



Music Piracy and Neutralization: A Preliminary Trajectory Analysis from Short-Term Longitudinal Data

George E. Higgins¹

University of Louisville, USA

Scott E. Wolfe²

Arizona State University, USA

Catherine D. Marcum³

Georgia Southern University, USA

Abstract

Digital piracy is an emerging criminal behavior. Little empirical research has been produced that examines the role of neutralization and performance of this behavior. Using short-term longitudinal data from college students, the present study examines the trajectories of digital piracy and the role of neutralization. The findings from this study show that trajectories of digital piracy may be tied to neutralization toward digital piracy. Criminal justice policies may be developed from this study.

Keywords: Digital piracy; neutralization; longitudinal data; Criminal justice policies;

Introduction

The Internet and increased use of personal computer in recent years has provided a refuge for a multitude of computer-based crimes (Adler & Adler, 2006; Hinduja, 2004). One of the most challenging computer related crimes to law enforcement and the economy has been intellectual property piracy. Personal computers and the Internet allow individuals to find, copy, and use intellectual property without providing any payment for it (Higgins, Wolfe, & Marcum, 2008). Digital piracy is one form of intellectual property piracy that has been increasing in recent years (International Federation of Phonographic Industries [IFPI], 2008).

Gopal and colleagues (2004) defined digital piracy as the illegal act of copying digital goods, software, digital documents, digital audio (including music and voice), and digital video for any reason other than to backup without explicit permission from and

¹ Associate Professor, Department of Justice Administration, 208 Brigman Hall, College of Arts and Sciences, University of Louisville, Louisville, KY 40292, United States of America Email: gehigg01@louisville.edu

² Doctoral Student, School of Criminology and Criminal Justice, 4701 W. Thunderbird Road, Glendale, AZ 85306-4908, United States of America

³ Assistant Professor, Department of Political Science, Georgia Southern University, PO Box 8101, Statesboro, GA 30460, United States of America Email: cmarcum@georgiasouthern.edu

compensation to the copyright holder. The Internet facilitates digital piracy because it allows the crime to take place detached from the copyright holder (Wall, 2005). This is especially true for digital music piracy that is committed through a multitude of modus operandi (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]). In turn, the perception of a victimless crime is created. However, music piracy is far from a victimless crime and has been described as “the greatest threat facing the music industry today” (Chiou, Huang, and Lee 2005:161).

Digital music sales have been increasing in recent years. In 2007 digital music sales accounted for an estimated \$2.9 billion in record company revenues and represented 15 percent of the total music market (IFPI, 2008). While the legitimate digital music market has been expanding, so has the illegal market of digital music piracy. Simon Gunning, Senior Vice President of Digital, EMI UK and Ireland said, “The music industry is way ahead of other media, broadcast and online companies in getting our content out there yet ironically we are behind when it comes to getting paid for it” (IFPI, 2008: 11). The IFPI (2006) estimated that 20 billion songs were illegally downloaded in 2005. Further, losses from worldwide digital music piracy in the United States music industry alone were projected at \$3.7 billion (IFPI, 2008). The lost revenue results in loss of jobs and poor legitimate market stability.

Importantly, the digital music piracy problem is not constrained to the United States. This criminal behavior is pervasively global and has affected markets in Mexico, Brazil, Spain, the Netherlands, and China (IFPI, 2008). Specifically, an estimated 2.6 billion illegal music downloads occurred in Mexico in 2007 and another 1.8 billion in Brazil (IFPI, 2008). The music piracy problem has also resulted in the underperformance of the legitimate music market in Spain and the Netherlands (IFPI, 2008). The Spanish Ministry of Culture performed a study that showed that 13 percent of Spaniards had illegally downloading music in 2007. Additionally, China has only a \$74 million legitimate music market due to the effects of a digital music piracy rate of over 99 percent (IFPI, 2008).

Many countries throughout the world have made music piracy a crime. Copyright laws in the United States attempt to protect intellectual property such as digital music. Specifically, *The Piracy and Counterfeiting Amendments Act* made digital piracy a copyright violation and *The No Electronic Theft Act* defined the distribution of copyrighted materials via the internet a felony (Koen & Im, 1997).

