MORAL JUDGMENT AND DIGITAL PIRACY: PREDICTING ATTITUDES, INTENTION, AND BEHAVIOR REGARDING DIGITAL PIRACY USING A MODIFIED VERSION OF THE DEFINING ISSUES TEST

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Digital piracy, the illegal copying or downloading of copyrighted digital products without approval from the copyright holders, has brought great economic loss to the software and digital media industries. Previous studies using moral developmental theory have not found consistent relationships between moral judgment and attitudes towards digital piracy. While some researchers have developed individual test items to assess relationships between moral judgment and attitudes toward digital piracy, others have relied on the Defining Issues Test (DIT). However, in that the DIT represents a general measure of moral judgment based on broad social issues, it, too, may not adequately assess an individual’s reasoning specific to issues regarding digital piracy. The purpose of this study was to create a reliable instrument (i.e., DP-DIT) modeled after the DIT designed to assess moral judgment regarding digital piracy as well as to examine and compare the ability of both DP-DIT and DIT2-short to predict attitudes, intentions and behaviors regarding digital piracy of college students. Results indicated the reliability of both the DIT2-short and the DP-DIT were discounted, quite likely due to the small number of stories contained in each. DP-DIT appeared to have greater predictive ability due to its advantage in predicting attitudes toward digital piracy, especially using DP-DIT MNS. However, even though here DP-DIT MNS was the strongest predictor of attitudes toward digital piracy, it explained a limited amount of variance. Further research to improve reliability and validity of DP-DIT is warranted.
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MORAL JUDGMENT AND DIGITAL PIRACY: PREDICTING ATTITUDES, INTENTION, AND
BEHAVIOR REGARDING DIGITAL PIRACY USING A MODIFIED VERSION
OF THE DEFINING ISSUES TEST

Introduction

Digital piracy, the illegal copying or downloading of copyrighted digital products (e.g., software, books, documents, audio, videotapes, etc.) without approval from the copyright holders (Cronan & Al-Rafee, 2008), has brought great economic loss to the software and digital media industries (Yu, 2013). According to Business Action to Stop Counterfeiting and Piracy (BASCAP), infiltration of pirated and counterfeited products has resulted in the loss of $1 trillion to the global economy and over 2.5 million job opportunities (BASCAP, 2014). Digital piracy can be either commercial piracy or end-user piracy. In the former, individuals work to profit from their pirated products, whereas the latter refers to individuals pirating products for their own use (Belleflamme & Peitz, 2010). Both commercial piracy and end-user piracy violate copyright laws; however, while people more commonly view commercial piracy as a criminal act, they hold a more lenient opinion about end-user piracy (Duchêne & Waelbroeck, 2005).

Researchers from diverse fields have explored attitudes, intentions and behaviors regarding end-user digital piracy, and several theoretical models have been employed to better understand the reasoning skills of those who commit digital piracy as well as those who do not. These theoretical models primarily include the theory of reasoned action (TRA) or theory of planned behavior (TPB) (Ajzen, 1985; 1991), the neutralization theory (Sykes & Matza, 1957), and ethical reasoning approaches such as Kohlberg’s (1978) and Rest’s (1979) theories of moral development (Siponen, Vance, & Willison, 2012; Siponen & Vartiainen, 2004). Previous studies
using moral developmental theory have not found consistent relationships between moral judgment and attitudes towards digital piracy (Al-Rafee & Cronan, 2006; Logsdon, Thompson, & Reid, 1994). While some researchers have developed individual test items to assess relationships between moral judgment and attitudes toward digital piracy, others have relied on the Defining Issues Test (DIT) (Rest, 1986). However, in that the DIT represents a general measure of moral judgment based on broad social issues (Fisher, 1997), it, too, may not adequately assess an individual’s reasoning specific to issues regarding digital piracy.

Researchers have also questioned the assumption that ethical decision-making within the context of a specific situation is identical to ethical decision-making related to general social issues (Fraedrich, Thorne, & Ferrell, 1994; Siponen et al., 2012).

Therefore, the purpose of this study is to create an assessment of moral judgment regarding digital piracy modeled after the DIT and referred to herein as the Digital Piracy DIT (DP-DIT) and then compare the ability of both the DIT and DP-DIT to predict attitudes, intentions and behaviors regarding digital piracy.

**Literature Review**

This study focuses primarily on the moral development perspectives of Kohlberg (1969) and Rest (1979) as these theories have been the dominant paradigms for studies in the field of moral development (Lapsley, 2006). Kohlberg’s (1984) theory presents six stages which correspond to three levels of moral reasoning. Level 1 is “pre-conventional” reasoning and incorporates the obedience and punishment orientation (Stage 1) as well as individualism and exchange (Stage 2). Level 2, “conventional” reasoning, incorporates perspectives focused on interpersonal relationships (Stage 3) and maintaining the social order (Stage 4), while Level 3
reflects “post-conventional” reasoning with its focus on social contract and individual rights (Stage 5) and universal principles (Stage 6).

Rest (1979) proposed the individual may simultaneously apply different types of moral reasoning rather than reason at only one or two adjacent moral stages. An individual may not use the highest level of moral reasoning he/she has achieved but may use several different types of moral reasoning together depending on his/her overall level of moral development as well as the content of the issue being evaluated. Revisions to Kohlberg’s (1984) work have conceptualized moral judgment as a function of three moral schemas each corresponding to different moral stages. The three schemas are personal interest schema (PIS), maintaining norms schema (MNS), and the post conventional schema (PCS) (Rest, Narvaez, Bebeau, & Thoma, 1999). The PIS corresponds well with Kohlberg’s Stages 2 and 3 and reflects pre-sociocentric reasoning wherein decisions are justified based on consequences to the self and concerns for individuals with whom the individual has an affectionate relationship. MNS corresponds to Kohlberg’s Stage 4 and reflects a desire to support social order wherein decisions are justified as functioning within the norm and laws of society. In MNS, then, behaviors that support only individual personal interests are seen as irresponsible in that they may potentially lead to anarchy and social chaos. The third schema, PCS, is similar to Kohlberg’s Stages 5 and 6 and reflects a belief in reciprocal moral obligations that are based on shared ideals which work to promote the greatest good for all as well as basic rights and protections for everyone. Moreover, revisions of the original DIT, known as DIT2, has been developed which includes 5 moral dilemmas. DIT2 is able to yield scores not only for each of
the schema, but also a more precise index of overall moral reasoning than that previously
provided by either the P and D scores, known as N2 (Rest, Narvaez, Thoma, & Bebeau, 1999).

Logsdon et al. (1994) first examined the relationship between moral judgment and
college students’ and executives’ attitudes towards software piracy using DIT1. Results showed
no correlation between respondents’ P scores and attitude toward copying software, and there
was only a weak relationship between respondents’ D scores and attitude toward copying
software (r = .11, p < .05). Furthermore, the overall score of attitudes toward using pirated
products also indicated university students had a high level of tolerance for digital piracy. The
dissociation between P and D scores and participants’ attitudes towards digital piracy, as well
as their apparent high level of tolerance for digital piracy, led researchers to conclude use of
moral dilemmas specifically designed to assess digital piracy might be more effective than those
designed to assess more general moral issues, such as those included in DIT1.

Al-Rafee and Cronan (2006) conducted a similar study using DIT1 and other variables to
explain participants’ attitudes toward pirating digital materials. Results also indicated moral
judgment was not a significant predictor of participants’ attitudes toward digital piracy, with a
weak regression coefficient (β = -.04). The weak relationship again indicated the original DIT1
may not be an optimal measure for assessing moral judgment related specifically to digital
piracy.

Rest, Narvaez, Thoma, and Bebeau (1999) maintain there is nothing “magical” about the
DIT dilemmas and have suggested the possibility of experimenting with new dilemmas that may
be more “profession-specific” (p. 657). It appears, then, that in order to better explore
relationships between moral judgment and attitudes, intentions and behaviors toward digital
piracy, research scenarios assessing moral reasoning using dilemmas specifically focused on
issues regarding digital piracy might be necessary to use.

Previous research in the field of digital piracy has also explored aspects of attitudes
toward committing digital piracy (Bonner & O’Higgins, 2010; Chan, Ma & Wong, 2013),
intention to commit digital piracy (Cronan & Al-Rafee, 2008; Moores & Chang, 2006) and actual
behaviors or acts of digital piracy (Al-Rafee & Dashti, 2012; Lyonski & Durvasula, 2008). These
three variables are generated from the TRA or the TPB, and both theories are used to explain
an individual’s behavior within a specific context (Ajzen, 1991; Fishbein & Ajzen, 1975). The
TRA and TPB both proposed behavior is determined by the intention of committing the
behavior, while intention is, in turn, determined by attitudes (Ajzen, 1991). While previous
studies using DIT1 have indicated a weak relationship between moral judgment and attitudes
toward digital piracy, none have investigated the relationship between moral judgment and
intention to engage in acts of digital piracy as well as moral judgment and actual behavior (Al-
Rafee & Cronan, 2006; Logsdon et al., 1994). Consequently, in order to obtain more
comprehensive information regarding how moral judgment influences participants’ reasoning
and behavior regarding digital piracy, all three (i.e., attitude, intention and behavior) were
included in this study as dependent variables. Furthermore, the relationships between the
three dependent variables indicated by the TRA and TPB will also be examined.

Research Questions

Based on the above discussion, DP-DIT was developed specifically to assess moral
judgment regarding digital piracy. Modeled after the original DIT (DIT1) (Rest, 1986), the DP-
DIT consists of three moral dilemmas and 12 accompanying issue statements. The following research questions are proposed for this study:

Question 1: What is the reliability of DP-DIT scores?

Question 2: How well does a short version of DIT2 predict attitude, intention and behavior related to digital piracy (when considering the relationships between the dependent variables)?

Question 3: How well does DP-DIT predict attitude, intention and behavior of digital piracy (when considering the relationships between the dependent variables)?

Methods

Participants

Participants in this study were students enrolled at a large metropolitan university in northern Texas. The target university had an enrollment of more than 34,000 students, among which 52.9% were females and 47.1% were males; mean age of all participants was 24.22 years. Race/ethnicities of this population were as follows: 51.8% Caucasian, 19.6% Hispanic, 5.4% Asian, 12.5% African American and 10.9% other. As for educational level, 81.2% of the participants were undergraduate students, 18.7% were graduate students and .13% were specific professionals. The final sample for the study included 275 participants, 74.5% of whom were females; mean age of all participants was 22.18 years (SD = 6.02). Race/ethnicities of participants were as follows: 55.3% Caucasian, 13.8% Hispanic, 10.9% Asian, 8.7% African American and 11.4% other. As for educational level, 93.8% of the participants were undergraduates, with an approximately equal distribution of participants across classification (i.e., freshman, sophomore, junior, and senior). Only 6.2% were graduate students. With
regards to political views, 41.9% self-reported being liberal, 32.0% self-reported as neutral and 26.2% self-reported as conservative. Approximately 90% of the participants were U.S. citizens, and their primary language was English.

**Instruments**

The order of the questionnaires used in the present study was as follows: a 3-story version of DIT2 (herein after referred to as DIT2-short); the DP-DIT, a questionnaire to assess Attitude, Intention, Behavior; and a demographic questionnaire (see Appendix D Questionnaires for details).

*The DIT2-short*

The full version of DIT2 (Bebeau & Thoma, 2003) is a standard questionnaire consisting of six stories containing a moral dilemma and a series of 12 issue statements related to each. Participants are asked to read each moral dilemma then mark the importance of the accompanying issue statements to their decision regarding each dilemma. Finally, participants are asked to rank the top four most important issue statements related to their decision for each dilemma. Scoring for DIT2 is completed at the Center for the Study of Ethical Development (i.e., Center) at the University of Alabama and yields scores for N2 as well as the three schema (i.e., PIS, MNS, PCS).

