

Software Piracy: Original Insights from a Criminological Perspective

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Abstract

It is well known that software piracy is widespread. While the existing research on this subject has applied a number of theories in order to understand and prevent such an act, this text presents an alternative perspective by advancing two criminological theories. More specifically, a novel theoretical model is advanced, drawing on these theories entitled Techniques of Neutralization and Differential Association Theory. The former helps to explain how individuals are able to rationalize their criminal behaviour in a manner which absolves them of pressures from social norms and internal controls such as feelings of guilt and shame. The latter explains how criminality is developed through a learning process taking place in personal groups. While empirical research is needed to test the model further, it is argued that these theories offer both an alternative perspective on the intention to commit software piracy, but also potentially open up new avenues for preventing this crime.

1. Introduction

Surveys all around the world report that people commonly use unauthorized software copies [19, 37]. Because the unauthorized copying of software is widespread, companies claim that such behaviour constitutes a serious economic threat [19]. It is perhaps no surprise, therefore, that this problem has received considerable academic attention. To be more precise, researchers have advanced a number of models in order to explain why individuals copy software. On the one hand, these models are based on generic behavioural theories, such as The Theory of Reasoned Action and the Theory of Planned Behaviour [e.g., 5, 48, 53]. On the other, scholars have also advanced more specific ethical decision making models that endeavour to explain why ordinary computer users copy software [e.g., 45, 64]. While these models have provided important insights into the research on unauthorized copying of software, we argue that two

criminological theories - Techniques of Neutralization and Differential Association Theory - offer a new perspective and sound foundation for understanding and preventing the copying of software. While these theories have been successfully applied in other areas to explain a plethora of crimes, their potential has not been exploited in addressing software piracy. This paper fills this research gap by advancing a new theoretical model, derived from these theories, aimed at explaining why people engage in software piracy.

The remainder of this paper is organized as follows. In the next section of the paper, the literature on software piracy is reviewed. The following section presents the theoretical foundations and the respective hypotheses for the new model. The penultimate part of the paper discusses potential research issues, while the final section summarizes the paper.

2. Related work

Chang [5] compared the Theory of Reasoned Action versus the Theory of Planned Behavior in the case of illegal copying of software. The Theory of Planned Behavior was found to be better than the Theory of Reasoned Action in predicting unethical behavior. A modified version of the Theory of Planned Behavior with a causal path linking subjective norms to attitude, provided a significant improvement on the fit of the model. Additionally, Peace and Galletta [48] applied the Theory of Planned Behavior, General Deterrence Theory, and Expected Utility Theory in an attempt to explain software piracy. Seale *et al.* [53] applied the Theory of Reasoned Action where it was found that the strongest predictors of software copying were social norms and attitudes towards copying. Possessing the necessary expertise to copy was associated with the illegal copying of software. Lending and Slaughter [37] combined the Theory of Planned Behavior with Hofstede's theory of cultures. Lending and Slaughter [37] found that technical students were more inclined to copy software than business students. In turn, Lin *et al.* [39] combined the

Theory of Planned Behaviour with the software piracy model (self-efficacy, deindividuation, motivation-object-protect theory) and with a theory of organizational culture. It was found that attitudes towards copying, deindividuation and subjective norms had a significant effect on intentions to copy illegal software. Organizational culture and the perception of copying had indirect effects on the intention through subjective norms and attitude.

While the Theory of Reasoned Action and the Theory of Planned Behavior based models typically measure intentional use or copying of software, non-intentional measures, such as habitual behaviour, are also applied to explain software copying by Limayem *et al.* [36]. They used Triandis' model to explain software copying. Perceived consequences and social factors were seen to have a significant effect on the intention to copy software. Facilitating conditions and habits were found to have a significant effect on the actual behaviour of copying software. Interestingly, intentions did not lead to the behaviour of software piracy.

In addition, other theories have been applied to explain software piracy. Glass and Wood [23] utilized Social Exchange/Equity theory. They found that the greater the cost of software, the less likely an individual would copy software for another person. Furthermore, their findings concluded that negative outcomes associated with sharing illegal software reduced the sharing of illegal software, while returning favours and social factors increase the likelihood of sharing illegal software.

Deterrent and preventive controls have been studied with respect to software copying. Gopal and Sanders [24] studied the effect of preventive and deterrent controls on the profits of software companies. Their results indicated that deterrence controls can increase such profits. Consequently, Gopal and Sanders [25] built an economic model to explain the implications of measures to deter and prevent unauthorized copying of software.

