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Abstract

This article analyses current trends in the use of anonymity services among younger Swedes (15–25 years old) and focuses on individuals engaging in illegal file sharing in order to better understand the rationale behind both file sharing as well as online anonymity, especially in relation to enforcement of copyright. By comparing the findings of a survey conducted on three occasions (early 2009, late 2009 and early 2012), we measure the fluctuations in the use of anonymity services among approximately 1000 15–25-year-olds in Sweden, compare them with file sharing frequencies and, to some extent, trends within legal enforcement. The article also suggests that the key to understanding any relationship between copyright enforcement and fluctuations in online anonymity can be found in the law's relationship to social norms in terms of legitimacy by showing a correlation between file sharing frequency and the use of anonymity services. The findings indicate that larger proportions of frequent file sharers (downloaders) also use anonymity services more often than those who file share less. However, in comparison to the earlier surveys, the strongest increase in the use of anonymity services is found in the groups where file sharing is less frequent, suggesting that reasons for actively making oneself less traceable online other than avoiding copyright enforcement have emerged since the initial two surveys in 2009. Further, the overall increase (from 8.6 per cent to 14.9 per cent) in using anonymity services found for the whole group of respondents suggests both that high file sharing frequency is a driver for less traceability, as well as a larger trend for online anonymity relating to factors other than mere file sharing of copyright infringing content – for example, increased governmental identification, data retention and surveillance in the online environment. The results are analysed in Merton's terminology as file sharers and protocol architects adapting in terms of both *innovation* and *rebellion* in the sense that institutional means for achieving specific

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cultural goals are rejected. This means, to some extent, participating in or contributing to the construction of other means for reaching cultural goals.

Keywords

anonymity, copyright, copyright enforcement, deviance, encryption, innovation, piracy, strain theory

Introduction

The digital milieu is generative in the sense that it can, to some degree, be built and rebuilt by its participants (Zittrain, 2008). One tool that can be seen as a result of this generative environment is encryption, which can be used, for example, for banking purposes to secure the connection and avoid interception of monetary transfers between the customers and the bank, or for universities and employees to have an individual connection to the internal network of the university or company. It can also be used for reducing traceability, for example, by using proxies that route the IP-addresses to a chosen geographical location. There are companies offering such services, which means that their role as an identity-protector will become an issue when attempting to track down an IP-address. In fact, much of the character of the Internet can be expressed in terms of a scale between anonymity and identification. It is safe to say that many of the current debates regarding legal enforcement vis-a-vis integrity and privacy relate to this.

Copyright enforcement is strongly related to the question of online identity and traceability in the sense that the prosecution of online violations of copyright, quite naturally, need to be tied to an individual. This process of connecting a digitally mediated behaviour in an online context to a specific person is not a matter without serious implications for power relations, legal enforcement, as well as privacy. We have previously demonstrated a link between high file sharing frequencies and the use of anonymity services as a dysfunctional result of the implementation of the so-called IPRED law in Sweden and the increased copyright enforcement online following the European IPR Enforcement Directive, 2004/48/EC (Larsson and Svensson, 2010).

This article analyses current trends in the use of anonymity services among younger Swedes with a focus on individuals engaging in illegal file sharing, and aims to understand more of the rationale behind both file sharing as well as online anonymity, especially in relation to enforcement of copyright.¹ For this purpose we focus on three research questions:

1. Is the use of online anonymity services in general increasing or decreasing?
2. To what extent is the use of encrypted online anonymity services correlated to unauthorised file sharing of copyrighted content?
3. In what way can the relationship between enforcement of copyright and fluctuations in online anonymity be found in the law's relationship to social norms and levels of perceived legitimacy?

While the first two questions are of a descriptive nature, the third relates to a more theoretical analytical level. For this article, we employ Merton's strain theory in order to discuss and analyse possible outcomes of a normative gap between copyright law and social norms of file sharing.

Based on earlier findings, we see the use of encrypted anonymity services as one such possible outcome, although private use of services that decrease traceability may originate from many reasons. The data for this study consist of a repeated survey comparing the changes in the use of online anonymity services over time in relation to file sharing frequency. The survey consists of approximately 1000 randomly selected Swedish respondents aged 15–25 years, and was conducted in January 2012. This is then compared with two similar surveys conducted in October and January 2009.

Encrypted anonymity and unauthorised file sharing

Cryptography has a long history. It is a technology for keeping information hidden or from being leaked to unwanted parties. It has a variety of uses and has, for instance, played an instrumental role in several military conflicts (Budiansky, 2000). Cryptography can be described as the ‘transformation of a message that makes the message incomprehensible to anyone who is not in possession of secret information that is needed to restore the message to its normal plaintext or cleartext form’ (Diffie and Landau, 1998: 13). Interest in this ‘key in a lock’ technology increased historically in accordance with the requirements for various industries to be able to engage in secure digital communications, producing potentially unbreakable encryption possibilities. Customers of online financial services routinely place trust in the secure connections provided between the IP-addresses of both themselves and the bank as a means of fraud prevention (access to accounts from unexpected IP-addresses may trigger security alarms and raise questions regarding the identity of a non-standard login attempt). Similarly, the bridge between the IP-address and offline identity is watched over by Internet service providers (ISPs) who, mainly for billing purposes, regularly keep track of their subscribers. Therefore, whenever anyone wants to find the identity behind the actions committed ‘by an IP-number’, for instance, a violation of copyright, it is at the door of the ISPs that they come knocking. These examples point to the tensions between the needs for secure digital communications and perceptions of anonymity in a networked context.

