

Chilling Effects in the Internet Age: Three Case Studies



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Abstract

This thesis is an empirical legal investigation into regulatory chilling effects in online contexts. Internet censorship is on the rise globally and state surveillance and cyber-policing capabilities are rapidly evolving. Understanding regulatory “chilling effects”—the idea that laws, regulations, or state surveillance can deter people from exercising their freedoms or engaging in legal activities—has thus today taken on greater urgency and public importance. Yet, the notion is not uncontroversial; many commentators have questioned the existence and impact of regulatory chilling effects, particularly in online contexts. It does not help that previous studies on regulatory chilling effects are generally narrow in methodological and theoretical approach and concern traditional media contexts, shedding little light on how chilling effects may work online. Drawing on a theoretical framework that synthesizes traditional chilling effects theory—forged largely by legal theorists Frank Schauer and Daniel Solove—and informed by insights from both online privacy and computer mediated communications (CMC) research, this thesis addresses this gap in the literature with an innovative research design that explores regulatory chilling effects online, with case studies exploring its comparative, regulatory, and surveillance-related dimensions.

In concrete terms, this thesis provides empirical and theoretical foundations not only for the notion of regulatory chilling effects online but also factors that influence them. The first case study, a first-of-its-kind online survey with over 1200 respondents, provides general empirical support for the existence of regulatory chilling effects in online contexts, including *comparative* insights, that is, how *some* forms of regulation or surveillance may have more significant regulatory chilling effects than others, and why. The second case study examines whether widely covered revelations in June 2013 concerning NSA/PRISM online surveillance has had a chilling effect on Wikipedia users. The third case study is an investigation of the United States Digital Millennium Copyright Act (DMCA)’s controversial notice and takedown copyright enforcement system, a scheme often criticized for creating chilling effects online. This DMCA study is carried with a sample of 500 Google Blogs and 500 Twitter accounts and offers insights into how regulatory chilling effects work in practice, along with insights and implications of automated or “robotized” legal enforcement and the DMCA’s international impact.

Ultimately, this thesis addresses substantial gaps in existing research and literature concerning the existence, scope, impact, and permanence of regulatory chilling effects, and factors that influence them, while helping lay the foundation for a theory of regulatory chilling effects for online contexts. It also has substantial methodological contributions, offering unique and innovative methods for measuring and exploring regulatory chilling effects that can be re-deployed or built upon in future research.

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Chapter 1

Introduction

1.1 Introduction

On March 10, 2015, the American Civil Liberties Union, on behalf of the Wikimedia Foundation and eight other organizations, filed a lawsuit against the United States Department of Justice and the National Security Agency (NSA) challenging the legality of NSA mass surveillance online.¹ In an Op-Ed published the same day in the New York Times, Wikipedia Founder Jimmy Wales and Lila Tretikov (2015), Executive Director of the Wikimedia Foundation, explained the lawsuit:

The notion that the N.S.A. is monitoring Wikipedia’s users is not, unfortunately, a stretch of the imagination. One of the documents revealed by the whistle-blower Edward J. Snowden specifically identified Wikipedia as a target for surveillance, alongside several other major websites like CNN.com, Gmail and Facebook. The leaked slide from a classified PowerPoint presentation declared that monitoring these sites could allow N.S.A. analysts to learn ‘nearly everything a typical user does on the Internet.’

The harm to Wikimedia and the hundreds of millions of people who visit our websites is clear: Pervasive surveillance has a chilling effect. It stifles freedom of expression and the free exchange of knowledge that Wikimedia was designed to enable.

Such concerns about the harmful “chilling effects” state regulatory activities have on Internet users are now common, with Internet regulation and censorship on the rise, states increasingly engaging in online surveillance, and state cyber-policing capabilities rapidly evolving globally

¹ Complaint for Declaratory and Injunctive Relief, Wikimedia Foundation et al v. NSA, No. 1:15-cv-00662-RDB (filed March 10, 2015).

(Nye, 2011; Zittrain, 2008; Deibert, 2013; Deibert et al., 2012; Schneier, 2015). Today, concerns about the “chilling effects” have moved beyond courtrooms and scholarly debates, and are now regularly invoked by citizens, journalists, policy analysts, and politicians around the world to critique law, policy, and other forms of state actions, or to highlight the threats such actions pose to rights, freedoms, and other important interests (see, for example: Nicas, 2014; Townsend, 2014; PEN America, 2013; 2015; Pew Research Center, 2015a; 2015b; 2014a; 2014b; 2014c; Sledge, 2013; Masnick, 2014; Halper, 2013).

Yet, underlying many of these concerns is an implicit idea or “theory” about how regulatory actions negatively impact on behavior. That is, certain regulatory state actions—like laws, regulations, or actions like government surveillance—*can* and *do* have a “chilling effect” on peoples’ activities online, that is, deterring them from exercising their rights and freedoms. This implicit theory—often called chilling effects theory (see, for example, Tushnet, 2014; Youn, 2013; Persily and Rosenberg, 2008; Ford, 1997; Redish, 1983; Schauer, 1978)—is not new, nor is skepticism about its own implicit theoretical and empirical assumptions about law and human behavior. Indeed, Barendt et al. (1997) observes that notions of regulatory “chilling effects” are of “American legal origins” and developed mainly out of 1960s-era “free speech” law in the United States (189-190). More contemporary accounts of regulatory chilling effects—explored in this research—also incorporate other theoretical and empirical threads, including aspects of both American and European privacy law and theory.

1.2 Chilling Effects: Foundations

1.2.1 Theoretical Origins and Normative Elements

Though notions of self-censorship in the face of coercive threats are quite old—historian Quentin Skinner, for example, identified comparable themes in early strains of republican political thought (Skinner, 2002: 257; Goodin and Jackson, 2007: 254)—more modern notions of regulatory “chilling effects” emerged out of the tumultuous Cold War regulatory context and gained their most high profile expression in traditional free speech law in the United States (Barendt et al., 1997: 189-190; Kenyon, 2010). The assertion that a law might “chill” free speech was arguably first articulated by Professor Paul Freund (1951) but it would find its most prominent expression soon after in the jurisprudence of the U.S. Supreme Court (Horwitz, 1997). In the 1952 case *Wieman v. Updegraff*² Justice Frankfurter introduced the idea and, a few years later, Justice William Brennan would offer the most popular formulation in relation to free speech in the 1965 case *Dombrowski vs. Pfister*.³ At issue in *Dombrowski* was a sweeping Louisiana “anti-communist” law being used to prosecute and intimidate civil rights workers in the state. The appellants in the case, a Louisiana civil rights organization and its executive director, sued in federal court to restrain state officials from prosecuting them. Justice Brennan, writing for the Court, found:

This overly broad statute also creates a ‘danger zone’ within which protected expression may be inhibited. Cf. *Speiser v. Randall*, 357 U.S. 513, 526. So long as the statute remains available to the State the threat of prosecutions of protected expression is a real and substantial one. Even the prospect of ultimate failure of

² 344 U.S. 183 (1952).

³ 380 U.S. 479 (1965).

such prosecutions by no means dispels their chilling effect on protected expression.⁴

The Court ultimately held that this “chilling effect”, which inhibited the free expression of the civil rights workers, was an unconstitutional abridgement of their First Amendment rights, the main provision of the U.S. Constitution that protects freedom of speech and the press (Schauer 1978: 685). Often referred to by lawyers as the “chilling effects doctrine”, this idea—and the theory underlying it—would find expression in many more subsequent cases, from the 1960s on and eventually become a not uncontroversial aspect of U.S. constitutional law (Kendrick, 2013: 1637).