While the Theory of Reasoned Action, the Theory of Planned Behaviour are general theories aimed at explaining various types of behaviour, researchers have also applied theories that focus on capturing the maturity level of moral thinking or explaining moral behaviour. With respect to the latter, Wood *et al.* [69] applied Kohlberg's theory of cognitive moral development and found that students were more inclined to copy software compared with business professionals. Furthermore, Kini *et al.* [33] applied

Kohlberg's theory of cognitive moral development. This study captured business students' levels of moral development in terms of Kohlberg's theory. Regarding the latter theories, Leonard and Cronan [38] added gender as a moderator into Banerjee's IT ethics model. One of the cases concerned the illegal copying of software. Findings by Leonard and Cronan [38] suggest that the intention to behave unethically was connected to an individual's moral belief and attitude towards copying, ego strength and gender.

Thong and Yap [64] applied Hunt and Vitell's General Ethical Decision Theory in the area of software piracy. Their findings supported the theory. Moores and Chang [45] modified, and applied, a four component model advanced by Rest [52]. Their findings supported a sequential causal model in which recognition of moral problems determines moral judgement, judgment determines intention, which finally determines software piracy.

Simpson *et al.* [55] studied the Stimulus to act, socio-cultural, legal, personal and situational factors. They found that religious orientation, situational factors (not knowing where to obtain the software, no time to buy the software) and personal gain, were found to have a significant effect on the propensity for illegal copying. Interestingly, ethical views on copying had no significant effect.

Cheng *et al.* [7] found that "software is too expensive" and "I cannot afford the program" constituted the main reasons for copying software. Other commonly stated reasons included "I want to try to software", "it is easy to copy", "little chance of being caught" and "most people copy software". They also found that the "I cannot afford the program" claim correlates with household incomes. Hence, the lower the income the more likely the "I cannot afford the program" argument will be used. This is line with the results by Moores and Dhillon [44]. They reported that the cost of the software was the major reason for acquiring illegal software. Chen and Png [6] echo these findings. They suggest that illegal copying should be tackled by means of price reduction rather than sanctions and monitoring.

Age has been found to have a role in software copying. A study by Gan *et al.* [19] drew 19 testable statements from the literature to measure attitude towards software copying. Their main finding was that students aged 26–35 copied software more frequently than university employees. Taylor and Shims [63] examined the attitudes towards illegal copying of software by business school professors and executives.

Finally, Crow [13], Dakin (2001), Johnson [30], Kruger [35] and Weisband and Goodman (1992) presented a set of arguments against the illegal copying of software, while Stallman [58, 59] argued that there is nothing wrong with copying software. Finally, there are more philosophically oriented studies that debate whether it is morally right to copy. These studies include: Kuflik [34], Johnson [31], Nissenbaum [46], Siponen [56], Weckert and Adeney [66].

While the existing research has provided important insights into the study of software piracy, we argue that criminological theories have not been exploited to their full potential in addressing this problem.

3. Theoretical background

The theoretical background of this model combines Techniques of Neutralization and Differential Association theory.

Techniques of Neutralization

Focussing on the area of juvenile delinquency, Sykes and Matza's [62] starting point is to question the idea of a delinquent sub-culture in which the prevailing values represent an inversion of those held by 'respectable society'. The paradoxical question, which subsequently emerges, is that which asks why delinquency occurs, if there is a commitment to 'the usages of conformity'? Sykes and Matza [62] respond by arguing that much deviance is underpinned by rationalisations (justifications) applied to a criminal act by the delinquent. These rationalisations negate the influence of internalised norms and social controls designed to inhibit aberrant behaviour. More specifically Sykes and Matza [62] term these rationalisations 'techniques of neutralisation' and list five types, which include 'denial of responsibility', 'denial of injury', 'denial of the victim', 'condemnation of the condemners' and 'the appeal to higher loyalties', which are now described.

The denial of responsibility involves the situation where if the offender is able to rationalise his actions in a manner which absolves him of responsibility for a crime, the restraining censure from others is reduced. Sykes and Matza [62] argue how a delinquent may subsequently view himself a 'billiard ball', propelled into a criminal act by unloving parents or bad company. The denial of injury involves the delinquent rationalising his behaviour in a manner which negates the perceived injury or harm caused by his actions. Hence, the delinquent may view vandalism as mere

