The Role of Morality in Digital Piracy: Understanding the Deterrent and Motivational Effects of Moral Reasoning in Different Piracy Contexts

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Abstract

Digital piracy has been a chronic issue in intellectual property protection. With the prevalence of online technologies, digital piracy has become even more rampant, as digital resources can now be accessed and disseminated easily through the Internet. While the antecedents of piracy behaviors have been studied for years, previous studies often focus on a specific type of behavior or pirated content and the findings are far from conclusive. They do not paint a coherent picture of the impacts of antecedents. In this study, we focus on the role of morality by revealing the different levels of moral reasoning that can both deter and motivate users' piracy intentions. Furthermore, we differentiate between two types of piracy behaviors (unauthorized copying/downloading vs. unauthorized sharing) and two categories of digital products (application software vs. music/movies), so that the differential impacts of the various antecedents can be assessed and articulated more clearly. We empirically evaluated the models in the four piracy contexts using a sample of 3,426 survey participants from a sizable IT-literate society. Our findings indicate the conflicting roles of morality in piracy intention and demonstrate its differential impacts across the two types of piracy behaviors, which can be generalized across the two categories of digital products. Our study sheds new light on end users' considerations in accessing and disseminating unauthorized digital content. It also informs the design of copyright protection policies and sanction measures with different levels of specificity.

Keywords: Digital Piracy, Unauthorized Copying/Downloading, Unauthorized Sharing, Moral Reasoning, Contingency Framework.

1 Introduction

Digital piracy refers to the unauthorized access or dissemination of licensed digital content and products. It is a major issue confronting policymakers and digital content providers worldwide. The prevalence of social media platforms and the proliferation of mobile devices serve to exacerbate the situation. According to

a recent survey from the Business Software Alliance, 39% of software installed on computers around the world is not licensed (http://globalstudy.bsa.org /2016/). The International Federation of Phonographic Industries (2016) points out that the "value gap" is widening as users increasingly upload music to online platforms without authorization. It is estimated that more than 900 million users access unauthorized music

sources, and this represents lost revenues to those creating and investing in music.

Because of its significant economic and social ramifications, digital piracy has been studied by content developers, law enforcement agents, policymakers and academics for many years. The central question is: *what motivates the act of digital piracy*? Previous studies have investigated a number of factors associated with piracy behavior.[1] These factors range from intrinsic ones such as demographics (Kini, Rominger, & Vijayaraman, 2000; Wang, Yang, & Bhattacharjee, 2011) and dispositional characteristics (Higgins, 2005; Wang, Zhang, Zang, & Ouyang, 2005) to extrinsic ones such as pricing (Sinha, Machado, & Sellman, 2010; Tunca & Wu, 2013) and legal measures (Kang, 2011; Moores & Chang, 2006). A number of studies have investigated the effect of morality on piracy behavior (Leonard & Cronan, 2001; Logsdon, Thompson, & Reid, 1994). Many of these studies measure morality as an individual's moral judgment capacity and the findings so far are mixed. Furthermore, previous studies have mostly focused on a single piracy situation such as unauthorized copying software or sharing music. In this study, we reveal the conflicting roles played by morality at different reasoning levels and propose a contingency framework of the antecedents of piracy intention that spans different piracy behaviors (i.e., unauthorized copying/downloading vs. unauthorized sharing) and digital content (i.e., application software vs. music/movies). The findings provide a comprehensive understanding of piracy intention in different usage contexts.

We attempt to address three research gaps. First, we focus on users' moral and amoral considerations. Prior studies have viewed morality as an antecedent of piracy behavior (Cronan & Al-Rafee, 2008; Goles et al., 2008; Yoon, 2011), but they do not delve into individuals' underlying principles that lead to their moral judgments. On the one hand, the desire to avoid punishment and to comply with laws and regulations could deter digital piracy. On the other hand, perceived unfair pricing of digital content and the desire to help others obtain the content they need may weaken the law-abiding motivation of users who may then regard digital piracy as morally acceptable. The different moral reasoning principles could lead to very different and even opposite perceptions of digital piracy. Moreover, moral and amoral factors affect the attitude of users toward piracy contingent on the type of piracy behavior. By unraveling the underlying principles in moral reasoning, the current study aims to enrich our understanding of the role of morality in piracy.

Second, the proliferation of social media and social networks (e.g., YouTube, Facebook) has

revolutionized the way digital content is pirated (Lewis, Gonzalez, & Kaufman, 2012; Yang & Wang, 2015). No longer are the sources of unauthorized content limited to close friends, bootleggers, or counterfeiters on the street. Nowadays many would share digital content brazenly with known or anonymous peers on social networking platforms (The Economist, 2011). Most previous studies, especially earlier ones, defined piracy behavior solely as the unauthorized copying/downloading of digital content (i.e., accessing digital content illegally). However, unauthorized sharing (i.e., disseminating digital content illegally) has recently been spreading in the online world like wildfire. A number of piracy studies assumed copying/downloading and sharing to be of the same type of behavior and did not differentiate between their motivations from a theoretical perspective (Peace, Galletta, & Thong, 2003; Siponen, Vance, & Willison, 2012; Yoon, 2001). As a result, the unique features and the corresponding antecedents of the two types of piracy behaviors remain largely unexplored. By proposing research models contingent on the two types of piracy behaviors, we can better differentiate between their underlying motivations.

Third, the content of piracy in previous literature was either software or multimedia content such as music and movies (e.g., Andrés & Asongu, 2013; Hashim, Kannan, Maximiano, & Ulmer, 2014; Yang & Wang, 2015). To the best of our knowledge, no study has evaluated both categories of digital products under a common theoretical model. In this paper, we validate the research model empirically for each type of behavior in two digital product categories: software and music/movies. A large-scale data set such as ours, collected from a representative sample at the societal level for different piracy situations, is seldom found in previous piracy research.

Our research framework spanning piracy behaviors and digital products is shown in Figure 1. The framework classifies piracy along two dimensions: (1) type of piracy behavior—unauthorized copying/downloading versus unauthorized sharing, and (2) category of pirated digital products— software versus music and movies. Thus we have four different digital piracy contexts. We differentiate between the two types of piracy behaviors by building a research model for each type of behavior with common and contingent factors. The models are examined empirically using data collected from 3,426 participants recruited through a major e-government portal in Hong Kong. Our empirical findings demonstrate the differential impacts of the antecedents across the two types of piracy behaviors, yet they can be generalized across a range of digital products. Our

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[1] Unless stated otherwise, piracy refers to digital piracy in this paper.

research sheds new light on the conflicting roles of morality in accessing and disseminating pirated content. It also aids in the design of copyright protection policies and sanction measures with different levels of specificity for users.

The rest of this paper is organized as follows. In the next section, we review the previous literature according to the proposed framework of piracy

behaviors and digital content and the antecedents. In Section 3, we present the theoretical model and the hypothesized relationships. Section 4 outlines the design of the empirical study. Results are presented in Section 5. Contributions, as well as limitations, are discussed in Section 6. Section 7 concludes the paper.
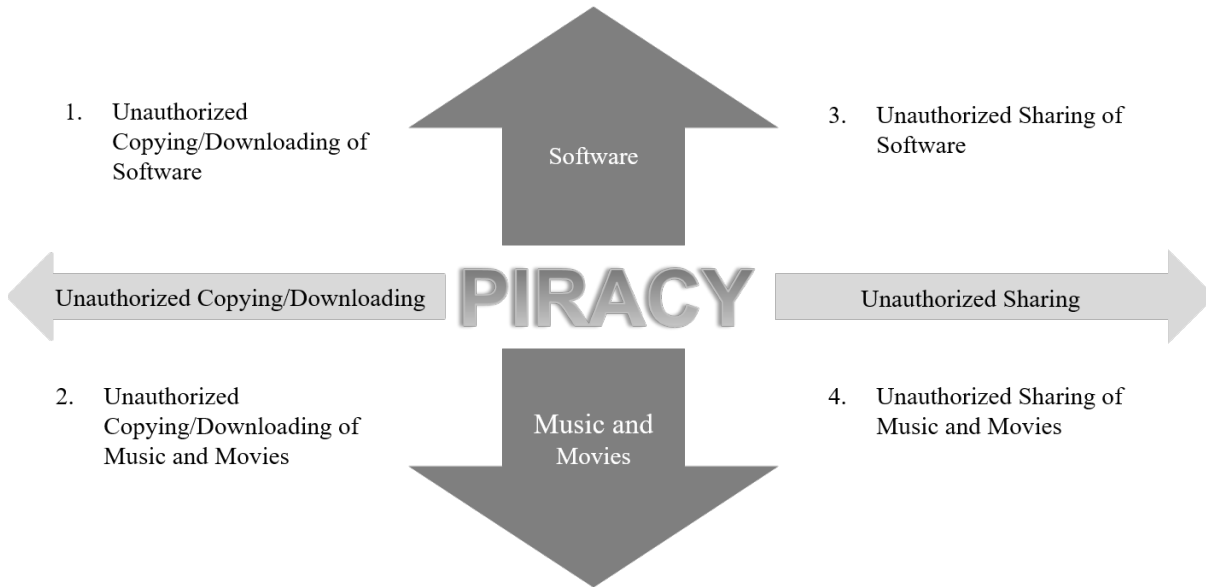