Given these American legal and doctrinal origins, First Amendment scholarship and free speech theory have deeply shaped the doctrine. Frederick Schauer’s leading account set out in *Fear, Risk, and the First Amendment: Unraveling the “Chilling Effects Doctrine”* (1978), which offered the first comprehensive treatment, drew heavily on U.S. First Amendment cases and primarily focused on how vague or overly broad laws, through fear of prosecution or sanction and the uncertainties of the legal process, could chill or deter the exercise of peoples’ freedom of speech and expression. Underlying this central concern about how state regulatory actions impact peoples’ free activities, and apparent from works on chilling effects theory like Schauer’s, are two central normative themes, both influenced by similar themes in First Amendment scholarship and liberal theory.

⁴ 380 U.S. 479, 494 (1965).

i. Benefits of individual freedom and skepticism about state interference

This first theme is a liberal promotion of greater liberty and freedom of individuals, particularly freedom of expression, and an attendant skepticism about the actions of governments or states in limiting those freedoms. The primary foundation for this idea is John Stuart Mill (Schauer calls Mill's *On Liberty* "an icon" of the liberal tradition) and Mill's defense of the "harm principle", that is, government or society is only justified in interfering with individuals in order to prevent them from harming others (Horwitz, 2012; Schauer, 2011: 571). Mill links this forceful justification for greater freedom, and skepticism about government (and other) infringements on freedoms, to a social "utility" that he defines as "the permanent interests" of people as "progressive" beings (Mill, 1859; Schauer, 2011: 575). In other words, respecting peoples' freedoms involves respecting their individual actions—their choices, decisions, and autonomy (Schauer, 2011). For Mill, the promotion of liberty fosters a greater likelihood of happiness and development of individuals; for people to exercise their "higher capacities" as people, that is, to deliberate, experiment, plan, and live "a good human life" (Brink, 2014; Mill, 1859). Liberties of speech, thought, and action are all connected to this broader defense of freedom—they assist the individual to exercise higher capacities to achieve her potential and so Mill opposes actions (such as those of the state) that interfere with, or limit, these liberties except in accordance to the harm principle (Schauer, 2011; Brink, 2014; Mill, 1859).

This classic liberal ethos has been developed by other scholars. C. Edwin Baker and David Strauss, for example, have built upon Mill's ideas to advance a full-fledged argument for freedom of speech (and liberty more generally) based on the importance of self-expression (Baker, 1977) or individual autonomy and the person's right to "control" her "own reasoning

processes” (Strauss, 1991: 354). As with Mill, state interference with speech (and other liberties) harm the individual and limit her autonomy and development through self-expression and creativity. A different but related argument consistent with Mill’s original skepticism for state interference has also gained some currency in First Amendment scholarship (Horwitz, 2012: 451). Gey (2008), for example, argues that the potential harms caused by governments that restrict the speech and other freedoms of individuals far outweigh the potential risks or harms that may flow from bad speech or expression. Like Mill, Gey is concerned about state interference and harms to individuals, but this concern is animated by an even deeper libertarian skepticism about the benefits of state action (2008; Horwitz, 2012: 451-452).

ii. Individual freedom, particularly free speech, as a societal good

While the previous theme focused on benefits to individuals and skepticism for state inference, this second theme approaches greater freedoms for individuals as a societal good (Schauer, 2011: 575; Horwitz, 2012). First, is the classic “search for truth” rationale for freedom of speech and thought. This idea, for which Mill is also the most famous proponent, rests on epistemological assertions about the truth-seeking function played by free speech and the exchange of ideas (Horwitz, 2012; Schauer, 2011: 571). Also known as a the “marketplace of ideas” argument, the social good here is that the truth if “left to its own devices” would eventually win out or “triumph” in a “free marketplace of ideas” (Schauer, 2011: 587; Horwitz, 2012: 449). The three classic arguments Mill advances on this count were, first, a skepticism about our knowledge of the truth (society may silence bad or false ideas not knowing that they are, in fact, true); second, that bad or false ideas can contain *some* elements of truth so if silenced or restricted, society loses out on those germs of insight; and finally, that in confronting false or

bad ideas, society strengthens its perceptions of truthful (or good) ideas (Horwitz, 2012: 449; Schauer, 2011: 576; Brink, 2014). Here, the free exchange and confrontation of ideas in society—including bad ideas—is an essential device for society to identify truths and strengthen their acceptance (Horwitz, 2012; Schauer, 2011; Brink, 2014).

More recently, scholars have focused increasingly on how free speech and liberty of thought and action are essential to democratic society (Schauer, 2009: 409-10). Scholars like Robert Post (1995) and Cass Sunstein (1993) have focused on the importance of liberty of speech, thought, and action in that they provide the necessary conditions for democratic deliberation and decision-making. Cohen (1995) has argued that the right to read anonymously is an important “First Amendment” value essential to collective action in society while Richards (2013) similarly argues “intellectual privacy”—the freedom to read, think, and communicate privately—is something essential to democracy and “self government” (1959, 1963). Others have made a slightly different but related assertion, including what Horwitz (2012) calls the “civic courage” argument, which holds that free thought and expression are important to fostering civic courage among citizens to take action and engage in self-governance. Here, in Justice Louis Brandeis’ view, the “greatest menace” to free and democratic society was an “inert people” (Horwitz, 2012: 452). Carpenter (2003) has asserted, based on a liberal conception of a neutral state, that the state should not be trusted with picking and choosing good and bad ideas given the diverse nature of contemporary society.

Though certainly not exhaustive, these themes, values, and justifications, have animated both historical and contemporary debates in First Amendment and related scholarship. They

have also shaped aspects of chilling effects theory and helped justify its concern over how laws, regulations, and surveillance may “chill” peoples’ rights and freedoms. These themes, values, and justifications are also certainly apparent, for example, in Schauer’s leading account (1978), which concerns itself with how laws and regulations impact individual autonomy and the free exercise of their rights and freedoms. They are also apparent from the origins of chilling effects doctrine itself (the legal doctrine from which the more general theory developed), which gained prominence in the McCarthy Era of the United States. Blasi (1985) observes that the doctrine was essentially “forged” by American judges in the 1960s as a means to “repudiate” McCarthyism, a term that embodies the (then) oppressive and overreaching federal and state efforts to suppress communism (482). And those who have analyzed and advanced chilling effects theory and its related legal doctrine likewise often share a deeper concern for individual liberty and its importance to a healthy democratic society. For example, Horwitz (1997), in a passage that echoes Mill, wrote about the relationship between concerns about chilling effects and the dangers of government overreach to democracy:

The chilling effects doctrine was more than an important legal formula; it also reflected a deep understanding of the stagnation of political, cultural, and intellectual life in American society during the McCarthy era, and the dangers that such stagnation posed to democracy (1997: 28).

1.2.2 Evolving Concerns: Chilling Effects and Privacy

However, these (First Amendment-related) ideas and themes also do not perfectly embody the theoretical or normative components of contemporary chilling effects theory. Concerns about regulatory chilling effects in research and scholarship have not remained a relic of early American constitutionalism. Rather, they have evolved as these concerns have emerged

in law, research, and public policy debates in Canada, Australia, the United Kingdom, and many other jurisdictions beyond the U.S. (Kenyon, 2010), and as scholars like Price (1975; 1995), Barendt et al. (1997), Boyle (2000), Zittrain (2008), Seltzer (2010), and Balkin (2012) have worked to understand it, and related ideas, in new technological or regulatory contexts. Not surprisingly, as new forms of societal surveillance, policing, and Internet regulation have emerged, researchers and theorists have employed chilling effects theory to understand and explore the privacy-related impacts and harms associated with these regulatory changes (Solove, 2007a; Richards, 2013; Brown, 2010; Deibert, 2013; Schneier, 2015).

