicago reported being stopped by the police, compared to an average of only 20 percent of the total number of residents in the city.

Hagan, Shedd, and Payne (2005) found that African American students in Chicago were more likely than Latino or White students to have encounters with the police, while Latinos were more likely to respond negatively to these encounters than were other youths. Hagan et al. (2005) suggested that adolescent minorities' perceptions of "criminal injustice" and their hostility toward the police are fueled by their lack of attachment to school and their being subjected to frequent and unprovoked police stops. The authors decried the paucity of research on Latinos' responses to police contacts (see also Brown 2004; Martinez 2007).

In New York City, Tyler (2005) investigated two forms of trust in the police: institutional and motive-based. Institutional trust was measured by survey items such as, "I trust the leaders of the NYPD to make decisions that are good for everyone in the city" and "People's basic rights are well protected by the police." Motive-based trust was measured by survey items such as, "The police give honest explanations for their actions to people" and "The police consider the views of the people involved when deciding what to do." Tyler found that African Americans expressed

less trust in the police than either Latinos or Whites on both forms of trust. All respondents rated the police slightly lower on institutional trust than on motive-based trust. Tyler concluded that a police officer's display of fairness in the exercise of duty was the most important factor in citizens' trust in the police.

In a national survey of the determinants of satisfaction with the police, Weitzer and Tuch (1999) reported that African American men were significantly less satisfied with the police than were African American women. The perception of personal safety in the neighborhood affected residents' satisfaction with the police. Those who resided in communities in which crime was a minor problem were more satisfied with the police than were those who resided in communities in which crime was a serious problem. Sampson and Bartusch (1998) reported that neighborhood disorder and concentrated poverty account largely for racial differences in satisfaction with the police.

Ho and McKean (2004) studied the relationship between residents and the police in North Carolina, concluding that race was the most important predictor of confidence in the police. African American residents were less likely to report confidence in police officers than were White residents. In addition, the risk of being a past or recent crime victim diminished residents' confidence in the police. Moreover, Hurst, Frank, and Browning (2000) reported that African American teenagers were more negative than White teenagers in their assessments of the police after street encounters even though their respective ratings of police treatment during those encounters were similar. A survey of ninth- and tenth-graders in Chicago found that both Latino and African American students believed that they were more likely than White students to be unfairly stopped and questioned by the police (Consortium on Chicago School Research 2002).

Rosenbaum, Schuck, Costello, Hawkins, and Ring (2005) indicated that vicarious experiences with the police in Chicago were significantly related to attitudes toward the police. Their findings suggested differences in how various racial and ethnic groups process their personal histories or past experiences with the police. The study found that African Americans were more likely to be affected by their indirect or vicarious experiences with the police than were members of other racial groups. Similarly, Weitzer and Tuch (2005) found that vicarious experiences with officers were correlated with lower approval ratings of the police among African Americans and Whites but not among Latinos. The researchers also argued that the mass media affect attitudes toward the police—particularly among African Americans, who are prominently featured in news stories about police officers' abuse of citizens.

Carter (1985) found that Latinos' perceptions of the police and expectations about future encounters with officers become more unfavorable with increasing contact between residents and officers. Hagan et al. (2005)

speculated that a similar deterioration in views of the police is less likely to occur among African Americans because police harassment has become an "experience of the expected" (p. 384).

## **IMPORTANCE OF STUDYING YOUTHS**

Age is another prime predictor of attitudes toward the police (Skogan 2006). Negative, age-related perceptions of the police are associated with different factors. For example, contacts between juveniles and officers typically occur under contentious or adversarial conditions (e.g., being stopped, frisked, or arrested); young males are responsible for committing a significant proportion of crimes and are the most common targets of law enforcement interest (Skogan 2006). Anti-police sentiments can also be an expression of young people's need for freedom and autonomy. In contrast, older residents are more likely to initiate contacts with the police and to be interested in safety and security issues (Reisig and Correia 1997).

In general, young people have unfavorable attitudes toward the police; they express little confidence in officers and rate them poorly on measures of competency, trust, and overall performance (Adams 1996; Borrero 2001; Decker 1981). Early and more recent studies indicate that negative encounters with the police lead to negative perceptions of officers (Friedman et al. 2004; Wellford 1973). Abusive incidents involving police officers and young people are grossly under-reported (Adams 1996). In interviews with mostly Latino and African American youths living in poor neighborhoods in Hartford, Connecticut, Borrero (2001) recorded hundreds of allegations of police misconduct against juveniles, including physical abuse, verbal harassment, threats, and violent attacks. Not surprisingly, the victims of excessive police force, who are disproportionately young minority males, have the most negative perceptions of the police (e.g., Ben-Ali 1992; Flanagan and Vaughn 1996).

Such encounters lay the foundation for longstanding hostility between the police and neighborhood residents. As adolescents become adults, they remain suspicious and distrustful of the police, decreasing the likelihood that they will report crimes and participate in community anticrime initiatives (Stoutland 2001). Hence, the study of young people's views of the police is critical as criminal justice-related beliefs, such as views of law enforcement officers, emerge and crystallize during middle adolescence and persist into adulthood (Bobo and Johnson 2004; Flanagan and Sherrod 1998; Niemi and Hepburn 1995).

## **PRESENT STUDY**

The present study explored whether the police-related views of African American and Latino students differ with

respect to three major predictive factors. First, based on research showing that commitment to school can affect adolescents' views of the police (Agnew 2005; Levy 2001; Nihart, Lersch, Sellers, and Mieczkowski 2005), we measured youths' attitudes toward school and their teachers. Relying on tenets of social control theory (Hirschi 1969), we hypothesized that students who hold more positive views of school will express more favorable views of the police. Second, based on research showing that the adoption of prosocial values can affect adolescents' proclivities toward delinquent and criminal behaviors and, by extension, their views of the police (Kee, Sim, Teoh, Tian, and Ng 2003), we measured youths' endorsement of conventional beliefs. We hypothesize that juveniles who possess more conventional beliefs would express more favorable views of the police (Hirschi 1969). Third, based on research showing that police treatment of youths during street encounters can affect young people's views of the police (Friedman et al. 2004; Hurst and Frank 2000), we measured youths' experiences after they had been stopped by police officers. We hypothesized that students who had no contact with the police or who were treated respectfully during field contacts would express more favorable views of the police. Thus, demeaning treatment by officers would elicit distrust while fair treatment (or no experience of being stopped) would do the opposite (Tyler 2004).

We used three complementary dependent measures on which we compared African American and Latino youths. We asked them if they thought that the police cared about their neighborhoods. We also asked them whether they respected the police. Finally, we asked them if they would be inclined to help police officers who were in need of assistance. Because of the scarcity of research on racial differences in perceptions of the police among youths, we ventured no specific hypotheses about how Latino and African American adolescents would differ on these measures.

## METHODOLOGY

### Data Collection and Sample

Survey data for this study were obtained from students who were enrolled in 18 Chicago Public Schools in May 2000. Approval for this project was received from the Board of Education's Legal Department, which was highly concerned with maintaining student's confidentiality. Therefore, student surveys were anonymous and information was not collected on the characteristics of the individual schools. All survey data from the schools were aggregated. At each of the 18 high schools, research staff distributed surveys during advising periods that the school had reserved for standardized test administration.

The data were collected during regular school hours in accordance with each high school principal's directions. The questionnaire consisted of 131 items in open- and

closed-ended response formats. The survey used several rating scales and explored numerous content domains: demographic characteristics, students' perceptions of the police, personal experiences with the police, and attitudes toward school and other social institutions. (For a more detailed description of the survey, see Friedman et al. 2004.)

A total of 943 students were asked to complete the questionnaire. The average completion time was 25 minutes. The completion rate for the survey was 94 percent ( $n = 891$ ). A total of 47 surveys were incomplete or unusable, and five students refused to participate in the study. Nearly half of the students were freshmen, and 41 percent were juniors. The mean and median age of the students was 16 years. Approximately 55 percent of the respondents were African American, 28 percent were Latino, 7 percent were White, and 3 percent were Asian. Based on 2008 data from the Chicago Public Schools, 8 percent of Chicago's public high school students are white, and 86 percent are African American or Latino—percentages that closely match the racial composition of the current respondents < <http://www.catalyst-chicago.org/guides/index.php?id=17>>. The sample consisted of more females (55%) than males (46%). After we excluded all of the students who were neither Latino nor African American, a total of 732 respondents remained in our sample. Two-thirds of the youths in the sample were African American ( $n = 490$ ) and one-third were Latino ( $n = 242$ ).

### Variables

**Dependent variables.** Three items were used to assess students' views of the police; all three were measured on a five-point Likert scale, ranging from "strongly agree" to "strongly disagree." The three measures were combined initially into one dependent variable or scale. However, the reliability coefficient of the scale was low, which suggested that the questions tapped into distinct aspects of students' reactions toward the police: their perceptions, feelings, and behavioral intentions.

The first dependent variable was measured by asking students if they believed that the police cared about what was good for their neighborhood (their perceptions). Higher values on this measure indicated that students believed that the police care about their neighborhoods whereas lower values indicated that students believed that the police did not care. The second dependent variable was measured by asking students whether they respected the police (their feelings). Higher values on this measure indicated that students respected the police whereas lower values indicated that students did not. The third dependent variable was measured by asking respondents whether they would assist a police officer in need of help (their behavioral intentions). Higher values on this measure

indicated a willingness to assist officers whereas lower values indicated an unwillingness to help them.