Validity for DIT2 has been assessed using seven criteria in more than 400 published manuscripts, and the developers of the instrument report Cronbach alphas for N2 in the upper .70s/low .80s (Rest, Narvaez, Thoma, & Bebeau, 1999). Reliability estimates for the schema scores using stratified random samples have yielded alpha coefficients of .61 for PIS (n = 272) and .73 and .74 for MNS and PCS, respectively, each using a sample of 244 (Bebeau & Thoma,
In addition to the 6-story version of DIT2, the Center also provides researchers the option of using only three of the stories in order to create a shorter version (DIT2-short) as an experimental option. Due to the length of the total questionnaire used in this study, a shorter version of DIT2 was utilized which included the DIT2 dilemmas of Famine, Reporter, and Cancer. Analyses at the Center focused on these stories and using college-aged samples has yielded reliabilities in the upper .60s for N2 (S. J. Thoma, personal communication to R. G. Glover, April 21, 2015). Alpha coefficients for DIT2-short N2, PIS, MNS, and PCS for this sample were .45, .30, .34, and .44, respectively.

The DP-DIT

As previously indicated the DP-DIT was developed using three dilemmas contained in DIT1. Following examples of digital piracy assessed by Morris and Higgins (2009) and Altschuller and Benbunan-Fich (2009), I developed moral dilemmas specific to software piracy (i.e., Jack’s Software, patterned after DIT1 Escaped Prisoner) and music piracy (i.e., Jim’s Gift, patterned after DIT1 Doctor’s Dilemma), respectively. A third dilemma was developed to assess eBook Piracy (i.e., Brandon and the eBook, patterned after DIT1 Heinz and the Drug). The 12 issue statements following each scenario were developed based on 1) theoretical foundation for the question statement; and 2) matching stage information with the corresponding DIT1 stories. The three DP-DIT stories were then sent to the Center for the Study of Ethical Development and feedback from the Center was incorporated into the final version of each dilemma. Alpha coefficients for DP-DIT N2, PIS, MNS, and PCS for this sample were .39, .48, .48, and .31, respectively.
**Attitude, Intention, Behavior**

Participants’ attitudes, intentions and behaviors regarding digital piracy were assessed following the TPB model. Attitude referred to the participants’ overall positive or negative view towards digital piracy. Participants were asked to indicate their opinion regarding four statements adapted from Cronan and Al-Rafee (2008) and Fishbein and Ajzen (1975). The statements included “Overall, my attitude towards using unauthorized digital material is: ___” (favorable/unfavorable (Item1); harmful/beneficial (Item 2); foolish/wise (Item 3); good/bad (Item 4). All items were scored on a 7-point Likert scale. “1” indicates most agreement with the statement on one side of the scale (e.g., favorable); “7” indicated most agreement with the statement on the other side of the scale (e.g., unfavorable), and “4” indicated “in the middle” of the scale (see Appendix D Questionnaires, Section 2, Question 1). Items 1 and 4 were reverse coded; higher scores indicated a more favorable attitude towards digital piracy. Cronbach’s α for attitude questionnaire was .908 in a previous study by Cronan and Al-Rafee (2008). Cronbach’s α for the attitude questionnaire used in the current study was .882.

Intention to commit digital piracy was defined as an individual’s willingness of using pirated digital products in the near future. It was measured by three items adapted from Cronan and Al-Rafee (2008) and Madden, Ellen, and Ajzen (1992). The three questions were (1) “I intend to use unauthorized digital content in the near future” (definitely do/definitely do not), (2) “I will try to use unauthorized digital material in the near future” (definitely /definitely will not), and (3) “I will make an effort to use unauthorized digital content in the near future” (definitely true/definitely false). All the items were measured on a 7-point Likert scale similar to those assessing attitude. All items were reverse coded so that higher scores indicated greater
intention to engage in digital piracy. Cronbach’s α for intention of digital piracy was .979 in a previous study by Cronan and Al-Rafee (2008). Cronbach’s α for the intention questionnaire used in the current study was .943.

Finally, behavior related to digital piracy referred to the amount of digital piracy behavior in which an individual had engaged in the past. It was measured by three items asking, “In the past three months, what percentage of [the software/eBook/music] that you use is unauthorized?” Here, participants were required to estimate the percentage of these materials (i.e., software, eBooks, music) they had used within the past three months that were pirated. Cronbach’s α for the behavior questionnaire was .607 in the current study.

Demographic Variables

Demographic information was also gathered regarding gender, age, ethnicity, education level, political identify, primary language, and citizenship.

Procedures

Following approval by the university’s Institutional Review Board (IRB), participants were recruited in one of four ways: (1) via an e-mail invitation sent directly to all students enrolled at the target university; (2) through announcements made in courses offered at the target university; (3) via flyers posted around the university campus; and (4) via my personal contacts through e-mails to friends and colleagues at the target university. All data were collected online, and participants were invited to enter their name in a raffle for a $100 Amazon gift card. Some participants who had been recruited from individual classes also had the opportunity to receive extra credit, depending on their instructors’ preferences.

Initially, 394 participants were identified through the four methods of recruitment. The
majority of the participants responded to the email invitation to all enrolled university students \((N = 282)\), resulting in a response rate of approximately .95%. Approximately 70-90 participants were recruited through announcements in 10 classes. Flyers recruited approximately 10 additional participants, and my personal requests resulting in approximately 17 additional participants. Among the total 394 responses, 27 were incomplete responses and were moved from further analysis, leaving a sample size of 367.

Rest, Thoma, Narvaez and Bebeau (1997) have indicated the three-story short form of DIT1 “takes about 30-40 min to complete, whereas the regular six-story form takes about 45-55 min to complete” (p. 500). The complete survey utilized in this study included six dilemmas (three in DIT2-short and three in DP-DIT) as well as additional items designed to assess the attitude, intention, and behavior related to digital piracy (see Appendix D Questionnaires for details). Prior to the beginning of data collection, I completed the full survey in order to determine an estimation of the length of time required to complete all the items and found 28 minutes were needed to complete the questionnaire. Based on my personal experience and the estimates regarding completion time cited by Rest et al. (1997) above, it was assumed participants in this study would require a minimum of 45-55 minutes to complete the full survey.

Following data collection, the 367 participants were ordered by the amount of time they utilized to complete the questionnaire and categorized into two groups. Group A \((n = 73; 19.9 \% \text{ of the participants})\) completed the full survey in less than 20 minutes; Group B \((n = 294; 80.1\% \text{ of the participants})\) completed the full survey in 20 minutes or more. Demographics for Group A indicated 56.2\% were female with a mean age of 20.86 years \((SD = 2.95)\).
Race/ethnicities of these participants were as follows: 47.9% Caucasian, 19.2% Hispanic, 16.4% Asian, 8.2% African American and 8.2% other. All participants categorized into Group A were undergraduate students, and the distribution of participants across classification was 20.5% freshmen, 20.5% sophomores, 32.9% juniors, and 26.0% seniors. With regard to political views, 41.1% self-reported as liberal, 37.0% self-reported as neutral, and 21.9% self-reported as conservative. Approximately 94.5% of the participants were US citizens, and 87.7% of the participants indicated their primary language was English.

Demographics for Group B indicated 73.8% were female with a mean age of 22.07 years (SD = 5.89; three did not reported year of birth). Race/ethnicities of these participants were as follows: 53.7% Caucasian, 15.0% Hispanic, 10.9% Asian, 9.9% African American, 1% American Indian/Other Native American and 9.2% other. For Group B, 93.5% of the participants were undergraduate students, and the distribution of participants across classification was 27.2% freshmen, 22.8% sophomores, 23.8% juniors, and 19.7% seniors. The remaining 6.5% of these participants were graduates students or indicated they had a professional degree or other form educational experience. With regard to political views, 42.2% self-reported as liberal, 31.6% self-reported as neutral, and 26.2% self-reported as conservative. Approximately 90.5% of the participants were US citizens, and 89.5% of the participants indicated their primary language was English.

Despite the lack of differences in participants as described above, I was concerned about the brevity of time to complete the full survey utilized by participants in Group A. Consequently, I decided to remove from the sample all 73 participants in Group A and utilize only responses from 294 the participants categorized into Group B.
Data Analysis

Both IBM SPSS Statistics 22 (descriptive analysis, correlation and internal consistency) and LISREL 8.80 (structural equation modeling) were used to analyze the data. Before testing the SEM models, data were screened for missing values and multivariate normality. Missing data were imputed with multiple imputation. The result indicated the assumption of multivariate normality was not met. Additionally, because there were ordinal variables in the data, asymptotic correlation matrix (ACM) and polychoric correlation matrix (PCM) were used to generate the covariance matrix (Jöreskog, 1994).

Results

Descriptive Analysis

The DIT2 contains four checks designed to ensure reliability of index scores (Bebeau & Thoma, 2003): random responding (i.e., rate-rank inconsistency), missing data, alien test-taking sets (i.e., picking an item for style rather than meaning; in this situation responses with weighted ranks on the Meaningless items of more than 10 are invalidated), and nondiscrimination of items. Similar criteria were used for both the DIT2-short and the DP-DIT. Among the participants categorized in Group B (see above) \((N = 294)\), 282 (95.9\%) passed the reliability checks included in the DIT2-short, 283 (96.3\%) passed the reliability checks for DP-DIT, and 275 (93.5\%) passed reliability checks for both questionnaires. A very small percentage of demographic data was missing (0.38\%); the missing pattern analysis indicated these data were missing at random.

Research Question 1: What is the Reliability of DP-DIT Scores?

Cronbach’s alpha for DP-DIT was .39, which was below the acceptable range of .60
suggested by Cronbach (2004). Further analyses indicated the Music Piracy story (i.e., Jim’s Gift) was statistically significantly ($p < .01$) related to the Software Piracy story (Jack’s Software) ($r = .194$), but not the eBooks Piracy story (Brandon and the eBook), $r = .043$ ($p > .05$). When the Music piracy story was dropped from analysis, the value of Cronbach alpha increased to .53, still below the acceptable range of .60. Rest, Narvaez, Thoma, and Bebeau (1999) have argued the unit of internal reliability for DIT2 is at the story level rather than the item level; consequently, the limited number of stories here ($n = 3$) may be a restriction for the value of Cronbach’s alpha.

Research Questions 2 and 3

Research Questions 2 and 3 were analyzed simultaneously using structural equation modeling. In order to compare the predictive ability of both the DIT2-short and DP-DIT, the PIS, MNS, and PCS schema scores as well as N2 were entered into the different SEM models to compare how well each moral judgment index predicted the attitude, intention and behavior towards digital piracy. Overall, four SEM models were examined. For each model, data analysis was carried out by referring to the two stage methodology of SEM (Anderson & Gerbing, 1988).

To determine model fit, the following indices were examined for both the measurement and the structural model: 1) the root mean square error of approximation (RMSEA); 2) the comparative fit index (CFI); 3) standardized root mean residual (SRMR); 4) goodness-of-fit index (GFI); 5) non-normed fit index (NNFI) (Schreiber, Nora, Stage, Barlow, & King, 2006). Values of RMSEA ≤ .05, SRMR ≤ .08, CFI ≥ .95, GFI ≥ .95, NNFI ≥ .95 were viewed as indicators of good model fit, whereas .05 ≤ RMSEA ≤ .08 was viewed as adequate model fit (Hu & Bentler, 1999; Schreiber et al., 2005). A parameter estimate t value greater than ± 1.96 was considered
a significant model path at $p = .05$, whereas a parameter estimate $t$ value greater than $\pm 2.56$
was considered a significant model path at $p = .01$ (Hoyle, 1995; Kline, 2011).

The correlation matrix of the latent variables is presented in Table 1. As can be seen
from the table, both PIS and MNS from DIT2-short and DP-DIT were statistically significantly
correlated with attitudes towards digital piracy. Both MNS and PCS from DIT2-short and DP-DIT
were statistically significantly correlated with intention to engage in digital piracy as well as
DIT2-short N2 and DP-DIT PIS. Finally, while none of the DIT-2 short indices were statistically
significantly correlated with digital piracy behavior, DP-DIT PIS, MNS and PCS were all
statistically significantly correlated with digital piracy behavior. Importantly, all the statistically
significant correlations between DIT2-short and DP-DIT MNS and attitude, intention and
behavior regarding digital piracy were negative; all remaining statistically significant
relationships between the DIT2-short and DP-DIT indices and attitude, intention, and behavior
were positive.