Anonymity on the Internet, especially in relation to unauthorised file sharing, is described by Hinduja (2008: 392) as ‘[releasing] the participants from traditional constraints on their behaviour,’ which would imply that the impact of regulatory norms is clearly reduced. This would include both legal norms and social norms, but also individual self-regulatory norms. Hinduja (2008) and Shang et al. (2008), along with Williams et al. (2010), argue that this is to be understood as a matter of a de-identification process: de-individuation at the intersection between anonymisation and overall online communication. Hinduja (2008: 396) stresses that ‘no significant increase in software piracy participation could be explained by knowledge of . . . anonymity’. This, however, is not the same as stating that more frequent file sharers may perceive a stronger need for using anonymity services. This is supported by the first, similar study that we conducted (15–25-year-old Swedes; Larsson and Svensson, 2010), as well as by a study on the global file sharing community (Larsson et al., 2012). Another study regarding the French ‘three-strikes’ law, abbreviated to Hadopi, shows how the enforcement of copyright law in relation to one file sharing technique – peer-to-peer – leads to an increased use of another technique – one-click hosting (Dejean et al., 2010; cf. Larsson and Svensson, 2010). In 2011 a large-scale study of the global file sharing community was undertaken, in which more than 75,000 respondents were solicited via a collaboration with The Pirate Bay website. This study reveals that besides the BitTorrent protocol, almost half of the respondents also used one-click hosting services as well as offline ‘sneaker

nets' for sharing files (Svensson et al., 2013). This study also focuses on practices of de-anonymisation; in other words, how the file sharers used anonymity services in order to become less traceable online (Larsson et al., 2012).

The literature regarding the effect of the enforcement of intellectual property and the punishment of unauthorised file sharing related to actual online behaviour and strategies is somewhat contradictory. In scenario-based survey studies, for instance, Kwong and Lee (2002) suggest that laws related to unauthorised file sharing have some impact on the downloading of CDs, which is also supported by Levin et al. (2007: 121). On the one hand, this suggests that 'the use of severe threats seems to be an effective way to diminish downloading'. On the other hand, Hsu and Shiue (2008), in studies based on scenarios, found no increased willingness to pay for software due to a high or raised risk of prosecution. Nevertheless, when carrying out statistical and quantitative research, Lysonski and Durvasula (2008) and Knopper (2007) point out that lawsuits seem neither to slow down the rate of unauthorised file sharing nor solve the issue. Combined studies covering enforcement and prosecution of intellectual property infringement show that severe punishment seems to have an impact. However, the current level of lawsuits are not perceived as being efficient enough to dissuade Internet users from engaging in the sharing of unauthorised digital material. A survey study by Karaganis et al. (2012), in which Internet users were asked about appropriate penalties for unauthorised file sharing, shows that there is broader support for minor fines or warnings rather than jail time or disconnection from the Internet.

The study of Karaganis et al. also covers countermeasures by Internet users involved in unauthorised file sharing. It shows that 20 per cent of the study's respondents within the age span of 18–29 years make 'special efforts to encrypt [their] Internet traffic' and 7 per cent also use tools to hide their IP-address online – this, in a survey study where 70 per cent of the 18–29-year-olds claim to have been involved in unauthorised file sharing. Similarly, Woo (2006: 963) emphasises how users claim their right to personal privacy as well as enabling ongoing online activities without being intercepted by enforcement agencies. Woo (2006: 964) concludes that the individual solutions of Internet users, among them network anonymisation techniques, tend to be a common and perceivably 'practical approach to ensure the least amount of network anonymity and privacy needed for personal autonomy'. The experience of being required to adopt a higher degree of anonymity may cause those users engaged in unauthorised file sharing to turn to underground piracy, as Beekhuyzen (2009: 204) states, forcing them 'under the radar of law enforcement' by 'employing methods that encrypt all traded digital content and communications, so they are not detectable by those tracking illegal file sharing activities' (Beekhuyzen et al., 2011: 701).

Background to the repeat study

The European Union directive on Intellectual Property Rights Enforcement (IPRED) was implemented in Sweden on 1 April 2009 and was intended to constitute the enforcement necessary to achieve increased compliance with intellectual property online, in particular, copyright. IPRED is part of a trend of strengthened copyright regulation, its own enforcement included, which has come to affect other values such as privacy and consumer relations with regards to ISPs (Larsson, 2011a, b). During 2009, the Cyb norms research group studied the changes in both the levels of use of Online Anonymity Services (OAS), both before and after the implementation of the so-called IPRED law (Larsson and Svensson, 2010), as well as the changes in social norms relating to copyright before and after the implementation of the law (Svensson and Larsson, 2009, 2012). The data consisted of two surveys of approximately 1000 respondents between 15 and 25 years of age; the

first survey was conducted 2 months prior to the implementation of IPRED, and the second one 7 months later.

The article dealing with the anonymity aspects of file sharing from 2010 suggested that one key to understanding any relationship between copyright enforcement and fluctuations in online anonymity is to be found in the law's relationship to social norms and levels of legitimacy (Larsson and Svensson, 2010). The implementation of disproportionately punitive laws is likely to spur countermeasures that render said laws as being dysfunctional. In the case of copyright enforcement and encryption technologies, the former seems to drive the latter, to some extent, possibly affecting the balance of openness and anonymity on the Internet – at worst, leading to the enforcement of legislation that has weak representation among social norms while negatively affecting legislation enforcement that has strong representation among social norms.