There is some background to this development that involves the relationship between chilling effects theory and contemporary privacy theory. Though the socio-cultural origins of privacy are ancient, more modern Western thought on privacy has been dominated by two traditions—one tied to English and American constitutional traditions and a European one tied to continental socio-political traditions (Westin, 1984; Whitman, 2004; Szivos, 1992). However, for sociological reasons (like common social and technological challenges), and, in part, the influence of continental thinkers like Habermas, Foucault, and Arendt beyond Europe, these traditions have slowly converged (Szivos, 1992; De Hert and Gutwirth, 2006). Habermas and Arendt’s “construction” of the public sphere as a space free from coercion and authoritarian control, for example, influenced (and reflected) a European concern with public sphere privacy, but also resonated with American privacy scholars and constitutionalists concerned with government overreach (De Hert and Gutwirth, 2006: 72-73; Szivos, 1992). Indeed, Habermas himself lauded the work of American constitutional scholars like Ely, Michelman, Ackerman, and Sunstein (Froomkin, 2003: 755) while Foucault (1977), too, drew on Anglo political thought

by employing Jeremy Bentham's Panopticon prison design as a metaphor for the modern surveillance state—how the threat of constantly being watched helps to discipline and control individuals (Lyon, 2006: 40). In recent times, privacy theorists and researchers (from both traditions) have subsequently relied on Foucault's metaphor to research, interrogate, theorize, and analyze privacy threats (Nissenbaum, 2009; Mayer-Schönberger, 2007; 2011; Božović, 1995; Lyon, 2006; 2014; Gandy, 1993; Solove, 2006; 2007a; 2007b).

Foucault's concern for the disciplining power of the "panopticon society" was an important but not entirely comprehensive metaphor to understand the threats and challenges posed by technology and surveillance in modern society. As privacy theorist David Lyon has argued, "ratcheting up" on government surveillance practices in response to contemporary events like the 9/11 terrorist attacks, and other criminal and security threats, cannot be fully understood through the lens of the panopticon (2006: 51). These developments are not merely the "outgrowth" of modern technological society (as Foucault theorized) but also the product of broader cultural trends that accommodate increasing amounts of societal surveillance (Lyon, 2006: 51) with the scope of such surveillance, particularly online, often disproportionate to presumed concerns or threats being addressed (Brown and Korff, 2009). One of the products of such trends toward both panopticon technologies and practices, as well as increasing social acceptance of surveillance, is what Nissenbaum calls "extrinsic losses of freedom", that is, when people "curtail outward behaviors that might be unpopular, unusual, or unconventional" because they fear both "tangible and intangible reprisals", such as "ridicule, loss of a job, or denial of benefits" (2009: 75). The potential that an individual is being watched robs her of "full agency" and "spontaneity" as she shapes her actions through the perspective of how others, or those

potentially monitoring her, may see her (2009: 75). Here, concerns about privacy and surveillance are clearly connected to the rights, interests, and freedoms of the individual, but within a broader societal context.

The panopticon society, in ways, rests on an assumption of a broad societal chilling effect: the threat of surveillance deters people from acting freely. But First Amendment “chilling effect” scholars like Schauer did not readily make this connection, given their primary concern with overreaching laws and regulations and their impact on individuals, rather than societal effects. This is where Daniel Solove’s work on chilling effects theory (2006; 2007a; 2007b) has made an important contribution. Solove broadened chilling effects theory by theorizing and exploring modern surveillance and data-gathering and explaining how such practices can create a kind of regulatory “environmental pollution” that encourages chilling effects and self-censorship (2006: 491). In doing so, he not only connects the First Amendment values underlying Schauer’s account of chilling effects with the Anglo privacy tradition—including classic works like Warren and Brandeis (1890) and Prosser (1960) and important contemporary ones like Clarke (1988) or Schwartz and Reidenberg (1996)—but also to aspects of the European privacy tradition that, in more recent times, has focused on regulatory concerns surrounding data protection and reputation, and, even more recently, the “right to be forgotten” (Mayer-Schönberger, 2011; Davies, 2015). By integrating these different ideas and traditions within chilling effects theory, Solove is also able to illustrate, better, the broader societal impact that mass surveillance or bulk data gathering can have:

Even surveillance of legal activities can inhibit people from engaging in them. The value of protecting against chilling effects is not measured simply by focusing on the particular individuals who are deterred from exercising their rights. Chilling effects harm society because, among other things, they reduce the

range of viewpoints expressed and the degree of freedom with which to engage in political activity (2007b: 765).

In short, Solove builds on Schauer's theoretical foundations to forge an account of chilling effects theory better suited to understand and analyze the threats and challenges posed by contemporary online surveillance practices and other forms of invasive electronic policing.

1.3 Chilling Effects Online: Lack of Evidence and Understanding

But just as regulatory chilling effects theory is not new, neither is skepticism about its legal, theoretical, and empirical basis. In the 1972 American case of *Laird v Tatum*, for example, it was argued that broad government surveillance and data gathering unconstitutionally “chilled” the rights of the complainants.⁵ The U.S. Supreme Court rejected the claim 5-4, finding that being targeted for surveillance did not constitute a sufficient “cognizable injury” to support the legal claims, with the Court’s reasoning reflecting a deep skepticism about both the potential chilling effects, and attendant harms, of surveillance. Such “judicial skepticism” has persisted over ensuing decades (Kaminski and Witov, 2015: 480-482). In more recent cases like *Clapper v Amnesty International*, where the legality of NSA surveillance under the Foreign Intelligence Surveillance Act (FISA) was challenged, the Supreme Court cited *Laird* to also dismiss the lawsuit while noting that chilling effects claims were “too speculative”.⁶

But such skepticism is not confined to courts. Commentators, scholars, and researchers, from a variety of fields, have long questioned such chilling effects claims, including their

⁵ *Laird v. Tatum*, 408 U.S. 1, 13–14 (1972).

⁶ *Clapper v. Amnesty Int’l*, 568 U.S. ___, ___, 133 S. Ct. 1138, 1152 (2013).

existence or extent of any “chill” and related harms, particularly so in online contexts. Schauer, while setting out chilling effect theory’s first authoritative account in 1978, himself observed that the empirical assumptions of chilling effects theory were “likely unprovable” (1978: 730). This skepticism has likewise persisted. Blasi (1985), writing nearly a decade after Schauer, noted that the notion of “chilling effects” on supposed “fearful and overly risk-averse” speakers was “oft-criticized” and based on “crude behavioral speculation” (465). More recently, Kendrick (2013) surveyed existing supporting literature and concluded that chilling effects theory still involved “unsubstantiated empirical judgments” overall (1657). Similarly, Kaminski and Witnov (2015), despite finding some indirect support for regulatory chilling effects in social science research more generally, recently called for more “empirical research” on point in a “number of critical areas”, particularly chilling effects online (517). Richards (2013) echoes these concerns.

With respect to chilling effects in online contexts, privacy researchers have also expressed skepticism, particularly about the possibility of large scale or long-term chilling effects caused by online surveillance due to “desensitization” or lax attitudes about privacy concerns in digital contexts (Nickel, 2014; Debatin, 2009). Other research has suggested any “chill” would, at the very most, be temporary or ephemeral as online users typically shift quickly in response to shifting norms (Rose, 2011; Bernescu, 2013; Acquisti et al., 2013) especially in the case of surveillance because watching is so pervasive and “commonplace” in contemporary society (Lyon, 2006: 36). Hermstrüwer and Dickert (2013), using an experimental design to assess the possibility of chilling effects arising from online publicity risks, conclude that the risks or uncertainties of publicity in certain online contexts are unlikely to generate any noteworthy chilling effects, though they add qualifications leaving open opportunities for future research.