Although, music piracy in many countries is acknowledged as a criminal activity, Hinduja (2007) has argued that individuals may not view music piracy as a crime. However, the legal statutes clearly show that it is a criminal behavior. The research on music piracy has indicated that it is a primarily male endeavor (Higgins 2007; Hinduja, 2003). Some have shown that music piracy is a behavior that is primarily performed by younger individuals (Hinduja, 2003). However, the theoretical explanations of music piracy are not very plentiful in the empirical literature. A theoretical explanation of music piracy would be helpful because they allow researchers to organize their data in a rational way that can help develop policies to reduce the occurrence of the behavior. We do acknowledge that others have used several theoretical perspectives to understand music piracy (Higgins, 2005; Higgins, Fell, & Wilson, 2006), but we chose to examine the changes with a specific theory that would provide insight about the decision-making process--neutralization. We believe that the neutralization theory will be able to provide some information concerning an individual's perceptions that music piracy is not a criminal

behavior. Sykes and Matza (1957) addressed the rationale as to why individuals' would seemingly shirk the idea of social constraints so that they may be able to commit deviant or criminal behavior. To be clear, the legal, moral, and ethical issues are not completely disavowed, but the individual momentarily relieves themselves from these dictates so that they may feel released to perform the behavior of interest. This means that the individual may use verbal or cognitive cues to convince themselves on the acceptability or the properness of the behavior regardless of the society's view of their behavior. Once this process takes place, the individual is free to perform the behavior without acquiring a permanent criminal persona or identity. The persona or identity is not acquired because the individual has adequately neutralized the feelings of the dominant society toward the behavior. In short, because of neutralization, the typical social controls that inhibit deviant and criminal behavior are inoperable and this allows the individual to feel free to violate the conventions of society (Sykes & Matza, 1957). The neutralization process takes place using five main techniques.

The main techniques that are important in the neutralization process are as follows:

- 1) Denial of responsibility (i.e., it is not my fault): the action that was performed was not at the fault of the individual performing the behavior,
- 2) Denial of injury (i.e., no harm resulted from my actions): negates the behavior because no particular harm has been produced by the behavior,
- 3) Denial of victim (i.e., nobody got hurt): this is the assumption that the victim deserves the consequences of the action,
- 4) Condemning the condemners (i.e., how dare they judge me, when they are just as criminal or hypocritical): the behavior is not produced by the individual but in retaliation of the hypocrisy and moral failings of the individuals that disapprove, and
- 5) Appeal to a higher loyalty (i.e., there is a greater and higher cause): the behavior is to help others not just the individual performing the behavior. These techniques provide individuals with the information and the thought process necessary to garner freedom from conventional social constraints so that criminal and deviant activity may take place.

The empirical literature shows support for neutralization theory. Maruna and Copes's (2005) presented the partial support that neutralization has with several different forms of behavior. In relation to the present study, neutralization theory has been applied to different forms of music piracy and computer crime. Goode and Cruise (2006) used responses from 28 individuals to examine the role of neutralization and cracking. Although this study has a substantial problem with sample size, the results of this indicate that crackers have different mean levels of the neutralization techniques. Hinduja (2007) used cross-sectional responses from 507 college students to examine the role of neutralization and software piracy. Hinduja's (2007) results show that the techniques of neutralization have a weak link to software piracy. Based on these findings, the intuitive link between neutralization music piracy and computer crime does not seem to have a substantial amount of support in the literature. While these studies make a contribution to our understanding, they do not address all of the areas concerning neutralization and music piracy. For instance, Maruna and Copes (2005) argued that longitudinal studies could test whether reductions in the use of neutralizations over the time predicts a reduction in criminal activity. We believe that this may be the case for music piracy. Thus, more study in the area of neutralization and music piracy is necessary because a gap

exists in this area. Further, these earlier studies of neutralization and music piracy are unable to discuss how the changes that take place in neutralization can influence the changes that take place in music piracy. Figure 1 presents the hypothesized links that are being examined in the present study.