Being strongly related to social norms means that the legitimacy of a law is of fundamental relevance when predicting its consequences, for example, methods of avoiding prosecution and enforcement of the given law. The implementation of the enforcement directive had, in Sweden, a short-term effect on actual file sharing frequencies. For example, before the implementation of IPRED, 21.6 per cent of the respondents reported that they do not illegally share files and 6 months after IPRED, this figure was almost 38.9 per cent. Simultaneously, the percentage of respondents who claimed to file share on a daily basis decreased from 10.6 per cent to 6.4 per cent (Svensson and Larsson, 2012). However, this study also measured the changes in the social norms. These were measured by considering two main factors: (1) the surrounding pressure, in this case, to abstain from illegal file sharing in combination with (2) the respondents' inclination to comply with the views of the persons in their surroundings. The survey showed that the respondents felt no substantial social pressure from any of the important surrounding persons; also, the respondents claimed that they cared only slightly about the opinions of any of the important surrounding persons with regard to file sharing. Furthermore, this study shows that not only is the social norm to follow copyright regulation concerning file sharing extremely low, but also that the social norm did not change from before to after the implementation of IPRED (Svensson and Larsson, 2012). This, in combination with some decrease in file sharing, can be interpreted as a deterrence effect, a rational choice in light of the risks of illegality as opposed to actually feeling that the behaviour is wrong:

“In other words, it was due to the fear of being punished by the state that some individuals chose to stop file sharing and not because they themselves or people in their lives have changed their minds on the issue itself. They stop as a result of a fear of getting caught and being punished and not because the social landscape has altered. Young people do not subscribe to the arguments on which the law rests and neither do those people who are close to them. However, some young people do submit to the authorities and the threat of punishment” (Svensson and Larsson, 2012: 13).

The study on anonymity (Larsson and Svensson, 2010) concluded that online anonymity plays an important role in how power is distributed online and can function as an indicator of the interplay between social and legal norms and the enforcement of the latter. The hypothesis is, then, that enforcement of a legal norm with a weak social norm will spur use of encryption for stronger anonymity.

Of interest is the massive readiness for using anonymity technology for when the risk of getting caught becomes more significant. For example, more than half of the respondents, 61 per cent, claimed in the first study that even if they did not use an anonymity service, they thought that they would if ‘new legislation enhances the possibilities for you to be held legally liable when caught file sharing copyrighted material without permission’ (Svensson and Larsson, 2009: 57). This indicates a

readiness for more advanced practices to avoid prosecution, as opposed to abstaining from file sharing copyright infringing content, and relates to legal enforcement as well as the different techniques for file sharing. When enforcement of copyright is implemented on a broader scale, we might see a significant increase in measures taken to hide one's identity as well as a shift to other file sharing techniques. Such behaviour has to be seen in light of the legitimacy, or lack thereof, of the legislation at hand, for example the strength in social norms relating to the law. The Larsson and Svensson study on anonymity (2010) concluded that social norms relate to trust and that the online environment is an environment also relating to trust:

Given the generativity of the Internet, any legally enforced forced identification that breaks this veil of anonymity will have to be well founded in social norms regarding the legitimacy of the actual law, if it is not to disrupt this 'trust'. If not, such initiatives are likely to spur counter-measures involving the diffusion of knowledge of how to strengthen online anonymity; as well as the counter-measures of smaller elites of pro-privacy activists. The levels of the different anonymity techniques, encrypted as well as other, are a sign that describes a part of the character of online behaviour, and hence, the character of the Internet. (Larsson and Svensson, 2010: 99)

We concluded in this study that there are two exceptions to this anonymity-based trust, of which one is a voluntary release of information (such as revealing birth name, age and pictures in social networks). The other exception is more intricate and is tied to social norms in another way. If de-anonymisation is forced by law, this will only seem just and legitimate if this law is in compliance with the structures of social norms: if it does comply, then online 'trust' in anonymity will not suffer from this breach of confidentiality, since most people will experience the breach as just. However, if the law is not in line with social norms, this de-anonymisation is likely to have a negative effect on the status quo of the weaker forms of anonymity. Thus, this 'trust' is adversely affected, resulting in countermeasures designed to strengthen the lost anonymity, all in line with the social norms that have been affected by the implemented law. This might lead to an escalation on both sides of what, clearly, can now be described as a conflict. In terms of the broader spread of online anonymity, a polarisation is likely to follow, perhaps as a result of a professionalisation within the file sharing community, empirically studied by Svensson et al. (2013) and suggested by Larsson and Svensson:

It is likely that a core of sharers are developing, who are more inclined to pay for anonymity services due to their anticipated need for advanced protection from being caught violating copyright laws. (Larsson and Svensson, 2010: 99)

Therefore, we predicted that the usage of anonymity services would increase, especially if enforcement of copyright increased. Due to the time frames of these studies, the two studies during 2009 did not measure the long-term effects of the legal implementation. Neither were they able to see more distant trends. This is, therefore, the reason we decided to conduct a repeat study to the two surveys more than 2 years after the second survey, in early 2012. Another, no lesser reason was to observe some of the effects of current copyright enforcement trends that can be (and have been) termed 'path dependent' due to their incapacity for any deviation from the chosen key conceptions, set up before the days of digitalisation and so clearly challenged in a digital society (Larsson, 2011a, b, c).

Copyright and its enforcement in a digital society

Although this current study deals with the file sharing frequencies and use of anonymity services of Swedish individuals, the dialectics of encrypted protection from traceability, in relation to

copyright enforcement, is likely to be similar on an international level. The main reasons are that copyright regulation, in some key aspects, is globally homogenous (Larsson, 2011a, b); in addition, similar digital environments and Internet access can be found in many countries. Nevertheless, the Swedish situation is of importance when trying to understand the background drivers for this study's respondents concerning enforcement of copyright, the risk of being prosecuted for file sharing copyrighted content as well as the trends in encrypted anonymisation. This is the reason it is important to not only observe the legal trends, but also to see how the police and prosecutors approach the issue as well as noting how many prosecutions have resulted.