Also recently, communications researchers Das and Kramer (2013) note that while there are some works examining online “self-censorship” the phenomenon has “scarcely been studied” given how often it is referenced in the literature. Similarly, Ditzler, Limmer, and Lipinski (2010) noted “a void” in research detailing the regulatory effects of Internet laws and regulation. There is clearly a large gap in research concerning chilling effects online, including understanding its scope, impact, persistence, and factors that influence these things.

This gap becomes even more apparent given that the applicability or relevance of prior empirical research—focused on more traditional offline settings—to online contexts is questionable. It is generally accepted that people act and respond different in online environments than offline (Suler, 2004; Suler, 2005; Chisholm, 2013; Chester and O’Hara, 2007; Lee, 2006). So it cannot be assumed that the insights from previous chilling effects studies, like those on libel laws and media (Barendt et al., 1997), necessarily hold true for laws, regulation, or other state actions, that impact Internet users online. The other part of the challenge is methodological; regulatory chilling effects are difficult to measure and prove as it often involves offering evidence of a negative—self-censorship⁷ (Solove, 2007a: 155; Czepek, 2009: 40; Strandburg, 2008: 813; Klang and Murray, 2005; Barendt et al., 1997; Hall, 1993-1994).

This thesis addresses these theoretical and empirical gaps, with an original and innovative research design that provides important contributions to understanding chilling effects in online contexts, including factors that influence its scope, persistence, and impact, and the broader implications of these findings. These contributions are not only important but timely as a matter

⁷ The “negative” here refers to proving a counterfactual claim – that certain forms of speech, expression, or other activities would have otherwise occurred but for regulatory chilling effects or self-censorship. This is discussed further in Chapter 3.

of public policy, as chilling effects concerns have, as noted earlier, moved beyond mere scholarly discussion to mainstream media and political/public policy debates. This urgency, and the concerns underlying them, has only intensified with the recent revelations due to disclosures by former NSA contractor Edward Snowden about invasive and global online surveillance practices employed by the U.S. and other governments around the world. This has caused a “media and political storm” (Bakir, 2015: 132) and broad “heated international debate” in the “U.S., Europe, Russia, and beyond” (Qin, 2015: 166; Giles and Hartmann, 2014: 24; Bakir, 2015; Nickel, 2014: 255).

1.4 Theoretical Framework

The approach to regulatory chilling effects used in this thesis is that a chilling effect is a deterrent effect on legal activities of Internet users online. Like Brown and Marsden (2013), this thesis uses “regulatory” in a wide sense, covering a broad range of actions involving some regulatory form of control over “online environments”, including laws, regulations, surveillance, and similar forms of state or non-state action.⁸ This account is largely derived from Schauer (1978) and Solove (2006; 2007a), which together provide the overarching theoretical framework for chilling effects employed in this research. This theory of chilling effects is primarily (1) individual focused; (2) approaches chilling effects as a kind of deterrence of legal activities; and is (3) broad enough to encompass chilling effects arising from laws, regulations, and actions like surveillance and data collection. Though the theory is most often focused on state-enacted laws

⁸ Some approaches to chilling effects speak of desirable or “legitimate” activities (see, Solove, 2007a: 174. speaking of “legitimate” financial transactions”); for simplicity, this thesis focuses on legal activities that may or may not be chilled, deterred, or dissuaded.

and actions, it can also account for private action with chilling effects, such as defamation suits or data surveillance.

This theory of chilling effects will also be informed by theoretical insights from other bodies of work concerning chilling effects or related concepts, like self-censorship online. This includes theories about the de-inhibiting effects of certain synchronous forms of computer-mediated communications (CMC), insights from privacy research, and theories of self-censorship, and related online behavior, in social network sites (SNS). boyd and Marwick (2010)'s theory of the "imagined audience" whereby an Internet user imagines an audience in sharing content and may self-censor if the content is not thought "appropriate" for that "imagined audience" is one such well known study.

The thesis is structured in three parts. Chapter 2 and 3 provide the foundation for the three empirical case studies that constitute the core of this thesis. Chapter 2 employs a comprehensive review of existing literature and sets out both the theoretical framework and research questions that animate the core aims of this thesis. Chapter 3 discusses the general research design and methodology employed in carrying out this thesis' research.

Having laid those theoretical and methodological foundations, the three case study chapters in 4, 5, and 6 discuss the three (embedded) empirical case studies, including more specific details about methodology and design for each. The first case study, discussed in Chapter 4, is a survey-based case study that, among other things, examines comparative aspects of regulatory chilling effects; the second, discussed in Chapter 5, explores the impact that

surveillance-related chilling effects may have on Wikipedia users. The third case study, discussed in Chapter six, examines potential chilling effects that the Digital Millennium Copyright Act (DMCA)'s online copyright regulatory scheme may have on Google Bloggers and Twitter users. These two latter case studies complement the first survey-based one, by examining chilling effects in a concrete contexts.

The thesis concludes with Chapter 7, which offers a synthesis of the findings of the three case studies, while addressing the core research questions of the thesis along with its key findings, contributions, and additional insights and implications. This discussion also lays the foundations for a theory of regulatory chilling effects for online contexts.

Chapter 2

Theory and Literature Review

2.1 Introduction

2.1.1 Overview

Chilling effects theory requires further theoretical and empirical exploration. This chapter aims to be a contribution on this count, situating the theory and related research within a broader theoretical and empirical context. The chapter is divided into four main sections. In the first section, the central theoretical framework for chilling effects in this research is elaborated based on accounts by Schauer (1978) and Solove (2006; 2007a). In the second section, a range of past chilling effects scholarship, theory, and research, which span a diverse range of legal, economic, empirical, and methodological works, is discussed. In the third section, relevant online privacy and related literature is reviewed. In the fourth section, other relevant research—much of it social science studies focused on online communications and behavior—is likewise discussed, including computer mediated communications, self-presentation, blogger studies, and social network site studies. The chapter concludes with a brief summation of main research themes that will shape and define the research questions addressed by this research.

In my assessment of chilling effects theory, research, and related literature throughout this chapter, a few broader critical themes will emerge. First, that chilling effects theory (which, as will be seen, has roots in legal theory, with elements of both privacy and economic theory) involves theoretical assumptions about peoples' behavior that, as yet, do not have clear empirical

support, particularly in online contexts. Schauer (1978) and Solove (2006; 2007a; 2007b), to be fair, are aware of these assumptions and draw them out in their accounts, even if they do not fully answer the questions they raise. And, in some cases, criticisms based on “behavioral assumptions” may not always be fair—proving chilling effects is difficult as it often involves proving a negative, but the same can be said of demonstrating the impact of any state action, whether enacting a law or conducting surveillance. Schauer (1978), for his part, notes that some assumptions relating to chilling effects may very well be “unprovable” (1978: 730). However, traditional legal scholarship that invokes the theory (or the legal doctrine based on the theory), for example, predominantly fails to not only grapple with these theoretical and empirical problems in a sustained way, but even fail to set out assumptions of the theory when applying it. Rather, potential “chilling effects” are most often raised simply as one argument, among several others, to critique a law or state action, without any sustained or in-depth analysis. The few exceptions that do so, such as Kendrick (2013), Richards (2013), and Kaminski and Witov (2014), are critical of the theory, questioning its empirical and theoretical assumptions.