Figure 1. A Contingency Framework of Four Piracy Contexts

1. Unauthorized Copying/Downloading of Software
2. Unauthorized Copying/Downloading of Music and Movies
3. Unauthorized Sharing of Software
4. Unauthorized Sharing of Music and Movies

Software

Music and Movies

PIRACY

Unauthorized Copying/Downloading

Unauthorized Sharing

2   Literature Review

The information systems literature offers two major theoretical perspectives for the study of digital piracy—namely, an economic perspective and a behavioral perspective. The economic perspective is largely concerned with optimal strategies for firms or governments in response to digital piracy and the decision calculus of pirates (Bhattacharjee, Gopal, Lertwachara, Marsden, & Telang, 2007; Lahiri & Dey, 2013; Tunca & Wu, 2013). Behavioral research, on the other hand, aims at discovering the various factors driving piracy behavior (Cenite, Wang, Chong, & Chan, 2009; Kwan, So, & Tam, 2010; Wang et al. 2011). The current study takes a behavioral approach. In the following, we review the contexts of piracy behavior and the major antecedents that have been studied in the behavioral literature.

2.1   Piracy Behavior and Digital Products

We review the previous literature based on the type of piracy behavior and digital content. Table 1 provides a summary of related research and identifies the gap that this paper attempts to fill.

Most studies investigate piracy behavior by framing it as the unauthorized access of licensed content (e.g., Nill, Schibrowsky, & Peltier, 2010; Yang & Wang, 2015; Yoon, 2011). Cronan and Al-Rafee (2008) define unauthorized copying/downloading as "the illegal copying and/or downloading of copyrighted software, music, video, or other digital material". Users may access digital material illegally through close friends, bootleggers, and counterfeiters on the street (Cheng, Sims, & Teegen, 1997; Peace et al., 2003), or through Internet-based sources (Hashim et al., 2014; Yang & Wang, 2015). Recent studies have investigated unauthorized sharing behavior (Aleassa, Pearson, & McClurg, 2011; Gopal & Gupta, 2010). They define such behavior as the sharing of digital content without authorization.

While these types of piracy behaviors (i.e., unauthorized copying /downloading and unauthorized sharing) have become increasingly common with the proliferation of social networking platforms, few studies have investigated both together (Siponen et al. 2012; Wang et al., 2011; Yang, Wang, & Mourali, 2015).

Table 1. Summary of Piracy Behaviors and Empirical Contexts in Previous Literature

Piracy behavior	References	Empirical context	Sample size
Piracy in general	Chiu, Hsieh, & Wang (2008)	Software	554 consumers
	Danaher et al. (2014)	iTunes music	918 observations
	Peace et al. (2003)	Software	201 MBA students
	Simpson et al. (1994)	Software	209 students
	Yoon (2011)	Digital products	270 students
Piracy defined as *unauthorized copying/downloading*	Andrés & Asongu (2013)	Software	64 observations
	Cheng et al. (1997)	Software	340 business students
	Cronan & Al-Rafee (2008)	Copyrighted products	280 business students
	Hashim et al. (2014)	Music	123 subjects
	Moores & Chang (2006)	Software	243 students
	Nill et al. (2010)	Software	108 MBA students
	Yang & Wang (2015)	Music	665 students
Piracy defined as *unauthorized sharing*	Aleassa et al. (2011)	Software	323 business students
Piracy defined as *unauthorized copying/downloading and unauthorized sharing* but without theoretically differentiating between the two behaviors	Gopal & Gupta (2010)	Software	
	Moores & Esichaikul (2011)	Software	213 students
	Morris & Higgins (2010)	Movies and music	585 students
	Sinha et al. (2010)	Music	Study 1: 816 students Study 2: 1312 students
	Siponen et al. (2012)	Software	183 students
	Tunca & Wu (2013)	Digital products	
	Wang et al. (2011)	Music	665 students
	Yang et al. (2015)	Music	278 students
Unauthorized copying/downloading and unauthorized sharing theoretically differentiated in terms of their antecedents	**** This paper ****	**Software, movies, and music**	**3,426 end-users**

In addition, most studies do not explicitly differentiate between the motivations underlying the two types of piracy behaviors from a theoretical perspective. One exception is Wang et al. (2011), who studied the differential motivations on the two types of piracy behaviors concerning music in a social learning environment. However, they hypothesized the same antecedents for the two types of piracy behaviors and did not differentiate their underlying motivations. Their research model was evaluated using a sample of 665 students.

Empirical analyses of piracy behavior usually focus on either software (Aleassa et al., 2011; Andres & Asongu, 2013; Siponen et al., 2012) or media files such as music and movies (Danaher, Smith, Telang, & Chen, 2014; Hashim et al., 2014; Morris & Higgins, 2010). Some of the studies simply treated digital products as a whole without specifying the product types (Cronan & Al-Rafee, 2008; Tunca & Wu, 2013). The current study considers the different types of behaviors and digital products explicitly to develop a comprehensive understanding of piracy considerations in different contexts. We evaluate the models using data from large-scale surveys involving 3,426 participants. The sample size is large compared to those generally found in the behavioral piracy literature, greatly increasing the validity of the findings.

2.2 Antecedents of Piracy Behavior

Previous studies have investigated a variety of antecedents of piracy behaviors. Most of them were developed with a focus on unauthorized copying/downloading. In Table 2, we review the key antecedents in the previous studies and

highlight the similarities and differences between those studies and the current paper.

Table 2. Summary of Antecedents of Piracy Behaviors in Previous Literature

References	Antecedents	Main findings	Differences and similarities between references and this paper
Al-Rafee and Cronan (2006) Banerjee et al. (1998) Leonard and Cronan (2001) Logsdon et al. (1994)	• Morality • Moral judgment capacity	• Morality or moral judgment capacity may not be a significant predictor of unethical IT behavior.	Instead of evaluating morality in general, this paper digs into the underlying moral reasoning principles to reveal the deterrent and motivational roles of morality at different levels.
Christensen and Eining (1991) Kreie and Cronan (1999) Gopal et al. (2004) Wang et al. (2011)	• Legal awareness • Punishment severity	• Legal awareness significantly reduces propensity to pirate software but it does not affect music piracy. • More severe punishment induces a more negative attitude toward piracy.	Given the inconsistent findings, this paper reevaluates the impacts across different types of piracy behavior and digital content and compares their consequences.
Al-Rafee and Cronan (2006) Sinha et al. (2010)	• Perceived proportionality	• Consumers are reluctant to pay for software that they perceive to be overpriced.	This paper reevaluates the impacts across different types of digital content and compares their consequences.
Danaher et al. (2010) Moores and Chang (2006)	• Content availability	• Consumers who cannot purchase online easily turn to piracy	This paper reevaluates the impacts across different types of digital content and compares their consequences.
Solomon and O'Brien (1991) Wang et al. (2011)	• Gender • Age	• Demographic segmentation has a significant impact on piracy behavior	This paper incorporates gender and age as control variables

2.2.1 Morality

Digital piracy and its connection to morality have received much research attention because of their profound social implications. While one may think that individuals with high levels of morality would disapprove of piracy, findings reported in the literature are inconclusive. Logsdon, Thompson, and Reid (1994) studied the relationship between an individual's moral judgment capacity and software piracy. Surprisingly, they found that respondents with high moral judgment capacity did not have significantly more negative attitudes toward piracy. Similarly, Al-Rafee and Cronan (2006) found that a person's attitude toward digital piracy was unaffected by his or her moral judgment capacity. Banerjee, Cronan, and Jones (1998) reported a study on IT ethics which examined the effect of morality on the intention to pirate software as well as on other unethical IT behavior. They found that morality was not a significant predictor of unethical IT behavior. Similar observations were made by Leonard and Cronan (2001). Despite the

counterintuitive findings, morality remains a key consideration in studying piracy behavior. Instead of narrowly focusing on one's moral judgment capacity, we attempt to address a more fundamental question of whether individuals perceive digital piracy as morally acceptable and to reveal the conflicting roles of morality by probing deeper into their underlying moral reasoning principles.