When IPRED was implemented in Sweden in April 2009, intellectual property rights holders were allowed, whenever they assumed that their rights had been violated online, to present their complaints to a court. The court would then examine the evidence and extent of file sharing in order to establish whether or not the ISPs should release the IP-address (IPRED, Article 6.1). In practice, the IPRED law, as it is called in Sweden, was a failure from this point of view for the first 2 years. Swedish ISPs chose to challenge it in court and the appeal of the first case – the so-called *Ephone Case* – was granted a review permit to the Supreme Court in January 2010. When the case was scheduled for trial (which was set for September 2010), the court decided to ask for a preliminary ruling by the European Court of Justice on the relationship between the Data Retention Directive (that Sweden still has to implement) and the implemented IPRED (Supreme Court Case nr Ö 4817-09, Court of Appeal Case ÖÄ 6091-09). This means that for the first 2 years, the IPRED law led to only a few court cases in Sweden, all of which were obstructed by the Supreme Court who were still waiting for the preliminary ruling by the European Court of Justice. This is especially interesting considering initial reports in the media that talked of 'hundreds' of cases being prepared by copyright holders' interest groups, and the rough estimate in preparatory legal work that spoke of an estimated 400 to 800 cases per year (Prop 2008/09:67, at 255). On 17 November 2011, the Advocate General of the Court of Justice of the European Union noted that there is no conflict concerning the Data Retention Directive to prevent the IPRED law from granting copyright holders the possibility of obtaining the identity of persons suspected of having infringed on their works. We are, at this present time, still waiting for the court to submit its preliminary ruling.

This means that the short-term effect following the implementation of the law in 2009 could be seen in the previous studies mentioned above (Larsson and Svensson, 2010; Svensson and Larsson, 2012; and further analysed in Larsson, 2011b). However, when put into practice, IPRED stumbled, suggesting that in the longer run, the effect of this particular law was weak. The perception of the risk of getting caught violating copyrights through file sharing is by no means limited to the application of the IPRED law. For the last 4 years, police and prosecutors in Sweden have received increased funding for the enforcement of copyright violation laws concerning unauthorised file sharing. During 2008, two specially appointed prosecutors were given the task of prosecuting this particular crime. They both had eight policemen at their disposal. They have since become 15 police officers, spread evenly between Stockholm, Gothenburg and Malmö, and currently, four specially appointed prosecutors. In 2011, this led to a new all time record for the number of convictions for copyright violations through file sharing in Sweden. Increased prosecution, conviction and therefore overall enforcement are likely to have an effect on the perceived risk of getting caught and convicted for illegal file sharing.

Relevant to the debate on copyright enforcement, but even more so to a general debate regarding online traceability and questions of integrity, is the much debated Swedish signal surveillance law and the implementation of the Directive on Data Retention (Larsson, 2011c;

Larsson and Hydén, 2010).² The latter means that the ISPs will no longer be able to lawfully choose to discard data logs once their billing purposes have been fulfilled. This law, according to the draft bill, was set to be implemented by 1 July 2011 in Sweden, but was postponed in a vote in the Swedish Parliament 16 March 2011 for at least a year. In March 2012, Parliament voted in favour of the law being implemented in Sweden. It is possible that this larger debate regarding integrity, and not just file sharing and copyright, may have an effect on active use of anonymity services.

A theory of strain and normative deviancy

As mentioned previously, Larsson and Svensson (2010) described how the use of anonymity services among young people seeking to avoid legal redress when sharing copyright protected files online is a modern example of a latent dysfunction of the law. Robert K. Merton (1968 [1949]: 105) described latent dysfunctions as being unpredicted ‘negative consequences for the structures and systems under consideration’. Thereby, Larsson and Svensson connected to a scholarly tradition emanating from Merton’s ‘theory on functions and dysfunctions of law’, with significant focus on the unintended consequences of legal implementation (see, for example, Aubert, 1954; Brown, 1992; Christi, 1965; House, 1968; McAulay, 2007; Mathiesen, 2005; Ridgway, 1956; Roots, 2004; Sunstein, 1994). This choice of macro-oriented theory made it possible to demonstrate the potentially counterproductive nature of the ongoing enforcement strategies aimed at decreasing illegal file sharing.

In this article, the aim is to analyse current trends with a focus on those individuals engaging in illegal file sharing and the rationale behind their behaviour, especially in relation to online anonymity. Hence, the theoretical approach leans slightly more towards criminology than sociology of law. Nevertheless, Merton’s theories constitute the guidelines for the analysis in this study. However, in this article, we use his ‘strain theory’ rather than his ‘theory on functions and dysfunctions of law’. Merton presented a strain theory of deviant behaviour that maintains that people are more likely to pursue illegitimate means to attaining culturally prescribed goals when they are blocked from accessing the institutionalised means to these goals (Merton, 1938: 679; 1968 [1949]: 211; see also Featherstone and Deflem, 2003).

Merton developed ideas originally formulated by Émile Durkheim in creating the strain theory, while Merton’s work was, in turn, advanced by scholars such as Albert K. Cohen (1955) and Robert Agnew (1984, 1992; see also Aseltine et al., 2000). The objective was to explain deviance. There is a bridge to the explanation of anomie, very much a Durkheimian contribution to the sociological tradition, but a bridge that has been criticised for being ‘an unfinished task to introduce a theoretical perspective of deviant behaviour that is complementary to and integrated with the anomie framework’ (Featherstone and Deflem, 2003: 472). For Durkheim, deviance was a normal and necessary part of social organisation that affirms social values and norms (Macionis and Gerber, 2011: 200). Besides the pedagogical effects of deviance as an aid in drawing the lines between that which is appropriate and that which is not, deviance can be the means by which society pushes its boundaries forward. Durkheim uses the example of Socrates, who was convicted for misleading the Athenian youth, to explain that it served to “prepare a way for a new morality and a new faith, which the Athenians then needed because the traditions by which they had hitherto lived no longer corresponded to the conditions of their existence” (Durkheim, 1982: 102).