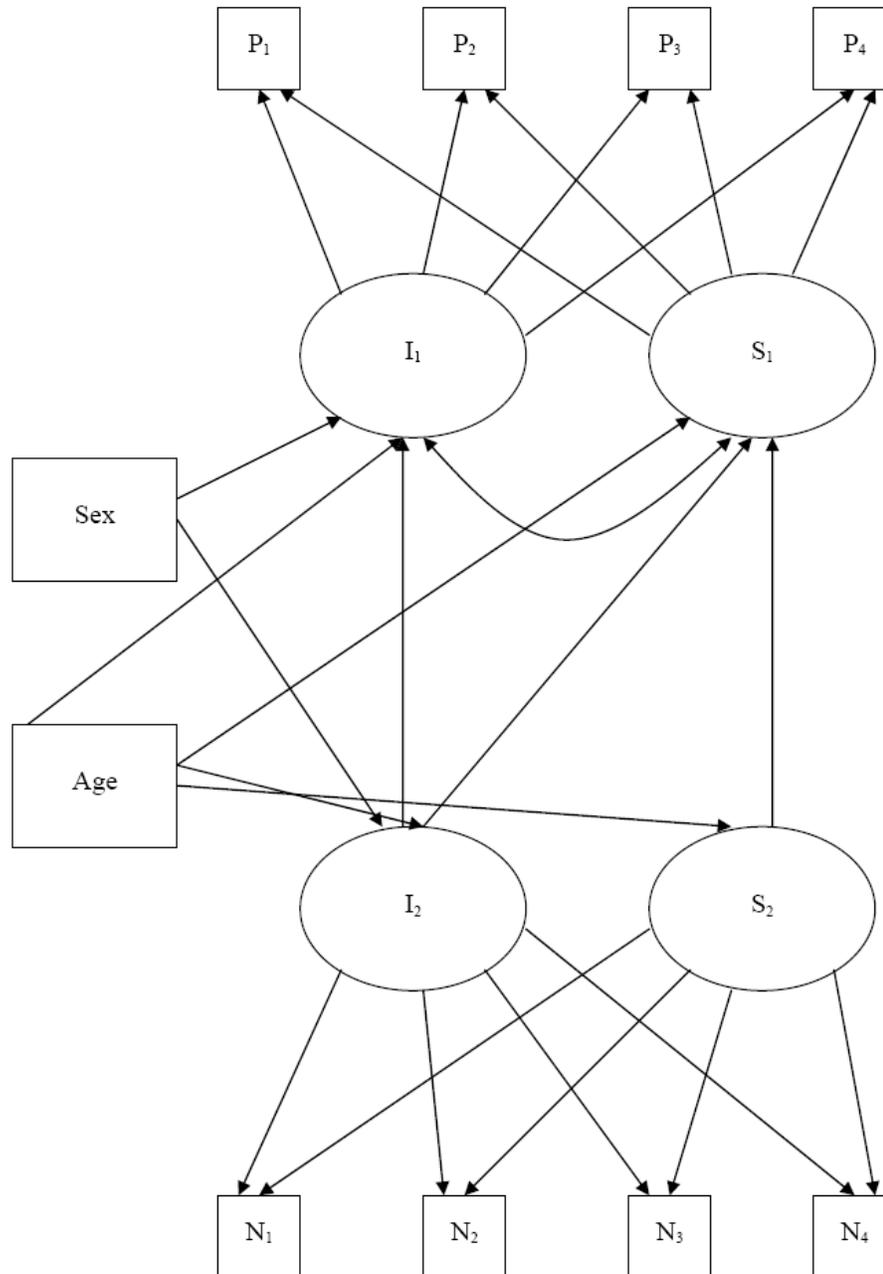


Figure 1. Structural Equation Model for Neutralizations and Music Piracy

This particular view allows for an important investigation to take place that focuses on the causal sequencing of neutralization. That is, the longitudinal focus of neutralization may be able to address the issue of music piracy persistence or desistance. Sykes and

Matza (1969) argued that neutralizations take place before the action so as to allow for a moral holiday. However, others have argued that the techniques of neutralization only make sense after the action has been performed (Hindelang, 1970; Hirschi, 1969; Akers, 1985). This implies that neutralization only occurs as an after-the-fact rationalization that may create the conditions for future behavior. This allows neutralizations to be a theory that accommodates both crime persistence and desistance from crime. Maruna and Copes (2005) argued that researchers examining neutralization and crime should consider this perspective in their studies. This call implies that researchers should focus on longitudinal designs that make this possible.