**Attitudes toward school and teachers.** School is a primary vehicle for transmitting conventional values to students on a considerable breadth of issues, including appropriate deference toward authority figures, such as the police. Teachers are the agents of socialization who communicate those values in and out of the classroom. Hence, we included in the survey two items that measured students' attitudes toward school and teachers. The first item asked students whether they liked school. A five-point Likert scale, ranging from "strongly agree" to "strongly disagree," was used to measure students' responses to this question. Higher values indicated that students liked school whereas lower values indicated that students did not like school.

The second item asked students whether they cared about what their teachers thought of them. This variable was measured using a five-point Likert scale, ranging from "strongly agree" to "strongly disagree." Higher values indicated that students cared about their teachers' opinions of them whereas lower values indicated that students did not care about their teachers' opinions about them. Students who claim to like school and care what teachers think of them should be more attached to conventional values (or socially bonded) than those who claim to not like school or care what their teachers think of them. Hence, the former would have a greater commitment to prosocial activities and better relationships with authority figures than the latter (Hirschi 1969).

**Prosocial beliefs.** Two questions using a five-point Likert scale, ranging from "strongly agree" to "strongly disagree," measured students' thoughts about delinquent behavior. The first question asked students whether they believed that taking things without permission was acceptable. The second question asked them if they believed that delinquent behavior is harmful. The polarity of these questions was reversed so that higher scores on either of these measures indicated prosocial values whereas lower scores on either of these measures indicated pro-delinquent values.

**Experiences with the police.** A few studies have found that treatment by the police (respect versus disrespect) was an important predictor of juveniles' attitude toward the police (e.g., Friedman et al. 2004). In the

present investigation, students' experiences with the police were measured by using a set of dummy variables. The dummy variables differentiated students not stopped by the police, students stopped and respected by the police, and students stopped and disrespected by the police. Students who were stopped and respected by the police were used as the comparison group for the analyses.

The variables used for not being stopped, being stopped and respected, or being stopped and disrespected by the police were generated from questions that followed a skip pattern in the survey instrument. Students were asked if the police had ever stopped them. Students were then asked whether they were respected or not during the stop. Ignoring the skip pattern in the survey would have introduced incidental selection bias into the model. Incidental selection bias is a methodological artifact that occurs when data are dropped from an analysis in an artificial (incidental to the method) instead of a random (non-artifactual) process.

Students who had not been stopped would have been excluded from the analysis through the incidental selection process. These students might be different from students who had been stopped on characteristics related to the study's outcomes; the not-stopped students would have been missed in the analysis unless they were captured by the survey structure and coding of the data. As mentioned above, dummy variables were created to prevent incidental selection bias and ensure that the entire sample of students (stopped and not stopped by the police) was included in the analyses.

The data were reviewed for inconsistencies in participants' responses and for coding errors that resulted from the survey's skip pattern. For example, some participants responded that they had not been stopped by the police but then indicated that they had been respected or disrespected by the police. Other variations in responses also created inconsistencies. A review of the data identified 37 cases (4%) with inconsistent responses, which were dropped from the analyses.

**Control and selection variables.** Gender was included in the analyses to control for gender-based differences in students' attitudes toward the police, which were reported in Friedman et al. (2004). Race was used as a selection criterion to determine if the analytic models produced different results for African Americans and Latinos. Table 1 presents the survey items and summary statistics for each of the study's variables.

Table 1. Summary Statistics of Regression Variables

Name	Description/Question	Category	Min	Max	Mean	SD	N
<i>Independent Variables</i>							
Like School	Question: "I like School"	African American <sup>a</sup>	1	5	3.5	1.2	446
		Latino <sup>b</sup>	1	5	3.4	1.1	225
Teachers	Question: " I care what my teachers think of me"	African American <sup>a</sup>	1	5	3.2	1.3	445
		Latino <sup>b</sup>	1	5	3.3	1.2	225
Stealing "not"OK	Question: "It's ok to take things that do not belong to you" [Reversed polarity to measure prosocial values]	African American <sup>a</sup>	1	5	3.7	1.5	445
		Latino <sup>b</sup>	1	5	3.5	1.4	223
Delinquency "not" OK	Question: " Most acts people call delinquent don't really hurt anyone" [Reversed polarity to measure prosocial values]	African American <sup>a</sup>	1	5	3.3	1.0	435
		Latino <sup>b</sup>	1	5	3.2	1.0	226
Experience	Dummy Variables: i. Not stopped ii. Stopped and Respected (comparison group) iii. Stopped and not respected	African American <sup>a</sup>					
		i	0	1	.4	.5	453
		ii	0	1	.2	.4	463
		iii	0	1	.4	.5	463
		Latino <sup>b</sup>					
		i	0	1	.4	.5	235
		ii	0	1	.2	.4	237
		iii	0	1	.3	.5	237
<i>Control Variable</i>							
Gender	Dichotomous variable measuring respondent sex. Male = 1; Female = 0.	African American <sup>a</sup>	0	1	.4	.5	461
		Latino <sup>b</sup>	0	1	.5	.5	237
<i>Dependent Variables</i>							
Care	Question: "Police really care what is good for my neighborhood"	African American <sup>a</sup>	1	5	2.6	1.0	451
		Latino <sup>b</sup>	1	5	2.7	1.0	230
Respect	Question: "I respect the police"	African American <sup>a</sup>	1	5	3.5	1.0	449
		Latino <sup>b</sup>	1	5	3.7	1.1	228
Assist	Question: "I would assist a police officer if he/she needed help"	African American <sup>a</sup>	1	5	2.8	1.2	448
		Latino <sup>b</sup>	1	5	3.1	1.1	228
Note: Figures are rounded. a. Selected for African Americans b. Selected for Latinos							

Note: Figures are rounded. a. Selected for African Americans b. Selected for Latinos

## Analyses

Ordinary Least Squares (OLS) regression analysis (SPSS 14.0 for Windows) was used to estimate several models that compared African American and Latino students. The variance in each of the dependent measures was sufficient enough to obviate the use of ordinal regression analyses; that is, responses were not heavily concentrated in any one category of any of the dependent measures. OLS regression analysis was also selected for its ease of presentation and interpretation.

The data for African American and Latino students were analyzed in two separate regression models for two reasons: first, to simplify the description of the results on race (the interpretation of interaction terms can be a bit complicated) and second, to diminish the likelihood of multicollinearity. The separate-model approach to test the effects of race could have compromised the robustness of the findings because the number of cases of Latino students was smaller than the number of cases of African American students. Nonetheless, the number of cases available for each analysis was adequate.

Model 1 (African American students) and Model 2 (Latino students) are presented in Table 3 and examined youths' perceptions about whether the police cared about what is good for their neighborhoods. Model 3 (African American students) and Model 4 (Latino students) are presented in Table 4 and examined youths' respect for the police. Model 5 (African American students) and Model 6

(Latino students) explored youths' intentions to assist a police officer in need and are presented in Table 4. All models included the same set of predictor variables.

A cross-coefficient analysis was used to examine differences between the models for African Americans and Latinos. In order to ascertain if any differences in slopes between the models were true differences, a cross-coefficient z-test was computed using the following equation for the analysis (Paternoster, Brame, Mazerolle, and Piquero 1998):

$$z = \frac{b_1 - b_2}{\sqrt{SEb_1^2 + SEb_2^2}}$$

The equation determines whether observed differences in slopes between sub-samples are statistically significant by generating a z-statistic that tests the null hypothesis that the regression coefficients in the two equations are equal (Paternoster et al. 1998). If the coefficients of the equations are equal, then the variables have similar slopes and predictive power. The significance level used for the cross-coefficient tests was  $p = .10$ .

## FINDINGS

### Description of Study Variables

Roughly 50 percent of Latino and African American students agreed or strongly agreed that "they like school." African Americans (23%) were more likely to strongly agree with the statement than were Latinos (14%).

Approximately half (48%) of Latinos and 43 percent of African Americans also agreed or strongly agreed that “they care about what their teacher thinks of them.” Nearly 25 percent of African Americans and 29 percent of Latinos agreed or strongly agreed with the statement that “it is not wrong to take things that do not belong to you.” Roughly 20 percent of African American and Latino students agreed or strongly agreed that “things they call delinquent do not hurt anyone.” In addition, a slightly higher percentage of African American students (60%)

than Latino students (55%) reported being stopped by the police. Roughly 62 percent of African Americans and 60 percent of Latinos reported that the police disrespected them during the encounter (See Table 2). In the Chicago Consortium Study of Chicago Public School students in the ninth and tenth grades, 50 percent each of African Americans and Latinos youths reported that the police had stopped them in the past year (Consortium on Chicago School Research 2002).