Table 1

*Correlation Matrix of the Latent Variables*

<table>
<thead>
<tr>
<th>Variable</th>
<th>PIS</th>
<th>MNS</th>
<th>PCS</th>
<th>N2</th>
<th>PIS</th>
<th>MNS</th>
<th>PCS</th>
<th>N2</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATT</td>
<td>.201**</td>
<td>-.199**</td>
<td>-.020</td>
<td>-.069</td>
<td>.312**</td>
<td>-.447**</td>
<td>.148</td>
<td>-.060</td>
</tr>
<tr>
<td>INT</td>
<td>.063</td>
<td>-.283**</td>
<td>.160*</td>
<td>.124*</td>
<td>.254**</td>
<td>-.425**</td>
<td>.220**</td>
<td>.044</td>
</tr>
<tr>
<td>BHA</td>
<td>.003</td>
<td>-.098</td>
<td>.079</td>
<td>.070</td>
<td>.241**</td>
<td>-.315**</td>
<td>.108*</td>
<td>-.016</td>
</tr>
</tbody>
</table>

*Note.  * $p < .05$ (2-tailed), ** $p < .01$ (2-tailed).*
Measurement Model

A CFA was conducted to test the measurement model with the latent variables of Attitude, Intention and Behavior. The initial model did not fit the data very well (RMSEA=.097; 90% CI: .078-.112). However, when the errors of items of the same latent variables were correlated, the model fitted the data better (See Figure 1; $\chi^2(28) = 74.51; p < .00001$; Satorra - Bentler scaled $\chi^2(28) = 74.73; \text{RMSEA} = .078$ (90% CI: .057-.10); CFI = .98; SRMR = .043; GFI = .95; NNFI = .98).

![Figure 1. The modified measurement model.](image)
The correlations of these items were mainly based on the meanings of these items (Schumacker & Lomax, 2012). ATT1 (i.e., “Overall, my attitude towards using unauthorized digital material is favorable/unfavorable”) and ATT3 (i.e., “Overall, my attitude towards using unauthorized digital material is wise/foolish”) were statistically significantly ($p < .05$) correlated. ATT2 (i.e., “Overall, my attitude towards using unauthorized digital material is beneficial/harmful”) and ATT4 (i.e., “Overall, my attitude towards using unauthorized digital material is good/bad”) were not statistically significantly ($p > .05$) correlated. INT2 (i.e., “I will try to use unauthorized digital material in the near future”) and INT3 (i.e., “I will make an effort to use unauthorized digital content in the near future”) were statistically significantly ($p < .05$) correlated. BHA1 (i.e., “In the past three months, what percentage of the software that you use is unauthorized?” _ %) and BHA2 (i.e., “In the past three months, what percentage of the e-books that you use is unauthorized?” _ %) were statistically significantly ($p < .05$) correlated. In that the modified measurement model fit the data well, the four structural models were analyzed.

**Structural Models**

The first model examined how well the PIS from both DIT2-short and DP-DIT predicted attitude (ATT), intention (INT), and behavior (BHA) regarding digital piracy when considering the relationships between ATT, INT and BHA (Figure 2). The model fit indices indicated the model for PIS fit the data adequately ($\chi^2 (43) = 95.25, p < .00001$; Satorra-Bentler scaled $\chi^2 (43) = 95.63$; RMSEA = .067(95% CI: .049-.085); CFI = .98; SRMR = .042; GFI = .95; NNFI = .97). Overall the model explained 44.1% of the variance in digital piracy intention and 43.3 % of the variance in digital
piracy behavior. As for the two PIS indictors, only the DP-DIT PIS was a positive significant predictor of digital piracy attitude, with the standard path coefficient .28.

Figure 2. SEM model for PIS. $R^2 = .109$ (ATT), $R^2 = .441$ (INT), $R^2 = .433$ (BHA); *$t > \pm 1.96$, **$t > \pm 2.56$.

The second model examined how well MNS from both DIT2-short and DP-DIT predicted attitude (ATT), intention (INT) and behavior (BHA) regarding digital piracy when considering the relationships between ATT, INT and BHA (Figure 3). Model fit indices also showed the model for MNS also fit the data adequately ($\chi^2$ (43) = 84.84, $p = .00015$; Satorra-Bentler scaled $\chi^2$ (43) = 84.59, $p = .00016$; RMSEA = .059 (CI: .040-.078); CFI = .98; SRMR = .040; GFI = .95; NNFI = .98).
Overall, the model explained 46.4% of the variance in digital piracy intention and 43.3% of the variance in digital piracy behavior. As for the two MNS indictors, only DP-DIT MNS was a significant negative predictor of digital piracy attitude, explaining about 20.2% of the variance in digital piracy attitude. Both DIT2-short MNS (with the standard path coefficient -.13) and DP-DIT MNS (with the standard path coefficient -.12) were significant negative predictors of digital piracy intention, but the path coefficients were very small.

Figure 3. SEM model for MNS. $R^2 = .202$ (ATT), $R^2 = .464$ (INT), $R^2 = .433$ (BHA); *$t > ± 1.96$, **$t > ± 2.56$. 
A third model examined the ability of DIT2-short and DP-DIT PCS to predict attitude (ATT), intention (INT) and behavior (BHA) regarding digital piracy when considering the relationships between ATT, INT and BHA (Figure 4). The model fit the data adequately ($\chi^2 (43) = 100.50, p < .00001$; Satorra-Bentler scaled $\chi^2 (43) = 101.38, p < .00001$; RMSEA = .070 (CI: 0.053-0.088); CFI = .98; SRMR = .044; GFI = .94; NNFI = .97).

![Figure 4. SEM model for PCS. $R^2 = .029$ (ATT), $R^2 = .461$ (INT), $R^2 = .420$ (BHA); **t > ± 2.56.](image)

Overall, the model for PCS explained 46.1% of the variance in digital piracy intention and 42.0% of the variance in digital piracy behavior. DP-DIT PCS was a positive significant predictor
of digital piracy attitude (with the standard path coefficient .18), and the DIT2-short PCS was a positive significant predictor of digital piracy intention (with the standard path coefficient .15).

A final model examined how well DIT2-short N2 and DP-DIT N2 predicted attitude (ATT), intention (INT) and behavior (BHA) regarding digital piracy when considering the relationships between ATT, INT and BHA (see Figure 5). The model fit the data adequately ($\chi^2 (43) = 109.27$, $p < .00001$; Satorra-Bentler scaled $\chi^2 (43) = 109.15$; RMSEA = .075 (CI: 0.058-0.093); CFI = .98; SRMR = .045; GFI = .94; NNFI = .96).

![Figure 5. SEM model for N2. $R^2 = .006$ (ATT), $R^2 = .458$ (INT), $R^2 = .417$ (BHA); **$t > \pm 2.56$.](image)
Overall the model for N2 explained 45.8% the variance in digital piracy intention and 41.7% of the variance in digital piracy behavior. Neither DIT2-short N2 nor DP-DIT N2 functioned as significant predictors for digital piracy attitude and behavior, and only DIT2-short N2 was a significant positive predictor for intention with a standard path coefficient .16.

In summary, results demonstrated that neither the moral schema nor N2 from DIT2-short or DP-DIT were significant predictors of behavior regarding digital piracy. However, DP-DIT PIS, MNS, and PCS all functioned as statistically significant predictors of attitude, while only DP-DIT MNS statistically significantly predicted intention. In addition, while none of the DIT2-short moral schema significantly predicted attitude, DIT2-short MNS, PCS, and N2 were all statistically significant predictors of digital piracy intention, although the path coefficients were very small and explained only 2-3% of variance in the different models. Overall, the DP-DIT appeared to have better predictive ability related to attitudes toward, intention to commit and behavior towards digital piracy than did the DIT2-short.

Discussion

The overall findings from this study can be summarized as follows:

Did DP-DIT generate reliable scores? This was not confirmed. In this study, the DIT2-short was selected as a reference questionnaire. However, the reliability of DIT-short N2 is not ideal. Bebeau and Thoma (2003) have indicated DIT2 has not been tested sufficiently using a standard short version; nevertheless, they have provided researchers the option of using any subset of stories from the DIT2 and are able to provide PIS, MNS, PCS and N2 scores for any subset of stories researchers select. Since the present study included several questionnaires and the full version DIT2 is very time consuming to complete, it was necessary to consider the
fatigue effect when using the full version of DIT2, much as Doyle, Frecknall-Hughes, and Summers (2009) addressed. Therefore, relying on a short version of DIT2 may have compromised the results here. However, it would be anticipated that research using the full 5-story version of DIT2 would result in increased reliability. The same would be expected if additional stories were created for inclusion in a longer version of DP-DIT.

Did DIT2-short and DP-DIT predict attitude, intention and behavior regarding digital piracy (when considering the relationships between the dependent variables)? Overall, the DP-DIT served to predict attitude related to digital piracy better than the DIT2-short (i.e., standard path coefficients of .28, -.43, and .18 across the PIS, MNS, and PCS models, respectively). Although DIT2-short appeared to better predict intention than did DP-DIT, the standard path coefficients in the MNS model were essentially equal in value. Furthermore, the statistically significant path coefficients in the PCS and N2 models were also very similar in values at .15 and .16, respectively. Based on these small path coefficient values, the DIT2-short appeared to have only a very weak advantage in predicting intention than did DP-DIT. In addition, the correlation matrix between latent variables (see Table 1) also did not indicate a significant advantage for DIT2-short over DP-DIT in predicting intention to engage in digital piracy. Finally, neither the DIT2-short nor DP-DIT proved to significantly predict behavior. In summary, based on findings related particularly to the ability of DP-DIT to predict attitude towards digital piracy, especially use of DP-DIT MNS, DP-DIT may be a better questionnaire for examining attitude, intention and behavior regarding digital piracy than DIT2-short, when considering the correlations among the dependent variables.

More specifically, all the schema indices of the DP-DIT proved to be significant
predictors for attitude across the SEM models, particularly MNS. Worthy of note is that while both the DP-DIT PIS and PCS were positively correlated with attitude, DP-DIT MNS was negatively correlated with attitude toward digital piracy (in both simple correlation and in the SEM models).

In that the PIS schema focuses on individual concerns and interpersonal relationships (Rest, Narvaez, Bebeau & Thoma, 1999), the positive relationship between DP-DIT PIS and attitude demonstrated by this data seems reasonable. Research by Nissenbaum (1995) supports this with findings that some individuals viewed providing pirated copies of software as “an act of generosity, helping satisfy a friend’s need” (p.209). Additionally, Stallman (1995) found those who did not share free software with friends are viewed as “bad neighbors” (p. 193). This is also consistent with Higgins’ (2005) findings that peer influence was related to attitudes toward digital piracy and those of Smallridge (2012) who maintained that the closer the relationship an individual had with his/her association group members, the larger the influence those group members had on the individual’s willingness to engage in digital piracy using hypothetical scenarios.

However, results from this study also indicated reasoning reflecting PCS was also positively related to attitudes favorable toward digital piracy. This may indicate that individuals reasoning at the more morally advanced schema view social laws against digital piracy as working against the common good and individual rights. Consistent with this, Nissenbaum (1995) argued digital piracy was not always wrong, claiming laws against such acts overemphasized the copyright holder’s rights while ignoring those of the consumer. Moreover, she contended it was not the law that should matter most, but the moral principles on which
the laws were based, meaning loss of income to makers of digital products should be secondary to the overall well-being of a society. This was supported in Yu’s (2012) mixed methods study by the comments of one participant, “… Not everyone is rich. Some poor people would appreciate the free stuff, like music, movies, or that (computer software). It is a way of living.” (p. 367). Konstantakis, Palaigeorgiou, Siozos, and Tsoukalas (2010) indicated only five of 56 students in their study thought the prices of computer software were fair, concluding the overpricing of computer software combined with the limited financial means of students served as a potential justification for students to support digital piracy.

Results from the current study using DP-DIT indicated the more individuals here demonstrated moral reasoning in support of social order and obedience to laws, the less favorable were their attitudes towards digital piracy. DP-DIT MNS was especially a significant predictor of digital piracy attitude, explaining approximately 20% of the variance. This is consistent with findings of Siponen and Vartianen (2004) who found that in 14 of 17 studies individuals expressed attitudes that unauthorized copying was wrong simply because it was against the law and, therefore, not supportive of social order.