Second, the body of existing empirical legal research that *has* set out to interrogate, explore, or empirically test chilling effects theory, or aspects of it, are generally quite narrow in their methodological and theoretical approach—usually drawing on one or at most two research methods or sources of data. This makes it difficult to draw more general inferences (or extrapolate findings to other contexts) or even answer more comparative questions about regulatory chilling effects, such as whether the “chill” caused by one sort of regulatory action (a vague Internet law) is greater or less than that caused by a different form of regulatory action, like state surveillance. To do this sort of study, multiple “chilling effect” scenarios would have

to be explored in relation to the same research subjects or participants for proper measurement or comparisons. This is not done in existing empirical legal research. Moreover, existing research also tends to be older, focused mainly on the impact of libel and defamation law or “libel chill” and explores chilling effects in relation to media organizations in traditional offline media settings and not, as this research concerns, chilling effects online (see, for example, Barendt et al., 1997; Renas et al., 1989). This is a problem for a few reasons. To begin with, individuals, not organizations, are the primary focus of this thesis, and there are many reasons to expect regulatory chilling effects to impact individuals differently than organizations, as such organizations are usually profit-making and so have access to resources or legal options that individuals do not. Moreover, given the significant changes to communications the Internet has fostered, these studies’ findings may not hold true for online contexts. Indeed, there is now a wealth of research demonstrating that online environments and their unique features—like its equalizing, anonymizing, and de-individuating effects—cause people to act and behave differently than they would in offline contexts (Suler, 2004; Suler, 1996; Chisholm, 2013; Chester and O’Hara 2007; Lee, 2006).

The few examples of empirical legal research that *have* studied chilling effects in online contexts is expectedly more recent, but still remains sparse by comparison to research concerning more traditional media contexts. Additionally, this research is narrowly focused on a few specific regulatory contexts, that is, the U.S. DMCA notice and takedown scheme or related notice and takedown (NTD) systems elsewhere (Urban and Quilter, 2005; Heins and Beckles, 2005; Seng, 2014; Nas, 2004; Ahlert et al., 2004). These studies provide important theoretical and empirical insights, as well as methodological guidance, but they are also less focused on the

empirical aspects of the DMCA (and NTD systems) related chilling effects, than they are with the legality of claims therein. So, empirical legal research has not provided the same sustained treatment of regulatory chilling effects online, at least compared to the substantial body of work done in relation to libel and defamation chill in traditional offline media contexts.

Third, the fields of research that have offered more sustained study of online environments are found beyond empirical legal research in areas such as privacy (and related) research, computer mediated communication (CMC), self-presentation, blog, and social network studies (SNS), though each have differing methodological challenges and limitations, at least with respect to the objects of this thesis. Most saliently, though these studies provide important empirical and theoretical insights—such as Das and Kramer (2013)’s work on SNS-related self-censorship and boyd and Marwick (2010)’s theory of the “imagined audience”—much of this literature, particularly CMC and SNS, fail to explore the impact that laws, statutes, and other legal and regulatory norms may have on peoples’ communications and other activities online, and in most cases rarely even raise the possibility. There are likely good reasons for this—these areas of research are new and evolving and, in some cases, still concerned with establishing basic theoretical and empirical foundations. Inevitably, as this literature matures and probes more deeply into issues like self-censorship, broader and more complex issues—like those involving regulatory chilling effects or other legal norms—will be explored. But so far, few studies do so.

The few studies in this literature that do examine regulatory chilling effects in online contexts more directly, like the empirical legal research already noted, are quite narrow, both theoretically and methodologically. For example, the series of surveillance-related studies by

PEN America (2013; 2015) and the Pew Research Center (2015a; 2014b; 2014c) examined instances of chilling effects, among other things, in a series of research reports, but were all solely survey or poll-based, focused mainly on reporting percentages and other data in responses, and offered little theoretical elaboration. Even Marthews and Tucker (2014) and Hermstrüwer and Dickert (2013), two recent and insightful empirical studies on privacy-related chilling effects, included findings that were contextual and qualified, as they focused on very specific phenomena: NSA/PRISM surveillance chilling effects apparent from Google trends data (Marthews and Tucker, 2014) and chilling effects arising from risks of online publicity of embarrassing behavior and the right to “delete” or “erase” any such publicity (Hermstrüwer and Dickert (2013)). Additionally, these findings are not perfectly consistent. While Marthews and Tucker (2014) find evidence of post-Snowden (or post-June 2013) chilling effects in relation to sensitive (and embarrassing) Google search terms based on Google search trend data, Hermstrüwer and Dickert (2013) conclude that reputational or privacy risks associated with online publication of evidence of embarrassing activities was muted and, in other contexts, unlikely to occur. There may be good reasons for these inconsistencies, but additional study to help resolve them is necessary. Finally, like other research surveyed in this Chapter, neither employed mixed-methods to triangulate, and provide different angles of view, on chilling effects, nor provide much insight by way of factors that influence chilling effects observed, like its scope, impact, and permanence.

Taking these different research threads together, an overlapping and substantial gap in the literature is apparent—a lack of empirical legal research on regulatory chilling effects in online contexts (particularly as compared to offline or traditional media settings) and a corresponding

failure for those fields of research like CMC and SNS that specialize in studying and theorizing online environment to sufficiently consider empirical legal questions. This gap is expanded by a further dearth of studies, from any field, that either offer sufficient methodological diversity to triangulate and better understand the phenomenon of regulatory chilling effects or provide insight as to factors that might influence its impact. Ultimately, a central contribution of this thesis will be to bridge these theoretical and empirical divides and address this research void, by pursuing a mixed method, multi-case empirical legal study of regulatory chilling effects that also employs the insights and methods of fields that specialize in online environments and how people behave in those contexts. In the end, a more sound understanding of regulatory chilling effects will emerge.

2.1.2 The Theoretical Framework: An Introduction

The theoretical framework used in this thesis is based on an individual-focused chilling effects theory. That is, how forms of Internet regulation “chill”, deter, or dissuade the legal activities of individual Internet users.⁹ Schauer (1978) and Solove (2006; 2007a) provide the primary theoretical foundation for this framework. Schauer’s *Fear, Risk, and the First Amendment: Unraveling the “Chilling Effects Doctrine”* (1978) is generally considered the leading account of chilling effects theory (Zacarias, 1986), described as both “seminal” (Youn, 2013) or the “definitive treatment” (Cohen, 1995). In this article, Schauer extrapolates a chilling effects theory by analyzing various First Amendment cases wherein American courts, mainly the United States Supreme Court, have applied the “chilling effects” doctrine to invalidate

⁹ Some approaches to chilling effects speak of desirable or “legitimate” activities (see, Solove 2007a: 174, speaking of “legitimate” financial transactions); for simplicity, this research focuses on legal activities that may or may not be chilled, deterred, or dissuaded.

legislation or curtail certain laws for having a “chilling effect” on an individual’s First Amendment (free speech) rights under the U.S. Constitution. For Schauer, a “chilling effect” is at its core an “act of deterrence” (Schauer, 1978: 689) and the fear, risk, and uncertainty built into laws, forms of regulation, and the legal system, create a kind of deterrence. However, Schauer readily notes that *some* chilling effects are actually intended by laws—such as deterrence of criminal activities—thus, his theoretical account concerns *legal* activities and how laws and regulations might have a chilling effect upon such legal and permissible activities (1978: 6990), particularly speech.

Solove is concerned about contemporary information practices influenced by technology, including data-gathering and surveillance (Wright and Friedwald, 2013: 755). His account—set out in a series of articles in the mid 2000s builds upon Schauer’s foundation, exploring its rationale and extending chilling effects theory to encompass concern for how surveillance and data collection—both by state and non-state actors—may also “chill” or deter legal activities. In *A Taxonomy of Privacy*, Solove sets out a taxonomy and categorization for privacy concerns, and elaborates how surveillance can have a chilling effect on legal activities, including encouraging inhibition and social conformity (2006: 493). Solove emphasizes that chilling effects are a kind of secondary or indirect restriction on people’s activities—a victim may not be directly injured, but the risks, uncertainty, and potential for direct harms flowing from a state law or action, leads the victim to avoid certain legal activities (Solove, 2006: 487). It is thus an indirect injury or harm but a harm nevertheless.