2.2.2 Law and Punishment

Researchers have studied piracy behavior from a law and punishment standpoint. A study by Kreie and Cronan (1999) found that an individual's acceptability of piracy behavior was significantly affected by the legal environment. Gopal and Sanders (1997) found that participants had a significantly reduced propensity to engage in software piracy when presented with deterrence information about copyright laws, the consequences of being caught, and negative effects on firms and other users. When a similar study was extended to music piracy, however, this reduced propensity was not observed (Gopal, Sanders,

Bhattacharjee, Agrawal, & Wagner, 2004). Similarly, Christensen and Eining (1991) found that knowledge and awareness of copyright laws did not influence piracy behaviors. Peace et al. (2003) found that respondents believed less than 9% of software pirates were caught on average, rendering punitive measures essentially ineffective. Nevertheless, they found that more severe punishment could induce a more negative attitude toward piracy. The results of music piracy (Wang et al., 2011) also suggested that differential reinforcement (a mix of reward and punishment) has a significant impact on the unauthorized access of digital products. Like morality, the influences of law and punishment have also yielded inconsistent findings in the literature. To further investigate their influences, we include users' perceptions of unlawfulness and punishment severity as predictors of moral acceptability in our models. We evaluate their impacts across different types of piracy behavior and digital content and compare their consequences.

2.2.3   Pricing

Pricing is one of the most frequently cited factors behind piracy (Sinha et al., 2010). Consumers cognitively encode prices in ways that are meaningful to them. Perceived monetary value has been verified as a major factor contributing to consumers' intention to use mobile services (Hong & Tam, 2006; Venkatesh, Thong, & Xu, 2012). Prior research has revealed that affordability may not be the only consideration for piracy (Kwong, Yau, Lee, Sin, & Tse, 2003). According to Seale (2002), software pricing is actually an issue of perceived proportionality—consumers are reluctant to pay for a product that has a perceived marginal production cost of near zero, even if they can afford it. In other words, those who pirate may not be driven solely by affordability but also by the impression that the software is overpriced. Any feelings of guilt associated with committing piracy would be neutralized when the prices charged are perceived to be excessive and disproportional to the actual value of the product. This view was reiterated by Al-Rafee and Cronan (2006). Following this line of reasoning, we include users' perception of price disproportionality as one antecedent specific to the piracy of unauthorized copying/downloading in our study and evaluate the impact across different types of digital content.

2.2.4   Content Availability

Previous research has also reported the impact of content availability on piracy behavior (Cenite et al., 2009; Peace et al., 2003). The perception that accessing authorized content was inconvenient was found to be a significant driver of piracy (Moores & Chang, 2006). Danaher, Dhanasobhon, Smith, and Telang (2010) studied the degree to which the digital distribution of media content affected demand for Internet piracy through a quasi-experiment. They found an 11.4% increase in the piracy of NBC content after the TV network removed its content from iTunes, corresponding to nearly 48,000 additional pirated downloads per day. Customers who cannot make their purchase online will easily turn to piracy. Therefore, we include users' perception that accessing pirated digital content is more convenient than purchasing an authorized copy as one antecedent in the model for unauthorized copying/downloading, and evaluate the impact across different types of digital content.

2.2.5   Demographic Factors and Personal Disposition

Demographic factors are found to be associated with piracy behavior. Solomon and O'Brien (1991) reported that females and the elderly committed less piracy. Their findings have been confirmed by many researchers (e.g., Gopal & Sanders, 1997; Kini et al., 2000). Using a student sample, Wang et al. (2011) reported the demographic segmentation of music piracy based on age, gender, nationality, and computer usage. Since the findings of gender and age are fairly consistent in the extant literature, we include them as control variables in our study. Beyond this, researchers have also considered dispositional characteristics, such as self-control (Higgins, 2005), responsibility denial (Harrington, 2002), and collectivism (Wang et al., 2005). Since our research focuses on users' moral reasoning rather than personality traits, we did not consider dispositional factors.

3   Theoretical Background and Hypotheses Development

While previous literature has approached identifying the motivations behind piracy behavior from several different perspectives, in this study we focus on understanding the role of morality in digital piracy. We advocate a research framework in four different contexts to comprehensively understand the phenomenon. In light of this, rather than exhausting all antecedents presented in the extant literature, we start from the attitudinal-behavior framework and extend the relationships by adding users' moral and amoral considerations. We identify particular factors contingent on the different features of the two types of piracy behaviors. The research model is illustrated in Figure 2.
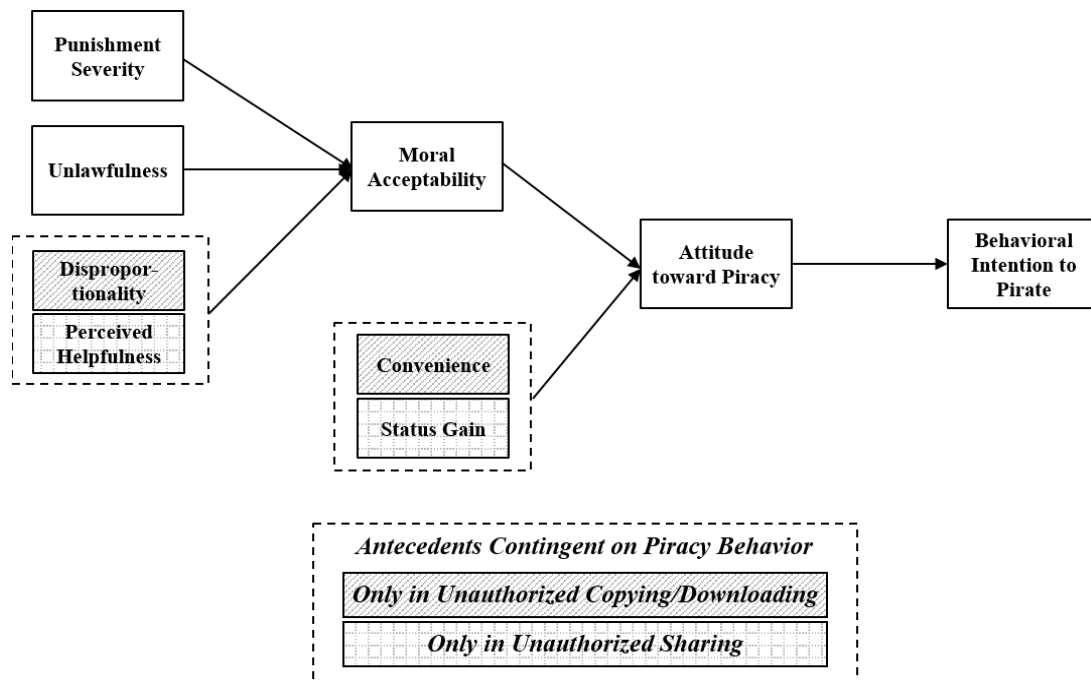
Figure 2. Research Model Contingent on Piracy Behaviors

3.1　Moral Acceptability

Most anti-piracy campaigns attempt to convey the message that digital piracy is not moral and should be condemned. Researchers have incorporated moral considerations in decision-making models of digital piracy (Cronan & Al-Rafee, 2008; Goles et al., 2008; Yoon, 2011). However, the influence of moral reasoning on piracy behavior was found to be inconsistent (Al-Rafee & Cronan, 2006; Leonard & Cronan, 2001). In this study, we focus on the fundamental question of whether users perceive digital piracy as morally acceptable and attempt to probe deeper into the underlying moral reasoning principles.

Perception of moral acceptability refers to whether or not an individual considers a certain behavior decent or appropriate (Gorsuch & Ortberg, 1983). In the piracy context, previous research has shown that one facet of attitude toward piracy is the extent to which a person believes such behavior to be morally acceptable (Parker, Manstead, & Stradling 1995; Yoon, 2011). Therefore, it follows that the more morally acceptable one regards piracy, the more positive one's attitude toward such behavior, leading to the following:

H1: Moral acceptability has a positive effect on the attitude toward piracy behavior

While previous studies incorporated the moral construct as an antecedent of piracy (Cronan & Al-Rafee, 2008; Goles et al., 2008; Yoon, 2011), they did not elaborate on the underlying moral reasoning

principles leading to a judgment. Bhal and Leekha (2008) reported the complex moral logic behind ethical judgments on software piracy using a grounded theory approach. A key finding of their study was that different moral principles were applied to arrive at a judgment. From a cognitive perspective, moral acceptability is the outcome of a person's moral reasoning process. In this study, going beyond the direct effect of the moral construct on attitude, we attempt to understand users' considerations in moral reasoning and identify the antecedents of moral acceptability contingent on the different types of piracy behaviors.