**Conclusion and Implications**

The purpose of this study was to create a reliable instrument (i.e., DP-DIT) modeled after the DIT designed to assess moral judgment regarding digital piracy as well as to examine and compare the ability of both DP-DIT and DIT2-short to predict attitudes, intentions and behaviors regarding digital piracy. The initial exploration using both these questionnaires indicated the reliability of both the DIT2-short and the DP-DIT were discounted, quite likely due to the small number of stories contained in each. As for the predictive ability of both
questionnaires, use of DP-DIT appeared to be more optimal due to its advantage in predicting attitude toward digital piracy, especially using DP-DIT MNS. However, even though DP-DIT MNS was the strongest predictor of digital piracy attitude in this study, the variance it explained was still limited.

In general, research evidence has suggested that in terms of attitudes there exists an absence of strong social norms against digital piracy (Hill, 2007). For instance, Konstantakis et al. (2010) found that even though computer science students admitted their software piracy behavior was “wrong,” they continued to discount such behaviors. Furthermore, they viewed software copyright laws as inapplicable and unrealistic, not functioning to protect intellectual property rights.

The overall findings of this study might reflect Yu’s (2012) observation that as technology enables more and more sharing of copyrighted digital products, the temptation of using “free stuffs” may be greater than the restriction of obeying the copyright laws. The discrepancy between legalities and realities may be resolved either by revising the legal framework or adapting new business models (Altschuller & Benbunan-Fich, 2009).

As for revising the legal framework, it might be argued that applying heavy punishment to those who utilize pirated digital products may help to reduce such behaviors, especially among individuals whose moral judgment is more characteristic of the Personal Interest Schema. For instance, counterfeiters in the U.S. may be fined as much as $2 million and sentenced to 10 years in prison for their first offense. However in China, not only are counterfeiters less likely to be arrested, even when convicted their punishment is a fine of
$1,000 (Peng, 2006). This might explain why rates of digital piracy in China are much higher than in the U.S. (Hill, 2007).

As for adapting new business models, addressing consumers’ demands to make more legally produced digital products available online as well as selling digital products at more reasonable costs may also work to reduce acts of digital piracy. For instance, Koh, Murthi and Raghunathan (2014) pointed out that providing legal channels for making digital music available could promote the consumption of legally produced digital music as well as reduce the negative effect online music piracy brought to physical music sales. In fact, Cox (2015) has suggested those who engage in digital piracy might be willing to legally obtain digital products if costs were more reasonable, citing the popularity of Spotify and Netflix as good indicators.

Limitations and Future Directions

One limitation of the current study was the decision of me to eliminate from analyses any participant who completed the survey questionnaire in less than 20 minutes, referred to previously as Group A. Eventual review of the data generated by this group (N = 73) indicated that 60 (82.2%) passed the reliability checks included in the DIT2-short, 63 (86.3%) passed the reliability checks for DP-DIT, and 55 (75.3%) passed reliability checks for both questionnaires and could have been included in the analyses. Though I was concerned about the brevity of time participants in Group A used to complete the full survey, the decision to eliminate this data from analysis was entirely subjective. Inclusion of this additional data would have increased the sample utilized in analyses from 275 to 330 and might have resulted in different findings.
Another limitation for this study was the small number of stories included in both the DIT2-short and DP-DIT. In addition, the specific stories chosen for inclusion in DIT2-short may have affected the results. While a standard short, 3-story version for DIT1 exists with established reliability (Rest, 1986), a standard short, 3-story version of DIT2 has not been established. When working with such a limited number of stories, choosing the most appropriate and valid combination of stories can be very important.

Though this study did find significant relationships related to attitudes towards digital piracy, with approximately 20% of the variance in attitude being explained by DP MNS, it is important to note the definition of attitudes varies across studies (Aleassa, Pearson, & McClurg, 2011; Al-Rafee & Cronan, 2006; Bonner & O’Higgins, 2010). In this study, attitude was defined as a general perspective (either positive or negative) toward digital piracy. In that attitude may be the aspect of digital piracy most related to moral judgment, use of a consistent definition might enhance the ability for future research to explain even greater amounts of variance. In addition, further work is needed to explore and conclude the ability of DP-DIT to predict intention and behavior regarding digital piracy.

A fourth limitation of this study was that the sample did not represent the broader population of the target university as follows. 1) The population of the target university had a comparatively balanced gender ratio (i.e., 52.9% of females), whereas the sample used in this study had a much higher ratio of females (i.e., 73.8%). 2) The target university reported that 81.2% of its students were undergraduates with an average age of 24.22 years, while 93.5% of the sample utilized in this study was undergraduate students with an average age of 22.07 years). 3) As for the distribution of ethnicities, the sample used in the study better matched the
population of the target university in terms of the percentage of Caucasian students (both were approximately 50%) and African American students (both were approximately 10%). However, the sample used in this study reflected a lower percentage of Hispanic participants (15.0%) than that of the target university (19.6%) and a higher percentage of Asian participants (10.9% vs. 5.4%, respectively). In future research, specific incentives may be provided to attract more male participants, graduate students and Hispanic students’ for inclusion.

Investigators doing research related to digital piracy have cited the need for more innovative methods for research design and data collection (Brown, 2014). Although developing context-specific questionnaires to investigate moral judgment related to specific situations was not a new idea (see Fisher, 1997), extending this line of research to include attitude, intention, and behavior regarding digital piracy was unprecedented. Therefore, this study should be viewed not as an endpoint, but instead as a first and exploratory step. Further research to improve reliability and validity of DP-DIT is warranted. Future research should work to include additional DP-DIT and/or DIT2 stories, if possible, or, in the alternative, utilization of DIT2 stories with internal high correlations. Future research might also include participants whose level of education and age are more diverse in order to better assess the validity of the DP-DIT (Rest, Narvaez, Thoma, & BeBeau, 1999). Finally, longitudinal study should be undertaken in order to explore how participants’ reasoning about digital piracy might change over time (Brown, 2014).

References


Cox, J. (2015, July 12). *Online pirates may be willing to pay-if the price is right.* Retrieved from http://eprints.port.ac.uk/16296/


APPENDIX A

EXTENDED LITERATURE REVIEW
Digital piracy is a global phenomenon that involves the illegal behavior of copying digital products, including software, books, documents, audio and videotapes without permission from the person who possesses the copyright (Yu, 2013). Hundreds of studies have investigated people’s attitudes, intentions and behavior regarding digital piracy. Each year, billions of dollars are lost due to digital piracy in the creative industry (Yu, 2013). Researchers from various fields have explored issues related to digital piracy (i.e., education, psychology, marketing, criminal analysis and business ethics, etc.), and each has proposed different explanations for the decision-making and behaviors related to digital piracy (Goode, 2012; Yoon, 2011). While some studies have focused on individual or behavioral factors related to decision-making (e.g., emotion, self–control, religious beliefs, peers associations, computer skills, and perceived risk/fear of punishment), others have explored theoretical models using the theory of reasoned action (TRA) or theory of planned behavior (TPB), the neutralization theory, and theories related to ethical reasoning (Siponen, Vance, & Willison, 2012). Findings with particular emphasis on research related to ethical or moral reasoning will be reviewed here, and existing studies on TRA or TPB will also be briefly reviewed here.

Literature Review

Digital piracy may be classified into one of two general types. One is commercial piracy, which means using pirated products to make profits; the other is end-user piracy, which using pirated products for personal use without making commercial profits from them (Belleflamme & Peitz, 2010). In this study, the focus is on end-user piracy.

One of the foremost issues related to digital piracy is understanding the ethical stance of those who commit end-user piracy (Gray, 2012). Toward this end, research have
investigated relationship between digital piracy and moral recognition (Wu & Yang, 2013), moral intention (Wu & Yang, 2013), morality intensity (Kini, Ramakrishna, & Vijayaraman, 2004; Kos Koklic, Bajde, Culiberg, & Vida, 2012; Tan, 2002; Wu & Yang, 2013), moral belief (Higgins, 2005; Siponen et al., 2012), moral obligation (Cronan & Al-Rafee, 2008; Setiawan & Tjiptono, 2013; Shang, Chen, & Chen, 2008; Yoon, 2011, 2012), moral judgment (Wu & Yang, 2013; Yu, 2012), moral development (Al-Rafee & Cronan, 2006; Logsdon, Thompson, & Reid, 1994), ethics position (Aleassa, Pearson, & McClurg, 2011; Bateman, Valentine, & Rittenburg, 2013). In addition, a variety of measurement test items and questions have been developed but not consistently used (Altschuller & Benbunan-Fich, 2009; Bonner & O’Higgins, 2010; Chiang & Assane, 2009; Coyle, Gould, Gupta, & Gupta, 2009; Halttunen, Makkonen, & Frank, 2010; Konstantakis, Palaigeorgiou, Siozos, & Tsoukalas, 2010; Liu & Fang, 2003; Lysonski & Durvasula, 2008; Weijters, Goedertier, & Verstreken, 2014).

This review of literature focuses primarily on the moral development perspectives of Kohlberg and Rest as these theories have been the dominant paradigms for studies in the field (Killen & Smetana, 2006). Furthermore, the Rest’s (1979) Defining Issues Test (DIT) has promoted much empirical work and will also be discussed here.

**Moral Stage Theory**

**Kohlberg’s Moral Stage Theory**

According to Kohlberg’s (1984) theory, there are primarily six stages which corresponding to three levels. Level 1 is “pre-conventional” reasoning, which is based on obedience and punishment orientation (Stage 1) and individualism and exchange (Stage 2). Level 2 is “conventional” reasoning, which is based on good interpersonal relationships (Stage
3) and maintaining the social order (Stage 4). Level 3 is “post-conventional” reasoning, which is based on social contract and individual rights (Stage 5) and universal principles (Stage 6).

Kohlberg’s theory mainly focuses on the foundation structure of a person’s moral judgment, instead of a specific decision or the content of that decision. Studies on children’s moral and social development have proposed humans’ moral reasoning focuses on welfare, fairness and rights, which involves considerations about freedom, dignity, self-worth and treatment of other people. One implication is children’s moral judgments can be differentiated across different domains of social interaction (Turiel, 1983). Another is that humans can reason and apply their moral decision-making in flexible ways in different circumstances or contexts.

Rest’s Moral Development Theory

Similar to Kohlberg, Rest (1979) proposed moral development was a cognitive and social construct based on the progressive development of self-focused reasoning of moral issues across broad social environments and social norms based on claims. Rest (1979) borrowed the basic components of Kohlberg’s approach and developed a paper-and-pencil measure to assess moral judgment (aka, the Defining Issues Test, DIT). Rest proposed an individual may simultaneously apply different types of moral reasoning rather than reason at only one or two adjacent moral stages. An individual may not use the highest level of moral reasoning he/she has achieved to date but instead use several different types of moral reasoning together, depending on his/her overall moral development level as well as the issue that needs to be judged.

Based on Kohlberg’s original interview, Rest (1979) developed DIT as an assessment to measure how an individual comes to understand and explain moral issues. The DIT is currently
the most commonly used assessment of moral reasoning, and several studies examining relationships between moral development and digital piracy have relied on the DIT. Rest (1979) incorporated the basic components of Kohlberg’s (1984) approach and developed a paper-and-pencil measure (i.e., the Defining Issues Test) to assess moral judgment. The DIT is a standard questionnaire which requires participants to first read a moral dilemma (e.g., Heinz and the Drug, see Appendix B), then evaluate how important a series of prototypic statements are in relation to their decision regarding the dilemma just read. Finally, participants are asked to rank the top four most important statements to their decision. The process is repeated for the remaining stories. These four ranked preferences are then scored to yield a percentage score of post-conventional reasoning (i.e., the P score) as well as a D score (Rest, 1994). The P score reflects the percentage of the individual’s reasoning that is based on Stages 5 and 6, while the D score represents an overall index of moral judgment that incorporates information from all stages. Rest’s original DIT (aka., DIT1) has both a short and long version; the short version contains three stories whereas the long version has six stories. Both the short and long versions can be used to yield P scores and D scores.