'mischief' or 'auto-theft' as simply 'borrowing'. The delinquent may further neutralise moral indignation from third-parties by rationalising his actions in a manner which denies the existence of a victim. A criminal act, in certain circumstances, may be viewed as not 'wrong' but rather 'rightful retaliation' or 'punishment'. As Sykes and Matza [62] state 'By a subtle alchemy the delinquent moves himself into the position of an avenger and the victim is transformed into a wrong-doer'. Vandalism may, therefore, be justified as 'revenge' on an 'unfair teacher', or theft form a store legitimised, given the owner is 'crooked'. Another variation on this theme refers to how, if the victim is unknown, absent, or a 'vague abstraction' (commonly the case with property crimes), their existence is marginalised, making it easier for the delinquent to perceive their actions as victimless. The fourth neutralisation technique is entitled the 'condemnation of the condemners'. This involves the delinquent moving the focus of attention away from his actions to the behaviour and motives of those who oppose his behaviour. The delinquent, for example, may view the police as 'corrupt' or 'stupid'. By criticising the behaviour of the 'condemners', the delinquent is able to diminish or repress the wrongfulness of his own actions. The final technique – the appeal to higher loyalties – encompasses the situation where the delinquent is able to neutralize internal and external social controls imposed by larger society by acquiescing to the demands of a smaller group or clique. A delinquent may therefore align their loyalty to a gang or group of friends as opposed to the dominant social order, and invoke neutralizations such as 'always help a buddy' and 'never squeal on a friend'.

While other writers have followed Sykes and Matza's [62] lead by examining delinquency [43, 54, 10], a number have stressed the central role that the rationalisation process plays in the commission of all forms of crime [18]. This is reflected in the diverse application of neutralization techniques, which has been used to help examine a plethora of crimes including domestic violence [16], tax evasion [65], drug-use [51], shoplifting [12], hate-crimes [4], poaching [12] and auto-theft [8]. In addition to these studies, the workplace has also been a source of focus for researchers examining, for example, property theft [15, 27] 'corporate crime' [50] and 'white-collar' crime [3]. We argue that techniques of neutralization are helpful in understanding why people copy illegal software. Thus we can hypothesize:

H1: The employment of techniques of neutralization, by an individual, will be positively associated with the intention to commit software piracy.

Differential Association

The theory of differential association was first proposed by Sutherland [60]. He argues that like other forms of social behaviour, criminal behaviour is learned. More specifically, criminal behaviour is learned through interaction with others by a process of communication in intimate, personal groups. The learning process encompasses two areas, including an understanding of criminal techniques e.g. how to steal a car, in addition to the moral outlook, and motivations appropriate for criminal behaviour. Furthermore, the elements of these two areas are technically termed 'definitions'. Sutherland argues the likelihood of an individual engaging in some form of criminal behaviour is dependent on pro-deviant versus anti-deviant messages that are communicated within the intimate personal groups. Therefore, differential personal groups may advance anti-deviant or pro-deviant definitions. As a consequence, an individual may well experience conflicting definitions of what is considered appropriate or inappropriate behaviour in certain settings. An individual is, therefore, more likely to engage in criminal behaviour if he or she associates with peers who are criminals. Hence through this 'differential association' with groups:

"A person becomes delinquent because of an excess of definitions favourable to violation of law or definitions unfavourable to violation of law" [61, p. 81]

The influence of these groups will vary based on their exposure to an individual in terms of their frequency, deviancy, priority and intensity. As Matsueda [41 p. 489] states:

"Both favourable and unfavourable definitions (behaviour patterns) are weighted by frequency, duration, priority, and intensity. Thus behaviour patterns presented with a greater frequency, presented for a longer time, presented earlier in life, and presented from a prestigious source will have more weight in the process producing delinquent or non-delinquent behaviour".

It is perhaps no surprise to learn that family and peer groups are considered important associations. However, it has also been noted how the corporate context and relationships with work colleagues form an important 'association' [28, 50]. Indeed, Piquero *et al.* [50] note that while corporate relationships may not

represent the primary association, given the amount of time employees spend in this context (particularly with regard to 'frequency' and 'duration') its influence should not be ignored.

Like techniques of neutralisation, the theory of differential association has been applied to explain a diverse range of criminal behaviours. These include drug use [29, 32, 40, 47], adolescent delinquency [2, 42, 57], corporate crime [50], embezzlement [11], and white collar crime [21]. We argue that differential association is helpful for understanding why people copy illegal software. Thus we can hypothesize:

H2: An influential association group, in which pro-deviant definitions are in excess of anti-deviant definitions, will be positively related with a member's intention to commit software piracy.

Intention and actual behaviour. Intentions indicate people's willingness to try to perform a behavior in question [1], which concerns the illegal copying of software in our case. Prior research on technology acceptance shows that intentions are good predictors of actual behaviour. We assume that this applies to illegal copying of software as well. Thus we can hypothesize:

H3: An individual's intention to copy software affects their actual behaviour in terms of copying software.