Table 2. Descriptive Analyses of Study Variables

Variables		Strongly Agree No. (%)	Agree No. (%)	Neutral No. (%)	Disagree No. (%)	Strongly Disagree No. (%)
<i>Independent Variables</i>						
“I care what my teachers think of me”	AA	87 (19.0)	108 (23.6)	128 (28.0)	67 (14.7)	67 (14.7)
	Latino	42 (18.5)	68 (30.0)	67 (29.5)	24 (10.6)	26 (11.5)
“I like school”	AA	104 (22.8)	142 (31.1)	130 (28.4)	40 (8.8)	41 (9.0)
	Latino	32 (14.1)	83 (36.6)	75 (33.0)	20 (8.8)	17 (7.5)
“It is not wrong to take things”	AA	62 (13.4)	53 (11.5)	49 (10.6)	78 (16.9)	220 (47.6)
	Latino	27 (12.1)	37 (16.5)	52 (14.3)	47 (21.0)	81 (36.2)
“Delinquency does not hurt anyone”	AA	22 (4.8)	62 (13.7)	202 (44.5)	114 (25.1)	54 (11.9)
	Latino	10 (4.4)	37 (16.2)	101 (44.1)	53 (23.1)	28 (12.2)
		Yes No. (%)	No No. (%)			
“Have you ever been stopped by the police?”	AA	285 (59.5)	194 (40.5)			
	Latino	131 (54.6)	109 (45.4)			
“Were you treated with respect when you were stopped?”	AA	109 (38.4)	175 (61.6)			
	Latino	131 (51.6)	109 (45.4)			
Sex (Male = 1) <sup>a</sup>	AA	210 (43.1)	277 (56.9)			
	Latino	124 (51.2)	118 (48.8)			
		Strongly Agree No. (%)	Agree No. (%)	Neutral No. (%)	Disagree No. (%)	Strongly Disagree No. (%)
<i>Dependent Variables</i>						
“If a police officer needed help...”	AA	30 (6.6)	99 (21.7)	165 (36.1)	83 (18.2)	80 (17.5)
	Latino	21 (9.3)	70 (30.8)	83 (36.6)	29 (12.8)	24 (10.6)
“I respect the police”	AA	82 (17.9)	141 (30.9)	170 (37.2)	28 (6.1)	36 (7.9)
	Latino	53 (23.3)	92 (40.5)	56 (24.7)	10 (4.4)	16 (7.0)
“Police really care...”	AA	13 (2.8)	55 (12.0)	201 (44.0)	108 (23.6)	80 (17.5)
	Latino	5 (2.2)	34 (15.0)	118 (52.0)	44 (19.4)	26 (11.5)

<sup>a</sup> 56.9 % of African American students are females; 48.8 % of Latino youth are females.

Descriptive analyses of the three dependent variables (i.e., “Police care about my neighborhood,” “I respect the police,” and “I would assist an officer who needed help”) showed that respondents had mixed views of the police. Approximately 50 percent of African Americans and 64 percent of Latinos agreed or strongly agreed with the statement, “I respect the police.” However, only 15 percent of African Americans and 17 percent of Latinos agreed or strongly agreed with the statement, “The police really care about what is good for my neighborhood.” Finally, 40 percent of Latinos but only 28 percent of African Americans responded affirmatively to the statement, “If a police officer needed help, I would be willing to assist him or her.” Hence, African Americans' overall views of the police were more negative than Latinos' views.

### Police Care about My Neighborhood (Models 1 and 2)

The results of Models 1 (African Americans) and 2 (Latinos) showed that students' experience with the police was significantly related to the study's first outcome variable. Specifically, for both African Americans and Latinos, being stopped and treated disrespectfully by officers negatively affected their perceptions of whether the police care about their neighborhoods ( $b = -.59$  for African Americans;  $b = -.51$  for Latinos). Being stopped by the police, per se, was not a significant predictor of this outcome for either group; how youths were treated when stopped mattered more than merely being stopped. Students' perceptions of their teachers and school, and their prosocial beliefs also were statistically non-significant. The results from the cross-coefficient tests supported the regression results and showed no difference in the slopes of the models for African Americans and Latinos.

Table 3. Regression Equations Examining Students Perception of Police Caring

Predictor Variables	African American		Latinos	
	b	Beta	b	Beta
Like School	.055	.048	.169	.147
Teachers	.099	.099	.236	.230
Stealing not OK	-.065	-.069	-.042	-.048
Delinquency not OK	.094	.092	.104	.111
Not stopped <sup>a</sup>	.044	.020	-.125	-.063
Stopped and disrespected <sup>a</sup>	-.590**	-.249	-.510*	-.245
Stopped and respected <sup>a</sup>	---	---	---	---
Control:				
Gender <sup>c</sup>	.179	.079	.284	.144
Constant	2.19***	---	1.59***	---
F-test	2.93**		4.13**	
R <sup>2</sup>	.089		.245	
N	218		97	

Note: b is the unstandardized coefficient; Beta is the standardized coefficient.  
 Figures are rounded.  
 a. Coded as 1 = (yes); 0 = (no)  
 b. Comparison group  
 c. Coded as 1 = (male); 0 = (female)  
 \*p ≤ .05 \*\*p ≤ .01 \*\*\*p ≤ .001

#### Respect for the Police (Models 3 and 4)

The model for African American youths (Model 3) demonstrated that respondents who cared what their teachers thought of them had more positive feelings toward police officers than those who cared little or not at all. This finding also applied to Latino respondents (Model

4). Hence, in Model 3 (African Americans) and Model 4 (Latinos), an association was found between respecting the police and students' caring about their teachers' opinions of them. Students who cared about their teachers' opinions were more likely to respect the police than those who did not ( $b = .32$  for African Americans,  $b = .46$  for Latinos).

Table 4. Regression Equations Examining Students Perception of Respect for the Police

Predictor Variables	African American		Latinos	
	b	Beta	b	Beta
Like School	.038	.031	.056	.042
Teachers	.324***	.303	.457***	.384
Stealing not OK	.017	.017	.137	.135
Delinquency not OK	.008	.007	.191*	.176
Not stopped <sup>a</sup>	-.105	-.045	.307	.133
Stopped and disrespected <sup>a</sup>	-.770***	-.305	-.252	-.105
Stopped and respected <sup>a</sup>	---	---	---	---
Control:				
Gender <sup>c</sup>	-.142	-.059	-.075	-.033
Constant	2.800***	---	1.310***	---
F-test	7.110***		10.590***	
R <sup>2</sup>	.192		.454	
N	217		97	

Note: b is the unstandardized coefficient; Beta is the standardized coefficient.  
 Figures are rounded.  
 a. Coded as 1 = (yes); 0 = (no)  
 b. Comparison group  
 c. Coded as 1 = (male); 0 = (female)  
 \*p ≤ .05 \*\*p ≤ .01 \*\*\*p ≤ .001

The results in Model 3 also indicated that African Americans who had been stopped and disrespected expressed more negative feelings toward the police than those who were stopped and respected, showing again the importance of police treatment during street encounters ( $b = -.77$ ). African American students who were disrespected

were significantly less likely to claim that they respected the police than were those who were respected. Being stopped and disrespected by the police was a slightly stronger predictor of African American juveniles' respect for the police than caring about their teachers' opinions of them. However, African Americans also were more likely

than Latinos to report that the police had physically mistreated them. Thus, the difference between the two groups might be linked to the intensity of alleged police abuse. Parenthetically, several students claimed that police officers hit and pushed them, pulled a gun on them, and made them lie face down on the ground. Examples of verbal abuse by police officers included being ridiculed, humiliated, called names, and asked inappropriate questions.

Unlike the model for African American youths, Latino students' experiences with the police had no significant effect on their respect for the police. Therefore, in Model 4 (Latinos), no significant relationship was found between police treatment and students' respect for the police. Thus, Latino and African American youths differed on the measure of respect for the police. The model for Latinos (Model 4) also differed from the model for African Americans (Model 3) on another variable. Specifically, Latinos who thought that delinquent acts were harmful were more likely to respect the police ( $b = .19$ ); African American students were not.

The cross-coefficient analysis supported the differences between Models 3 and 4. The z-test of different slopes in the African American and Latino models for the delinquency variable was statistically significant ( $p = .06$ ).

The z-test that examined the difference between African American and Latino students on being disrespected by the police was also statistically significant ( $p = .05$ ). These results are consistent with the differences between African American and Latino students that were found in the regression models for experience with the police.

### Assisting the Police (Models 5 and 6)

For African American and Latino youths, being pro-school was related to their expressed intentions to aid officers in need of help. The results also suggested that being disrespected by the police negatively affected both African Americans' and Latinos' willingness to assist the police ( $b = -.72$  for African Americans;  $b = -.57$  for Latinos). In addition, caring about teachers' opinions of them was related positively to the willingness of students in both groups to assist the police ( $b = .22$  for African Americans,  $b = .37$  for Latinos). The models for African Americans and Latinos differed from each other on the delinquent values variable. Among African Americans, the results showed that believing that delinquency is harmful was negatively related to whether students would assist the police ( $b = -.18$ ). For Latinos, the belief that stealing was wrong was positively associated with the expressed willingness to assist police officers.

