Annual ADFSL Conference on Digital Forensics, Security and Law

2013
Proceedings

Jun 10th, 10:35 AM

Cybercrime and Punishment: An Analysis of the Deontological and Utilitarian Functions of Punishment in the Information Age

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CYBERCRIME AND PUNISHMENT: AN ANALYSIS OF THE DEONTOLOGICAL AND UTILITARIAN FUNCTIONS OF PUNISHMENT IN THE INFORMATION AGE

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ABSTRACT

This conceptual piece analyzes the role of criminal punishment and the nature of cyber crime to investigate whether the current punishment schemes are appropriate given the deontological and utilitarian goals of punishment: retribution, deterrence, incapacitation, and rehabilitation. The research has implications for policymaking in cybercriminal law.

Keywords: cybercrime, criminal law, punishment, retribution, deterrence, information economics

1. INTRODUCTION

Academics in business, law, and the humanities have studied cybercrime with the ultimate intent of reducing the probability or magnitude of a cyber attack. This paper refers to classical legal scholarship in criminal law to analyze whether punishments for cyberlaw—as applied by the U.S. Attorney's Office—are appropriate given the deontological and utilitarian frameworks that underlie criminal law. Following this introduction, the paper is organized into three segments. First, I discuss the four functions of criminal punishment. Then, I describe the ways in which differs from "real world" crime with respect to the constraints that govern online behavior. I conclude with an example of the ways that "real world" laws are applied to cybercrime and a plan to conduct future research in this area.

The threshold question to any inquiry of criminal law should question why our society has created criminal law and distinguished it from civil law. After all, parties that have suffered losses or harms can use the tort system—a facet of civil law—to recover damages from tortfeasors. In addition to the "traditional" tort of negligence, common law has developed intentional torts that allow aggrieved parties to recover in cases in which a tortfeasor has interfered with their rights of property. These torts cover actions such as trespass to property and conversion, the civil analogue to criminal theft. Additionally, in cases involving particularly malicious or willful and wanton conduct, plaintiffs may be entitled to punitive damages—additional money damages intended to deter and reform future defendants. These types of actions can be used to compensate victims for losses and are particularly useful in cases of economic crimes. In fact, some scholars have argued that civil law may even be more effective at addressing online malfeasance (Virgo, 2012).

What, then, is the distinction between criminal law and civil law? In a seminal essay on the subject published in 1958, Henry Hart noted that there is actually very little that distinguishes the two general systems of law. For example, he argues, one cannot distinguish crimes on the basis of civil wrongs on the basis of general social interest because society has a significant interest in due fulfillment of contracts and "most of the other stuff of civil litigation" (Hart, 1958). Additionally, the distinction cannot lie in the fact that public officials enforce criminal laws because public officials may also bring many kinds of civil enforcement actions. As a result, he concludes somewhat tautologically that anything which is *called* a crime is a crime and that the distinction is the result of a judgment of community condemnation (Hart, 1958). If an act, then, is so morally delinquent as to be labeled a crime by a legislature, conviction in a court of law carries the "unpleasant physical consequence" of a punishment (Hart, 1958).

2. THE FUNCTIONS SERVED BY CRIMINAL PUNISHMENT

Classical scholarship in criminal law has identified four main goals of punishment: retribution, deterrence, incapacitation, and rehabilitation (Bonnie et al., 2004). These goals fit into two ethical frameworks: deontological and utilitarian. Table 1 illustrates the way the goals fit into the two ethical frameworks. The deontological framework, as the name suggests, suggests that a duty exists upon society to punish a criminal individual. Punishment under this framework, then, is not justified by any positive social consequences that may result from the act of punishment but rather because of the inherent fairness of the punishment itself (Bonnie et al., 2004). Retribution is the primary punishment goal under a deontological ethical framework. The utilitarian framework, on the other hand, is primarily concerned with the use of punishment to further social goals—particularly to deter and minimize future behavior (Bonnie et al., 2004). Deterrence, incapacitation, and rehabilitation fit under the utilitarian framework. Neither the two ethical frameworks nor the four goals within them operate in a vacuum; the criminal justice system relies on a mixture of these principles and constantly changes the importance it attaches to any one (Alschuler, 2003). The remainder of this section examines the four goals in greater detail.