The purpose of the present study is twofold. First, this study provides an understanding of the changes in neutralization and music piracy. Second, this study provides an understanding of how the changes in neutralization influences the initial point and changes in music piracy. The results from this study can be seen as uniquely informing the two literatures i.e., the music piracy literature is lacking in understanding of the initial point and changes in the behavior (trajectories). The results can be seen as informing the literature on neutralization by providing an understanding of the initial point and changes in this particular measure (trajectories). The results of this study may be used to inform policy to reduce instances of music piracy.

Method

This section presents the methods for the present study. Specifically, this section outlines the sampling, procedures, and measures used in this study.

Sample and Procedures

This study used a short-term longitudinal design, where low self-control and sex were measured at time 1 and the digital piracy and intentions were measured every week for four weeks (i.e., time 1 through time 4). Some may argue that the short-time in capturing the data may be a shortcoming because it could be triggering the changes. Maruna and Copes (2005) have argued that neutralizations are dynamic cognitive processes. However, we have not been able to uncover any quantitative evidence that shows that neutralizations require a substantial amount of time for change. Therefore, we see our design as an advance to the quantitative empirical literature.

Undergraduate students that resided in the College of Arts and Sciences and the Justice Administration Department at an eastern university were used for this study. The courses chosen for this study were those open to all majors and where the instructor agreed to allow the study to take place during class. In the classroom, the researcher instructed the students that their participation in the study was voluntary, anonymous, and confidential. After the researcher explained the rights as respondents to the students and gave the respondents a letter stating these rights and procedures, 25 students refused to take part in the study. Before completing the surveys, the students were given instructions on how to develop their own identification codes so that the surveys may be linked across administrations. Specifically, the identification code included a combination of the instructor's name, the section number, and the student's birthday. The present study used data collected over the course of four weeks: week 1 ($n=292$), week 2 ($n=202$), week 3 ($n=213$), and week 4 ($n=185$).

Measures

The dependent measures (i.e., digital piracy) and the independent measures (i.e., neutralization, age, and sex) are presented in this section.

Dependent Measure:

The dependent measure consisted of a single item of digital piracy. The students reported for all four weeks, using an open-ended response format, how many times in the past week had they downloaded music without paying for them and using sites like itunes.

Neutralization:

The measure of neutralization is a composite measure that uses 6-items to capture the techniques of neutralization (i.e., the six items can be found in Appendix A). The students used a five-point Likert-type scale ranging “strongly disagree” (1) to “strongly agree” (5), to mark their responses. Higher scores on this measure mean that more the individuals neutralized their digital piracy.

Additional Control Measures:

Age was open-ended and was used as a continuous measure. Finally, the present study used a measure of sex where 0 was coded for female and 1 was coded for male.

Results

Table 1 presents the means, standard deviations, bivariate correlations and uni-variate skewness coefficients for the two predictors and the four measures of music piracy and neutralization. This shows that the sample is 46 percent male and is approximately 21 years in age. The results are relatively consistent with the individuals at the institution from which the data were drawn. However, the difference between the sample and the population does not allow us to conclusively say that our sample is representative of the university from which it came, making our study a preliminary investigation.⁴

The correlations indicate that the measures are behaving in their generally predicted manners. For instance, all of the piracy measures (i.e., p1 through p4) and neutralization (n1 through n4) have reasonable amounts of shared variance that indicates that changes that can be found in a trajectory model are possible. Thus, the data now turns to the latent trajectory modeling.

⁴ Due to clerical error we were not able to use our measure of major. Therefore, we were not able to draw solid conclusions about the representativeness of the sample to the university as a whole. We do not see this as a fatal flaw to our data. In fact, if neutralization is to be a general theory, it should hold no matter that the group is being studied. Thus, in our view, the representativeness of the data is not in question for testing the theoretical links that we have hypothesized, but this does reduce the generalizability of the results. Therefore, we see our study as providing preliminary information at best.