**Table 5.** Regression Equations Examining Students' Willingness to Assist the Police

Predictor Variables	African American		Latinos	
	b	Beta	b	Beta
Like School	.114	.089	.027	.020
Teachers	.219***	.193	.367*	.299
Stealing not OK	.003	.003	.198*	.189
Delinquency not OK	-.181*	-.157	.138	.124
Not stopped <sup>a</sup>	-.330	-.132	-.185	-.077
Stopped and disrespected <sup>a</sup>	-.719***	-.268	-.574*	-.231
Stopped and respected <sup>a</sup>	---	---	---	---
Control:				
Gender <sup>c</sup>	-.222	-.086	.206	.087
Constant	2.990***	---	1.127*	---
F-test	4.820***		5.109***	
R <sup>2</sup>	.137		.287	
N	220		97	

Note: b is the unstandardized coefficient; Beta is the standardized coefficient. Figures are rounded.  
a. Coded as 1 = (yes); 0 = (no)  
b. Comparison group  
c. Coded as 1 = (male); 0 = (female)  
\* $p \leq .05$  \*\* $p \leq .01$  \*\*\* $p \leq .001$

The cross-coefficient z results supported the differences found in the regression analyses for Models 5 and 6. The z-tests of the differences between African American and Latino youths on believing that stealing is wrong and on willingness to assist officers were statistically significant ( $p = .05$ ). The difference between the models on the belief that delinquency is harmful and its

association with a willingness to assist officers was also supported by the cross-coefficient analysis ( $p = .01$ ).

### SUMMARY AND CONCLUSIONS

Several similarities were found between Latino and African American students on the dependent measures.

Both African Americans and Latinos who had been stopped and disrespected by the police were less willing to assist them and less likely to believe that the police care about their neighborhoods. Moreover, both Latinos and African Americans who indicated that they cared what their teachers thought of them were more likely to report that they would assist the police and that they respected the police, compared to students who cared less about what their teachers thought of them.

A notable distinction was found between African American and Latino respondents on the delinquent-values variable. Although the beta was not as robust as others in the analyses, Latinos who disapproved of delinquent acts were more likely to respect the police than those who did not. This variable failed to reach statistical significance for African Americans. However, the findings showed that African Americans who believed delinquency was acceptable were more likely to report that they would assist an officer in need of help. This variable did not reach statistical significance for Latinos. Furthermore, being stopped and disrespected was statistically significant only in predicting African American students' respect for the police. No difference was found between Latinos who were stopped and disrespected and those who were stopped and respected on this outcome variable.

Unlike previous studies, contact with the police, by itself, had no negative effects on attitudes, feelings, or behavioral intentions (Sced 2004). However, police treatment during encounters was the most important factor associated with the dependent measures. Among African Americans, police disrespect was strongly related to all three outcome variables, suggesting that adverse contact between police officers and such youths might have an additive rather than a habituating effect on juveniles' reactions to the police (Hagan et al. 2005). This result is germane to the findings of Sunshine and Tyler (2003) who noted that the police can aggressively fight crime and cultivate constructive relationships with community residents only if officers are perceived as legitimate authorities. Community residents will be more inclined to cooperate with the police if they have been treated with fairness and respect. Law enforcement officers' emphasis on process issues or procedural justice can have a positive effect on all racial and ethnic groups.

As a number of other studies have demonstrated, process matters. Residents care as much or more about the nature and tenor of police encounters as they do about the outcomes of those encounters (Tyler 2004). Police officers hold all the power in interactions with juveniles and generally view them with suspicion and disdain (Skogan 2006). Such negative presuppositions promote disrespect toward juveniles, which can have lasting, pernicious effects on police-community relations. In accordance with the principles of asymmetry, negative experiences with the police weigh more heavily in the development of police-

related attitudes and perceptions than positive experiences do (Skogan 2006).

Because of the inchoate nature of young people's views of the police, their perceptions are still amenable to change in response to vicarious and direct experiences with police officers (Brunson 2007; Hurst and Frank 2000). Officers should therefore be trained, using realistic scenarios (simulations), in effective techniques for defusing volatile situations with juveniles. Also useful might be open forums for young people and officers that encourage a mutual airing and resolution of grievances (Friedman et al. 2004). The Chicago Alternative Policing Strategy (CAPS) lends itself to such interactions through beat meetings, which are an integral component of Chicago's community policing program. Adolescents of color should have numerous opportunities for favorable interactions with the police to balance the contentious and adversarial experiences that they have with officers during typical street encounters (Dean 1980).

The relationship between caring about teachers and having more favorable perceptions of the police might simply reflect generally positive sentiments toward authority figures. Students who are closer to their teachers might be more likely to view police officers similarly, as helpful and caring adults. Unlike their African American counterparts, Latino students remained respectful of the police even in the face of police disrespectfulness, which might suggest cultural differences between the two groups in terms of deference toward adults in positions of authority. For example, the offering of respect (*respeto*) toward authority figures is a deeply-rooted value in most Latino households, and it could explain why disrespected Latino juveniles remained respectful toward the police, unlike their African American counterparts (Understanding Bilingual and Monolingual Latino Consumers n.d.).

Among Latino students, prosocial views made youths more favorably inclined toward police officers, whereas among African American students, pro-delinquency views did. By their endorsement of an antisocial statement, African Americans might be recognizing the challenge of policing in high-crime neighborhoods in which antisocial attitudes are more common among younger residents. However, this inconsistency defies ready explanation and might be an artifact of the sample or the measure.

### **Study Limitations**

Contextual or environmental variables can be an important component of research on police-community relations. Nonetheless, the current study was unable to explore the influence of social ecology on juveniles' attitudes toward the police (i.e., neighborhood-level variables), which is an obvious shortcoming of this investigation. As several researchers have observed, neighborhood-level variables can have considerable explanatory power. For example, ecological factors, such as social disorganization or community disorder (e.g.,

graffiti, vagrancy, drugs, loitering, vandalism, noise, crime), could spawn mistrust and fear of the police (Ross and Joon Jang 2000). Styles of policing in different neighborhoods—another contextual variable—are also critical to research on youth-police relations. Officers' maltreatment of residents or excessive applications of their legal authority have been linked to the order maintenance policing approach, which is applied in varying degrees in Chicago communities (Skogan and Hartnett 1997). "[This] approach privileges the law abider who cares for his home, his lawn, and his children, and the neighborhood merchant. It frowns on the unattached adult and the kids hanging out on corners" (Harcourt 2001:127).

Negative officer perceptions about the communities they patrol can significantly affect the outcome of interactions with young people. For example, in a Canadian study, Schulenberg (2003) found that social disorganization and urban growth affected police behavior toward residents. Regrettably, the current study could not shed light on the impact of the juveniles' neighborhoods on their attitudes toward the police.

The present sample consisted of youths enrolled in public high schools and failed to include dropouts. In addition, juveniles who were enrolled in private or parochial schools were not surveyed. These youngsters might have qualitatively different experiences with and attitudes toward the police, compared to the respondents in the current study. Future researchers should directly observe police-youth interactions in order to assess the validity of the students' reported experiences with officers. Similarly, future researchers should examine police officers' experiences with Chicago's young people from the standpoint of officers who interact frequently with the city's youths.

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## Explaining Deviant Peer Associations: An Examination of Low Self-Control, Ethical Predispositions, Definitions, and Digital Piracy

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**Abstract:** *Digital piracy is an emerging criminal behavior. Criminological research has been successful in explaining intentions to commit digital piracy using several different theories. Social learning and self-control have been two of the theories that have consistently been able to explain digital piracy. Importantly, differential association has been shown to be an invaluable measure in predicting involvement in digital piracy and other crimes. However, no study to date has attempted to show what variables specifically contribute to associations with digital pirating peers. Regression models are used to examine this question and results offer interesting interpretations. Age, sex, low self-control, and ethical predispositions were shown to be associated with digital pirating associations. However, when definitions were incorporated into the model these effects disappeared. The results of the present study advance our understanding of digital piracy and social learning theory and pave the road for research on other types of criminal behavior.*

**Keywords:** peers; differential association; social learning theory; digital piracy

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Digital piracy is an emerging computer-related crime in the twenty-first century. Digital piracy is the unauthorized copying of digital goods--software, digital documents, digital audio (music and voice), and digital video--for any reason, other than to back-up, without permission from and compensation to the copyright holder (Gopal, Sanders, Bhattacharjee, Agrawal, and Wagner 2004). Two forms of digital piracy involve software and music (International Federation of Phonographic Industries [IFPI] 2006). It has been estimated that 37 percent of all music CDs purchased worldwide are pirated, resulting in a 4.5 billion dollar loss to the music industry (IFPI 2006). Additionally, around 20 billion individual song tracks were illegally uploaded or downloaded in 2005 (IFPI 2006). The economic impact of music piracy has been described as "the greatest threat facing the music industry today" (Chiou, Huang, and Lee 2005:161). In the context of software piracy, this behavior has been shown to account for the loss of software sales, jobs, wages, and tax revenue (Business Software Alliance 2003; Peace, Galletta, and Thong 2003; Seale, Polakowski, and Schneider 1998). The Business Software Alliance (2003) estimates that software piracy causes 13 billion dollars in lost revenue to the software industry annually.