The roots to deviance can, in Merton’s terminology, be described in terms of strain, which can be either structural or individual. It has been described as ‘an attempt to span both macro-social and

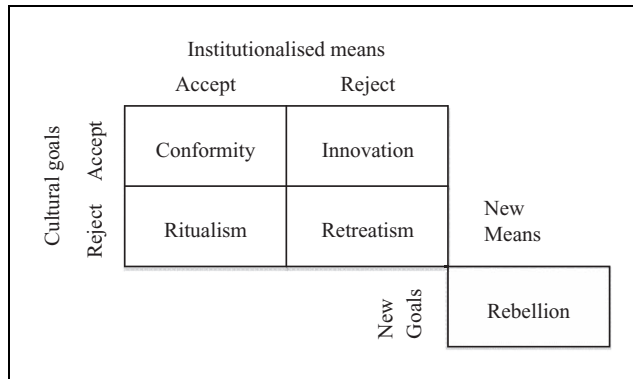


Figure 1. A remodelled version of Merton's deviance typology (1968 [1949]: 195).

micro-social levels of analysis by tracing the individual-level consequences of cultural and social-structural phenomena' (Menard, 1995: 139). In this article, we set out to understand deviation from an individual perspective and therefore make use of Merton's deviance typology. At the fundament of this typology is the recognition of the fact that deviance can emerge as a result of a mismatch between cultural goals and institutionalised means. Merton identifies five different categories of deviance due to different combinations of acceptance or rejections of social goals and institutionalised means of achieving them: *Conformity*, *Innovation*, *Ritualism*, *Retreatism* and *Rebellion*.

Strain theory differs from the other dominant theories of deviance – for example, social control theory and differential association theory. It is distinguished from the others in that it focuses explicitly on negative relationships with others: relationships in which the individual is not treated as he or she wants to be treated. 'Strain theory has typically focused on relationships in which others prevent the individual from achieving positively valued goals' (Agnew, 1992). Cultural goals are, according to strain theory, desirable values within a society. In addition, strain theory argues that individuals are pressured into deviance by negative relationships. Such pressure may lead individuals to (1) make use of illegitimate channels of goal achievement and (2) attack or escape from the source of their adversity. Hence, strain theory is the only theory to view deviance as a result of pressure and not drift or desire (Agnew, 1992). The five categories found in Figure 1 can be further described as follows:

1. *Conformity* occurs when available institutionalised means are sufficient in order to meet the goals or desirable values and in this case there is no deviance;
2. *Innovation*, which is the result of individuals accepting the cultural view of what is desirable, however lack the legitimate means in order to achieve the goals. Hence, resulting in innovative and illegal methods of attaining what is desirable – this is perhaps the most dominant category of deviance.
3. *Ritualism* takes place when individuals have given up the hope of obtaining cultural goals and even reject them, but still accept the fundamental institutionalised means;
4. *Retreatism* exists among societies' true outsiders. They reject both the cultural goals of desirable values and the rules describing the institutionalised means. In other words, they break rules in order to obtain resources and they use the resources in a way that is not in line with society's values.

Table 1. Response rate in the three surveys

Survey	Contacted	Answered	Response rate (%)
1	1400	1047	74.8
2	1477	1047	70.9
3	1094	1056	96.5

5. *Rebellion* is close to retreatism; however, with the important difference that rebellion also includes both new goals and new means. Castells (2000: 365 ff.) would probably describe Merton's rebellion in terms of project identity, whereas the other forms of Mertonian deviance are closer to Castells' view on resilience identities.

It is the innovation adaptation that has received the most attention from sociologists interested in the study of deviance and crime (Featherstone and Deflem, 2003). According to Merton, innovation 'occurs when the individual has assimilated the cultural emphasis upon the goal without equally internalizing the institutional norms governing ways and means for its attainment' (1968 [1949]: 195). As we see below, this particular adaptation is of clear interest concerning the use of anonymity services, as enforcement of copyright increases.

Method

In this repeat study, we conducted a survey that was a replica of two former surveys, (reported in Larsson and Svensson, 2010, and Svensson and Larsson, 2012). This entailed surveying approximately 1000 Swedish Internet users between 15 and 25 years of age, fairly equally divided between female and male. They were not necessarily the same respondents, however, they were randomly selected from a panel of 250,000 (see below). The response rate was higher in the repeat study than in the two earlier studies (see Table 1).

The questions concerned, among other subjects, file sharing frequency (intentional download) and use of services that decrease online traceability through the use of encryption technology. The repeat survey was conducted between 18 January to 3 February 2012, and its value should be viewed in the light that it was formulated in the exact same way as the two previous surveys. This makes this repeat survey comparable to the other surveys, thereby providing an opportunity to reflect on the changes over time regarding the effects of the implementation of IPRED in Sweden, as well as trends in the usage of encryption tools in relation to, for example, measured file sharing frequencies. The previous surveys were conducted in January to February 2009 and in October 2009. Since IPRED was implemented between the two surveys (in 1 April 2009), those surveys provided the opportunity to study some of the more short-term consequences of the legal implementation.

The selection in the repeat study was made randomly from the desired age group of the CINT panel eXchange register, which contains 250,000 individuals in Sweden (9 million inhabitants). To join this register, the respondents agree in advance to participate in online self-administered questionnaires for which they receive minor compensation. The questions on anonymity services are part of a larger battery of questions regarding social norms, perceived pressure from others to comply with copyright regulation, the willingness to pay for music and movies, and so forth. The

Table 2. Use of anonymity services in relation to file sharing frequency seen over time