Revisions to Rest’s (1979) work and to DIT1 have resulted in a revised DIT (aka., DIT2). The neo-Kohlbergian theory now perceives moral judgment as a function of three schemas—the personal interest schema (PIS), maintaining norms schema (MNS), and the post conventional schema (PCS) (Rest, Narvaez, Bebeau, & Thoma, 1999). PIS includes elements of Kohlberg’s Stages 2 and 3, which are early stages and also a more primitive form of judging. MNS corresponds to Kohlberg’s Stage 4. Stage 4 has five main elements: need for norm, society-wide scope, uniform, categorical application, partial reciprocity and duty orientation.
Need for norm means normative rules are needed for each society. Society-wide scope implies an individual needs to work well with both familiar people and strangers. Uniform, categorical application refers to the idea everyone is protected by the law and needs to obey the law. Partial reciprocity refers to the need for all to obey laws, even when laws fail to benefit everyone equitably – social order is still maintained. Duty orientation claims an individual has to obey authorities in order to demonstrate respect for the social system. In the MNS there is a connection between law and social order since without law people will behave based on their own interests, leading to chaos. Under the MNS schema, no further rationale of morality is needed since obeying to the law is a basic principle of doing things.

PCS represents Kohlberg’s Stages 5 and 6. Stage 5 and 6 have four important elements, which are primacy of moral criteria, appeal to an ideal, sharable ideas and full reciprocity. Primary of moral criteria demonstrates an individual is able to view norms and laws as alterable and non-universal which serves moral purposes. Appeal to an ideal indicates individuals are not passive at the post-conventional stage; instead, they can contribute ideas and propose ways to improve the existing norms and laws. Sharable ideals require an individual to justify an act; he/she not only relies on his/her own intuition but also considers other people’s benefits. Finally, full reciprocity implies not only equal application of social norms but also that the norms themselves are not biased (Rest, Narvaez, Bebeau, & Thoma, 1999). Furthermore, the more recent DIT2 includes only five moral dilemmas and can be used to yield not only scores for each of the three schema, but a more precise index of overall moral reasoning, known as N2, than that previously provided by the P and D scores (Rest, Narvaez, Thoma, & Bebeau, 1999).
Studies on Digital Piracy Using DIT

Logsdon et al. (1994) first examined the relationship between moral judgment and attitudes toward illegally copying software among 363 American respondents (including executive, graduate and undergraduate students) using DIT1. In Logsdon et al. (1994), P scores and D scores were used as independent variables, whereas the measures of participants’ attitude towards software copying behaviors were dependent variables.

Though it was hypothesized that higher levels of moral judgment (P score) would be correlated with a lower tendency to accept and commit behaviors indicative of digital piracy, only the D score had a weak positive relationship with attitudes regarding copying software ($r = .11$, $p < .05$). There was no statistically significant correlation between respondents’ P scores and their attitude toward copying software. Further, attitude towards using pirated products indicated university students had a higher level of tolerance toward digital piracy. Results provided limited support for the hypothesis (Logsdon et al., 1994).

Al-Rafee and Cronan (2006) conducted a similar study using the DIT1 together with other factors to explain the variance of an individual’s attitude toward pirating digital materials. In this study, the 3-story short version of DIT1 was used. Attitudes toward digital piracy, the overall favorableness and unfavorableness toward piracy, was assessed by asking participants to respond to four items using a 7-point Likert scale, “Overall, my attitude toward digital piracy is [good/bad, harmful/beneficial, positive/negative, favorable/unfavorable].” Step-wise regression showed moral judgment was not a significant predictor of attitude towards digital piracy, with a weak regression coefficient ($\beta = -.04$) though the direction of the relationship was negative as predicted.
Kini et al. (2004) conducted a study to explore whether the influence of the immediate community of individuals (e.g., students, faculty, other university employees) impacted the development of moral intensity regarding software piracy in U.S. (\(N = 843\)) and Thailand students (\(N = 663\)). They used the question, “I think it is alright for me to copy commercial software because it is unlikely that I will be caught,” to address Kohlberg’s Stage 2; questions, “I think it is alright for me to use copied software if I would not buy it in any case” and “I think it is alright for me to copy commercial software if most people do it,” to address Stage 3, and “I think it is alright for me to ‘try out’ software as long as I intend to buy it in the future,” to address Kohlberg’s Stage 4. The results showed participants’ self-perception of moral intensity in regard to software piracy was strongly related to the influence of their immediate communities, and there were little differences in moral intensity regarding software piracy between students in U.S. and Thailand.

Summary and Implication of the Exiting Studies

Logsdon et al. (1994) used a diversified population but only found a weak relationship between participants’ D scores and their attitudes toward copying software, whereas there was no significant correlation between participants’ P scores and their attitudes toward copying software. Overall, the participants showed a more favorable attitude towards copying software rather than not copying it. The overall dominant attitude towards copying software may indicate digital piracy is a different type of issue than the more general moral issues developed by Logsdon et al. Al-Rafee and Cronan’s (2006) study suggested moral development was not a significant predictor of participants’ attitudes towards digital piracy though there was a weak negative relationship between participants’ moral judgment and their positive attitude towards
digital piracy. The weak relationship indicates participants’ general moral reasoning may be dissociated with their attitude toward digital piracy. Finally, in Kini et al. (2004), the authors developed four questions to represent three of Kohlberg’s moral stages without providing evidence to indicate if the cognitive structure of the questions matched that of the moral stages proposed by Kohlberg.

**Theory of Reasoned Action/Theory of Planned Behavior**

The theory of reasoned action (TRA; Fishbein & Ajzen, 1975) and the theory of planned behavior (TPB; Ajzen, 1991) are validated models widely used in explaining various human behaviors (Sheppard, Hartwick, & Warshaw, 1988). According to TRA, an individual’s attitude and subjective norms toward an issue determine his/her intention of performing a certain behavior. Furthermore, the individual’s intention of performing a certain behavior will eventually determine whether he/she will engage in the behavior. Here, attitude means an overall positive/negative evaluation of a certain issue, whereas subjective norms refer to the individual’s perception of how the majority of people who are significant to him would think about whether he/she should engage in the certain behavior (Ajzen, 1985). Behavior (B) is a function of Intention (I): B = f (I), whereas Intention is a function of Attitude (A) and Subjective Norm (SN): I = f (A, SN).

The TPB is actually an updated version of TRA, in which perceived behavior control (PBC) is added into the model as a predictor of the individual’s evaluation of difficulty level of performing a certain behavior (Ajzen & Madden, 1986). PBC can either predict behavior directly or impact behavior indirectly by playing a role in the individual’s intention. Therefore,
there are two versions of TPB if expressed in the format of functions, which are \( B = f(I), I = f(A, SN, PBC) \) or \( B = f(I, PBC), I = f(A, SN, PBC) \).

In the field of digital piracy, both TRA and TPB are widely used to investigate people’s intention and behavior of their involvement in digital piracy (Aleassa et al., 2011; Al-Jabri & Abdul-Gader, 1997; Al-Rafee & Dashti, 2012; Christensen & Eining, 1991; Liao, Lin, Liu, 2010; Morton & Koufteros, 2008; Peace, Galletta, & Thong, 2003; Setiawan & Tjiptono, 2013; Setterstrom, Pearson, & Aleassa, 2012; Wang & McClung, 2012; Yoon, 2011, Yu, 2012). The complete model explains 14.6% (Aleassa et al., 2011) to 70.8% (Cronan & Al-Rafee, 2008) of variance in participants’ intention to engage in digital piracy. TPB is a better model for explaining the intention to engage in digital piracy compared to the TRA model (Chang, 1998), and TPB also has better predicting effects than some moral models (e.g., Hunt-Vitell Model; Yoon, 2012).

Some researchers extended the TPB model by adding other factors into the model or adding a dimension of attitude. Moral judgment is a typical factor in the extended model. For instance, Moral obligation (MO) was added as a fourth variable in the TPB model to predict the piracy intention of both U.S. and Middle East College students (Al-Rafee & Dashti, 2012). MO was significantly related with both groups’ intention (\( \beta = -.349 \) in U.S. participants and \( \beta = -.153 \) in Middle East participants). Cronan and Al-Rafee (2008) constructed a similar model in which MO was significantly related to American students’ intention to engage in digital piracy (\( \beta = -.291 \)). Yoon (2011) found MO was the strongest predictor of an individual’s attitude toward digital piracy (\( \beta = -.57 \)). All these studies indicate there is a connection between moral judgment and attitude toward digital piracy; however, in that MO is only measured by three
items in these studies, studies investigating the systematic construct of moral judgment and intentions to engage in acts of digital piracy are still needed.

Current studies of digital piracy rely largely on examining the participants’ intentions to engage in digital piracy. Intention can be examined via designed scenarios or self-reported questionnaires. According to the TPB, intentions together with PBC account for a considerable amount of variance in individuals’ actual behavior (Ajzen, 1991). However, the predicting effect of intention was determined based on a combined effect with PBC, and the overall effect was also averaged across different tasks in different studies, with its correlation with actual behavior ranging from .08 to .80 (Ajzen, 1991). For example, intention had a very weak prediction effect on losing weight ($r = .08$) (Netemeyer, Burton, & Johnston, 1990) but a very strong prediction effect on voting choice ($r = .80$) (Watters, 1989). In that the prediction effect of intention on behavior was task-specific and divergent among different tasks, researchers were not able to assume a good predictor for intention of engaging in digital piracy would also serve as a good predictor for actual behavior. However, in the existing literature, the majority of the studies used intention toward a specific act of digital piracy as the dependent variable.

Furthermore, measuring real digital experiences is also limited. In that digital piracy is against the copyright laws of many countries, it is not easy to obtain honest responses from participants’. Some participants may tend to conceal the information or respond to questions in socially desirable ways (Siponen et al., 2012). This is why some researchers used a method based on scenarios rather than self-report questionnaires to investigate participants’ intention towards digital piracy. Higgins, Wolfe, and Ricketts (2009) used both forms of measurement and concluded designed scenarios produced more conservative results compared to self-report
questionnaires. The authors also recommended future researchers use both forms of assessment to measure behaviors of digital piracy.

**Future Directions for Research**

Previous studies using moral development theory have not found consistent relationships between moral judgment and attitudes towards digital piracy (Al-Rafee & Cronan, 2006; Logsdon et al., 1994). Brown (2014) has argued different research methodologies may make it almost impossible to reach consistent conclusions on the issue of digital piracy with regard to moral judgment. While some researchers have developed individual test items to assess relationships between moral judgment and attitudes toward digital piracy, others have relied on DIT1. However, in that the DIT1 represents a general measure of moral judgment based on broad social issues (Fisher, 1997), it too may not adequately assess an individuals’ reasoning specific to issues regarding digital piracy.

Therefore, the purpose of this exploration of literature is to provide a rationale to establish the development of an assessment of moral judgment regarding digital piracy modeled after the DIT1 (referred to herein as the Digital Piracy DIT) and then examine its ability to predict attitudes, intentions and behaviors regarding digital piracy. Furthermore, in that individuals tend to justify their digital piracy behaviors using neutralization techniques (Konstantakis et al., 2010), it is possible the influence of these techniques may then be examined for their potential to serve as mediators between moral judgment and attitudes, intentions and behaviors towards digital piracy.

Rest, Narvaez, Thoma, & Bebeau (1999) maintained there is nothing “magical” about the DIT dilemmas and have suggested the possibility of experimenting with new dilemmas that
may be more “profession-specific” (p. 657). It appears, then, that in order to better explore relationships between moral judgment and attitudes, intentions and behaviors toward digital piracy, research scenarios reflecting moral reasoning and judgment specifically focused on issues regarding digital piracy might be possible and necessary to use.

Based on the above discussion, a version of the DIT specifically designed to assess moral judgment regarding digital piracy was developed (i.e., the Digital Piracy DIT). The Digital Piracy DIT consists of three moral dilemmas and their accompanying issue statements modeled after three moral dilemmas contained in DIT1. Using content from scenarios adopted from Morris and Higgins (2009) and Altschuller and Benbunan-Fich (2009), I developed one moral dilemma specific to software piracy (e.g., Jack’s Software) and music piracy (i.e., Jim’s Gift), respectively. A third scenario modeled after the Heinz dilemma in DIT1 was developed to assess eBook piracy (aka., Brandon and the eBook). Additionally, after the three scenarios were prepared, I relied on issue items related to moral dilemmas in DIT1 to develop issue items corresponding to each digital piracy dilemma in order to match the structure of moral reasoning in DIT1 necessary for scoring purposes. Items from DIT Escaped Prisoner were used to develop items for Jack’s Software; items from DIT Heinz and the Drug were used to develop items for Brandon and the eBook; items from DIT Doctor’s Dilemma were used to develop items for Jim’s Gift (see Appendix B).