Table 1. Bivariate Correlation Matrix (n=300)

	Mean	1	2	3	4	5	6	7	8	9	10
1. P1	2.18	1									
2. P2	.87	.25*	1								
3. P3	.70	.17*	.30*	1							
4. P4	.19	.10	.36*	.29*	1						
5. N1	13.16	.07	.22*	.21*	.12*	1					
6. N2	12.51	.07	.16*	.07	.12*	.25*	1				
7. N3	10.22	.08	.16*	.19*	.16*	.13	.07	1			
8. N4	9.27	-.07	.06	.20*	.16*	.32*	.28*	.20*	1		
9. Sex	.46	.14*	.17*	.11	.14*	-.03	-.01	.11	.06	1	
10. Age	21.16	-.10	-.10	-.05	-.06	-.06	-.08	-.08	.01	.03	1

*p=.05

To accomplish the purposes of this study, Latent Trajectory Models (LTM) via structural equation modeling was used to examine the change overtime and an understanding of the predictors of the change overtime (Muthen & Muthen, 1998-2004). It should be noted that the decision was made to use structural equation modeling after unsuccessfully attempting to fit the models to Nagin's (1999) semi-parametric group based mixture model. As with all longitudinal studies, missing data is an issue (Brame & Paternoster, 2003), and the present study was not able to falsify the hypothesis that the data was missing at random, using Little's (1988) coefficient. We did not show any statistically significant differences for those that pirated and those that did not pirate in the missing data. However, we were not able to falsify the result that the data was missing completely at random. Therefore, some sort of correction was necessary. This is similar to Higgins (2007) and we decided to use a similar correction as Higgins (2007).

To correct the missing data, the present study used all the information in maximum likelihood in the LTM estimations (see Allison, 2003; for comparisons of full information maximum likelihood and imputations) that is operationalized in Mplus 4.2 (Muthen & Muthen, 1998). For an adequate fit of the models, the chi-square statistic should not be statistically significant (Hu & Bentler, 1999). However, given that the total sample size may lead to excessive power of the chi-square test, three additional fit statistics were used to evaluate the model fit: the root mean squared error of approximation (RMSEA), the confirmatory-fit-index (CFI), and the standardized root mean of the residual (SRMR). Hu and Bentler (1999) provided the standards for proper fit of these statistics: RMSEA should be below .08, the CFI should be equal to or above .95, and the SRMR should be below .05. Based on these standards, all of the models tested, using these data, have adequate levels of fit.

The first step in the analysis was to test for the presence of change in music piracy and neutralization over the four week period. Two LTM were estimated, one for music piracy and one for neutralization. The basic LTM comprises of two latent factors, with the repeated measures of the construct overtime as the indicators. Conceptually, this

model is a confirmatory factor analysis (CFA) model. The first latent factor defines the intercept of the growth curve, such that the factor loadings of the repeated measures are set to 1.0 that represents the identification point of the LTM at Time 1. This is held constant to provide a metric for the development of LTM (see Bollen & Curran, for a complete discussion of this issue). Without this metric, the LTM would be able to converge for proper results. The second latent factor defines the slope of the growth curve and represents the rate of change of the trajectory overtime. The means of these latent intercept and slope factors represent the group growth parameters and are overall measures of the intercept and slope for all participants. The variances of the latent factor reflects the variation of each individual around the overall group growth parameters. This estimation of variance makes this model a random coefficients model.

Music piracy: A two factor LTM as described above was estimated for the four repeated measures of music piracy. The model was found to fit the observed data well: chi-square (4.55, $p = .47$), CFI = 1.00, RMSEA = .00, and SRMR = .03. The significant slope factor (mean = -.36) indicated that the overall group reported decreases in music piracy over the four week period. The equally spaced factor loadings (0, 1, 2, and 3) reflected the decrease was linear. The variance components for the slope (1.12) and the intercept (11.32) factors indicated that there were significant individual differences in both initial levels and change of music piracy over the four week period. Finally, the negative correlation between the intercept and the slope ($r = -.94$, $p < .05$) indicated that there was an inverse link between the initial point and the change over the four week period (i.e., individuals who reported high levels of music piracy at Time 1 tended to report lower levels of music piracy at Time 4).⁵