The retribution goal of punishment is predicated upon the assumption that individuals who commit crimes are moral agents with decision making capacity. Retributive justice is not necessarily motivated by revenge but rather by "holding actual wrongdoers… to the same high standards to which we hold ourselves" (Bonnie et al., 2004). As a result, criminal law has carved out exceptions for children and other individuals that lack the capacity to understand the consequences of their actions (e.g., the mentally "insane"). Punishing these individuals under a model of retributive justice makes little sense because they cannot be held to the "same high standards" that society expects of itself. Legal scholars have compellingly argued that, when carried to its natural extension, these exceptions to retributive justice also preclude us from punishing criminal defendants if, "at the time of [their] unlawful conduct, [their] mental or emotional processes or behavioral controls were impaired to such an extent that [they] cannot justly be held responsible for [their] act" (Bazelon, 1975). In a world in which retributive justice functioned in this way, instructions to juries would be amended to allow jurors to acquit in cases in which the crime was caused by physiological, psychological, environmental, cultural, educational, economic, and hereditary factors, rather than by the accused's free choice (Bonnie et al., 2004). Although our current notion of retributive justice does not encourage these types of jury instructions to limit the blameworthiness of criminal defendants, it does carry an important limitation to the application of punishment: proportionality.

Because retribution is based on a deontological perspective of punishment, proportionality tempers the extent of the punishment with the degree of wrong-doing involved in the crime. Essentially, we are saying that some crimes do not deserve to be punished as harshly as others. As a result, the principle of proportionality serves to create distinctions between, for example, felonies and misdemeanors with the intention that particularly harsh penalties should be reserved for particularly serious offenses. Currently, proportionality is determined by legislatures and is fairly granular; for example, the Federal Sentencing Guidelines distribute crimes "according to their relative seriousness among 43 different offense levels" (Bonnie et al., 2004). Although the sentencing guidelines provide substantial guidance to prosecutors, they cannot be relied upon entirely to assess blameworthiness of criminal defendants; most sentencing schemes give judges some discretion to act when the facts of a particular case do not fit neatly into the recommendations offered by the guidelines. Graded proportionality has utilitarian benefits as well, particularly with respect to disincentivizing risky or escalated behaviors. This is known as the principle of marginal deterrence.

Table 1. The Purpose of Punishment

Deontological	Retribution
Utilitarian	Deterrence
	Incapacitation
	Rehabilitation

The goal of deterrence has a slightly different set of assumptions than the goal of retribution. Whereas retribution assumes that individuals have the capacity to make choices for themselves, deterrence assumes that individuals perform—prior to acting—a “hedonistic calculus of pain and pleasure” when selecting from courses of conduct (Bonnie et al., 2004). Deterrence also differs from retribution in that deterrence is forward-looking while retribution is backwards-looking. In order for a potential punishment to deter a crime, the punishment must outweigh the expected pleasure attributed by the crime, discounted by the belief that the criminal will get away with the crime. As a result, for deterrence to be effective at all, the potential criminal must believe that there is at least some risk that he or she will be caught and arrested for committing the crime. If such a belief does not exist, punishment cannot have any deterrent value.

Marginal deterrence, as mentioned above, is the utilitarian implication of proportional grading of sentences. In order for marginal deterrence to be effective, there must be a large gap between the punishments for the most serious crimes and the least serious crimes (Bonnie et al., 2004). For example, if kidnapping was, like murder, punishable by the death penalty, kidnappers would have no incentive to protect the lives of the individuals that they kidnap. Because, however, the death penalty is generally reserved for extremely serious crimes, individuals that commit “relatively minor” crimes have an incentive to ensure that their actions are contained within the ambit of their original intent.