Digital piracy is considered a copyright violation and was made a criminal offense by *The Piracy and*

*Counterfeiting Amendments Act*. The distribution of copyrighted materials via the internet was defined as a felony by *The No Electronic Theft Act* (Koen and Im 1997). While the illegality of digital piracy is clear, the criminal act continues to be performed. The heavy reliance on and use of the personal computer in today's society has allowed digital piracy to exist fairly easily. Wall (2006) argues that the Internet facilitates digital piracy because it allows for anonymity, it bridges transnational gaps, it creates the impression of ownership of ideas rather than property, it is relatively easy, and it allows the offense to take place detached from the copyright holder, thereby creating a sense of a victimless crime. Further, with many modus operandi available to commit digital piracy (e.g., CD burning, peer-to-peer networks, LAN file sharing, digital stream ripping, and mobile piracy [see IFPI.org for a discussion of these techniques]), legal battles and public awareness campaigns have been shown to be "insufficient to gain widespread public compliance with the law" (Tyler 1996:224).

Rather than using valuable resources on interventions that do not seem to work, it may be advantageous to examine the factors believed to influence individuals to commit digital piracy (Al-Rafee and Cronan 2006). Accordingly, the criminological literature has focused on examining such ideas as individual propensities (Higgins

2005; Higgins, Fell, and Wilson 2006; Higgins and Makin 2004a, 2004b; Higgins, Wilson, and Fell 2005; Wolfe, Higgins, and Marcum in-press), behavioral intentions (d'Astous, Colbert, and Montpetit 2005; Gopal et al. 2004), past behavior (Higgins and Makin 2004a, 2004b; Higgins et al. 2005; Wolfe et al. in-press), deterrence measures (Higgins 2005; Liang and Yan 2005; Wagner and Sanders 2001; Wolfe et al. in-press), and ethical beliefs (Al-Rafee and Cronan 2006; Gupta, Gould, and Pola 2004; Moores and Chang 2006; Kini, Ramakrishna, and Vijayaraman 2004; Siegfried 2004; Tan 2002; Taylor 2004; Wagner and Sanders 2001) in explaining digital piracy. Additional research has considered the role of social learning variables as predictors of digital piracy (Higgins, Fell, and Wilson 2007; Higgins et al. 2006; Higgins and Makin 2004a; Higgins and Wilson 2006; Hollinger 1993; Wolfe et al. in-press). Much of this literature has shown that deviant peer associations are positively related to digital piracy. However, no known research has examined what variables are associated directly with deviant peer associations. Thus, the present study will explore possible predictor variables associated with the deviant peer associations (i.e., the dependent variable). Specifically, this study will determine which variables help explain digital pirating peer associations.

Because the internet provides a cloak of anonymity, individuals may be likely to befriend people who they would not normally befriend. That is, the anonymity of the internet provides individuals with an opportunity to behave in ways that they would not normally engage in during face-to-face encounters. For instance, peer-to-peer (P2P) file sharing networks are important in the promulgation of digital piracy. The Business Software Alliance (BSA) (2003) reported that the increased availability of pirated software over the internet via P2P networks is contributing to rising piracy rates. The BSA indicated that almost 60 percent of all internet traffic is driven by P2P networks. Thus, the roles of peers and their networking systems are important in the development and continuation of digital piracy. However, little is known about the development of digital pirating peer associations. This knowledge may provide information to others about P2P networks and their relation to the tendency to perform the behavior. Therefore, a gap exists in the literature for understanding digital piracy peer associations.

The present study will explore the possible predictor variables associated with deviant peer associations (i.e., the dependent variable). Specifically, this study will determine what variables help explain digital pirating peer associations. This study contributes to the literature in two ways. First, this study will advance our understanding of social learning theory. Specifically, it will address areas that explain deviant peer associations. This theoretical development will be valuable in future explorations of other deviant and criminal behaviors and will assist in the formation of policies directed at the reduction of such behaviors. Second, it will help to further explain the act of digital piracy. The present study will shed light on what

contributes to the formation of digital pirating peer associations, which will allow for policy interventions that can help reduce instances of digital piracy.

To make these contributions, the present study will begin with a discussion of social learning theory. It will then address peer associations and definitions in the context of digital piracy, which will be followed by a discussion of self-control theory and ethical beliefs, two concepts that may play a role in explaining deviant peer associations. The methods utilized in the present study will then be discussed, followed by a presentation of the results. The study will conclude with a discussion section.

### ***Social Learning Theory***

Sutherland's (1947) theory of differential association has been an influential and widely tested explanation of criminal and deviant behavior (Durkin, Wolfe, and Clark 2005). Researchers, however, have criticized the theory's testability (Burgess and Akers 1966; Glaser 1956; Krohn, Skinner, Massey, and Akers 1985). The most complete and most tested revision is Akers's (1985, 1998) social learning theory.

Akers's (1998) social learning theory argues that, like all behavior, criminal behavior is learned. The theory explains criminal and deviant behavior through variables that both motivate or control criminal behavior and that promote or undermine conformity (Akers and Sellers 2004). Akers's social learning theory (1998) posits four concepts essential to the learning process of deviant or conforming attitudes and behaviors: differential association, definitions, differential reinforcement, and imitation.

***Differential association.*** Differential association involves the direct association with individuals who may engage in certain forms of conduct that will result in exposure to specific sets of values and norms (Durkin et al. 2005). The most important associations involved in the learning process are those of peer groups such as family and friends (Akers 1998). Peer associations form the social contexts in which social learning operates. Peer groups provide an individual with definitions, models for imitation, and differential reinforcement for criminal and conforming behavior (Akers 1998).

***Definitions.*** Definitions are the attitudes and beliefs an individual attaches to a behavior (Akers 1998). These definitions identify the commission of an act as favorable or unfavorable, desirable or undesirable (Akers 1998). According to Akers (1998), individuals with definitions favorable to the commission of criminal behavior are more likely to engage in such acts.

***Differential reinforcement.*** Differential reinforcement "refers to the balance of anticipated or actual rewards and punishments that follow or are consequences of behavior" (Akers and Sellers 2004:87). Differential reinforcers determine whether the behavior will continue in the future and can be social or nonsocial (Akers 1998). Social reinforcers include the praise, acceptance, scorn, and ridicule of friends or family members, while nonsocial

reinforcers include the psychological and physical effects of drugs or alcohol (Durkin et. al. 2005). Akers (1998) argues that a person will be more likely to commit an act in the future if he or she is rewarded for the act (positive reinforcement) or is able to avoid an unpleasant feeling by its commission (negative reinforcement).

**Imitation.** Imitation refers to the commission of an act after observation of similar behavior by others (Akers 1998). Whether or not the behavior modeled by others will be imitated is affected by the characteristics of the models, the behavior observed, and the observed consequences of the behavior (Bandura 1977, cited in Akers and Sellers 2004).

Social learning theory has been subjected to a vast number of empirical tests and has received tremendous support (Akers and Sellers 2004; Durkin et. al. 2005; Gottfredson and Hirschi 1990). Akers and Sellers (2004) state that results from the literature show a relationship between social learning variables and criminal behavior that is "typically strong to moderate, and there has been very little negative evidence reported" (p. 92).

Although Akers (1998) social learning theory added much to Sutherland's (1947) differential association theory, much of the current criminological literature consistently demonstrates that deviant peer association is one of the most important elements from the theory for explaining criminal behavior. The element has been shown to explain a diverse array of criminal behavior such as college students' use of fraudulent identification to obtain alcohol (Durkin, Wolfe, and Phillips 1996) and gang membership among high school students (Brownfield 2003).

### ***Differential Association and Digital Piracy***

Research has shown peer associations (i.e., differential association) from social learning theory to be one of the strongest predictors of digital piracy (Hinduja 2006; Higgins et al. 2007; Higgins et al. 2006; Higgins and Makin 2004a; Higgins and Wilson 2006; Hollinger 1993; Skinner and Fream 1997; Wolfe et al. in-press). Specifically, Higgins and Wilson (2006) used a sample of 318 college students to demonstrate a positive link between pirating peer associations and software piracy. Higgins et al. (2007) examined movie piracy in a sample of 338 college students and showed that association with movie pirating peers had a positive association with intentions to pirate movies.

The literature on digital piracy and differential association has contributed several important findings to the extant body of knowledge. First, the literature shows how concepts from the theory, such as peer associations, are related to digital piracy. Also, a few studies demonstrate that there are interaction effects that take place between social learning variables and individual propensities (i.e., self-control) (Higgins 2005; Higgins et al. 2007; Higgins et al. 2006; Higgins and Makin 2004a, 2004b; Higgins and Wilson 2006). However, no known study has explicitly used differential association as the

dependent variable in explaining the factors that develop deviant peer relationships.

### ***Definitions and Digital Piracy***

The digital piracy literature has demonstrated an association between definitions and intentions to pirate (Higgins et al. 2007; Higgins and Wilson 2006). Higgins et al. (2007) used a sample of 338 college students to show that "associating with movie-pirating peers created an environment that may develop positive movie piracy attitudes" (p. 351). Additionally, the study showed that the link between low self-control and intentions to pirate were exacerbated by positive attitudes (i.e., definitions) for piracy (see also Higgins and Makin 2004a). Similarly, Higgins and Wilson (2006), using a college student sample of 318, demonstrated that favorable definitions for piracy were significantly associated with intentions to pirate. The literature examining the link between definitions from social learning theory and digital piracy has provided support for such a connection. However, no known study has explicitly tested whether or not a measure such as definitions plays a role in explaining variations in differential association. Thus, a gap is left in the literature as to what role an individual's definitions (i.e., attitudes) play in explaining association with deviant peers.