Neutralization: A second two factor LTM as described above was estimated for the four repeated measures of neutralization. The model was found to fit the observed data well: chi-square (9.72, $p = .05$), CFI = .95, RMSEA = .07, SRMR = .05. The significant mean slope factor (-1.38) indicated that the overall group reported decreases in neutralization over the four week period. The factor loadings were developed to reflect a linear decrease over the four week period. The variance component for the slope (1.76) and the intercept (19.98) indicated that there were significant individual differences in both the initial levels and the change in neutralization over the four week period. Finally, the correlation between the slope and the intercept factors is statistically significant ($r = -1.60$, $p < .05$) that indicated that there was an inverse link between the slope and the intercept. (i.e., individuals who reported high levels of neutralization at Time 1 tended to report lower levels of neutralization at Time 4). This may be a result of the students' not seeing this as a moral behavior where they have to take relinquish their identity to perform the behavior. That is, after performing the behavior, the students' may see music piracy as normal behavior (Hinduja, 2007).

⁵We performed the same analysis using the count function for Mplus. We substantively found the same results. Following Nagin's suggestions with count data issues, we paid attention to the Bayesian Information Criterion (BIC) for the count runs and compared those to that came from our original findings. In addition, we paid attention to convergence issues. We did not find convergence issues with the data in our original runs, count runs, or in our simulations. While not completely representative of our population, the data did not seem to bias our results. Therefore, we feel confident in the LTMs that we present in this study. Interested readers may be able to obtain these results on request from the first author.

Combined LT: Two LTM presented above indicated that there were negative linear changes in both music piracy and neutralization and there were significant individual differences in changes over the time. To further explore the individual variation around the group trajectories, the LTM for music piracy and neutralization was estimated simultaneously and regressed on respondent age and sex.

The priori model was estimated so that age and sex predicted both the intercept and slope factors for respondent music piracy and neutralization. The structural parameters were estimated so the intercept factor of neutralization predicted the intercept and slope factors of music piracy. In addition, the slope factor of neutralization also predicted the slope factor of music piracy. These structural paths between the intercept and slope factors represent longitudinal prospective prediction over the time and test whether earlier information about one measure is predictive of later changes in the other measure. To further specify, the model, sex and age were hypothesized to account for the intercepts of neutralization and digital piracy as-well-as the slope factors of neutralization and digital piracy. To be clear, males were more likely to neutralize and pirate music and have changes in both measures. Finally, younger individuals were more likely to neutralize and pirate music while your individuals were more likely to change in both areas.

The chi-square statistic is (44.63, $p = .05$), CFI= .94, RMSEA=.04, SRMR=.05. Sex was associated with the initial level and change in music piracy but it was not associated with the initial level of neutralization or change in neutralization. Age was not associated with the initial levels or change of music piracy or neutralization. Table 2 presents a decomposition of the standardized effects in this particular model. Of key interest is the initial level of neutralization has a link with the initial level of music piracy (.50). This indicates that the neutralization of the behavior is important for initial music piracy. Further, the initial level of neutralization has a link with the change in music piracy (-.48). Thus, the findings from these results indicate that neutralization has a link with the initial level of music piracy and the changes in music piracy. This advances our understanding in the connection between neutralization and music piracy. To be clear, neutralization can be viewed as a theory of crime desistance. That is, as the neutralizations changed the individual changed their music piracy.

We would like to note that to recognize the attrition rate for this data is high. However, we performed the analysis using the complete data for all 185 respondents--not shown but available from the first author on request--and the entire sample. Our results were robust. To be certain, we performed simulation analyses ($n = 1000$ datasets) for each of these models using all the observations and the 185 observations and found little or no bias in the estimates, standard errors, and fit statistics. Therefore, we feel confident in presenting the entire sample results.

Table 2. Decomposition of Standardized Effects

Causal Variable	Endogenous Variable			
	Intercept Piracy	Slope Piracy	Intercept Neutralization	Slope Neutralization
Intercept Neutralization	.50* (.14)	-.45* (.04)		
Slope Neutralization	--	.10 (.08)		
Sex	.26 (.56)	-.25* (.20)	.06 (.95)	.29 (.43)
Age	-.02 (.06)	.00 (.02)	-.22 (.09)	.19 (.04)

*p=.05

Beta weights are above and standard errors are in parentheses.