Following the development of the three Digital Piracy DIT dilemmas and their accompany issues items, all were sent to Stephen Thoma, Ph.D., Executive Director of the Center for Ethical Development (aka., the Center) at the University of Alabama, Tuscaloosa. The major activity of the Center is research related to the DIT1 and DIT2, and Dr. Thoma has
played a significant role in research related to both instruments. After reviewing and providing edits to the Digital Piracy DIT stories, Dr. Thoma indicated the stories and items seemed reasonable and had the potential of generating useable data (personal communication from S. Thoma to R. Glover, May 13, 2014). The Digital Piracy DIT dilemmas and a draft copy of DIT1 (with three stories) are available in Appendix B.

Future research will work to establish the validity of Digital Piracy DIT as well as its ability to predict attitudes, intentions, and behaviors regarding digital piracy.

References


APPENDIX B

CREATING DIGITAL PIRACY DIT

Permission was granted by Dr. Steve Thoma to use and reproduce DIT1 stories #1, #2, #4 and the corresponding statements.
DP-DIT and DIT1/DIT2

**Note:** both DIT1 (Copyright, 1979, James Rest) and DIT2 (Copyright, 1986, James Rest & Darcia Narvaez) are copyrighted questionnaires. For further information about the questionnaire, please contact the Center for the Study of Ethical Development.

http://ethicaldevelopment.ua.edu/.

<table>
<thead>
<tr>
<th>Version</th>
<th>Story 1</th>
<th>Story 2</th>
<th>Story 3</th>
<th>Story 4</th>
<th>Story 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIT 2</td>
<td>Famine</td>
<td>Reporter</td>
<td>School Board</td>
<td>Cancer</td>
<td>Demonstration</td>
</tr>
<tr>
<td>DP-DIT</td>
<td>Brandon and the eBook</td>
<td>Jack’s Software</td>
<td>Jim’s Gift</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relationship with DIT1</td>
<td>Referred to Heinz (DIT1 Story #1)</td>
<td>Referred to Prisoner (DIT1 Story #2)</td>
<td>Referred to Doctor (DIT 1 Story #4)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Create DP-DIT: Matching DIT1 and Digital Piracy DIT

<table>
<thead>
<tr>
<th>Scenario name</th>
<th>Heinz and the drug</th>
<th>Brandon and the eBook</th>
<th>Note/Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scenario Content</td>
<td>In Europe, a woman was near death from a special kind of cancer. There was one drug that doctors thought might save her. It was a form of radium that a druggist in the same town has recently discovered. The drug was expensive to make, but the druggist was charging ten times what the drug cost to make. He paid $200 for the radium and charged $2000 for a small dose of the drug. The sick women’s husband, Heinz, went to everyone he knew to borrow the money, but he could only get together about $1000, which is half of what it cost. He told the druggist that</td>
<td>Brandon is considering registering on an illegal website to get an expensive electronic textbook. The book is published by a large textbook company and is a required text for one of his favorite courses. The book costs $180 on Amazon, but the unauthorized website only charges $15 for the electronic version. Furthermore, if he gets the eBook, he can share it with two good friends who are also in the course and cannot afford the textbook. Brandon knows the eBooks available on the website are unauthorized copies and this website is operated by an illegal</td>
<td>M means meaning less</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>A means: Anti-establishment</td>
</tr>
</tbody>
</table>
his wife was dying and asked him to sell it cheaper or let him pay later. But the druggist said, “No, I discovered the drug and I’m going to make money from it.” So Heinz got desperate and began to think about breaking into the man’s store to steal the drug for his wife. organization, Brandon considers getting the eBook anyway.

<table>
<thead>
<tr>
<th>Q1</th>
<th>1. Whether a community’s law are going to be upheld</th>
<th>1. Whether the law against using unauthorized eBooks is going to be upheld?</th>
<th>Stage 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2</td>
<td>2. Isn’t it only natural for a loving husband to care so much for his wife that he’d steal?</td>
<td>2. Isn’t it only natural for Brandon to care so much for his friends that he’d share the eBook?</td>
<td>Stage 3</td>
</tr>
<tr>
<td>Q3</td>
<td>3. Is Heinz willing to risk getting shot as a burglar or going to jail for the chance that stealing the drug might help?</td>
<td>3. Is Brandon willing to risk being caught or even going to jail for the chance to use the unauthorized eBook?</td>
<td>Stage 2</td>
</tr>
<tr>
<td>Q4</td>
<td>4. Whether Heinz is a professional wrestler or has considerable influence with professional wrestlers</td>
<td>4. Whether Brandon is a professional wrestler or has considerable influence with professional wrestlers?</td>
<td>M</td>
</tr>
<tr>
<td>Q5</td>
<td>5. Whether Heinz is stealing for himself or doing this solely to help someone else?</td>
<td>5. Whether Brandon is using the unauthorized eBook for himself or doing this solely to help his friends?</td>
<td>Stage 3</td>
</tr>
<tr>
<td>Q6</td>
<td>6. Whether the druggist’s rights to his invention have to be respected</td>
<td>6. Whether the rights of the author of the textbook and of the publisher have to be respected?</td>
<td>Stage 4</td>
</tr>
<tr>
<td>Q7</td>
<td>7. Whether the essence of living is more encompassing than the termination of dying, socially and individually</td>
<td>7. Whether the essence of integrity is more encompassing than the dissolution of honesty, socially and individually?</td>
<td>M</td>
</tr>
<tr>
<td>Q8</td>
<td>8. What values are going to be the basis for governing how people act towards each other</td>
<td>8. What values are going to be the basis for governing how people act towards each other?</td>
<td>Stage 6</td>
</tr>
<tr>
<td>Q9</td>
<td>9. Whether the druggist is going to be allowed to hide behind a worthless law which only protects</td>
<td>9. Whether the publisher is going to be allowed to hide behind a worthless law that only protects</td>
<td>A</td>
</tr>
<tr>
<td>Q10</td>
<td>10. Whether the laws in this case is getting in the way of the most basic claim of any member of society</td>
<td>10. Whether the law in this case is getting in the way of the most basic claim of any student?</td>
<td>Stage 5A</td>
</tr>
<tr>
<td>Q11</td>
<td>11. Whether the druggist deserves to be robbed for being so greedy and cruel</td>
<td>11. Whether the author and/or the publisher of the textbook deserve to be infringed upon for making the price of the book so high?</td>
<td>Stage 3</td>
</tr>
<tr>
<td>Q12</td>
<td>12. Would stealing in such a case bring about more total good for the whole society or not</td>
<td>12. Would using the unauthorized eBook in such a case bring about more total good for the whole society or not?</td>
<td>Stage 5A</td>
</tr>
</tbody>
</table>

| Scenario name | Escaped Prisoner | Jack’s Software | Note/Stage |
| Scenario Content | A man had been sentenced to prison for 10 years. After one year, however, he escaped from prison, moved to a new area of the country, and took on the name of Thompson. For 8 years he worked hard, and gradually he saved enough money to buy his own business. He was fair to his customers, gave his employees top wages, and gave most of his own profits to charity. Then one day, Mrs. Jones, an old neighbor, recognized him as the man who escaped from prison 8 years before, and whom the police had been looking for. | Jack owns a copy of a reasonably-priced word processing package which he uses on his home computer to do school work. The software is developed by a small, modestly successful, foreign software company. His best friend, Bob, asks Jack to lend him the installation disk for the word processing program so Bob can install it on his own computer. Bob tells Jack he is never able to use the university computers as they are almost always occupied. Bob also says that if he does not install the program on his computer soon, he will not be able to finish his school assignment by the deadline and he will fail his course. The software user manual states that making unauthorized copies is prohibited. | M means meaning less |
| | A means Anti-establishment |

| Q1 | 1. Hasn’t Mr. Thompson been good enough for such a long time to prove he isn’t a bad person? | 1. Is Bob a good person in general? | Stage 3 |
| Q2 | 2. Every time someone escapes | 2. Every time one person loans | Stage 4 |
| Q3 | 3. Wouldn’t we be better off without prisons and the oppression of our legal system? | 3. Wouldn’t we be better off without copyright laws and the government prohibiting digital piracy? | A |
| Q4 | 4. Has Mr. Thompson really paid his debt to society? | 4. Does Bob need to buy a copy of the software according to social norms? | Stage 4 |
| Q5 | 5. Would society be failing Mr. Thompson? | 5. Would society (or the copyright laws) be failing what Bob should fairly expect? | Stage 6 |
| Q7 | 7. How could anyone be so cruel and heartless as to send Mr. Thompson to prison? | 7. How could Jack say no to Bob since they are best friends? | Stage 3 |
| Q8 | 8. Would it be fair to all the prisoners who had to serve out their full sentences if Mr. Thompson was left off? | 8. Would it be fair to all the students who paid for the copyrighted software? | Stage 4 |
| Q9 | 9. Was Mr. Jones a good friend of Mr. Thompson? | 9. Was Jack a good friend of Bob? | Stage 3 |
| Q10 | 10. Wouldn’t it be a citizen’s duty to report any escaped criminal, regardless of the circumstances? | 10. Wouldn’t it be a citizen’s duty to obey the copyright laws and not use pirated software, regardless of the circumstances? | Stage 4 |
| Q11 | 11. How would the will of the people and the public good best be served? | 11. How would the will of the people and the public good best be served? | Stage 5A |
| Q12 | 12. Would going to prison do any good to Mr. Thompson or protect anybody? | 12. Would using the unauthorized copy really do any harm or hurt anybody? | Stage 5A |

**Scenario name**
The Doctor’s Dilemma

**Jim’s Gift**

**Note/Stage**
<table>
<thead>
<tr>
<th>Scenario</th>
<th>Content</th>
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<tbody>
<tr>
<td><strong>Scenario</strong></td>
<td><strong>Content</strong></td>
<td><strong>Scenario</strong></td>
<td><strong>Content</strong></td>
<td></td>
</tr>
<tr>
<td>A lady was dying of cancer which could not be cured and she had only about six months to live. She was in terrible pain, but she was so weak that a good dose of pain-killer like morphine would make her die sooner. She was delirious and almost crazy with pain, and in her calm periods, she would ask the doctor to give her enough morphine to kill her. She said she couldn’t stand the pain and that she was going to die in a few months anyway.</td>
<td>Jim is a college student and is paying for his own education and living expenses. Jim listens to music all the time and wishes he were able to purchase more songs but he needs all the money he has to pay for his school supplies, textbooks and course software. He usually downloads free but copyrighted MP3 files using a popular peer-to-peer site that allows users to share music. Jim is aware that these sites are not legal. One day Jim is invited to a friend’s music party, and he needs to bring a gift. Having used the last of his spending money on his regular expenses, Jim considers burning onto a CD a dozen of his friend’s favorite selections he can find on the website.</td>
<td>1. Whether the woman’s family is in favor of giving her the overdose or not</td>
<td>1. Whether Jim’s friend is in favor of accepting the downloaded music?</td>
<td></td>
</tr>
<tr>
<td>2. Is the doctor obliged by the same laws as everybody else if giving her an overdose will kill her</td>
<td>2. Is Jim obligated by the same copyright laws as everybody else if giving his friend the CD would be the same as stealing the music?</td>
<td>3. Whether the people would be much better off without the society regimenting their lives and even their deaths</td>
<td>3. Whether people would be much better off without society regimenting their behaviors and lives?</td>
<td></td>
</tr>
<tr>
<td>4. Whether the doctor could make it appear like an accident</td>
<td>4. Whether Jim can keep his act of downloading the music a secret?</td>
<td>5. Does the state have the right to force continued existence on those who don’t want to live</td>
<td>5. Does the state have the right to force people to pay for digital music?</td>
<td></td>
</tr>
<tr>
<td>6. What is the value of death prior to society’s perspective on personal values</td>
<td>6. What is the value of friendship prior to society’s perspective on personal values?</td>
<td></td>
<td></td>
<td></td>
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</table>

**M** means meaning less

**A** means Anti-establishment
| Q7 | 7. Whether the doctor has sympathy for the women’s suffering or care more about what society might think | 7. Whether Jim cares what society might think or considers giving his friend a gift more important. | Stage 3 |
| Q8 | 8. Is helping to end another’s life ever a responsible act of cooperation | 8. Is downloading unauthorized music ever a responsible act? | Stage 6 |
| Q9 | 9. Whether only God should decide when a person’s life should end | 9. Whether a person’s religious beliefs should determine if using unauthorized music is right or wrong? | Stage 4 |
| Q10 | 10. What values the doctor has set for himself in his own personal code of behavior | 10. What value Jim has set for himself in his own personal code of behavior? | Stage 5B |
| Q11 | 11. Can society afford to let everybody end their lives when they want to | 11. Can society afford to let everyone use unauthorized music if they want to? | Stage 4 |
| Q12 | 12. Can society allow suicide or mercy killing and still protect the lives of individuals who want to live | 12. Can society allow acts of illegally copying music and still protect the rights of musicians and music companies? | Stage 5A |
APPENDIX C

INFORMED CONSENT NOTICE
Before agreeing to participate in this research study, it is important that you read and understand the following explanation of the purpose, benefits and risks of the study and how it will be conducted.