### ***Self-Control Theory***

Gottfredson and Hirschi's (1990) self-control theory has received tremendous support in the empirical literature (Pratt and Cullen 2000). The theory posits that poor or ineffective parenting results in a child with low levels of self-control. Poor and ineffective parenting is characterized by a parent's inability to develop emotional bonds with their child, to adequately supervise or monitor his or her behavior, to analyze this behavior for deviance, or to effectively use noncorporal means to punish deviant behavior. Hirschi (2004:543) defines self-control as "the tendency to consider the full range of potential costs of a particular act." Individuals with low self-control tend to be impulsive and self-centered; to enjoy simple, easy, and physical acts; and to prefer risky behavior. Because criminal behaviors share common characteristics, those with low self-control are more likely than individuals with higher levels to engage in them. Higgins et al. (2007:342) note that "crimes provide a short-lived payoff, an act that requires little planning, an act that is exciting, and one that is simple and easy to perform." Low self-control has been argued to inhibit an individual's ability to accurately calculate the consequences of crime (Higgins et al. 2007). This inability to see the consequences of committing crime has been shown to be a relatively stable trait throughout an individual's life (Turner and Piquero 2002). Low self-control has been shown to be associated with many forms of deviance and criminal behavior, such as cutting class (Gibbs and Giever 1995), academic dishonesty (Bichler-Roberston, Potchak, and Tibbetts 2003; Cochran, Wood, Sellers, Wilkerson, and Chamlin 1998; Gibbs, Giever, and Martin 1998; Tibbetts and Myers

1999), and theft (Piquero and Tibbetts 1996; Tibbetts 1997; Tibbetts and Herz 1996). As such, it appears logical to examine the link between low self-control and involvement in digital piracy.

### ***Low Self-Control and Digital Piracy***

Importantly, research has shown that individuals with low self-control have greater intentions to commit digital piracy. Higgins et al. (2007) used a sample of college students to show that lower levels of self-control were associated with higher intentions to pirate movies. Higgins and Makin (2004a, 2004b), in a sample of college students, demonstrated similar findings with intentions to pirate software. Other research has also shown a positive link between low self-control and digital piracy (Higgins 2005; Higgins et al. 2006; Higgins et al. 2005; Higgins and Wilson 2006; Wolfe et al. in-press). It appears that low self-control is an important predictor variable to be used in studies of digital piracy.

Important to the present study, some researchers have suggested that self-control theory and social learning theory are interrelated in complex ways (Evans, Cullen, Burton, Dunaway, and Benson 1997; Pratt and Cullen 2000; Winfree and Bernat 1998). Higgins et al. (2007) showed through a conditioning analysis that “when substantial association with movie pirating peers and positive attitudes toward software piracy combine, low self-control has its strongest relative impact on movie piracy likelihood” (p. 352). This finding supported the contentions made by Higgins and Makin (2004a) that low self-control is conditioned by social learning theory. It was argued that the “results indicate that individuals develop the intentions to pirate a movie as a member of a group, and the group norms toward movie piracy exacerbate the link between low self-control and intentions to pirate movies” (Higgins et al. 2007:353). However, this is counter to Gottfredson and Hirschi’s (1987) contention that “people acquire the propensity to delinquency, find delinquent friends, and commit delinquent acts” (p. 597).

In order to move beyond previous research and examine Gottfredson and Hirschi’s (1987) argument, the present study will use differential association as the dependent variable. Previous literature has neglected to examine this link in the context of digital piracy. As such, there is a substantial gap left in the literature. Researchers know how self-control and digital piracy are linked and that self-control may be conditioned by social learning theory. However, these studies have all used intentions to pirate as the dependent variable. Using differential association from social learning theory as the dependent variable will show what factors are associated with deviant peer associations rather than simply using it as a predictor of criminal behavior.

### ***Ethical Beliefs and Digital Piracy***

Several studies have demonstrated that individuals do not see piracy as a crime or an unethical issue (Im and Van Epps 1991; Solomon and O’Brien 1990). This is an

important finding, since strategies aimed at reducing digital piracy take for granted the illegality of the act. Individuals may not see the act of piracy as illegal or unethical and, therefore, will be influenced little by preventive strategies (Al-Rafee and Cronan 2006). Thong and Yap (1998) used ethical decision-making theory (Hunt and Vitell 1986) to show that individuals are influenced by deontological and teleological evaluations, both of which influence an individual’s piracy involvement. Viewing digital piracy as an ethical behavior appears to be a strong predictor of a person’s intentions to pirate and actual piracy behavior.

Similar to ethical beliefs, several studies have shown that moral beliefs have a connection with digital piracy (Higgins and Makin 2004b; Higgins and Wilson 2006). As an individual’s level of moral beliefs increases, his or her involvement with or intention to digitally pirate decreases. Additionally, in an important study by Gopal et al. (2004), a behavioral model was tested for explaining music piracy. Among other variables, ethical predispositions, or what the authors referred to as “justice,” had strong connections with music piracy involvement. The authors pointed out that due to strong factor loadings in the ethical predisposition scale, such a measure would be beneficial to use in future research on digital piracy (Gopal et al. 2004).

## **THE PRESENT STUDY**

The purpose of the present study is to examine the factors that contribute to the development of associations with digital pirating peers. Much of the extant literature has shown that differential association (Hinduja 2006; Higgins et al. 2007; Higgins et al. 2006; Higgins and Makin 2004a; Higgins and Wilson 2006; Hollinger 1993; Skinner and Fream 1997; Wolfe et al. in-press), definitions (Higgins et al. 2007; Higgins and Wilson 2006), ethical and moral beliefs (Al-Rafee and Cronan 2006; Gopal et al. 2004; Higgins and Makin 2004; Higgins and Wilson 2006; Im and Van Epps 1991; Solomon and O’Brien 1990; Thong and Yap 1998), and self-control all have links with digital piracy behavior. Additionally, many of these studies have shown correlations and interactive effects between each of the variables. However, little research has examined whether such variables explain associating with deviant, software-pirating peers. Regression will be used in the present study to determine whether low self-control, ethical predispositions (Gopal et al. 2004), definitions, gender, or age have a link with differential association.

This study is important to the development and understanding of differential association from social learning theory (Akers 1985), self-control theory (Gottfredson and Hirschi 1990), and ethical predispositions (Gopal et al. 2004) in the context of digital piracy. Additionally, this study will provide information on the factors that are associated with deviant peer associations, which can then be used to implement policies aimed at reducing instances of digital piracy. Finally, results from the present study will guide future research on digital piracy and other forms of criminal behavior.

## METHODS

The methods section of the paper will discuss the sampling procedure, sample, measures, and analytic process used in the analysis.

### *Procedure and Sample*

A self-report questionnaire was administered to college students at an eastern university in the United States in the fall 2004 semester after Institutional Review Board and Human Subject Protection review. Prior to administration of the survey, the researchers stressed the voluntary nature of study and explained that answers would be anonymous and confidential. The researchers ensured anonymity by requiring no identifying marks or personal information on the survey instrument. Further, confidentiality was ensured by the researchers storing all completed surveys in a locked filing cabinet housed in a locked room within the researchers' academic building. This set of procedures produced 392 questionnaires. However, due to listwise deletion for missing data, 337 completed questionnaires remained for the analysis. The sample consisted of a non-random sample of students in seven classes from the College of Arts and Sciences. These

classes consisted of general education courses open to all students.<sup>1</sup>

Table 1 presents the demographic characteristics of the sample. Males represented 39.2 percent of the sample, which is somewhat unrepresentative of the overall student population, which consisted of 47.4 percent males. About 81.5 percent of the sample was white, which is slightly higher than the university population, which is 76.7 percent white. The mean age category of the student sample was 4.37, which is between the ages of 21 and 22. Age information was not available from the university to compare to this sample. The sample consisted of 9.5 percent freshmen, 33.1 percent sophomores, 21.8 percent juniors, and 35.6 percent seniors. This is compared to the university population from which the sample was drawn, which consisted of 27.4 percent freshmen, 18.9 percent sophomores, 19.7 percent juniors, and 25.1 percent seniors. Thus, the sample is somewhat less representative of the overall university population in terms of class rank. Lastly, the present study oversampled criminal justice majors at 52.0 percent of the sample. While the sample is not perfectly representative of the university population from which it was drawn, it contains few drastic departures in terms of demographic characteristics.

*Table 1. Sample Descriptive Statistics*

Variable	Valid N	Mean	Median	Std. Deviation	Variance	Skewness	Kurtosis	Minimum	Maximum
Sex	390	.392	0	.489	.239	.443	-1.813	0	1
Race	379	.815	1	.389	.151	-1.632	.665	0	1
Age	391	4.371	4	2.274	5.172	.742	-.320	1	9
Class Rank	390	2.836	3	1.021	1.042	-.206	-1.249	1	4
Major	392	.520	1	.500	.250	-.082	-2.004	0	1

### *Measures*

The measures for this study included differential association (pirating peers), low self-control, ethical predispositions, and the control variables of age (1= 18 to 9= Over 25), sex (1=male, 0=female), race (1= white, 0= non-white), and previous software piracy ("How many times in the past month have you pirated software?").