Kohlberg (1971; 1981) proposed cognitive moral development (CMD) theory to explain how a person judges what is morally right. Trevino (1992) reviewed the applications of CMD theory in different business ethical contexts and emphasized that individuals' moral judgment is related to why they behave in a certain way. Kamm (2009) conducted a neuroscience experiment to understand the nature of moral reasoning. She verified that moral judgment played an important role in the cognitive process, and as a consequence, affected individuals' decisions. Kohlberg (1971) proposed three levels of moral reasoning: the preconventional level, the conventional level, and the postconventional level. Basically, individuals reasoning at the preconventional level are mainly driven by punishment and reward. Their reasoning involves obedience and instrumentality orientation. Behavior that is punishable is morally

610

unacceptable. Second, those reasoning at the conventional level are more concerned about "law and order". They are oriented toward maintaining social order and tend to exhibit behavior that is approved by authorities and the law. At the highest level, individuals employing postconventional moral reasoning strive for the well-being of mankind and emphasize adherence to universal ethical principles that underlie justice and fairness. According to Kohlberg's (1971) theory, the three levels of moral reasoning follow a chronological development process. Adults possess the highest moral judgment capacity and tend to reason at a higher level than children and adolescents. However, Rest (1979) suggests that when faced with a moral issue, individuals actually used a combination of these three levels of moral reasoning, depending on their own moral judgment capacity and the issue at hand. The outcome of moral judgment would then be driven by whether the different levels of moral reasoning actually reinforce or contradict each other.

Following this line of reasoning, we investigate the multiple levels of moral reasoning in judging the acceptability of piracy behavior. It is possible that the different levels of moral reasoning take effect simultaneously and compete against each other. This could account for the inconsistent relationships between moral factors and their judgment outcomes in the previous literature.

3.1.1 Preconventional Moral Reasoning

Preconventional moral reasoning is guided by the fear of punishment (Kohlberg, 1981), which is an important piracy deterrent. In this study, "punishment severity" denotes the extent to which people believe a particular type of piracy behavior would be met with severe punishment. If a person employs preconventional moral reasoning, the perceived severity of punishment would affect his or her moral acceptability of the behavior, leading to the following hypothesis:

H2: Punishment severity has a negative effect on moral acceptability.

3.1.2 Conventional Moral Reasoning

For those who reason at the conventional level, the mere unlawfulness of a behavior is enough to make it immoral because social order is perceived to be disrupted. Reasoning at this level has a "law and order" consideration. Compliance with the law follows the desire of a person to be respected as a member of society and any act that jeopardizes social order will be judged as immoral. As computer ethicist Johnson (2001) puts it, piracy is wrong "not because there is some prelegal immorality involved in the act" but because it is illegal. In theorizing the impact of law and order, we use "unlawfulness" to indicate the extent to

which individuals perceive a particular type of piracy behavior to be illegal. It follows that if an individual employs conventional reasoning in judging piracy, the higher the perceived unlawfulness, the less likely the individual is to treat the behavior as morally acceptable. Thus, we posit:

H3: Unlawfulness has a negative effect on moral acceptability.

3.1.3 Postconventional Moral Reasoning (Contingent on Piracy Behavior)

A primary difference between unauthorized copying/downloading and unauthorized sharing is that the former can be regarded as "receiving", whereas the latter as "giving". This is consistent with the argument of Wang et al. (2011), highlighting the need to treat the two behaviors separately. Unlike their study, which posits the same set of social learning factors as antecedents of both types of behaviors, we include a unique factor reflecting the different postconventional reasoning principles associated with the two types of behavior. In particular, while many view unauthorized copying/downloading as a way to save money, those who share do not actually enjoy any monetary return. Unauthorized sharing seems to be driven by a desire to help others.

Unauthorized Copying / Downloading: The principles of postconventional reasoning focus on compliance with universal ethical principles. Johnson (2001) proposes that the ownership of physical goods is different from the ownership of intellectual goods because consumption of the latter is primarily nonexclusive. As such, rights pertaining to intellectual goods should not be taken as absolute and the moral acceptability of piracy lies in whether the amount of economic compensation to the owner is fair or not. In fact, for digital goods, affordability may not be the sole factor for pirating (Kwong et al., 2003). Instead, many perceive the marginal production cost of digital goods to be near zero and thus are reluctant to pay (Seale, 2002). Their feelings of guilt associated with committing piracy would be neutralized when the prices charged by software or media providers are perceived to be excessive (Al-Rafee & Cronan, 2006). Harrington (2002) notes that unauthorized copying was judged as ethical by individuals with "Robin Hood syndrome", namely those who believe large firms possess unfair advantages over individuals and that "harming a large organization to the benefit of an individual is the right behavior" (p. 180). A perception of disproportionate pricing would enhance the perceived morality associated with piracy through psychological neutralization by "condemnation of the condemners" (Vitell & Grove, 1987). In our model, "disproportionality" denotes the degree to which people believe the licensed digital content is unfairly priced. We thus posit:

H4(a): Price disproportionality has a positive effect on the moral acceptability of unauthorized copying/downloading.

Unauthorized Sharing: Sharing, in contrast, is a kind of helping behavior and extending help to the disadvantaged is a universal virtue. Individuals who enjoy helping others would be more likely to contribute online (Kankanhalli, Tan, & Wei, 2005; Wasko & Faraj, 2005). Nissenbaum (1995) argue that rights claimed by software firms are usually much broader than common notions of property rights. For example, despite paying for a product, users often face many usage restrictions (e.g., software purchased is licensed for one computer only). Stallman (1997), a strong advocate of open source software, argues that "the fundamental act of friendship among programmers is the sharing of programs" (p. 231). Individuals who share digital products are often motivated by their beliefs that they are actually helping others (Becker & Clement, 2006). In the current study, "perceived helpfulness" refers to the degree to which people believe that sharing digital content will benefit others. Thus, we posit:

H4(b): Perceived helpfulness has a positive effect on the moral acceptability of unauthorized sharing.

In summary, different moral principles could be at work in judging the acceptability of digital piracy. An individual who believes that the price of a certain digital product is unfair would regard copying or downloading in an unauthorized manner as simply restoring fairness and would not feel guilty. An individual who believes that sharing digital products is a way of helping others may even regard unauthorized sharing as a universal virtue. These two lines of postconventional moral reasoning contravene preconventional and conventional moral reasoning. The identification of possibly opposing moral reasoning principles in the current work supplements previous studies that focus primarily on the immoral side of piracy.

3.2 Amoral Factors Contingent on Piracy Behavior

Besides morally driven motivations, amoral factors also contribute to digital piracy. Whether unauthorized copying/downloading or sharing is perceived to be practically advantageous would also influence one's attitude toward the behaviors. Since the behavioral outcomes of the two types of piracy behaviors are different, the amoral antecedents of the attitude should also vary.

Unauthorized Copying/Downloading: Besides the considerations associated with moral reasoning, content availability is usually another factor relevant to deciding whether or not to commit piracy (Simpson, Banerjee, & Simpson, 1994; Solomon & O'Brien,

1991). With the current proliferation of online app stores and social networking platforms (Danaher et al., 2010; Johar, Kumar, & Mookerjee, 2012), consumers can obtain digital content through a host of channels. Sometimes it might be equally convenient to purchase online or download from illegal sites. It is thus necessary to reassess the impact of this factor in view of the shifting social and technology landscape. We use "product convenience" to indicate the extent to which unauthorized copying/downloading is believed to be more convenient than purchasing licensed products in terms of the time and effort required. We posit the following:

H5(a): Product convenience has a positive effect on the attitude toward unauthorized copying/ downloading.

Unauthorized Sharing: While helping others is posited as the main driver for sharing, self-interest should not be overlooked. According to social exchange theory (Blau, 1964), individuals expect social rewards from social interaction. Such social rewards may be tangible or intangible. Examples of intangible rewards include social approval, status, and respect (Grant & Gino, 2010; Wang et al., 2011). According to Brown and Venkatesh (2005), social outcome is a motivation for using technology. Glass and Wood (1996) investigated the determinants of unauthorized sharing. They found that individuals who shared software with others expected a favorable social outcome. The anticipated social outcome might not necessarily be materialistic gains but can be enhanced reputation or status. We use "status gain" to indicate such social outcome which measures the extent to which individuals expect that unauthorized sharing will generate social approval from others. This expectation leads to a favorable attitude toward piracy behavior. Thus, we posit:

H5(b): Status gain has a positive effect on the attitude toward unauthorized sharing.

We build on the attitudinal-behavioral framework and follow previous research to choose behavioral intention as the dependent variable (Gopal & Sanders, 1998). Many previous studies of piracy have demonstrated the effect of attitude toward piracy on intention (e.g., Beck & Ajzen, 1991; Cenite et al., 2009; Peace et al., 2003). Consistent with these studies, we evaluate this relationship in different empirical contexts. We posit:

H6: Attitude toward piracy has a positive effect on the intention to pirate.