Gender and Age as moderators: Venkatesh *et al.* [68 p. 469] note that both gender and age have received very little attention in IS literature, even though gender and age differences have been shown to play a role in the context of technology acceptance. For example, Venkatesh and Morris [68] found that gender functions as a moderator between subjective norm in terms of the Theory of Reasoned Action, perceived usefulness, perceived ease of use in terms of the Technology Acceptance Model and behavioral intention. Higgins *et al.* [26] applied contemporary General Deterrence Theory to the illegal copying of software and suggested that males are more inclined to copy illegal software than females. Venkatesh *et al.* [68 p. 450, 469] added that studies of gender differences are misleading without any information on age. Therefore, there is a reason to study whether the relationships between intentions and the five components of theories of neutralization and the relationship between association differential theory and intention to copy software are moderated by gender and age.

4. Discussion

The Techniques of Neutralization and Differential Association Theory both offer potential insights into the intention to commit software piracy. In terms of the Techniques of Neutralization, the existing literature on software piracy hints at their use by individuals. For example, and as stated earlier, Cheng *et al.* [7] note how those respondents who copied software believed that the 'software is too expensive' and 'I cannot afford the program'. When these comments are considered in terms of the neutralization techniques it could be argued that they represent examples of the 'denial of responsibility'. Hence, the offender rationalizes their actions by claiming that they had no choice but to copy the software owing to the cost. In this sense, the offender is denying responsibility for their actions. Similarly, Peace *et al.* [49 p. 154] note how:

The fact that the crime [software piracy] may appear victimless to the perpetrator further complicates matters. The 'software pirate' may see the action as causing little harm to faceless, billion-dollar company.

It could be argued that this statement refers to two techniques of neutralization used by offenders. The first sentence refers to the technique entitled 'denial of the victim'. As noted earlier, if the victim is unknown, absent, or a 'vague abstraction', their existence is marginalised, making it easier for the delinquent to perceive their actions as victimless. In addition, it could also be argued that the second sentence of the above quote refers to the technique of neutralization entitled 'denial of injury'. In this sense, offenders attempt to rationalise their behaviour in a manner which negates the perceived injury or harm by using such arguments as 'they can afford it'.

Interestingly, owing to the criminological origins of the Techniques of Neutralization, there has emerged a related group of crime prevention approaches. One of these approaches entitled Situational Crime Prevention has, amongst other things, developed measures to address neutralization techniques. Hence, Cornish and Clarke [9] advance five methods, while Wortley [70] advocates four. Wortley [70], while discussing the 'denial of the victim', provides the example of how employees may use this technique prior to the perpetration of fraud in their company. Hence in a bid to mitigate this technique he notes how:

Employee share schemes, incentive schemes and general attention to reducing job dissatisfaction may increase in employees a sense of attachment to a company and inhibit their ability to portray the

company in ways that justify acting fraudulently against it [70 p. 122-123].

Hence, if further research into software piracy reveals that offenders use neutralization techniques then the crime prevention methods advanced by Situational Crime Prevention could feasibly be employed.

As noted, it has been argued that with regard to Differential Association theory, family and peer groups are considered important 'associations'. However, given the central roles played by intimate personal groups in the development of criminality, Differential Association theory also points to the consideration of other important associations. Piquero *et al.* [50] note how the corporate environment may well provide such associations given the 'frequency' and 'duration' of time spent by employees at work. In addition, higher-education institutions may also provide a suitable research environment for applying Differential Association theory, particularly with regard to software piracy. Like the workplace, it could be argued that associations developed by students, at least, are characterised by 'frequency' and 'duration'.

The workplace and student environments also offer potential in terms of deterring or preventing software piracy. If further research finds that staff and students learn criminality as advanced by Differential Association, then the situated nature of these associations could potentially be addressed.

5. Conclusions

It is widely agreed that the unauthorized copying of software is widespread. To understand why people copy software, existing research on this subject has applied a number of theories. This study proposes an alternative perspective by advancing two criminological theories. More specifically, a new theoretical model is advanced, drawing on these theories entitled Techniques of Neutralization and Differential Association Theory. The former helps to explain how individuals are able to rationalize their criminal behaviour in a manner which absolves them of pressures from social norms and internal controls such as feelings of guilt and shame. The latter explains how criminality is developed through a learning process taking place in personal groups. While empirical research is needed to test the model further, it is argued that these theories offer both an alternative perspective on the intention to commit software piracy, but also potentially open up new avenues for preventing this crime.

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