Discussion

Use of the Internet permits easy accessibility to an abundance of information and entertainment, including digital music. Digital music sales in 2008 provided the music industry with \$2.9 billion in revenues (IFPI, 2008). However, the convenient and impassive access of this intellectual property provides a conducive environment for theft of the music. According to Sykes and Matza (1957), individuals can participate in this type of criminal behavior by neutralizing their behavior. The purpose of this study was to provide an understanding of how changes in neutralization affect music piracy, as well as the initial point and future changes of music piracy.

Initial analysis of the models indicated that individuals who reported high levels of music piracy during week one were likely to report lower levels of music piracy during week four, and similar findings were discovered in regards to the levels of neutralization reported by respondents. Moreover, the latent trajectory models of neutralization and music piracy were changing systematically over the time and the functional form of the change for both models was linear. In regards to significance, there were significant individual differences in the initial status and changes over the time in each model. Earlier levels of music piracy were significantly related to later levels of music piracy. This is similar to the changes that were found by Higgins (2007) in an examination of digital piracy. However, in this study, initials levels of neutralization were not significantly related to later levels of neutralization. These findings provide modest support for the changes in music piracy, but they do not support the changes in neutralization.

As discussed previously, the second purpose of this study was to provide a better understanding of the link between changes in neutralization and music piracy. A dual

trajectory model that controlled the influences of sex and age was conducted to investigate the relationship between these simultaneous changes in the two behaviors. This model shows that the initial level and changes of neutralization has a direct influence on the initial level and change in music piracy. As no other study in the literature provides any type of longitudinal examination of the relationship between neutralization and this type of criminal behavior, Maruna and Copes' (2005) prediction on the importance of this finding is confirmed.

The findings of the present study indicated that individuals will take a "holiday" from social controls to allow themselves to pirate music without developing a pirating identity. In other words, using different forms of neutralization performs a self-serving purpose for the respondents who participated in digital piracy, as they detached themselves from the criminality of the behavior. This is especially true for the males and younger members of the sample, as they both were shown to be more likely to neutralize their behavior and pirate music.

As the study progressed, the findings indicated that the rate of digital piracy and neutralization simultaneously decreased. It is probable that after continued participation in the study, respondents reflected on the criminality of their behavior, as they were consistently reminded of that possibility through their weekly participation in the study. When the participation in the deviant behavior decreased, the need to neutralize (or justify) the behavior was also smaller (Hinduja, 2007). This demonstrates that education on this issue, and a friendly push towards moral conscience, decreases the likelihood of criminal behavior.

These unique results suggest that policies may be developed to reduce instances of music piracy. In particular, the results suggest that to reduce instances of music piracy, the manner in which individuals perceive the behavior is the key to reducing the instances of music piracy. The value of properly using the Internet to acquire music media needs to be instilled so that the moral "holiday" that is necessary to perform music piracy is reduced. If the illegality of this behavior is reinforced to youth before participation in this behavior, the likelihood that they will participate in music piracy, especially on a regular basis, is diminished. This sort of moral development can occur through educational programs that have a specific curriculum that points toward reducing the neutralizations, as well as understanding the detriment participation in such a behavior can cause.

Although the results of the study are unique to the literature and the results point to policy implications, the study is not without limits. This study only uses one college student body to collect its data. However, important results in the music piracy and neutralization literatures come from studies with similar samples (Higgins, 2007; Hinduja, 2007) so the value of this data is considerable. In regard to the research design, a comparatively short longitudinal study was used. While close repetition of the study may indicate a bias in the results, we believe that this is a strength rather than a weakness. The close period of time allows us to begin to see what actually occurs in the patterns of piracy. Others may wish to perform daily inquiries about how piracy takes place.

It is important to note that the composite measures of neutralization may be an issue as it does not take into account a wide variety of the larger content of domains that is possible for neutralization (Murana & Copes, 2005). However, our psychometric properties of our measures indicated that they shared enough variance to be considered as one measure. As this study is the first of its kind, it makes a significant contribution to the literature as it provides insight into how the neutralization process involving criminality.