4 Empirical Analysis

4.1 Study Design

We conducted the empirical analysis based on a large-scale online survey and designed four versions of the

survey, representing two types of piracy behaviors and two kinds of digital products. The four contexts were: (1) unauthorized copying/downloading of software, (2) unauthorized copying/downloading of music and movies, (3) unauthorized sharing of software, and (4) unauthorized sharing of music and movies. We provided a detailed definition and explanation of each context at the beginning of the survey questionnaire. In particular, unauthorized copying of software (or music/movies) was described as downloading or copying of software (or music/movies) without permission from the authorized vendor or distributor. These behaviors included downloading the software from unofficial sources on the Internet or copying it from friends. Unauthorized sharing of software (or music/ movies) was described as dissemination of software (or music/movies) without permission from the authorized vendor or distributor. These behaviors included uploading the software (or music/movies) online or giving it to friends for copying. In particular, we highlighted to the respondents that the questions in the survey pertained only to sharing activities without monetary benefits. Dissemination of counterfeits for profit by illegal merchants was excluded. Before starting the survey, we asked participants to confirm that they understood the definition of the corresponding piracy behavior for a type of digital product and removed those who did not clearly understand from our final samples.

We sent email invitations to the members of a major e-government portal in Hong Kong to request their participation. The portal is operated by a commercial company on behalf of the government and offers a variety of public services—including reserving public sports or recreational facilities, applying for identification documents, renewing various licenses, and filing tax returns. At the time of the survey, the portal had about 250,000 active members. Participants were invited to click on a hyperlink embedded in the invitation email to start the questionnaire. Once they clicked on the link, they were randomly assigned to one of our four study cells. They were briefed about the academic nature of the survey and assured of strict data confidentiality. They were also informed that they would be entitled to enter a lucky draw upon completion of the online questionnaire as a token of appreciation.

4.2 Measurement

We measured "punishment severity", "attitude", and "behavioral intention" using items from Peace et al. (2003) and Ajzen (2002), and measured "moral acceptability" using four items from the work of Beck and Ajzen (1991), which identifies an individual's moral judgment regarding a particular type of piracy behavior. To measure "unlawfulness", we adopted items from Christensen and Eining (1991). "Price

disproportionality" was measured by using three items introduced by Seale (2002). We treated "product convenience" as a reflection of "situation factor"; this measure was adapted from Simpson et al. (1994) with three items corresponding to time, effort, and convenience, in general. "Status gain" was measured using four items from Brown and Venkatesh (2005), who studied the social outcome of technology adoption, and from Wasko and Faraj (2005), who investigated the social motivation for knowledge contribution—we adapted four items to the context of digital piracy. "Perceived helpfulness" was measured as the perceived outcome of unauthorized sharing by adapting the measures of performance expectancy from Venkatesh, Morris, Davis, and Davis (2003).

We conducted a pilot study with 108 undergraduate students to check the psychometric properties of the measures prior to the main study. To encourage greater participation, Chinese questionnaires were used in the survey based on a back-to-back translation process. To alleviate the potential threat of common method bias, we followed the guideline suggested by MacKenzie and Podsakoff (2012) and Podsakoff et al. (2003) and implemented the following measures: (1) randomizing the sequence of instruments to disrupt participants' consistency motif; (2) using different response formats to reduce scale commonality (e.g., using a reverse scale); (3) inserting check items with obvious answers to check response validity and to introduce a short time lag; (4) assuring strict data confidentiality and respondent anonymity to minimize evaluation apprehension, such as social desirability and leniency; and (5) conducting a pilot study to ensure the wording was clear, concise, and unambiguous.

A total of 3,786 participants responded to our questionnaires. Participants who did not understand our description of piracy behavior or those who gave incorrect answers to the check items (for example: What is two plus three?) were excluded from the analysis. In the end, we collected 3,426 valid responses. Thanks to random assignment, the samples in the four study cells were found to be statistically equivalent, allowing us to perform multigroup comparisons.

The detailed measurement items are shown in Appendix A. To assess response bias, we compared gender and age across the four study cells using ANOVA. The distributions of gender and age are shown in Table 3. The participants' demographics were found to be consistent across the four study cells and representative of the sampling frame. The distributions of demographics in our samples were compatible with the statistics provided by the portal. We used gender and age as control variables throughout our analysis and treated age as a continuous variable.

Table 3. Statistical Description of Demographics in Each Empirical Context[a]

Study cell	Sample size	Gender		Age				
		M	F	Mean	S. D.	<20	20-29	>29
1. Copy software	921	47.45%	52.55%	31.29	8.15	3.58%	43.00%	53.42%
2. Copy music and movies	887	48.25%	51.75%	30.84	8.81	4.51%	48.03%	47.46%
3. Share software	810	49.01%	50.99%	31.24	8.72	4.44%	42.84%	52.72%
4. Share music and movies	808	48.89%	51.11%	30.62	8.53	5.94%	45.17%	48.89%
Sampling frame		46.27%	53.73%	N/A		5.42%	46.35%	48.23%

[a]The percentages of male and female subjects and the percentages of those aged under 20, between 20 and 29, and 30 or over in each category were compared across the four study cells and the whole sampling frame. Age was categorized into three groups according to the records provided by the portal site.

5 Results

For all four study cells, we verified both the measurement model and the structural model using partial least squares (PLS). PLS is especially suited to theoretical development with rich data, which aims to maximize the explained variance in the outcome variables (Gefen & Straub, 2005). Compared with covariance-based structural equation modeling, PLS requires no distributional assumptions (Chin, 1998) and does not impose any constraints on measurement errors (Gefen, Rigdon, & Straub, 2011). Considering that our main goal is to develop a comprehensive framework to understand the antecedents of digital piracy and generalize the framework to different contexts, we believe it is appropriate to use PLS to assess our research models.

5.1 Assessment of the Measurement Model

All measures exhibited good reliability and validity. For both unauthorized copying/downloading and sharing, as shown in Tables 4(a) and 4(b), the constructs have composite reliability (CR) exceeding 0.80 and Cronbach's α exceeding 0.7 (Gefen, Straub, & Boudreau, 2000). In addition, the average variance extracted (AVE) exceeds 0.5.

Table 4(a). Construct Reliability and Validity: Unauthorized Copying/Downloading

	Behavioral intention		Attitude		Moral acceptability		Punishment severity		Perceived unlawfulness		Disproportionality		Convenience	
Composite reliability	**0.92**	0.93	0.89	0.90	0.91	0.92	0.88	0.87	0.92	0.91	0.90	0.92	0.88	0.87
Cronbach's α	**0.86**	0.89	0.83	0.85	0.86	0.88	0.73	0.72	0.83	0.80	0.84	0.88	0.80	0.79
AVE	**0.79**	0.82	0.67	0.69	0.71	0.74	0.78	0.77	0.85	0.83	0.75	0.80	0.71	0.70
Interconstruct correlation (figures on diagonal are the square roots of AVE)														
Behavioral intention	**0.89**	**0.91**												
Attitude	0.79	0.8	**0.82**	**0.83**										
Moral acceptability	0.42	0.48	0.5	0.58	**0.84**	**0.86**								
Punishment severity	-0.25	-0.23	-0.31	-0.25	-0.39	-0.31	**0.89**	**0.88**						
Perceived unlawfulness	-0.3	-0.42	-0.42	-0.53	-0.48	-0.49	0.24	0.19	**0.92**	**0.91**				
Disproportionality	0.24	0.22	0.26	0.24	0.21	0.18	-0.11	-0.03	-0.17	-0.17	**0.87**	**0.89**		
Convenience	0.38	0.4	0.37	0.43	0.21	0.3	-0.23	-0.17	-0.15	-0.2	0.22	0.3	**0.84**	**0.84**

Note: The figures for music and movies are shown in shaded cells; all other figures are for software.

Table 4(b). Construct Reliability and Validity: Unauthorized Sharing

	Behavioral intention		Attitude		Moral acceptability		Punishment severity		Perceived unlawfulness		Perceived helpfulness		Status gain	
Composite reliability	0.94	0.95	0.94	0.94	0.9	0.92	0.88	0.88	0.91	0.92	0.91	0.91	0.9	0.9
Cronbach's α	0.91	0.93	0.92	0.91	0.86	0.88	0.73	0.74	0.8	0.82	0.87	0.87	0.86	0.86
AVE	0.85	0.87	0.81	0.8	0.7	0.73	0.79	0.79	0.84	0.85	0.72	0.73	0.7	0.7
Interconstruct Correlation (figures on the diagonal are the square roots of AVE)														
Behavioral intention	**0.92**	**0.94**												
Attitude	0.82	0.79	**0.9**	**0.89**										
Moral acceptability	0.56	0.56	0.66	0.67	**0.84**	**0.86**								
Punishment severity	-0.43	-0.42	-0.46	-0.44	-0.58	-0.54	**0.89**	**0.89**						
Perceived unlawfulness	-0.35	-0.39	-0.42	-0.48	-0.49	-0.5	0.34	0.38	**0.92**	**0.92**				
Perceived helpfulness	0.63	0.56	0.7	0.67	0.64	0.64	-0.49	-0.38	-0.37	-0.44	**0.85**	**0.85**		
Status gain	0.56	0.54	0.56	0.58	0.63	0.59	-0.49	-0.45	-0.39	-0.37	0.67	0.65	**0.84**	**0.84**

Note: The figures for music and movies are shown in shaded cells; all other figures are for software.