Like Schauer, Solove uses an individual focused theory of chilling effects and focuses on forms of state action. But rather than focusing on the chilling effects of specific laws or private legal actions (e.g., defamation law suits), he focuses on forms of data tracking and surveillance—watching, listening to, or recording an individual’s activities—whose chill can cause something he calls “decisional interference”. That is, interference with an individual’s choices or decisions about their lives, including what legal activities they may engage in (2006: 491). In *First Amendment as Criminal Procedure* (2007a) Solove builds on his account further, examining a broader range of state practices that, too, can cause a chilling effect. In essence, Solove refines Schauer’s account to better encompass the actual range of potential chilling effects on individuals.

Schauer and Solove’s work on chilling effects provide the overarching theoretical framework for this doctoral thesis and substantially shape the central research questions pursued. These two accounts will be elaborated further in the next section, including key elements of each account, and insights and perspectives from relevant literature subsequently considered.

2.3 Schauer’s Chilling Effects Theory

Schauer’s theory of chilling effects, set out in his 1978 article *Fear, Risk, and the First Amendment: Unraveling the “Chilling Effects Doctrine”* is articulated first through an analysis of United States First Amendment cases and related law. He notes that notions of speech “chill” and “chilling effects” were first introduced by the United States Supreme Court in the mid twentieth century, making an appearance in 1952, and then more fully expounded in 1968 (1978: 685). From there, it has grown from an “emotive” argument to a full-fledged constitutional

doctrine—the “chilling effects doctrine” as American lawyers often call it—which, explicitly or impliedly formed the basis for a number of free speech decisions over the subsequent decade (1978: 685). But underlying this doctrine was, in fact, a theory, or so Schauer argued. He took it as his task to unpack the doctrine and set out the elements of that chilling effects theory.

The “chilling effects” doctrine and the chilling effects theory underlying it, Schauer argues, is based on two “fundamental propositions” (1978: 687). The first proposition is that “all litigation”, in fact the “entire” legal system, is infused with, and “surrounded” by, uncertainty. The interaction of a range of characters— human witnesses, judges, jurors, lawyers, and “people made rules”—ensure there is very little certainty in the legal process (1978: 687). This uncertainty also leads to the possibility of mistake and error. This can happen in both the criminal process, with the innocent being convicted, or in the civil context with a large damage award given to an “undeserved” plaintiff (1978: 688). The second proposition is that an “erroneous” limit on speech has more “social disunity” than an erroneous “overextension” of speech. Schauer means that states that value freedom of expression and liberty—he links this proposition to the First Amendment, but the idea could apply to many Western states—should err on the side of those values (1978: 688). Put simply, the chilling effects theory recognizes that the legal process are uncertain and that states, if so inclined, ought to favour legal rules that guarantee our rights and freedoms. What are the key components?

2.3.1 Key Elements

i. Chilling Effects as Deterrence of Legal Activities

For Schauer, a chilling effect, at its core, is an “act” or form of “deterrence” (Schauer, 1978: 689). That is, fear, risk, and uncertainty built into laws, forms of regulation, and the legal system, creates a kind of deterrence. So the concepts of “chill” and deterrence are closely related, but they are nevertheless different. Deterrence is often an intentional aim or goal of law, like with criminal law. The state may pass a criminal statute that includes harsh punishments for homicide and prohibitions on other kinds of anti-social behavior like assault. These new criminal prohibitions are intended, presumably, to deter homicide or assault. So in one sense, Schauer says, those acts are “chilled” and, in fact, that is a desirable outcome (Schauer, 1978: 689). But chilling effects theory is not concerned with this sort of deterrence. Rather, it is concerned with how laws or state action may “chill” *legal* activities; here, Schauer speaks of freedom of expression protected by the First Amendment, but again, it could apply to a broad range of legal actions that are constitutionally protected, legal, and permissible but “chilled”. On Schauer’s theory a “chilling effect” occurs:

...when individuals seeking to engage in activity protected by the first amendment are deterred from doing so by government regulation not specifically directed at that protected activity. (1978: 693)

The “chilled” legal activities here are speech or expression protected by the First Amendment. Chilling effects theory, then, is necessarily about indirect harms or effects. That is, a law that prohibits one activity leads an individual to be deterred from doing another entirely legal one. Two examples Schauer uses to illustrate this indirect aspect of chilling effects is a statute that criminalizes “hard core pornography” but has the actual effect of deterring someone from

publishing *Lady Chatterley's Lover*, a book by famed English novelist D.H. Lawrence controversial for its explicit descriptions of sex but found to be entirely legal. The second example is where the potential for a defamation lawsuit for publishing false statements deters one from publishing truthful stories or factual commentary (1978: 693). This is the sort of “invidious” chilling effect that concerns Schauer, rather than any “benign deterrence” whereby some anti-social activity is directly deterred as intended by a law or statute (like an anti-smoking law deterring smoking) (1978: 693).

Schauer focuses on freedom of speech and expression to set out his theory, as he is a First Amendment scholar and lawyer. And underlying his account is the normative position that free speech and expression is a societal good and should be encouraged and government restrictions on it discouraged (1978: 691). But his chilling effects theory need not be so limited to merely “speech” or “expression”. It easily encompasses any kind of “protected” or legal activities. Saying that freedom of expression is a “protected activity”, as Schauer often does, is simply another way of saying that it is a legal and permissible activity, because the First Amendment is part of the U.S. Constitution, the supreme law of the land, and what activities it “protects” are legal and permissible and, when it comes to speech, also desirable. But on this latter count, as Schauer readily admits, some forms of speech or activities that are “protected” are not always desirable though determining what is “desirable” speech or activity is a complicated task, often determined by “societal consensus” (1978: 691-692). So, for the sake of methodological pragmatism, Schauer limits the scope of his discussion to constitutionally protected (legal) activities while also expressly noting that his chilling effects theory can be applied beyond the First Amendment context and other activities beyond speech and expression (1978: 692).

ii. Individual Focused

Schauer's chilling effects theory is individually focused, that is, primarily concerned with how individuals are "chilled" or deterred. This is easily apparent from his helpful discussion wherein sets out how and why an individual may be deterred or "chilled" from legal or "protected" activities based on law that prohibits some other activity. On Schauer's account, individuals are reasonable, rational, and engage in a kind of reasoning process about whether or not to partake in a given activity (his focus is mainly speech or expression), in light of whatever legal rule or regulation that may or may not apply to the activity (1978: 695-697). For Schauer, a central factor is the uncertainty and possibility of error inherent in the legal process, which leads to a kind of "fear". This fear concerns both the punishment itself (especially if it is harsh or has other reputational effects) as well as the fear of error, where punishment or other costs are imposed by error (like an innocent person being mistakenly punished) (1978: 696-697). This fear will necessarily be influenced by other factors; complex factual situations may lead to more uncertainty and thus more fear of mistaken punishment if the individual acts, despite knowing their conduct is legal. Another factor is any benefit an individual might take from engaging in the otherwise legal activity; the example Schauer gives is a news editor decides to publish, for commercial reasons, despite threats of a defamation law suit (1978: 697). Another important factor is "individual risk-aversion". Some individuals, given certain fear, uncertainty, and limited benefit, will be more easily "chilled" or deterred from engaging in legal activities (1978: 698).