Incapacitation and rehabilitation are similar in that they both attempt to eliminate the likelihood that an individual will continue to commit crimes. Incapacitation, quite simply, refers to the fact that during the period in which individual is incarcerated, his or her ability to commit crimes has been significantly diminished. As a practical matter, any crimes committed while incarcerated either must be committed using a non-incarcerated intermediary agent or must be committed within the physical confines of the prison. Rehabilitation becomes particularly relevant once the individual is no longer incapacitated [though it is often considered a process that begins during incarceration] and refers to a “humanitarian intervention that promises to cure offenders and return them to their law-abiding ways” (Bonnie et al., 2004). Although the process of rehabilitation can take forms that range from talk therapy to electroshock therapy (see e.g., Lutze, 1998), the ultimate goal is to enhance an individual’s “impulse control and life satisfaction” in order to reduce the likelihood that he or she will want to commit future criminal activity.

Given the theoretical underpinnings of criminal law as described above, the next section will describe what makes cybercrime different from traditional crime in order to make an assessment about whether or not cybercrime deserves special consideration with respect to punishment.

3. CRIME IN THE INFORMATION AGE

As society slowly shifted from an industrial economy to a knowledge economy, the nature of products changed, relying more heavily on information goods (see e.g., Shapiro and Varian, 1999). Intellectual property regimes that protected those goods evolved as scholars developed more theory to the distinctions between intellectual property and real property (see e.g., Maskus, 2000). Finally, and most recently, information goods have largely transformed from analog to digital in form (see e.g., Boyle, 2003). James Boyle, a professor of law studying the emergence of the public domain, illustrates the evolution of information goods over time:

> Imagine a line. At one end sits a monk painstakingly transcribing Aristotle's *Poetics*. In the middle lies the Gutenburg printing press. Three-quarters of the way along the line is a photocopying machine. At the far end lies the Internet and the online version of the human genome. At each stage, copying costs are lowered and goods become both less rival and less excludable. My MP3 files are available to anyone in the world running Napster. Songs can be found and copied with ease. The symbolic end of rivalry comes when I am playing the song in Chapel Hill, North Carolina at the very moment that you are both downloading and listening to it in Kazakhstan—now *that's* non-rival.

The field of information economics evolved to tackle these changes, particularly with respect to analog and digital information goods. Scholars in the field found that information goods are easy to reproduce—meaning that they generally had high fixed costs and low marginal costs—while also having the unique property that one person's use did not adversely affect another person's ability to derive value from the good—non-rivalry (Shapiro and Varian, 1999). Scholars of intellectual property followed suit: noting that intellectual property may be non-excludable, they identified tradeoffs of static and dynamic efficiency and helped develop policy to maximize overall efficiency. These efficiency gains are most prominent in the structure of patent law, which promotes dynamic efficiency by incentivizing new investments for information due to the monopoly period while also promoting static efficiency by granting wide access to patented material following the monopoly period (Maskus, 2000). The new scholarship indicated the extent to which the relationships among individuals and between individuals and their property had been fundamentally changed.

As society evolved along the Boyle scale, criminal legislation has remained relatively stagnant. Prior theoretical work on cybercrime suggests that cybercrime can be divided into two distinct types. The first and more common type is "nothing more than the migration of real-world crimes to cyberspace" and that when computer technology is used in the commission of a crime, that crime is considered to be "cybercrime" (Brenner and Clarke, 2005). The second type consists of specifically-defined cyber-offenses such as hacking or distributing malicious software. These crimes may, as a technical matter, also be placed in the "migration" category but are often distinct enough to justify the dichotomy. It is the first type—migration crimes—that indicate the extent to which legislation establishing cybercrime as a distinct field has lagged behind changes in technology. For example, in hacking cases, defendants are often charged with wire fraud using a statute that has been in place since the late 1800s (see e.g., United States Attorney's Office 2011).