The loadings are greater than 0.707.[2] The convergent validity for the reflective constructs is deemed acceptable. To assess discriminant validity, we compared the square root of AVE with the intercorrelations among measures. We also compared the cross-loadings with the loadings on each construct. Both comparisons reveal an acceptable level of discriminant validity (Straub, Boudreau, & Gefen, 2004). Moreover, we evaluated the measurement models across the four scenarios. The loadings were found to be invariant, allowing further comparison of the structural models across different piracy contexts.

5.2   Assessment of the Structural Model

The PLS results are shown in Figure 3(a) and Figure 3(b), corresponding to unauthorized copying /downloading and sharing, respectively. We conducted bootstrapping with 1,000 samples to determine the significance of each path. The models account for 63%-68% of the variance in piracy intention and 34%-54% of the variance in attitude. More than 31% and 55% of the variance in moral acceptability are explained by the three levels of moral reasoning with respect to unauthorized copying/downloading and sharing respectively.

As shown in Figure 3, all hypotheses are supported at the 5% significance level in all four research contexts. The findings are aligned with our predictions.[3] In particular, moral acceptability has a significant impact on attitude toward piracy behavior. As for moral reasoning principles, reasoning at the preconventional level and conventional level has negative impacts on moral acceptability. More severe punishment associated with piracy behavior will lead to a lower moral acceptance of such behavior. Perceived unlawfulness will prevent users from pirating by reducing the moral acceptability of the act.

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[2] Because of the page limit, we do not include the loadings and cross-loadings in the paper, but they are available upon request.
[3] We also tested the models using the covariance-based method AMOS. The model fit indexes confirm the goodness-of-fit of our models. All of the GFIs, NFIs, CFIs, and TLIs are above 0.90. RMSEAs are around 0.05. The AMOS results are similar to those of PLS, indicating the robustness of the model.
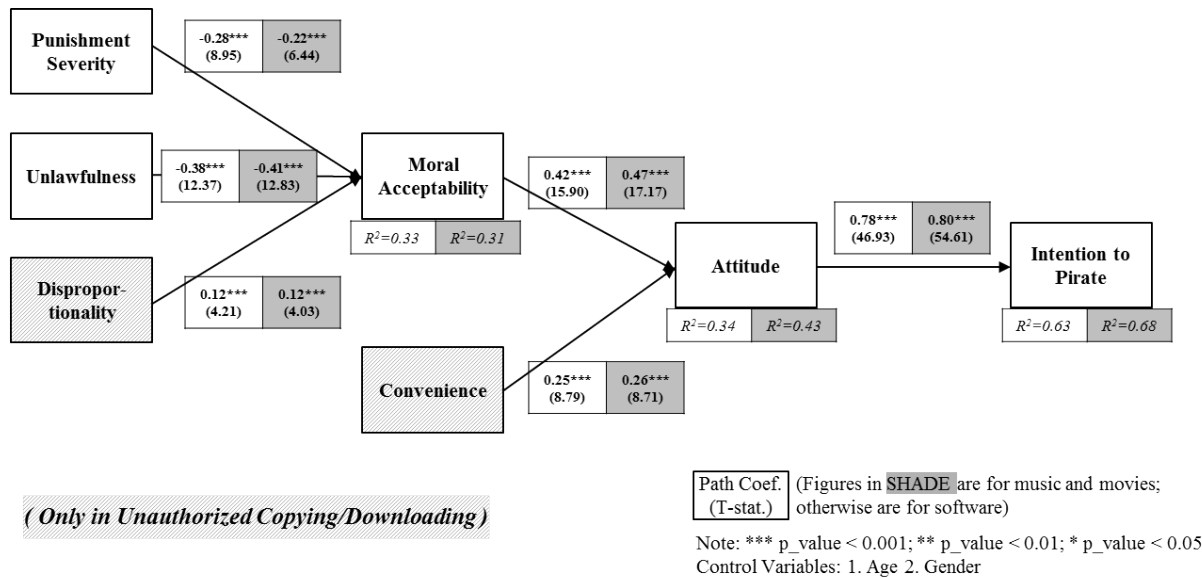
Figure 3(a). Results of the Full Model for Unauthorized Copying/Downloading
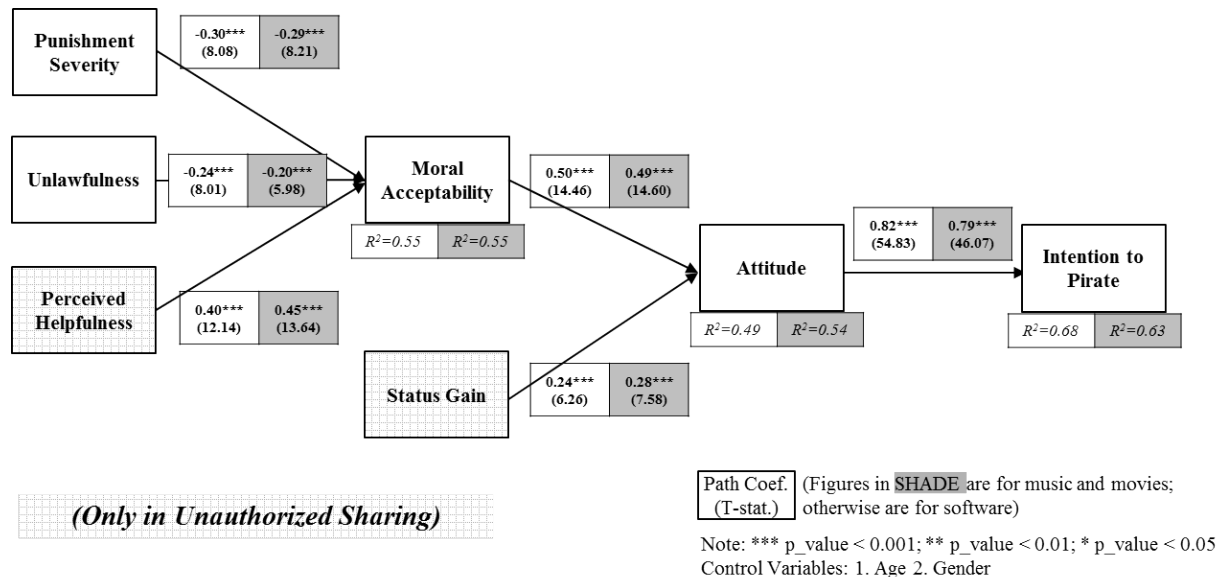

Figure 3(b). Results of the Full Model for Unauthorized Sharing

In terms of the contingent factors in postconventional model reasoning, price disproportionality has a positive effect on the moral acceptability of unauthorized copying/downloading. On the other hand, individuals' perceived helpfulness has a positive effect on the moral acceptability of unauthorized sharing. It follows that users who believe sharing digital products can help others are more likely to regard piracy as morally acceptable. In addition, the amoral factors demonstrate significant roles in affecting attitude toward piracy. Product convenience and status gain improve users' attitude toward unauthorized copying/downloading and sharing, respectively. Finally, as expected, attitude toward piracy behavior is strongly and significantly related to intention.

We controlled for the effects of age and gender on the three dependent variables (moral acceptability, attitude, and intention) throughout our data analysis. In general, we found that elderly and female users had lower propensities for piracy, consistent with prior

research (Gopal & Sanders, 1997). We also assessed common method bias using two methods. First, we performed Harman's one-factor test and were unable to find a single factor that could account for the majority of covariance (Podsakoff et al., 2003). Second, we conducted the common method variance factor test (Li, Hsieh, & Rai, 2013; Podsakoff et al., 2003). All factor loadings remained stable across the original measurement model and the measurement model with a common method variance factor (Appendix B). Results of both tests suggest that common method bias is not a serious threat in our study.

5.3 Multigroup Comparisons

We compared relationships across the two types of piracy behaviors and the two kinds of digital products. The loading patterns are consistent across the four contexts, thus permitting between-group path comparisons. A t-test was conducted to assess the statistical difference for each pair (Chin, 2004). The results are shown in Table 5.