Schauer discusses two further key factors. First, the legal rules, statutes, or other related legal issues relevant to a particular situation can, and are often, vague and themselves uncertain in application, rendering individuals unable to even "know" if they are, in fact, acting legally or

not. Second, the costs associated with obtaining legal or judicial determination. In our “imperfect” legal system, even the innocent will incur costs—often significant ones—both financially and lost time, seeking “vindication” through litigation or defending oneself (1978: 700). There is, in Schauer’s words, a “heavy price to pay” simply having to explain or defend, creating additional fear (1978: 700). Add to these factors the inherent uncertainty and possibility of error in the legal system and one can see how predictions about legal outcomes become “extremely difficult” (1978: 699), leading to chilling effects of legal activities.

iii. Legal Rules and Statutes

A final notable element of Schauer’s chilling effects theory, is that it focuses primarily on legal rules and statutes. To be clear, Schauer recognizes the possibility of chilling arising from both state action (e.g., a vague law enacted by the state) or private action (e.g., a common law action in libel or defamation brought by a non-state actor). In fact, Schauer’s most prominent application of his theory is to defamation; that is, how the threat of litigation based on a defamation legal claim (for printing or publishing false material) might “chill” or deter publication of truthful news or commentary, demonstrating how the vagueness of the relevant legal standards and uncertainty of the legal process can lead to chilling effects (1978: 705-714). His other key illustrations are statutory prohibitions on obscenity and criminal incitement (e.g., speech that incites illegal activities) and the vague and uncertain judicial standards applied in the U.S (1978: 705-714). Most notably, he does not consider, at least in depth, any other kinds of state action that may or may not have a chilling effect on individuals.

This is Schauer's theory of chilling effects and its essential elements. It is (i) individually focused; (ii) concerned with chilling effects on legal activities; and, while broad enough to include chilling effects caused by both state laws and private action, it focuses (iii) primarily on legal rules, statutes, and judicial standards (and not, for example, other forms of state action that may have a chilling effect). Schauer's formulation is tied closely to the First Amendment, but it is flexible enough that it can be applied to a range of other situations and offers the central foundation for this research's theoretic framework. It is not, however, without problems.

2.3.2 Limitations and Criticism in Literature

There are empirical gaps that need to be filled. Schauer's theory, as already noted, is considered the leading account of chilling effects theory. He was the first to attempt to consider the full range of potential speech deterrence or "chill" (Zacarias, 1986) and in doing so, set out a "definitive treatment" (Cohen, 1995) that most commentators follow (Youn, 2013: 1483). But Schauer's theory has not escaped criticism nor is it without important limitations. First, Schauer's theory has been criticized for incorporating certain "behavioral" assumptions while offering little empirical proof on point (Blasi, 1985; Kendrick, 2013; Richards, 2013). Blasi (1985), writing a few years after Schauer (1978), argued the doctrine (and theory) was "unsatisfying" in relying on "crude behavioral assumptions". Blasi's analysis is historically oriented, attempting to show that shifting regulatory pressures and broader attitudes and morals about things like tolerance suggest such assumptions ought not be trusted without evidence (1985: 482).

Such criticisms can certainly be applied to the seeming rational individual at the center of Schauer's formulation. As noted, Schauer (1978) envisions a reasonable and rational individual being "chilled" or dissuaded from speaking or acting, because the risks and fears associated with speaking outweigh benefits of doing so. Korobkin and Ulen (2000), drawing on behavioral economics, take aim at this human decision-making model—that people undergo an explicit or implied cost-benefit analysis—and argue that individuals are far from rational actors. That is, people are flawed, often lack perfect information, and are not "infinitely skilled" to avoid mistakes in weighing competing interests (Horwitz, 2003). And in day to day life, with its complexities, time constraints, and ambiguities, individuals take shortcuts and use "heuristic" strategies that often do not "maximize" their utility; they seek a satisfying decision, not a maximal one (Korobkin & Ulen, 2000:1143; Horwitz, 2003). In reality, people are only "boundedly rational" as Simon (1955) famously coined; individuals are "hobbled" by these limitations—both situational and cognitive—resulting in less than optimal outcomes, at least in terms of utility (Horwitz, 2003: 12; Jolls, 1998; Korobkin and Ulen, 2000).

These critiques make an important point and cannot be ignored. They do not, of course, necessarily debunk chilling effects theory, but caution against overly simplistic assumptions about the way people make decisions, as well as generalizations drawn from specific or unique contexts. Indeed, Korobkin and Ulen (2000) assert that their work does not mean the "edifice" of theories (like chilling effects) based, in part, on a form of rational choice decision-making be "ripped down"; only that overly simplistic models and assumptions be revised.

At the very least, these criticisms underline the importance of providing some empirical evidence to ground or support aspects of chilling effects theory, and its various elements and assumptions. On this count, Kendrick (2013) recently analyzed both chilling effects doctrine, as deployed by U.S. courts, and the chilling effects theory more generally and found the doctrine was used, at least by courts, with only a “flimsy empirical basis” leading to less than persuasive results (2013: 1656, 1674). Moreover, Kendrick canvasses empirical support for the theory and suggests more work needs to be done to substantiate key aspects (2013: 1681). Her critiques were recently noted and affirmed by Richards (2013).¹⁰ In fact, Schauer acknowledged and anticipated these criticisms in his original work:

While the chilling effect concept appears to be premised upon predictions or assumptions about human behavior, no evidence has been proffered to justify those predictions (1978: 730).

Schauer argues that courts ought not refrain from making assumptions about human behavior but acknowledges judges also cannot ignore “psychology, sociology, or other disciplines”. His answer to the problem is that while chilling effects’ assumptions are “most likely unprovable” (1978: 730) so long as the legal process remains uncertain and individuals risk averse, chilling effects will emerge as a useful theory and doctrine (1978: 731). This is important. Lawmakers enact laws making assumptions about the impact or “effects” that they might have; but then legislators are not required to meet any high evidential test before enacting a law; it seems, then, to be a somewhat disingenuous and unfair demand to require critics of laws—those that allege chilling effects—to prove those effects, and all underlying assumptions. Still, Schauer’s answer is not a comprehensive one, so questions remain.

¹⁰ Richards, however, argues that these criticisms miss the point, as today chilling effects theory is inextricably linked to, and a part of, U.S. First Amendment doctrine (Richards, 2013: 1950).

A second criticism that can be raised is the theory's limited focus in terms of the sorts of regulatory action that can cause chilling effects. As noted, Schauer focuses in large part on certain statutes and the vague judicial standards and rules deployed by courts to interpret and apply them. Blasi (1985) points to other forms of state conduct that may cause chill that should also be a priority. For example, he points to "political surveillance" conducted by the U.S. military in the 1970s on political groups as being one of the forms of state action that can cause chilling effects. Blasi blames, in part, the theory's "methodological strains" for the failure, by that time, to extend its scope to such state conduct. Similarly, Zacarias (1985) notes Schauer's focus on "regulation" and argues that chilling effects theory should also encompass how "society as a whole" is affected or chilled by state action like "criminal surveillance of political activists" (1985: 942, 991). Indeed, works in the few years after Schauer attempted to grapple with a broader range of state conduct than Schauer had analyzed, including police surveillance of reading habits (Wilson, 1980; Ault 1990; Cohen, 1995) libel chill (Rosenberg, 1988) and broader communications regulation (Powe, 1982).

On one hand, it is unusual that Schauer does not consider in-depth the potential chilling effects of more diverse forms of state action, particularly surveillance practices. Other commentators and theorists writing before Schauer (1978) had already made the link between surveillance and chilling effects including Fried (1968), and Reiman (1976). Though the link was not necessarily set out in the most systematic terms, it was nevertheless made. On the other hand, Schauer's omission can be explained as a product of both the issues most contentious in the late 1970's, as well as his focus on American constitutional law. In 1978, obscenity laws

(due to the U.S. Supreme Court's 1973 ruling in *Miller v California*¹¹) remained a highly contentious subject, as were defamation standards due to the Supreme Court's 1964 ruling in *New York Times v Sullivan*¹² and subsequent lower court decisions. Both of these were a key focus for Schauer (1978). Moreover, Schauer may have set aside surveillance simply because the U.S. Supreme Court had in two recent and high profile "surveillance cases" *Laird v Tatum*¹³ and *Socialist Workers Party v Attorney General*,¹⁴ found that any chilling effects caused by such state surveillance practices did not amount to a cognizable injury to found a First Amendment claim (Dolich, 1993). If Schauer was mainly concerned with existing First Amendment doctrine, as he suggested, then surveillance would not have been so pressing. This may explain the omission, but the criticism stands. Even when Schauer returned to chilling effects theory fourteen years later in *Uncoupling Free Speech* (1992), he further elaborated on chilling effects and defamation, but again, made no mention of surveillance.