Title of Study: Predicting attitudes, intentions, and behaviors regarding use of digital products using a modified version of the Defining Issues Test

Student Investigator: Jie Wang, University of North Texas (UNT) Department of Educational Psychology. Supervising Investigator: Rebecca J. Glover, Ph.D.

Purpose of the Study: You are being asked to participate in a research study examining issues, attitudes and reasoning related to use of digital products and other social issues.

Study Procedures: You will be asked a series of questions about your attitudes and decision-making related to use of digital products. In addition, you will be asked to read several stories and rate the importance of several issues presented related to those stories. There are four sections in the questionnaire which will take approximately 45-60 minutes to complete.

Foreseeable Risks: There are no foreseeable risks to you. In that the topic is related to your decision-making, it is possible you may feel uncomfortable answering some of the questions. In that case, you may call the student counseling office (940-565-2741) in Chestnut Hall on the UNT campus if you feel the need to talk with someone.

Benefits to the Subjects or Others: Although there is no direct benefit for individuals to participate in this study, by answering the questions presented you might experience some enhanced self-awareness through personal reflection as you make decisions regarding issues presented.

Compensation for Participants: At the end of the survey, you will be given the opportunity to enter your email address in a drawing for a chance to win a $100 Amazon gift card. The winner of the gift card will be notified via email.

Some UNT instructors might offer extra credit in courses they teach to students who participate in this study. Offering extra credit is entirely your instructor’s decision, but if extra credit is provided, your instructor will also provide an alternative extra credit opportunity for students who wish to earn extra credit but who do not wish to participate in this study. Please talk with your individual instructor regarding any extra credit. In order to receive your extra credit, please print a screen shot of the Qualtrics page you receive after submitting your completed survey which reads, “We thank you for your time spent taking this survey!! Your response has been recorded. Please remember to send a screen shot of this page, including the day and time
you completed the survey, to the instructor who has agreed to provide extra credit for your participation.” After printing this screen shot, submit it to your instructor. (If you are completing this survey in paper-pencil format, a copy of the screen shot is attached at the end of this survey. Please detach it, write your name on it and submit it to your instructor.)

Procedures for Maintaining Confidentiality of Research Records: This is an anonymous questionnaire. You will not be asked to provide your name, and all information will be recorded anonymously. No individual respondents will be identified. However, if you want to participate in the random drawing for the Amazon gift card, you will need to provide your email address. If you do this, your email address will be recorded in a separate file from your survey responses. Once the drawing has been concluded, the file containing participants’ email addresses will be destroyed.

Questions about the Study: If you have any questions about the study, you may contact Rebecca J. Glover by email at Becky.Glover@unt.edu or Jie Wang by email at jie.wang@unt.edu.

Review for the Protection of Participants: This research study has been reviewed and approved by the UNT Institutional Review Board (IRB). The UNT IRB can be contacted at 940.565.4643 with any questions regarding the rights of research subjects.

By choosing one of the options below, you are indicating you have read or have had read to you all of the above and that you confirm all of the following:

- You are voluntarily participating in this study. You have been told the possible benefits and the potential risks and/or discomforts of the study.
- You understand that you do not have to take part in this study, and your refusal to participate or your decision to withdraw will involve no penalty or loss of rights or benefits. The study personnel may choose to stop your participation at any time.
- You understand why the study is being conducted and how it will be performed.
- You understand your rights as a research participant and you voluntarily consent to participate in this study.
- Your decision to participate or to withdraw from the study will have no effect on your standing in any UNT course or course grade.
- Your participation in this online survey involves risks to confidentiality similar to a person’s everyday use of the Internet.

Please choose whether you consent to participate in this study or not

☐ Yes, I consent to participate in this study and to have my responses included in the research project described.

☐ Click here to exit the study.
Title of Study: Predicting attitudes, intentions, and behaviors regarding use of digital products using a modified version of the Defining Issues Test

Student Investigator:  Jie Wang, University of North Texas (UNT) Department of Educational Psychology.  Supervising Investigator:  Rebecca J. Glover, Ph.D.

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☐ Yes, I consent to participate in this study and to have my responses included in the research project described.

☐ Click here to exit the study.
APPENDIX D

QUESTIONNAIRES

Permission was granted by Dr. Steve Thoma to use and reproduce DIT2 Short Form.
Section 1: DIT-2 short form and Digital Piracy DIT form

Note: DIT-2 Short form (Copyright, 1986, James Rest & Darcia Narvaez) is a copyrighted questionnaire. For further information about the questionnaire, please contact the Center for the Study of Ethical Development http://ethicaldevelopment.ua.edu/. Below is an example story included in DIT2. In addition, Story 1, 2, and 3 represent stories in DIT2 Short Form. Story 4, 5 and 6 are stories included in Digital Piracy DIT.

This questionnaire is concerned with how you define the issues in a social problem. Several stories about social problems will be described. After each story, there will be a list of questions. The questions that follow each story represent different issues that might be raised by the problem. In other words, the questions/issues raise different ways of judging what is important in making a decision about the social problem. You will be asked to rate and rank the questions in terms of how important each one seems to you.

EXAMPLE of the task.

Imagine you are about to vote for a candidate for the Presidency of the United States. Before you vote, you are asked to rate the importance of five issues you could consider in deciding who to vote for. Rate the importance of each item (issue) by checking the appropriate box.

*1. Rate the following issues in terms of importance.

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<th>Great</th>
<th>Much</th>
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<tbody>
<tr>
<td>1. Financially are you personally better off now than you were four years ago?</td>
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<td>2. Does one candidate have a superior moral character?</td>
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<td>3. Which candidate stands the tallest?</td>
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<td>4. Which candidate would make the best world leader?</td>
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<td>5. Which candidate has the best ideas for our country’s internal problems, like crime and health care.</td>
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Note. Some items may seem irrelevant or not make sense (as in item #3). In that case, rate the item as "NO". After you rate all of the items you will be asked to RANK the top four items in terms of importance. Note that it makes sense that the items you RATE as most important should be RANKED as well. So if you only rated item 1 as having great importance you should rank it as most important.
*2. Consider the 5 issues above and rank which issues are the most important.

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Again, remember to consider all of the items before you rank the four most important issues and be sure that you only rank items that you found important. Note also that before you begin to rate and rank items you will be asked to state your preference for what action to take in story. Thank you and you may begin the questionnaire!

**Story 1: Famine**

The small village in northern India has experienced shortages of food before, but this year's famine is worse than ever. Some families are even trying to feed themselves by making soup from tree bark. Mustaq Singh's family is near starvation. He has heard that a rich man in his village has supplies of food stored away and is hoarding food while its price goes higher so that he can sell the food later at a huge profit. Mustaq is desperate and thinks about stealing some food from the rich man's warehouse. The small amount of food that he needs for his family probably wouldn't even be missed.

*3. What should Mustaq Singh do? Do you favor the action of taking food?*

______Should take the food ________Can't decide ________Should not take the food

*4. Rate the following issues in terms of importance.*

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<tr>
<th>1. Is Mustaq Singh courageous enough to risk getting caught for stealing?</th>
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<th>Much</th>
<th>Some</th>
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<th>None</th>
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<td>2. Isn't it only natural for a loving father to care so much for his family that he would steal?</td>
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<td>3. Shouldn't the community's laws be upheld?</td>
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<td>4. Does Mustaq Singh know a good recipe for preparing soup from tree bark?</td>
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<td>5. Does the rich man have any legal right to store food when other people are starving?</td>
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6. Is the motive of Mustaq Singh to steal for himself or to steal for his family?

7. What values are going to be the basis for social cooperation?

8. Is the epitome of eating reconcilable with the culpability of stealing?

9. Does the rich man deserve to be robbed for being so greedy?

10. Isn't private property an institution to enable the rich to exploit the poor?

11. Would stealing bring about more total good for everybody concerned or wouldn't it?

12. Are laws getting in the way of the most basic claim of any member of a society?

*5. Consider the 5 issues above and rank which issues are the most important.

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Story 2: Reporter

Molly Dayton has been a news reporter for the Gazette newspaper for over a decade. Almost by accident, she learned that one of the candidates for Lieutenant Governor for her state, Grover Thompson, had been arrested for shop-lifting 20 years earlier. Reporter Dayton found out that early in his life, Candidate Thompson had undergone a confused period and done things he later regretted, actions which would be very out-of-character now. His shoplifting had been a minor offense and charges had been dropped by the department store. Thompson has not only straightened himself out since then, but built a distinguished record in helping many people and in leading constructive community projects. Now, Reporter Dayton regards Thompson as the best candidate in the field and likely to go on to important leadership positions in the state. Reporter Dayton wonders whether or not she should write the story about Thompson's earlier troubles because in the upcoming close and heated election, she fears that such a news story could wreck Thompson's chance to win.
*6. Do you favor the action of reporting the story?

_____Should report the story            _____Can’t decide          _______Should not report the story

*7. Rate the following issues in terms of importance.

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<th>Issue</th>
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<tr>
<td>1. Doesn't the public have a right to know all the facts about all the candidates for office?</td>
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<td>2. Would publishing the story help Reporter Dayton's reputation for investigative reporting?</td>
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<td>3. If Dayton doesn't publish the story wouldn't another reporter get the story anyway and get the credit for investigative reporting?</td>
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<td>4. Since voting is such a joke anyway, does it make any difference what reporter Dayton does?</td>
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<td>5. Hasn't Thompson shown in the past 20 years that he is a better person than his earlier days as a shop-lifter?</td>
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<td>6. What would best service society?</td>
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<td>7. If the story is true, how can it be wrong to report it?</td>
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<td>8. How could reporter Dayton be so cruel and heartless as to report the damaging story about candidate Thompson?</td>
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<td>9. Does the right of &quot;habeas corpus&quot; apply in this case?</td>
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<td>10. Would the election process be more fair with or without reporting the story?</td>
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<td>11. Should reporter Dayton treat all candidates for office in the same way by reporting everything she learns about them, good and bad?</td>
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<td>12. Isn't it a reporter's duty to report all the news regardless of the circumstances?</td>
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*8. Consider the 5 issues above and rank which issues are the most important.

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<th>Most important item</th>
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**Story 3: Cancer**

Mrs. Bennett is 62 years old, and in the last phases of colon cancer. She is in terrible pain and asks the doctor to give her more pain-killer medicine. The doctor has given her the maximum safe dose already and is reluctant to increase the dosage because it would probably hasten her death. In a clear and rational mental state, Mrs. Bennett says that she realizes this; but she wants to end her suffering even if it means ending her life. Should the doctor give her an increased dosage?