Table 5. Comparison Across Piracy Behaviors and Digital Products

Relationships		Copy software – Copy M&M		Share software – Share M&M		Copy software – Share software		Copy M&M – Share M&M	
Independent variable	Dependent variable	Δcoef.	p-value	Δcoef.	p-value	Δcoef.	p-value	Δcoef.	p-value
Punishment severity	Moral acceptability	-0.07	0.16	0.00	0.95	0.01	0.82	0.07	0.14
Unlawfulness		0.03	0.45	-0.04	0.38	-0.14	**0.00**	-0.21	**0.00**
Disproportionality/ Perceived helpfulness		-0.01	0.89	-0.05	0.29	N/A		N/A	
Moral acceptability	Attitude	-0.05	0.21	0.02	0.72	-0.08	0.06	-0.01	0.74
Convenience/ Status gain		-0.01	0.89	-0.04	0.44	N/A		N/A	
Attitude	Intention to pirate	-0.02	0.48	0.03	0.25	-0.04	0.11	0.01	0.82

The path coefficients are quite robust between software and music/movies for the same type of piracy behavior. In other words, the motivations for each piracy behavior have similar impacts on both content types. It follows that the research model for unauthorized copying/downloading and unauthorized sharing can be generalized to different types of digital content. The coefficient of the path from unlawfulness to moral acceptability was found to be significantly different between unauthorized copying/downloading and unauthorized sharing for the same kind of digital content. Unlawfulness has a stronger negative effect on the moral acceptability of copying/downloading than on the moral acceptability of sharing, for both types of digital products. This suggests that the law and order consideration is more important in the moral judgment of copying/downloading. On the other hand, users' concern of unlawfulness is reduced when they think they are helping others by sharing digital content. In addition, moral acceptability was found to contribute more to users' attitude of sharing software than to their attitude of copying software, but the difference is only marginally significant. Apart from the contingent factors that we theorize in the research models, the common factors also exhibit different patterns of influence on the two types of piracy behaviors.

6 Contributions and Limitations

In this paper, we unravel the conflicting roles of morality at different reasoning levels. We developed our research models by differentiating between two types of piracy behaviors and empirically validated them for two types of digital products. The findings suggest that the antecedents of digital piracy and their relative impacts are contingent on the type of piracy behavior (i.e., unauthorized copying/downloading and unauthorized sharing), while the findings can be generalized to different digital products (i.e., software, music/movies). In what follows, we discuss the theoretical and practical implications and our research limitations.

6.1 Theoretical Implications

As multimedia and online social media technologies continue to reshape the piracy contexts and motivations to pirate (Qualman, 2013), our understanding of digital piracy has not kept pace with its development. This paper contributes to the piracy literature in several ways.

First, our paper focuses on the conflicting roles of moral reasoning at different levels. On one hand, most

users respect intellectual property and law and order and want to avoid punishment. On the other hand, they may form their own perceptions about price fairness, consumer rights, and the universal virtue of helping others. These opposing forces of moral reasoning, depending on their relative salience, could lead to different piracy behaviors. While prior studies incorporate morality as an antecedent of piracy behavior (Cronan & Al-Rafee, 2008; Goles et al., 2008; Yoon, 2011), they do not go further down the path of reasoning to reveal deeper reasoning principles underlying an individual's moral judgment. In this study, we explicitly consider the moral reasoning process at the preconventional, conventional, and postconventional reasoning levels. Our findings suggest that conventional moral reasoning emphasizing law and order is more dominant for unauthorized copying/downloading and the factors at the postconventional level are contingent on the different features of piracy behavior. Moreover, different amoral factors will also contribute to users' attitude toward different types of piracy behaviors. By incorporating the multilevel moral reasoning principles, the current work enriches our understanding of the role of morality in piracy.

Second, we differentiate between the two types of piracy behaviors and develop the research models with contingent antecedents accordingly. The models are generalized to two types of digital products, resulting in four scenarios that cover a wide spectrum of digital piracy contexts. Previous studies of piracy mostly focus on unauthorized copying/downloading or do not clearly differentiate it from unauthorized sharing, despite obvious differences in their underlying motivations. Also, previous research either treats the two types of digital products as the same or develops models to study one or the other type of content individually. A contingency approach can shed light on the salience of various factors in a host of piracy contexts and allow fine-grained analysis of their impacts. Our findings suggest that for each type of piracy behavior, the relationships can be generalized to different kinds of digital content. However, the motivational factors are contingent on the type of piracy behavior and generate differential impacts on piracy intention.

Third, the majority of empirical piracy studies use student samples. While students are believed to be among the most likely to pirate, a more comprehensive sampling would help achieve better external validity. Compeau, Marcolin, Kelley, and Higgins (2012) provide a critical review of information systems research that uses students as subjects; they suggest that the findings can only be generalized under certain conditions. In contrast, our study empirically validates the research models based on a large-scale data set and representative samples with diverse coverage collected at the societal level.

6.2 Practical Implications

According to our findings, the multilevel moral reasoning principles influence piracy behaviors differently. In particular, price disproportionality has a relatively small impact on moral acceptability in the case of unauthorized copying/downloading (Coeff. = 0.12). This suggests that compared with legal and punitive considerations, people may not view pricing as a strong factor in deciding whether or not it is acceptable to access unauthorized digital content. After all, many websites such as Amazon.com and the iTunes Store offer users lower-cost options for authorized access. These options reduce the perception of unfair pricing (e.g., different subscription packages for content streaming).

However, the perception of helping others was found to be a significant motivator for unauthorized sharing. Legal sanction is less effective in this case. The belief that sharing digital products can help others greatly increases the moral acceptability of piracy and counterbalances the negative effects of punishment severity and unlawfulness. Anti-piracy campaigns that emphasize law and order and the severity of punishment may not be very effective when postconventional moral reasoning carries more weight in judging the acceptability of unauthorized sharing, which is deemed ethical despite legal sanctions. Furthermore, the motivation to gain social status importantly shapes users' attitude toward sharing behavior. The proliferation of online social media (e.g., YouTube) offers users endless opportunities to establish social status by sharing digital products. Individuals who engage in unauthorized sharing are driven not only by the thought that they are helping others but also by their desire to improve their social status (e.g., receiving "likes" from online peers). This poses a challenge to the sole use of legal sanctions to deter unauthorized sharing. Embedding social networking features may even facilitate the dissemination of unauthorized digital content on social media platforms.

A major finding of the current study is that moral reasoning could be a double-edged sword in deterring digital piracy. In developing an anti-piracy campaign, we need to first identify the target audience and the types of behavior and content that we want to deter. Second, for that particular audience, we need to decide on the moral reasoning principle most appropriate for the message. Based on the types of piracy behavior, one particular moral reasoning principle may be more effective than others. Our findings can help to identify these mappings. Third, we need to design the rhetoric for the campaign. The rhetoric used in an anti-piracy campaign to educate the audience should highlight the

underlying reasoning principle. For example, the Software Publishers Association's video "Don't Copy that Floppy" was targeted at youngsters and asked them not to disrespect game creators by copying games from others. In one campaign, the Motion Picture of America (MPAA) used the slogan "respect copyrights" to highlight "respect" for the creators. Both serve as examples of postconventional reasoning rhetoric. On the other hand, another MPAA campaign with the slogan "If you don't pay for it, you have stolen it" is an example of conventional reasoning rhetoric. Not only does the rhetoric need to be carefully crafted, the casting, storyline, and production for a campaign commercial are also critical design choices. A successful campaign should trigger the targeted moral reasoning principle but not others. Failing to do so may generate mixed messages to audiences.[4]

Our findings across software and music/movies are fairly consistent but the antecedents of piracy as well as the impacts differ between unauthorized copying/downloading and sharing. It is suggested that policymakers should focus more on the behavior rather than the content in designing sanction measures to achieve impactful deterrence against digital piracy.

6.3   Limitations and Future Study

There are some limitations that should be taken into account when interpreting the findings. First, while the intention to pirate is a commonly used outcome variable in previous studies (e.g., Beck & Ajzen, 1991; Cenite et al., 2009; Peace et al., 2003), survey respondents may be concerned about social desirability and legal implications which could affect their responses (Randall & Fernandes, 1991). In most cases, assessing the direct link between attitude and behavior instead of intention is methodologically challenging. One way to overcome this challenge is to let respondents know that their responses will be kept strictly confidential. A promising line of research is to explore advanced statistical techniques such as randomized response (Kwan et al., 2010) to minimize socially desirable responses.

Second, we made references to previous studies on construct measurement but did not use the original items for some of the constructs (e.g., unlawfulness, convenience, and perceived helpfulness). They were

instead adapted to the context of the current study. Although the adapted constructs are conceptually similar to the original ones and have demonstrated reliability and validity in both the pilot and main studies, some lack a long development history. We also did not measure the "unlawfulness" of each type of piracy behavior. The construct reflects an individual's overall perception of whether piracy behavior is legal or not.

Third, we only applied the research models for each type of piracy behavior concerning software and music/movies. We did not theoretically differentiate between the two types of digital products by including specific antecedents. A more fine-grained classification of digital products would be helpful for understanding piracy, such as software for utilitarian and music/movies for hedonic purposes, which is beyond the scope of current paper.

Fourth, this paper focuses only on the direct impacts of the moral reasoning antecedents on users' sense of acceptability regarding each type of piracy behavior. Future studies could explore indirect impacts on perceptions of moral acceptability through different moral reasoning considerations, such as the motivation to help others—which, in turn, improves perceptions of moral acceptability.