**Differential association.** The dependent measure for this study was differential association. A composite of six items from Krohn et al. (1985) was used to form the measure of association with software-pirating peers. The items asked respondents to answer the following questions: "How many of your best *male* friends copied software in the last 12 months without paying for it?," "How many of your *male* friends that you have known the longest have copied software without paying for it in the last 12 months?," "How many of your *male* friends whom you are around the most copied software in the last 12 months without paying for it?," "How many of your best *female* friends copied software in the last 12 months without paying for it?," "How many of your *female* friends that

you have known the longest have copied software without paying for it in the last 12 months?," and "How many of your *female* friends whom you are around the most copied software in the last 12 months without paying for it?" The answers were gathered using a five-point Likert-type scale (1=none, 2= just a few, 3=about half, 4=more than half, and 5=all or almost all). Higher composite scores indicated more association with deviant peers or differential association. Internal consistency was shown to be acceptable for this measure ( $\alpha = .96$ ). Further, factor analysis and scree test showed that the scale was unidimensional.

**Definitions.** Respondents' definitions were measured using a set of 11 questions regarding their attitudes toward illegally copying or downloading digital software. A list of the items used in the definitions scale is presented in the Appendix. Such questions are consistent with Akers (1998) but have been formulated to be offense specific. A four-point Likert-type scale, ranging from 1=strongly disagree to 4=strongly agree, was used to measure each of the questions. A definitions scale was created by summing

the ten questions together. Internal consistency for the scale was acceptable ( $\alpha = .92$ ) and was demonstrated to be unidimensional through factor analysis and scree test. Higher scores on the scale indicated positive definitions in favor of piracy.

**Low self-control.** Respondents' level of self-control was measured utilizing the 24-item Grasmick, Tittle, Bursik, and Arneklev (1993) scale. Response answer choices were measured on a four-point Likert-type scale, ranging from 1=strongly disagree to 4=strongly agree. The scale had an acceptable internal consistency ( $\alpha = .86$ ) and was shown to be unidimensional through factor analysis and scree test. Higher scores on the scale indicated lower levels of self-control.

**Ethical predisposition.** Overall ethical predispositions were measured using a composite of four items from Gopal et al. (2004), who demonstrated the utility of such a scale in research on digital piracy. The items asked the respondents to respond to the following statements: all individuals deserve equal treatment before the law; man's capacity for justice makes democracy possible, but man's inclination to injustice makes democracy necessary; to no man will we sell, or deny, or delay right or justice; and all human beings are born free and equal in dignity and rights. Answer choices were captured using a four-point Likert-type scale, ranging from 1=strongly disagree to 4=strongly agree. There was acceptable internal consistency ( $\alpha = .72$ ), and factor analysis and scree test show unidimensionality.

### Analytic Process

The present study will first examine bivariate correlations. Regression will be used to examine the relationships among the variables and the dependent measure. Two regression models will be run in the present study. The first model will be without the definitions

measure. This will be done to determine the association of the other measures with differential association without the impact of another social learning measure. The second regression will include definitions within the model to determine what impact it has in explaining differential association and if it takes away the effects of the other variables.

### RESULTS

Table 2 presents the bivariate correlations for the measures used in the present study. The first issue that can be addressed from this table is multicollinearity. The correlations do not indicate that multicollinearity is a problem with this data. Low self-control was significantly related to age ( $r = -.105$ ), sex ( $r = .243$ ), race ( $r = .154$ ), ethical predispositions ( $r = -.147$ ), and definitions ( $r = .231$ ). This suggests that individuals with lower levels of self-control also have lower ethical predispositions and definitions favorable to software piracy. Also males, younger respondents, and whites tend to have lower self-control. Definitions were also significantly correlated with age ( $r = -.176$ ), previous piracy ( $r = .208$ ), and ethical predispositions ( $r = .121$ ). These results suggest that younger individuals, those who have pirated software in the previous month, and those with ethical predispositions were more likely to have definitions favorable to software piracy. Differential association was shown to be significantly correlated with all other variables except race. That is, individuals with low self-control ( $r = .205$ ) were more likely to have deviant peer associations (i.e., software pirating peers), and males ( $r = .113$ ) and younger respondents ( $r = -.219$ ) were more likely to have deviant peer associations. Further, those who had definitions favorable to the commission of software piracy were more

Table 2. Bivariate Pearson Correlations of Measures ( $n=337$ )

Variables	1	2	3	4	5	6	7	8
1. Age	1							
2. Sex	.168**	1						
3. Race	-.126*	.060	1					
4. Previous Piracy	-.070	.066	.036	1				
5. Low Self-Control	-.105*	.243**	.154**	.106*	1			
6. Ethical Predis.	-.036	.080	.067	.028	-.147**	1		
7. Definitions	-.176**	.087	.083	.208**	.231**	.121*	1	
8. Diff. Association	-.219**	.131*	.035	.308**	.205**	.113*	.376**	1

\*\* Correlation is significant at the 0.01 level (2-tailed).  
\* Correlation is significant at the 0.05 level (2-tailed).

likely to associate with peers who pirate ( $r = .376$ ). An interesting finding was that ethical predispositions ( $r = .131$ ) were positively related to differential association.

This is a finding that appears to be counter to previous literature and warrants further investigation. Pearson correlation was used to determine whether or not the

measures were related enough to warrant a regression analysis. The next step in the research process is to perform a regression analysis to determine the relative impact that each measure has on software pirating peer association.

Ordinary least squares (OLS) regression was used in the present study because the data were appropriate for such a technique. Specifically, the data are approximately normally distributed, which allows for the use of OLS regression. Table 3 summarizes the first regression analysis (i.e., without definitions in the model) to

determine what factors are associated with deviant peer associations. Low self-control has an impact on differential association ( $b = .074$ ,  $B = .130$ ,  $t = 2.302$ ). The lower an individual's self-control level, the greater deviant peer associations tend to be. This finding is consistent with literature concerning self-control theory and digital piracy. Further, the regression demonstrates that age is significantly related to deviant peer associations ( $b = -.331$ ,  $B = -.161$ ,  $t = -2.927$ ). Specifically, as age increases, individuals are less likely to associate with digital pirating peers.

*Table 3. Regression Results with Differential Association as the Dependent Variable (n=337)*

Variables	Unstandardized Coefficients	Standardized Coefficients		t	Sig.	Collinearity Statistics	
	b	Std. Error	Beta			Tolerance	VIF
Age	-.331	.113	-.161	-2.927	.004	.902	1.109
Sex	.877	.544	.091	1.610	.108	.853	1.172
Race	-.613	.633	-.051	-.968	.334	.969	1.032
Previous Piracy	.217	.046	.248	4.670	.000	.964	1.037
Low Self-Control	.074	.032	.130	2.302	.022	.850	1.176
Ethical Predis.	.291	.140	.111	2.074	.039	.953	1.049
F = 8.935**							
R <sup>2</sup> = .146							
** Correlation is significant at the 0.01 level (2-tailed).							
* Correlation is significant at the 0.05 level (2-tailed).							

A unique finding from the first regression model is that ethical predispositions are associated with differential association in the opposite direction from what previous literature (Gopal et al. 2004) would suggest ( $b = .291$ ,  $B = .111$ ,  $t = 2.074$ ). According to the regression, individuals with stronger ethical predispositions have more association with deviant peers. This is an important and interesting finding, given previous literature that implicates strong ethical predispositions (Gopal et al. 2004) with having a deterrent effect on digital piracy. The results of the present study suggest that strong ethical predispositions do not hinder the formation of deviant peer associations and may, in fact, lead to more encounters with software pirating friends. An examination of the tolerance and VIF values in the first model indicates that multicollinearity is not a problem with the data.

The next step in the present study was to examine the impact of definitions on the first model. Table 4 summarizes the findings for the second regression with definitions in the model. The results of the second regression are different from those in the first. With definitions in the model, the effect of low self-control and ethical predispositions on differential association was taken away. Age ( $b = -.283$ ,  $B = -.138$ ,  $t = -2.538$ ) was still shown to impact differential association, with older respondents experiencing less association with deviant peers. Additionally, previous software piracy ( $b = .171$ ,  $B = .197$ ,  $t = 3.709$ ) was still a significant predictor of differential association. Further, results from this regression demonstrate that individuals with favorable definitions for software piracy had significantly more associations with pirating peers ( $b = .205$ ,  $B = .258$ ,  $t = 4.753$ ).

**Table 4.** Regression Results with Definitions included in Model and Differential Association as the Dependent Variable (*n*=337)

Variables	Unstandardized	Standardized		t	Sig.	Collinearity Statistics	
	Coefficients b	Std. Error	Beta			Tolerance	VIF
Age	-.283	.112	-.138	-2.538	.012	.887	1.127
Sex	.669	.541	.069	1.236	.217	.839	1.192
Race	-.295	.630	-.024	-.468	.640	.963	1.038
Previous Piracy	.171	.046	.197	3.709	.000	.936	1.068
Low Self-Control	.045	.032	.078	1.376	.170	.809	1.236
Ethical Predis.	.204	.139	.078	1.471	.142	.930	1.075
Definitions	.205	.043	.258	4.753	.000	.893	1.120
F = 10.853**							
R <sup>2</sup> = .200							
** Correlation is significant at the 0.01 level (2-tailed).							
* Correlation is significant at the 0.05 level (2-tailed).							