The limitations of this study, as well as the indication for the need of further investigation in this area, encourage the necessity for future research. Obviously, a lengthier study with increased points of data collection would provide further insight into the affect of neutralization on music piracy, as well as the usage of other measures of neutralization. However, and more importantly, the findings of this study indicates the potential for using neutralization measures to explain other types of cyber criminality, such as identity theft and other types of piracy. The use of the Internet allows for any person to detach himself from reality, in turn not placing a humanistic face to the victim of his criminal behavior. Similar studies should be utilized to determine if the same link exists between a change in neutralization and a change in the cyber criminality of choice.

Conclusion

Despite the limitations of the present study, it provides evidence that the level of neutralization utilized by a potential music pirate affects the piracy that actually occurs. Participants in music piracy are often misguided on the perception of the harm that is caused through their participation in this behavior, as well as the responsibility they have. This perception, as well as the lack of education in the area, increases the likelihood of participating in this “victimless” crime. The findings of this study are extremely important as it is a first of its kind study, and it provides insight into a potential solution to the increasing problem of music piracy.

References

- Adler, P., & Adler, P. A. (2006). The deviance society. *Deviant Behavior: An Interdisciplinary Journal*, 27, 129-147.
- Brame, R., & Paternoster, R. (2003). Missing data problems in criminological research: Two case studies. *Journal of Quantitative Criminology*, 19, 55-78.
- Chiou, J. S., Huang, C. Y., & Lee, H. H. (2005). The antecedents of music piracy: Attitudes and intentions. *Journal of Business Ethics*, 57, 161-174.
- Gopal, R., Sanders, G. L., Bhattacharjee, S., Agrawal, M., & Wagner, S. (2004). A behavioral model of digital music piracy. *Journal of Organizational Computing and Electronic Commerce*, 14, 89-105.
- Goode, S., & Cruise, S. (2006). What motivates software crackers? *Journal of Business Ethics*, 65, 173-201.
- Higgins, G. E. (2007). Digital piracy: An examination of low self-control and motivation using short-term longitudinal data. *CyberPsychology & Behavior*, 10, 523-529.
- Higgins, G. E., Wolfe, S. E., & Marcum, C. D. (2008). Digital Piracy: An examination of multiple conceptualizations and operationalizations of Self-Control. *Deviant Behavior: An Interdisciplinary Journal*, 29, 440-460.
- Hinduja, S. (2003). Trends and patterns among online software pirates. *Ethics and Information Technology*, 5, 49-61.
- Hinduja, S. (2004). Perceptions of local and state law enforcement concerning the role of computer crime investigative teams. *Policing: An International Journal of Police Strategies & Management*, 27, 341-357.
- Hu, L.T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6, 1-55.

- International Federation of Phonographic Industries (IFPI). (2006). The Recording Industry 2006 Piracy Report: Protecting Creativity in Music. Retrieved on October 16, 2007 from <http://www.ifpi.org/content/library/piracy-report2006.pdf>
- IFPI. (2008). *IFPI Digital Music Report 2008*. Retrieved on February 19, 2008 from <http://www.ifpi.org/content/library/DMR2008.pdf>
- Koen, C. M., & Im, J. H. (1997). Software Piracy and its Legal Implications. *Security Journal*, 31, 265-272.
- Maruna, S., & Copes, H. (2005). What have we learned in five decades of neutralization research? *Crime and Justice: A Review of Research*, 32, 221-320.
- Muthen, L. K., & Muthen, B. O. (2002). How to use a monte carlo study to decide on sample size and determine power. *Structural Equation Modeling*, 9, 599-620.
- _____.(1998-2004). *Mplus users' guide*. Third Edition. Los Angeles, CA: Muthen and Muthen.
- Nagin, D. S. (2005). *Group-based modeling of development*. Boston, MA: Harvard University Press.
- Sykes, G., & Matza, D. (1957). Techniques of neutralization: A theory of delinquency. *American Sociological Review*, 22, 664-670.
- Wall, D. S. (2005). The Internet as a conduit for criminal activity. In A. Pattavina, (Ed.), *Information Technology and the Criminal Justice System* (p. 78-94). Thousand Oaks, CA: Sage Publications.