*9. Do you favor the action of giving more medicine?*

______ Should give Mrs. Bennett an increased dosage to make her die
______ Can’t decide
______ Should not give her an increased dosage

*10. Rate the following issues in terms of importance.*

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<tr>
<th>Number</th>
<th>Statement</th>
<th>Great</th>
<th>Much</th>
<th>Some</th>
<th>Little</th>
<th>None</th>
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<tbody>
<tr>
<td>1.</td>
<td>Isn't the doctor obligated by the same laws as everybody else if giving an overdose would be the same as killing her?</td>
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<td>2.</td>
<td>Wouldn't society be better off without so many laws about what doctors can and cannot do?</td>
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<td>3.</td>
<td>If Mrs. Bennett dies, would the doctor be legally responsible for malpractice?</td>
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<td>4.</td>
<td>Does the family of Mrs. Bennett agree that she should get more painkiller medicine?</td>
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<td>5.</td>
<td>Is the painkiller medicine an active heliotropic drug?</td>
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<td>6.</td>
<td>Does the state have the right to force continued existence of those who don't want to live?</td>
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<td>7.</td>
<td>Is helping to end another's life ever a responsible act of cooperation?</td>
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<td>8.</td>
<td>Would the doctor show more sympathy for Mrs. Bennett by giving the medicine or not?</td>
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<td>9.</td>
<td>Wouldn't the doctor feel guilty from giving Mrs. Bennett so much drug that she died?</td>
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<td>10.</td>
<td>Should only God decide when a person's life should end?</td>
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<td>11.</td>
<td>Shouldn't society protect everyone against being killed?</td>
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<td>12.</td>
<td>Where should society draw the line between protecting life and allowing someone to die if the person wants to?</td>
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*11. Consider the 5 issues above and rank which issues are the most important.

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**Story 4: Jack’s Software**

Jack owns a copy of a reasonably-priced word processing package which he uses on his home computer to do school work. The software is developed by a small, modestly successful, foreign software company. His best friend, Bob, asks Jack to lend him the installation disk for the word processing program so Bob can install it on his own computer. Bob tells Jack he is never able to use the university computers as they are almost always occupied. Bob also says that if he does not install the program on his computer soon, he will not be able to finish his school assignment by the deadline and he will fail his course. The software user manual states that making unauthorized copies is prohibited.

*12. Should Jack loan Bob his program?*

___Should loan the program       ___Can’t decide       ___Should not loan the program

*13. Rate the following issues in terms of importance.*

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<tr>
<td>1. Is Bob a good person in general?</td>
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<td>2. Every time one person loans copyrighted software to another person, doesn’t that just encourage more digital piracy?</td>
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<td>3. Wouldn’t we be better off without copyright laws and the government prohibiting digital piracy?</td>
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<td>4. Does Bob need to buy a copy of the software according to social norms?</td>
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<td>5. Would society (or the copyright laws) be failing what Bob should fairly expect?</td>
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<td>6. What benefits would copyright laws be apart from society, especially for Bob?</td>
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<td>7. How could Jack say no to Bob since they are best friends?</td>
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8. Would it be fair to all the students who paid for the copyrighted software?

9. Was Jack a good friend of Bob?

10. Wouldn’t it be a citizen’s duty to obey the copyright laws and not use pirated software, regardless of the circumstances?

11. How would the will of the people and the public good best be served?

12. Would using the unauthorized copy really do any harm or hurt anybody?

*14. Consider the 5 issues above and rank which issues are the most important.

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</tbody>
</table>

*15. Should Brandon buy the eBook?

__Should buy the book      __Can’t decide      __Should not buy the book

16. Rate the following issues in terms of importance.

<table>
<thead>
<tr>
<th></th>
<th>Great</th>
<th>Much</th>
<th>Some</th>
<th>Little</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Whether the law against</td>
<td></td>
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<tr>
<td>using unauthorized eBooks</td>
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<tr>
<td>is going to be upheld?</td>
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<tr>
<td>2. Isn’t it only natural for</td>
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<tr>
<td>Brandon to care so much for</td>
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<tr>
<td>his friends that he’d share</td>
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<tr>
<td>the eBook?</td>
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<tr>
<td>3. Is Brandon willing to risk being caught or even going to jail for the chance to use the unauthorized eBook?</td>
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<tr>
<td>4. Whether Brandon is a professional wrestler or has considerable influence with professional wrestlers?</td>
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<tr>
<td>5. Whether Brandon is using the unauthorized eBook for himself or doing this solely to help his friends?</td>
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<tr>
<td>6. Whether the rights of the author of the textbook and of the publisher have to be respected?</td>
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<tr>
<td>7. Whether the essence of integrity is more encompassing than the dissolution of honesty, socially and individually?</td>
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<tr>
<td>8. What values are going to be the basis for governing how people act towards each other?</td>
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<tr>
<td>9. Whether the publisher is going to be allowed to hide behind a worthless law that only protects large companies anyhow?</td>
<td></td>
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<tr>
<td>10. Whether the law in this case is getting in the way of the most basic claim of any student?</td>
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<tr>
<td>11. Whether the author and/or the publisher of the textbook deserve to be infringed upon for making the price of the book so high?</td>
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<tr>
<td>12. Would using the unauthorized eBook in such a case bring about more total good for the whole society or not?</td>
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</table>

*17. Consider the 5 issues above and rank which issues are the most important.

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</thead>
<tbody>
<tr>
<td>Most important item</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
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<tr>
<td>Second most important item</td>
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<tr>
<td>Third most important item</td>
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<tr>
<td>Fourth most important item</td>
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</table>

**Story 6: Jim’s Gift**

Jim is a college student and is paying for his own education and living expenses. Jim listens to music all the time and wishes he were able to purchase more songs but he needs all the money he has to pay for his school supplies, textbooks and course software. He usually downloads free but copyrighted MP3 files using a popular peer-to-peer site that allows users to share music. Jim is aware that these sites are not legal. One day Jim is invited to a friend’s music party,
and he needs to bring a gift. Having used the last of his spending money on his regular expenses, Jim considers burning onto a CD a dozen of his friend’s favorite selections he can find on the website.

*18. Should Jim download the songs from the website?

- [ ] Should download the song  
- [ ] Can’t decide  
- [ ] Should not download the songs

*19. Rate the following issues in terms of importance.

<table>
<thead>
<tr>
<th></th>
<th>Great</th>
<th>Much</th>
<th>Some</th>
<th>Little</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Whether Jim’s friend is in favor of accepting the downloaded music?</td>
<td></td>
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<tr>
<td>2. Is Jim obligated by the same copyright laws as everybody else if giving his friend the CD would be the same as stealing the music?</td>
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<tr>
<td>3. Whether people would be much better off without society regimenting their behaviors and lives?</td>
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<tr>
<td>4. Whether Jim can keep his act of downloading the music a secret?</td>
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<tr>
<td>5. Does the state have the right to force people to pay for digital music?</td>
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<tr>
<td>6. What is the value of friendship prior to society’s perspective on personal values?</td>
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<tr>
<td>7. Whether Jim cares what society might think or considers giving his friend a gift more important.</td>
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<tr>
<td>8. Is downloading unauthorized music ever a responsible act?</td>
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<tr>
<td>9. Whether a person’s religious beliefs should determine if using unauthorized music is right or wrong?</td>
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<tr>
<td>10. What value Jim has set for himself in his own personal code of behavior?</td>
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<tr>
<td>11. Can society afford to let everyone use unauthorized music if they want to?</td>
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<tr>
<td>12. Can society allow acts of illegally copying music and still protect the rights of musicians and music companies?</td>
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</tbody>
</table>

*20. Consider the 12 issues you rated above and rank which issues are the most important.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most important item</td>
<td></td>
<td></td>
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</tbody>
</table>
Section 2: Questionnaire of Theory of Planned Behavior

Please read each of the statements below and respond to each using the scale provided. Checking #1 would indicate most agreement with the choice on the left side of the scale; checking #7 would indicate most agreement with the choice on the right side of the scale; checking #4 would indicate you are “in the middle”.

Question 1. Overall, my attitude towards using unauthorized digital material is:

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<tbody>
<tr>
<td>Favorable</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Harmful</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Foolish</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Good</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
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<td>O</td>
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Unfavorable Beneficial Wise Bad

Questions 2-4 are related to the opinions of significant others (friends and family) regarding using unauthorized digital material:

2. Most people who are important to me think I should not use unauthorized digital material.

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</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
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3. Those who are important to me think it is okay to use unauthorized digital material.

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</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
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4. If I use unauthorized digital material, then most people who are important to me would

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</thead>
<tbody>
<tr>
<td>Not care</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Disapprove</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

76
Questions 5-9 are related to your ability to use unauthorized digital materials.

5. For me to use unauthorized digital material, it would be

1  2  3  4  5  6  7
Very easy  O  O  O  O  O  O  O  Very difficult

6. If I want to, I could easily use unauthorized digital material.

1  2  3  4  5  6  7
Strongly agree  O  O  O  O  O  O  O  Strongly disagree

7. I believe I have the ability to use unauthorized digital material.

1  2  3  4  5  6  7
Strongly agree  O  O  O  O  O  O  O  Strongly disagree

8. I have the resources necessary to use unauthorized digital material.

1  2  3  4  5  6  7
Very easy  O  O  O  O  O  O  O  Very difficult

9. I can find unauthorized digital material to use if I wanted to.

1  2  3  4  5  6  7
Very easy  O  O  O  O  O  O  O  Very difficult

Questions 10-12 are related to your intention to use unauthorized digital material.

10. I intend to use unauthorized digital content in the near future.

1  2  3  4  5  6  7
Definitely do  O  O  O  O  O  O  O  Definitely do not

11. I will try to use unauthorized digital material in the near future.

1  2  3  4  5  6  7
Definitely  O  O  O  O  O  O  O  Definitely will not

12. I will make an effort to use unauthorized digital content in the near future.

1  2  3  4  5  6  7
Definitely True  O  O  O  O  O  O  O  Definitely False

77
Questions 13-15 are related to your behavior of using unauthorized digital products.

13. In the past three months, what percentage of the software that you use is unauthorized? ____%

14. In the past three months, what percentage of the e-books that you use is unauthorized? ____%

15. In the past three months, what percentage of the music that you use is unauthorized? ____%

Section 3: Demographic questions

Please provide the following information about yourself:

1. Age in years: ___________

2. Sex:
   ○ Male
   ○ Female

3. Which best describes your race/ethnicity? [Check all that apply]
   ○ African American or Black
   ○ Asian or Pacific Islander
   ○ Hispanic
   ○ American Indian/ Other Native American
   ○ Caucasian (other than Hispanic)
   ○ Other (please specify)
   ___________

4. Level of Education (mark the highest level of formal education you've obtained, or if you are currently working at that level [i.e. Freshman in college], or if you have completed that level [i.e. you have finished your Freshman year but gone no further] then mark that level.

   ○ Grade 1 to 6
   ○ Grade 7, 8, 9
   ○ Grade 10, 11, 12
   ○ Vocational/technical school (without a bachelor's degree) (i.e. auto mechanic, beauty school, real estate, secretary, 2-year nursing program)
   ○ Junior college (i.e. 2-year college, community college, Associate Arts degree)
   ○ Freshman in college in bachelor degree program
   ○ Sophomore in college in bachelor degree program
○ Junior in college in bachelor degree program
○ Senior in college in bachelor degree program
○ Professional degree (practitioner degree beyond bachelor's degree) (i.e. M.D., M.B.A., Bachelor of Divinity, D.D.S. in dentistry, J.D. in law, Master's of Arts [in teaching], Master's of Education [in teaching], Doctor of Psychology, nursing degree along with 4-year Bachelor's degree)
○ Master's Degree (in academic graduate school)
○ Doctoral Degree (in academic graduate school)
○ Other Formal Education
If you selected other please describe:

______________

5. In terms of your political views, how would you characterize yourself?
○ Very Liberal
○ Somewhat Liberal
○ Neither Liberal nor Conservative
○ Somewhat Conservative
○ Very Conservative

6. Are you a citizen of the U.S.A?
○ YES
○ NO

7. Is English your primary language?
○ YES
○ NO

8. Think of a 10-level ladder representing where people stand in your own country. 1 represents people who have the least money; 10 represents people who have the most money. Where would you place yourself on this ladder based on your status at this time in your life? Please move the slider to the point on the bar to represent your perceived level?

Please enter your email address here if you would like to participate in the drawing for the $100 Amazon gift card!

________________________

Thank you very much for participating in this study!!!


Cox, J. (2015, July 12). *Online pirates may be willing to pay-if the price is right*. Retrieved from http://eprints.port.ac.uk/16296/


Doyle, E., Frecknall-Hughes, J., & Summers, B. (2009). Research methods in taxation ethics:


Hoyle, R. H. (1995). The structural equation modeling approach: Basic concepts and