File sharing frequency	Use of OAS (%)				
	Survey 1 (pre-IPRED)	Change	Survey 2 (post- IPRED)	Change	Survey 3 (repeat)
1. Never file share	2.8 (of 217)	+2.7	5.5 (of 384)	+ 2.7 (p value 0.1388) ⁵	8.2 (of 389)
2. Never file share + Once a month at the most	4.8 (of 459)	+0.8	5.6 (of 638)	+ 4.1 ^a (p value 0.0058) ⁶	9.7 (of 642)
3. Never file share + Once a month at the most + Once a week at the most	6.5 (of 681)	+0.7	7.2 (of 797)	+ 4.5 ^a (p value 0.002) ⁷	11.7 (of 803)
4. Daily + more than once a week + once a week at the most	11.9 (of 547)	+6.6 ^a	18.5 (of 346)	+ 5.8 (p value 0.0588) ⁸	24.3 (of 367)
5. Daily + More than once a week	13.2 (of 325)	+9.8 ^a	23.0 (of 187)	+ 4.7 (p value 0.2846) ⁹	27.7 (of 206)
6. File share daily	20.6 (of 107)	+8.0	28.6 (of 63)	+ 1.1 (p value 0.889) ¹⁰	29.7 (of 74)
All	8.6 (of 1006)	+1.6	10.2 (of 984)	+ 4.7 ^a (p value 0.0014) ¹¹	14.9 (of 1013)

^aStatistically significant change, given a confidence interval of 95 per cent.

survey was conducted in Swedish and the main question regarding the use of anonymity services translates to:

There are services that allow you to surf the Internet anonymously. This means that no one can discover what you do on the Internet. Do you use any such service for anonymity?³

The surveys were self-administered questionnaires (SAQ). Wolf (2008) suggests that respondents are more likely to report sensitive or illegal behaviour when they are allowed to use a SAQ format rather than during a personal interview on the phone or in person. Traditionally, the SAQ has been distributed by mail or in person to large groups. Now, however, SAQs are used extensively for Web surveys. Because the questionnaire is completed without ongoing feedback from a trained interviewer, special care must be taken in how the questions are worded, as well as how the questionnaire is formatted, in order to avoid measurement error.

Findings

In the repeat survey, approximately 51 per cent of the 1051 respondents were male and 49 per cent were female.⁴ Note that the groups of file sharing frequency (Table 2) have been clustered in different ways in order for us to significantly shed light on the fluctuations in OAS usage between the surveys. This also follows the groupings reported in Larsson and Svensson (2010).

The most interesting data from the repeat study can be summarised as follows:

- From survey 2 (October 2009) to the repeat study (January 2012), the increase in use of anonymity services is significant for the combined group of those who 'never' file share and those who file share 'once a month at the most' (file sharing frequency category 2, in Table 2).
- The increase is similarly significant for the combined group of those who 'never' file share, those who file share 'once a month at the most' and 'once a week at the most'.
- The proportions of those who file share the most frequently, in categories 4, 5 and 6, are continuously high. The share is between 24.3 per cent and 29.7 per cent.
- The increase in use of anonymity services for the entire group of respondents, from survey 2 to survey 3, is statistically significant.
- Where the increase from survey 2 to survey 3 (the repeat) is statistically significant, the increase from survey 1 to survey 3 is also significant (the total as well as file sharing frequency categories 2 and 3).
- A statistical note can be made concerning category 4 in Table 2 about those who file share fairly to very often. The increase in use of anonymity service is (only) very close to significant, given the 'two-sided' hypothesis that underlies the statistical confidence interval of 95 per cent.

The data clearly show that the use of online anonymity services correlates to unauthorised file sharing of copyrighted content. Larger proportions of those who file share (download) more frequently also use anonymity services than those who file share less. However, the increase in use that was clearly significant in the previous study (Larsson and Svensson, 2010) is this time not as salient. In addition, the overall use observed in the entirety of the surveyed groups is clearly increasing, which is shown in the increase within the groups that file share less often.

Analysis: Anonymity from strain

If we first look at the more descriptive research questions (RQ1 and RQ2), we almost immediately find ourselves in need of a theoretical framework to understand what these findings mean in a socio-legal context. In addition, RQ3 demands even more of a theoretical approach, represented here by Merton's strain theory, which then quite naturally reconnects to both RQ1 and RQ2. Initially, we were, of course, eager to see to what extent the use of anonymity services had increased or decreased. Since the overall increase is significant (4.7% percentage points, from 10.2 per cent to 14.9 per cent between survey 2 and survey 3) from 2009 to 2012 (RQ1), the second research question greatly interested us and offered a little more refinement when comparing file sharing frequencies to the use of anonymity services. A core assumption in strain theory states that delinquency results when people are unable to achieve their goals through legitimate channels (Agnew, 1984: 425). If we apply this to the case of file sharing of copyrighted content of digitalised media, we must also include how the entire structure of media distribution and reproduction has changed within the digital society. When Merton first wrote about strain and the lack of means for achieving cultural goals, he used the example of the American dream. We have to rethink some of the theoretical conditions in order to relate them both to the use of online anonymity services, but also to file sharing of copyrighted (and other) content.

Relevant to the context of illegal file sharing is the development of copyright law during the last 100 years or so. This indicates that the development of how cultural production is organised today has occurred during the greater part of the 20th century, not only in terms of copyright regulation but also collective societies, contract practice and a privileged industry that relies on the extreme terms of protection that the law provides (see, for example, Hemmungs Wirtén, 2008, 2011;

Larsson, 2011b; Lessig, 2008; Vaidhyanathan, 2001), which have further developed, path dependently, in the digital society (Larsson, 2011a, c). This means, in a digital society, that enforcement of copyright arguably goes hand in hand with an emerging surveillance regime. The data presented above signals that those who do not conform to the traditional means for taking part in culture, regulated by a certain and strong copyright, are more inclined to use digital means such as file sharing via BitTorrent; and since this behaviour is criminalised in response to that, they also choose anonymity by methods of encryption and proxy services. One reason for young people's lack of respect for copyright law is that the law is seen as far too broad, encompassing the continual extension of copyright protection and of benefit mainly to powerful corporations, rather than individual creators. The penalties are also likely to be perceived as too high (cf. Karaganis et al., 2012).