In spite of some degree of facial similarity—particularly when considering "migration crimes"—cybercrime differs from so-called "real world" crime along four dimensions: proximity, scale, physical constraints, and patterns (Brenner and Clarke, 2005). Table 2 summarizes these dimensions. Although there are notable exceptions within each of the categories, "real world" crimes generally require closer proximity between the perpetrator and victim, require a one-to-one level of focus (i.e., breaking and entering into one house at a time and being forced to focus on committing the crime at hand), are subject to physical requirements (i.e., physically breaking and entering a house, leaving behind trace evidence, being seen by passersby), and pattern recognition due in part to geographic limitations.

Table 2 Theoretical Distinctions between Cybercrimes and "Real World" Crimes

Proximity	Perpetrator and victim must be in reasonably close physical proximity
Scale	Real-world crime tends to involve one perpetrator and one victim; perpetrator must focus on crime for its duration
Physical Constraint	Physicality of real-world crime require additional preparation; physical trace evidence can be left at the scene of the crime
Pattern	Patterns emerge around demographics of both perpetrators and victims, as well as around the seriousness of crime

Susan Brenner and Leo Clarke, legal scholars prolific in the field of cybercrime write that, "The phenomenon of increasingly frequent and severe 'cybercrime,' however, does not require us to rethink how we defined 'crime' as much as it demonstrates that we need to rethink how we should enforce our criminal laws to deter and prevent cybercrime" (Brenner and Clarke, 2005). But if we grant two assumptions (a) that the nature of digital information goods is substantially dissimilar to non-information goods of the age at which some cybercrime laws were written and (b) that cybercrime is substantially dissimilar to real world crime, we can conclude that it may be time to rethink whether the migration of "real world" criminal law to "cybercrime" is an appropriate solution, given the function of punishment in criminal law. This is particularly true in cases of "migration crimes," which are governed legislative histories that did not conceive of the statutes being used in these ways.

4. CRIME AND PUNISHMENT; FUTURE RESEARCH

The Aaron Swartz case presents a vivid illustration of these tensions. Aaron Swartz, an instrumental creator of the social news site Reddit, the RSS protocol, and the creative commons, was charged with two counts of wire fraud and eleven violations of the Computer Fraud and Abuse Act for downloading 4.8 million scholarly articles from JSTOR by stashing a laptop in an unlocked closet at MIT. If convicted, he faced up to 35 years in prison and fines of up to $1 million. Swartz committed suicide in early 2013, before he was convicted. We can use this case, which was widely reported in the popular media, to examine whether the punishments meet the stated goals and to determine whether they offend our collective sense of justice.

Given the reproducibility of digital information goods, the application of technology to crime can dramatically increase the scale of the crime with minimal "effort" on behalf of the perpetrator. To what extent should the number of documents downloaded affect the retributive punishment in this case? Is the proposed punishment in this case (approximately 35 years in prison and $1m in fines) proportional to the crime? For reference, in some jurisdictions manslaughter carries a 10-year sentence, bank robbery carries a 20 year sentence, and selling child pornography carries a 20 year sentence? Does the proposed punishment leave a wide enough gap for marginal deterrence? Only after answering questions such as these can we make judgments about the appropriateness of punishment schemes for cybercriminals in the United States.

Future research will attempt to answer these questions head-on by using psychometric research tools to determine if the types of punishments used for "migration" crimes are overly harsh or otherwise misapplied. This type of broad, psychometric sampling is particularly relevant for determining the ways in which we enact policy to enforce deontological goals (whereas we can examine recidivism statistics to shape utilitarian policymaking). Particularly as the legislative structure of cybercrime is being established with the debate surrounding, for example, the CFAA and CISPA, this type of research can increase the credibility and the effectiveness of these and future laws by ensuring that the punishments for each of the crimes does not offend our sense of justice.

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