Fifth, we studied only a single culture, that of Hong Kong. Hong Kong is known as a modern city where Eastern culture and Western culture are inextricably intertwined. While our study provides solid insights into the piracy phenomenon in general, future replications involving participants from other cultures would improve the generalizability of our findings.

7   Conclusion

In this paper, we investigate the role of morality and explain how different moral reasoning principles could lead to different, sometimes contradicting intentions. Gantz and Rochester (2005) conducted numerous focus-group interviews in a digital piracy context with a host of stakeholders, including innovators, license holders, and consumers. They draw the thought-provoking conclusion that "from all walks of life, income level, and age, the average digital pirate we talked to or surveyed: a) knew pirating was wrong and b) did it anyway" (pp. 230). Piracy behavior is the

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[4] One example is the TV commercial produced by the California Commission for Jobs and Economic Growth to combat digital piracy in 2005. The 30-second commercial featured two celebrities: Arnold Schwarzenegger (then governor of California) and Jacky Chan. Dressed in Terminator-like costumes and riding motorcycles, the two were punching their way through explosions and car wrecks as they appealed to viewers not to pirate. Schwarzenegger and Chan are known for their heroic and rebellious characters in many of their silver screen appearances. While the

intention was to leverage the endorsement effect of celebrities, the advertiser failed to recognize the close resemblance of the characters and the situation portrayed in the commercial to digital pirates and their resentment toward software and media giants. Failing to understand the underpinning psychological factors of piracy, the commercial likely had zero effect, if it did not in fact reinforce piracy as a way to fight back against corporate giants.

outcome of a complex reasoning process involving multiple moral principles. As such, it is important to consider different contextual factors so as to offer a more precise account of the underlying reasons for engaging or not engaging in digital piracy. This paper contributes to the existing literature on digital piracy by unraveling the moral reasoning process underlying one's decision to engage in or avoid digital piracy and by investigating the different piracy contexts based on a contingency framework.

Acknowledgments

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Appendix A

Table A1. Measurement Items for Unauthorized Copying/Downloading and Sharing

Construct		Measurement item	Copying/ Downloading Mean		S.D.		Sharing Mean		S.D.	
Behavioral intention	1	I may copy (share) software without authorization in the future.	3.81	3.68	1.40	1.49	3.23	2.95	1.41	1.46
	2	If I have the opportunity, I would copy (share) software without authorization.	3.73	3.61	1.45	1.52	3.06	2.88	1.38	1.40
	3	I have intention to copy (share) software without authorization.	3.63	3.56	1.50	1.54	3.13	2.94	1.38	1.39
Attitude	1	To me, unauthorized copying (sharing) of software is: (Very Bad … Very Good)	3.04	3.07	1.19	1.27	3.05	2.95	1.26	1.30
	2	To me, unauthorized copying (sharing) of software is: (Very Unattractive …Very Attractive)	4.14	4.03	1.47	1.52	3.31	3.18	1.31	1.34
	3	To me, unauthorized copying (sharing) of software is: (Very Harmful … Very Beneficial)	3.55	3.48	1.47	1.46	3.20	3.05	1.29	1.29
	4	To me, unauthorized copying (sharing) of software is: (Very Foolish … Very Wise)	3.51	3.49	1.16	1.81	3.29	3.20	1.23	1.21
Moral acceptability	1*	Unauthorized copying (sharing) of software goes against moral principles.	2.95	3.11	1.15	1.26	3.18	3.11	1.24	1.31
	2	Unauthorized copying (sharing) of software is not unethical.	2.91	3.02	1.14	1.17	2.92	2.95	1.12	1.21
	3*	People ought not to copy (share) software without authorization.	2.86	2.89	1.12	1.16	3.16	3.02	1.18	1.23
	4	It would be morally acceptable to copy (share) software without authorization.	3.02	3.08	1.18	1.19	3.04	2.94	1.15	1.17
Punishment severity	1*	If I were caught unauthorized copying (sharing) software, I would not be subject to severe punishment.	4.70	4.55	1.24	1.28	4.76	4.80	1.28	1.39
	2	If I were caught copying (sharing) software without authorization, I would be severely punished.	4.66	4.54	1.22	1.29	4.90	4.94	1.26	1.32
Unlawfulness	1	Unauthorized copying of software is illegal.	5.19	4.99	1.39	1.50	5.13	5.10	1.40	1.47
	2	Unauthorized sharing of software is illegal.	4.88	4.90	1.48	1.56	4.91	4.95	1.46	1.51
Constructs applicable only to unauthorized copying/downloading										
Dispropor-tionality	1	The price of licensed software is unfair.	4.33	3.82	1.27	1.28	N/A			
	2	Licensed software is overpriced.	4.84	4.27	1.04	1.15				
	3	Licensed software is not worth the money.	4.01	3.63	1.35	1.36				
Convenience	1	One may save effort by copying without authorization rather than purchasing the licensed software.	3.89	3.75	1.54	1.61	N/A			
	2	Copying software without authorization is more convenient than purchasing the licensed copy.	4.34	4.26	1.31	1.38				
	3	One may save time by copying without authorization rather than purchasing the licensed software.	4.34	4.20	1.36	1.43				
Constructs applicable only to unauthorized sharing										
	1	Unauthorized sharing of software can help others.	N/A				3.93	3.59	1.36	1.39

Perceived Helpfulness	2	It would benefit others to share software with them without authorization.		3.50	3.33	1.33	1.40
	3	Unauthorized sharing of software can benefit others.		3.75	3.57	1.32	1.37
	4*	It does not help others to share software with them without authorization.		4.01	3.76	1.40	1.45
Status Gain	1	Those who are willing to share software without authorization would be more welcome.		3.58	3.61	1.32	1.41
	2	Those who are willing to share software without authorization would be more respected.		2.93	2.91	1.25	1.39
	3	Those who are willing to share software without authorization would be praised.		3.15	3.10	1.19	1.23
	4*	Sharing software without authorization with others cannot increase one's popularity.		3.13	3.09	1.20	1.22

Notes: 1. For music and movies, we replaced the word "software" by "music and movies" and kept the rest the same. The statistics are shown in shaded cells. 2. Those items marked with * are the constructs reversed.

Appendix B

Table B1. Common Method Variance Test Results

Construct	Item	Copy/Downloading—Factor loading				Sharing—Factor loading			
		Measurement model		Measurement model with CMV		Measurement model		Measurement model with CMV	
Behavioral intention	int1	0.878	0.905	0.876	0.904	0.929	0.938	0.929	0.938
	int2	0.909	0.927	0.909	0.927	0.907	0.933	0.908	0.933
	int3	0.871	0.889	0.872	0.891	0.922	0.934	0.922	0.934
Attitude	att1	0.749	0.803	0.754	0.803	0.897	0.896	0.896	0.897
	att2	0.797	0.813	0.799	0.816	0.903	0.891	0.903	0.892
	att3	0.864	0.865	0.864	0.867	0.917	0.913	0.916	0.913
	att4	0.850	0.836	0.846	0.830	0.882	0.868	0.883	0.867
Moral acceptability	mo1	0.842	0.866	0.843	0.866	0.855	0.853	0.854	0.853
	mo2	0.868	0.851	0.869	0.853	0.818	0.848	0.819	0.847
	mo3	0.792	0.831	0.789	0.828	0.864	0.896	0.863	0.895
	mo4	0.862	0.895	0.864	0.897	0.811	0.823	0.814	0.825
Punishment severity	seve1	0.874	0.822	0.880	0.823	0.874	0.851	0.878	0.857
	seve2	0.897	0.932	0.891	0.931	0.899	0.925	0.895	0.920
Perceived unlawfulness	unlaw1	0.931	0.928	0.919	0.922	0.908	0.910	0.902	0.910
	unlaw2	0.919	0.921	0.904	0.901	0.920	0.929	0.925	0.930
Disproportionality	disprop1	0.872	0.889	0.892	0.893	N/A			
	disprop2	0.845	0.873	0.851	0.887				
	disprop3	0.884	0.920	0.865	0.908				
Convenience	conven1	0.852	0.829	0.836	0.820				
	conven2	0.857	0.841	0.867	0.847				
	conven3	0.814	0.839	0.828	0.845				
Perceived helpfulness	help1	N/A				0.895	0.888	0.897	0.891
	help2					0.882	0.891	0.878	0.887
	help3					0.907	0.902	0.906	0.900
	help4					0.697	0.721	0.701	0.725
Status gain	status1					0.817	0.819	0.820	0.822
	status2					0.772	0.766	0.767	0.759
	status3					0.874	0.893	0.875	0.894
	status4					0.876	0.866	0.878	0.870

Note: The values for music and movies are shown in shaded cells whereas all other values are for software.

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