In Merton's terminology, online piracy can be conceptualised as an innovative approach to achieving cultural goals. File sharers share the cultural goals but not the means by which they are to be achieved. As mentioned earlier, it is the category of innovation as adaptation in Merton's strain theory that has received the most attention from sociologists interested in the study of deviance and crime (Featherstone and Deflem, 2003). There are reasons as to why encrypted anonymity is related to unauthorised file sharing in terms of innovative adaptations, born out of the strain that copyright enforcement causes in the large parts of society where copyright is a weak social norm (regarding social norms and copyright, see Larsson, 2011b; Svensson and Larsson, 2012).

Control versus privacy

However, the data also signal that there are other reasons for seeking encrypted anonymity than just for protection from prosecution for file sharing violations. In these cases, as well in the uptake of increased anonymisation services more generally, we may see an increased rejection of a number of conjoined, and often governmentally initiated, trends seeking control, traceability and accountability for online behaviour. The legal system, not only with regards to copyright enforcement, is in a number of instances struggling with the accountability of individual acts mediated by an online environment. We now see a more broad development towards what Lawrence Lessig wrote about concerning an 'architecture of control' and the addition of 'layers of identification technology' upon the more uncontrolled TCP/IP protocol (Lessig, 2006). This is done entirely to raise the 'regulability' of online behaviour (Lessig, 2006; see also Larsson et al., 2012), pushing what Roscoe Pound described in terms of 'effective legal action' (1917). The debate in Sweden in recent years has included many issues regarding state-governed surveillance, for example, the so called FRA law, which is a signal surveillance law for monitoring signal traffic across the Swedish borders in order to fight terrorism and international crime. It was heavily criticised both before and after it was passed in Sweden (Kullenberg, 2009; Larsson and Hydén, 2010). The respondents overall increase in use of anonymity services from October 2009 to January 2012 may be a sign of decreased willingness to comply with this type of surveillance and control, as a sign of a quiet resistance in action.

When it comes to both copyright enforcement as well as more general questions of control and surveillance over the digital environment, 2009 was a very important and eventful year in Sweden. It included the conviction in the first instance of the individuals behind The Pirate Bay, the implementation of IPRED and the strong results for the Swedish Pirate Party in the EU Parliament election. For that reason, measuring the short term effects in a time when the general public's awareness of these issues was very much raised was important in regards to, for example, anonymity

and file sharing (Larsson and Svensson, 2010) and file sharing and social norms (Svensson and Larsson, 2012). However, we argue that the public display of these issues in Sweden has not been as strong in the years following 2009. As a consequence, present studies can, to some extent, be seen as measuring the long-term effects of the debates during 2009, as well as a measurement of where the trend is heading without similarly strong governmental and legislative involvement.

The results of the repeat survey indicate that the general public is now following the file sharers in terms of more consciously seeking stronger anonymity online. The deviancy, in this case, is in relation to the legal system in its current attempts to add more control to the digital environment. Encrypted anonymity is a way to obstruct the methods in which the judiciary system works, being especially focused on identification. As mentioned previously, this can be connected to a previous study on online anonymity and file sharing (Larsson and Svensson, 2010). This study concludes that if de-anonymisation is forced by law, this will only seem just and legitimate if this law is in compliance with the structures of social norms. If it does comply, then online 'trust' in anonymity will not suffer from this breach of confidentiality, since most people will experience the breach as just. However, if the law is not in line with social norms, this de-anonymisation is likely to have a negative effect on the status quo of the weaker forms of anonymity.

Rebellion in the protocol?

The short history of file sharing protocols can be related to at least three main factors: the increased broadband width in the technological infrastructure; the development of more efficient data transfer; and of being a response to a strengthening of copyright enforcement in a digital environment. The architecture went from the centralised unstructured peer-to-peer system of Napster to the first decentralised file sharing network, Gnutella, in 2000 and then to Kazaa in 2001. From 2002 to 2003, a number of popular BitTorrent services were established, including The Pirate Bay (Spitz and Hunter, 2005; Strahilevitz, 2003; Zittrain, 2006). Those who actively construct new environments that offer new means – file sharing platforms, anonymisation tools, and so on – may even represent a Mertonian adaptation that cannot merely be labelled as innovative, but rather as rebellious. They can actively 'work to bring into being a new, that is to say, a greatly modified social structure', which presupposes 'alienation from reigning goals and standards' (Merton, 1968 [1949]: 211). The goals could then be different from just striving to achieve present cultural goals; they could be more political, to change the system itself. Media researcher Jonas Andersson, for example, discusses how 'compared to the traditionalist, national bias of the established polity, *digital politics* are characterised by a transnational, globalised and highly technophilic exchange' (2011: 1). The more 'revolutionary' aspects of Merton's concept of 'rebellion' might be able to express, in terms of digital politics, what some scholars describe as 'cyber-activism' (Bennett, 2003, 2008). One might see the construction of both file sharing sites as well as anonymity services as an extremely innovative adaptation, which is more of a 'rebellion' because it may question the cultural goals that media consumption traditionally sets up (cf. Rojek, 2005, in terms of 'net banditry'). Questioning both emerging as well as traditional surveillance regimes that are, so it is claimed, necessary for upholding law is also likely a part of this. This means that one could argue an evolution towards, not only avoiding or feeling excluded from, the means to participate in the shared cultural goals, but to a questioning of the common cultural goals themselves.

Merton stated that rebellion is close to retreatism, but with the important difference that rebellion also includes both new goals and new means. Rule breaking is considered normality and is also justified in order to form a common understanding of the problem and its potential solutions.