## DISCUSSION

The purpose of the present study was to determine what variables explain associating with software pirating peers by using differential association from social learning theory (Akers, 1985) as the dependent variable. Software piracy has been shown to be a serious crime problem in the United States (Business Software Alliance 2003; Peace et al. 2003; Seale et al. 1998). A number of criminological studies have examined digital piracy using social learning theory (Hinduja 2006; Higgins et al. 2007; Higgins et al. 2006; Higgins and Makin 2004a; Higgins and Wilson 2006; Hollinger 1993; Skinner and Fream 1997; Wolfe et al. in-press), self-control theory (Higgins 2005; Higgins et al. 2006; Higgins et al. 2005; Higgins and Wilson 2006; Wolfe et al. in-press), and ethical predispositions (Al-Rafee and Cronan 2006; Gopal et al. 2004; Higgins and Makin 2004b; Higgins and Wilson 2006; Im and Van Epps 1991; Solomon and O'Brien 1990; Thong and Yap 1998). However, no study to date has attempted to explicitly explain digital pirating peer associations. Doing so is important for two reasons. First, explaining digital pirating peer associations will assist in the formulation of policies aimed at reducing digital piracy. Secondly, understanding digital pirating peer associations will advance our understanding of social learning theory and will improve its utility in explaining various types of criminal behavior.

Results from the present study come with the use of two regression models. The first model examines the ability of age, sex, race, previous piracy behavior, low self-control, and ethical predispositions in explaining deviant peer association. This model does not include any social learning measures except the dependent variable of differential association. The results indicate that as an individual's age increases, he or she tends to associate with fewer deviant peers. Previous research on digital piracy

has not found any significant associations with age and digital piracy (Higgins et al. 2007; Higgins and Wilson 2006). However, these studies did not use differential association as the dependent variable. While age may not help explain intentions to digitally pirate, the present study contributes to the literature by showing that age is an important predictor of association with pirating peers. Additionally, previous piracy behavior was shown to influence differential association. Specifically, those individuals who engage in more software piracy have more friends who engage in the same behavior. This is a fairly consistent finding in the social learning and digital piracy literature. These findings suggest that the robustness of social learning theory may be mediating the effect of demographics. Further, the first regression model demonstrates that low self-control is associated with deviant peer association, which tends to be a similar finding to previous literature showing low self-control to be a predictor of intentions to pirate (Higgins 2005; Higgins et al. 2006; Higgins et al. 2005; Higgins and Wilson 2006; Wolfe et al. in-press). The finding from the present study shows that an individual's level of self-control can not only be used to predict his or her intention to pirate but also to predict his or her association with deviant pirating peers. However, the relative impact of low self-control on deviant peer associations may not be as strong as Gottfredson and Hirschi (1990) contend in their general theory of crime when other variables are taken into consideration.

A unique finding from the first regression was that ethical predispositions were positively related to deviant peer association. This finding is counter to what would be hypothesized after examining previous literature on the subject. Studies have shown that individuals with lower ethical predispositions are more likely to commit digital

piracy (Gopal et al. 2004; Higgins and Makin 2004b; Higgins and Wilson 2006). As such, one would believe that lower ethical predispositions would be associated with more deviant peer relationships. However, the present study contributes to the literature by demonstrating that this is not the case. Rather, the more ethical an individual is the more likely she or he is to have deviant peer relationships. This suggests that ethical predispositions may not be important in reducing peoples' association with software pirating peers. Further, this finding suggests that software piracy may be a behavior that is often socially accepted and thus accepted within many peer groups. Essentially, associating with peers who commit software piracy may not be viewed as an unethical behavior.

Important to the present study was the second regression that included definitions from social learning theory in the model. This measure was included to see what effect it had on the other variables in the model. Interestingly, definitions took away the effect of low self-control and ethical predispositions. With definitions taken into consideration, an individual's level of self-control or ethical predispositions did not have an impact on his or her deviant peer associations. While the second regression still demonstrates that older individuals associate with fewer deviant pirating peers and those who have pirated themselves associate with more deviant peers, definitions was the only other measure with a significant relationship to the dependent variable. Specifically, individuals who have definitions that favor digital piracy are more likely to associate with peers who engage in the behavior. This finding is important to both the digital piracy and social learning theory literature. Importantly, the present study shows that when definitions are included into the model, the effect of low self-control and ethical predispositions on differential association is reduced to insignificance. It appears that definitions have such a strong effect in explaining association with deviant peers that the impact of all other variables (with the exception of age) is negligible.

There are several important findings to consider when developing sound policy to thwart software piracy. Research has shown associating with deviant peers to be an important predictor of an individual's involvement in digital piracy (Hinduja 2006; Higgins et al. 2007; Higgins et al. 2006; Higgins and Makin 2004a; Higgins and Wilson 2006; Hollinger 1993; Skinner and Fream 1997; Wolfe et al. in-press). Accordingly, policy aimed at reducing digital piracy should not overlook deviant peer relationships. If digital pirating associations can be reduced, in turn, digital piracy as a behavior can be reduced. Results from the first regression need to be viewed with caution, given the findings in the second regression. The results of the present study demonstrate that in order to reduce contact with deviant peers, policy needs to target people's definitions of whether the behavior is criminal or not. Internet service providers and software companies should post messages both on products and online that remind people that piracy is a crime, explaining why, and

informing of the harm that piracy causes to the economy, people's jobs, and the cost of products. Exposing the public to such messages would hopefully increase the likelihood that they would view piracy as a crime and as inappropriate. They would, as a result, reduce their contact with deviant pirating peers. In effect, these messages are aimed at changing individuals' definitions of piracy. Additionally, these individuals may then spread the word to their friends who engage in digital piracy.

The present study also demonstrates that ethical predispositions and definitions are distinct concepts. Ethical predispositions were positively related to differential association in the first model but not in the second. Internet service providers and software companies should be aware of this finding when developing messages intended to change people's definitions of piracy. The wording of the messages is as important as who receives them. The messages should use language similar to the questions in Appendix 1 asking individuals their definitions of piracy. While research has shown an individual's level of self-control to be fairly stable over time (Turner and Piquero 2002), policies aimed at reducing software piracy should consider the role of self-control in influencing deviant peer associations. While such an action may not change a person's level of self-control, it may assist in restoring inhibitions that were reduced due to previous piracy (Higgins et al. 2007). However, results from the present study show that this may not help in reducing contact with deviant peers. Lastly, policy attempting to reduce instances of digital piracy should focus on younger age groups, since the present study suggests that people age out of associating with pirating peers.

The results of the present study yielded important findings for researchers and policy makers trying to reduce digital piracy. However, the study is not without limitations. For one, the sample was that of college students, which makes generalizability of results difficult. However, social learning theory is considered a general theory that explains all crime all of the time. As such, regardless of the sample, results should be useful in making predictions about larger populations. A second limitation is that the present study used regression as the main analytic tool. This technique demonstrated important results, but the findings cannot be discussed in terms of causal order. Future research would benefit from using larger samples and more advanced statistical techniques.

Despite the limits, the present study contributed significantly to both the digital piracy and social learning theory literature. In particular, the present study was the first to date to use differential association as the dependent variable to help explain deviant pirating associations. Results from the first regression demonstrate the utility of age, sex, and low self-control in explaining deviant peer association. However, when definitions were included in the model, the effect of sex and self-control was diminished. What appear to be the predominant findings of the present study are that younger individuals associate

more regularly with deviant pirating peers and that individuals with strong definitions in favor of piracy tend to associate more with pirating peers. The findings of the present study advance our understanding of social learning theory and digital piracy. The results emphasize the importance of utilizing an overlooked measure, differential association, as the dependent variable. Additionally, the results show that a number of measures have potential in explaining deviant peer relationships with various criminal behaviors. Future studies should investigate other criminal behaviors, use larger and more diverse samples, and employ advanced analytic techniques to more fully capture the behavior and theoretical properties.

## Endnotes

<sup>1</sup>The seven classes included in this study consisted of four criminal justice classes open to all majors and three general education classes that were required by the university for graduation and that were also open to all majors. Thus, the present study oversampled criminal justice majors.

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*Appendix. Items from the Definitions Scale*

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The following is a list of the items used in the construction of the definitions scale. They can be used in future research or to formulate messages aimed at changes in definitions of piracy.

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- 1) I do not think it is okay to use copied software because it may create a negative image (reverse coded).
  - 2) I think copied software helps people, including me, save money.
  - 3) I think it is okay to use copied software to improve my productivity.
  - 4) I see nothing wrong in giving friends copies of my software in order to foster friendship.
  - 5) I think it is okay to use copied software if it improves my knowledge.
  - 6) I think it is okay to use copied software because the community at large is eventually benefited.
  - 7) I believe that copying software helps to increase my computer literacy.
  - 8) I think it is okay to use copied software for entertainment.
  - 9) I see nothing wrong with using copied software if it is badly needed for the success of a project.
  - 10) I think it is okay to use copied software for research purposes, because everybody shares the benefits.
  - 11) I think copying software is okay to punish software publishers who charge high prices.
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