The rebellion identity of the file sharing community has been an active response to a perceived increase in control and surveillance related to legislative actions. A vital part of this trend has been set by The Pirate Bay and its iconic status within its closest communities, but it has also initiated a more accessible public debate; the site has consistently replied to the standard Digital Millennium Copyright Act related cease and desist letters from copyright holders with swearing and general mockery. The most quoted such letter, which could be said to really set the overall tone of the debate, is probably one sent to the US branch of Dreamworks, stating that ‘Sweden is not a state in the United States of America [but] a country in northern Europe’, and rapidly escalates to profanities from thereon.¹²

In a series of focus group interviews with ninth graders in a medium-size Swedish city, conducted by the Cybernorm Research Group in 2011 and repeated in 2012, this attitude of rebellion is quite clear. The respondents claim to not feel threatened by legal sanctions, since there is no way to stop file sharing whatsoever (Svensson et al., 2013). Overall, reaction among these respondents to questions regarding the buying of physical CDs or DVDs involved laughter and remarks about not even remembering when they last bought an album or a movie. Some respondents, however, expressed that they only engaged in unauthorised file sharing when it came to non-Swedish titles, since other countries legislation is not believed to reach Swedish territory. This could be said to be a more lightweight variation of the more offensive stance that The Pirate Bay early became famous for (cf. Goldman, 2012). It is worth noting that the focus group interviews were conducted at least 7 or 8 years after the original answer from The Pirate Bay, but the attitude is still recognisable even within younger age groups.

Future outlook

An important question for the future development lies in the Durkheimian challenge – where does the trend of anonymity lead? Is it a sign of a new digital organisational scheme? Is it a sign of ‘a new morality’ or social change on a larger scale? In the case of online piracy, it could be described as the changing conceptions of right (and wrong), along with the means for achieving accepted goals, visible in the case of file sharing norms (Larsson, 2011b) and the ways that file sharers justify their behaviour (Andersson, 2010, 2012; Larsson and Andersson, 2013).¹³ This means that this relates to the conceptions of reality in terms of distribution and reproduction of media content, which creates a collision between social and legal norms of copyright, analysed in Larsson (2011b). These conceptions of reality likely form a basis for how file sharers justify their behaviour and relate to both its illegality as well as what the digitalisation of society means (Andersson, 2010; Larsson and Andersson, 2013). How file sharers justify their behaviour displays an ‘innovative’ approach. They do this by not having internalised the institutional norms (law) governing the ways and means for participating in culture (listening to music, watching movies), and by rejecting how government in general should be managed in terms of surveillance, data retention and online traceability (see Merton, 1968 [1949]: 195). For example, Featherstone and Deflem argue that most individuals in society accept the cultural goals, but that ‘the access to legitimate avenues for goal attainment are blocked for other people, causing them to reject the legitimate (and often legal) means to achieving the accepted goals’ (2003: 480).

Conclusion

The aim here has been to analyse current trends with a focus on illegal file sharers and the rationale behind their behaviour, especially in relation to online anonymity and copyright enforcement. The

data clearly shows that larger proportions of frequent file sharers (that download) also use anonymity services more frequently than those who file share less. The overall use of anonymity services is clearly increasing, which is also seen in the increase in the groups that file share less often or never. This means that the data also signals that there are other reasons for seeking encrypted anonymity than just protection from prosecution for file sharing violations. This may be a response to what is often perceived as governmentally initiated attempts to increase control, traceability and accountability for online behaviour in the digital domain.

In the terminology of Robert Merton, this can be expressed in terms of innovative adaptations born from the strain that copyright enforcement brings about in large parts of society where copyright is a weak social norm, as well as the perceivable strain of the fact that identification and surveillance are layered onto a digital environment conceptualised by many as an environment that should be rid of just that. Merton's strain theory stems to some extent from the ideas of Durkheim, who, as mentioned, claimed that deviance can be the means by which society pushes its boundaries forward. In Merton's theory, consequently, a key concept bridging the gap between statics and dynamics is that of strain. Such strains may be dysfunctional for the societal system in its existing form, and they may also be instrumental in leading to changes in it (Merton, 1968 [1949]: 175). Encrypted online anonymity, exemplified by its correlation with unauthorised file sharing, is likely to play a role in both such cases.

Notes

1. In this article, the term 'anonymity' is used in a broad sense. That means that 'true' untraceable anonymity is included in the concept, but mostly the concept regards a more traceable form of anonymity, a 'pseudonymous' state. To keep this clear, we will speak of activities as being more or less anonymous, and will regard anonymity as a form of scale, rather than as a single, true, anonymous state.
2. Directive 2006/24/EC of the European Parliament and of the Council of 15 March 2006 on the Retention of Data Generated or Processed in Connection with the Provision of Publicly Available Electronic Communications Services or of Public Communications Networks and Amending Directive 2002/58/EC, [2006] OJ L105/54-63.
3. 'Det finns tjänster som gör att man kan surfa på internet anonymt. Det innebär att ingen utomstående kan upptäcka vad du gör på internet. Använder du någon sådan tjänst för anonymitet?'
4. Five respondents did not answer this question. The number of respondents that answered both the question on file sharing and the question on use of anonymity service is 1013, as one can see in Table 2 at the bottom of column 6. In the first survey, approximately 59 percent of the 1047 respondents were male and approximately 41 percent were female. In the second survey approximately 60 per cent of the 1041 respondents were male and approximately 40 per cent female (Svensson and Larsson, 2012: 10).
5. Possible margin error (% points) is ± 3.55 (non-significant increase).
6. Possible margin error is ± 2.9 (significant increase).
7. Possible margin error is ± 2.9 (significant increase).
8. Possible margin error is ± 6.0 (non-significant increase (but close)).
9. Possible margin error is ± 8.6 (non-significant increase).
10. Possible margin error is ± 15.3 (non-significant increase).
11. Possible margin error is ± 2.9 (significant increase).
12. See http://static.thepiratebay.se/dreamworks_response.txt (accessed 27 June 2012).
13. See Larsson (2011b: 124–126) for a discussion on how conceptions are related to physical infrastructures of communication, leading to normative drift as the means change, as they so revolutionary have in a digital context in relation to pre-Internet.

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Biographies

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