This gap in Schauer's chilling effects theory became clearer and more urgent to address after 9/11. In those years, governments throughout the West ramped up surveillance programs and infrastructure leading commentators to increasingly raise concerns about insidious "chilling effects" resulting from these programs: Fisher (2004), Elrod (2008), Balkin (2008), and Michaelson (2009). The emergence of the Internet in the 1990s as an increasingly important global telecommunications technology, and state monitoring thereof, only added to this urgency among commentators to examine chilling or related effects: Yen (1995), Cohen (1995), Clarke

¹¹ 413 U.S. 15 (1973).

¹² 376 U.S. 254 (1964).

¹³ 408 U.S. 1 (1972).

¹⁴ 419 U.S. 1314 (1974).

(1999), Horn (2004), Slobogin (2005; 2009), Sidhu (2007), Strandburg (2008); Brown & Korff (2009). This gap in chilling effects theory would be addressed by privacy theorist Daniel Solove, in the midst of these two developments.

2.4 Solove's Surveillance Chilling Effects

Solove, like Schauer, is a legal academic but also a leading privacy theorist concerned, among other things, with the impact of modern information collection and surveillance (Wright and Friedwald, 2013: 755). His account of chilling effects is built upon Schauer's theoretical foundation and, for the most part, compliments it by extending its scope and further elaborating its reach and usefulness. The central works setting out his account were two articles entitled *Taxonomy of Privacy* (2006) and *First Amendment as Criminal Procedure* (2007a), though prior articles (2003) and books (2004) at least raised the issue of chilling effects. These works reflect the context in which he was writing, a conscious recognition of the changes brought about by the September 11, 2001 terrorist attack, and new challenges posed by Internet and digital technologies (see e.g., Solove, 2004: Ch. 1). Like Schauer, Solove's theory is, for the most part, individually focused and also approaches chilling effects as deterring legally permissible activities.¹⁵ Beyond linking Anglo and European privacy traditions (discussed later in this Chapter), Solove's central contributions to chilling effects theory are his account of how surveillance and comparable information practices can "chill" or deter such legal activities; furthermore, by showing how such chilling effects have an impact not only on individuals, but also a broader societal effect.

¹⁵ In fact, Solove goes further to argue that chilling effects not only deter legal and permissible activities, but *desirable* ones like "creativity" and "self-development" (Solove, 2007a: 494). For the sake of simplicity and clarity, at least in its empirical components, this thesis will largely focus on *legal* activities, and avoids the more normatively complex debate about what activities might be good or desirable.

Solove's *First Amendment as Criminal Procedure* (2007) sets out his approach to chilling effects, which largely conforms to Schauer's account. In fact, he cites Schauer (1978) several times and agrees that the "key" to chilling effects is a form of deterrence of legal, permissible, or in Schauer's language "protected" activities (2007:142-143). Here, like Schauer, Solove examines First Amendment cases but notes that the courts have, in the years since, recognized that a range of "government information gathering through surveillance" can "chill" a range of legal and constitutionally protected activities: "freedom of speech, consumption of ideas, association, and other rights" (2007:151). Surveillance for criminal prosecutions are one obvious source of chilling effects, Solove writes, but that is not all. Even "information gathering" not tied to any particular penalty or purpose can cause a "chill". This is because such data collection can inhibit people from saying or doing certain things, fearing their "speech" or "associations" they may end up on some sort of blacklist or in a database where the data can be used against them at some indiscriminate future time (2007: 156-157). Interestingly, he cites an example of the Federal Bureau of Investigation (FBI) seeking the IP address and identity of a radical but anonymous blogger via a secretive National Security Letter to the blogger's Internet Service Provider (ISP). Such action, even if the blogger is never prosecuted (presumably because his or her speech is protected by the First Amendment) would nevertheless likely "substantially" chill the blogger's activities and political expression (2007: 167).

But it is in his companion article *A Taxonomy of Privacy* (2006) wherein Solove makes his most enduring contributions to chilling effects theory. In this article, a categorization of privacy concerns, Solove offers a sustained illustration of how certain state information practices—like surveillance and data collection—may give rise to chilling effects. And in the

process, he connects First Amendment chilling effect concerns with privacy-related ones and incorporates ideas from both the American and European privacy traditions.

The American (and Anglo) privacy tradition, influenced by English common law and American constitutionalism, has often focused on the rights of the individual and the need to place limits on intrusions into an individual's private domain (Westin, 1984; Szivos, 1992). This is apparent from classic privacy works like Warren and Brandeis (1890) and Prosser (1960), including more recent ones like Clarke (1988) (on "dataveillance") in their emphasis on the private sphere, secrecy, and the "right to be left alone" (Bygrave, 2010; PoKemper, 2014a; 2014b; Solove, 2007c). By contrast, the European tradition, influenced by continental socio-political philosophy (including more recent works by Habermas and Foucault) has focused more on privacy concerns in the public sphere like issues of reputation, personality or "personal integrity", and the impact information practices have on self-determination (Bygrave, 2010; Westin, 1984; Szivos, 1992; Brown and Marsden, 2013). This is seen, for example, in the German Constitutional Court famously annulling the country's national census based on what it called a fundamental right of "informational self-determination" (Reidenberg, 2000: 1326; Bygrave, 2010). It is also seen in the enactment, across Europe, of wide-ranging data protection laws to promote individual control and access over data flows (Bygrave, 2010; Schwartz and Reidenberg, 1997; Reidenberg, 2000; Mayer-Schönberger, 2007). A high profile example of this latter tradition is the recent debate surrounding the "right to be forgotten" in Europe, which concerns matters of privacy, reputation, and societal memory (Rosen, 2012; Mayer-Schönberger, 2011).

Solove examines key texts in the American privacy tradition like Warren and Brandeis (1890) and Prosser (1960), observing that their focus on invasions of the private sphere lead them to neglect more “modern” privacy problems associated with surveillance and information practices that involve—notably borrowing Schauer’s language here—the “creation” of “risk” that a person may be harmed or injured “in the future” (Solove, 2006: 487). This “risk”, says Solove, is more comparable to “environmental harms” or “pollution” than direct harms to an individual’s dignity based on invasions of an intimate private sphere (2006: 487). To elaborate this different kind of risk or harm, he draws on the European privacy tradition—and its focus on privacy problems in the public sphere—incorporating concepts like “information processing” enshrined in European data protection law (2006: 488) and Foucault’s panopticon metaphor (2006: 495). One example Solove cites is how activities involving a person’s own information may leave them more at risk for identity fraud or theft. Another example he cites, is where the state or police may have “too much power” creating a kind of risk-based chilling effect on legal activities:

The classic example is law enforcement officials having too much power, which can alter the way people engage in their activities. People’s behavior might be chilled, making them less likely to attend political rallies or criticize popular views. Surveillance can also have these effects. This kind of harm is often referred to as a “chilling effect” (2006: 487).

Solove’s concern here is not the American privacy concern with seclusion or invasions of intimate spaces, but more European concerns with the impact of surveillance and self-determination in the public sphere— chilling peoples’ involvement in political activities or democratic debate (Whitman, 2004).¹⁶ Linking these differing legal and privacy traditions is

¹⁶ Whitman argues that the American privacy tradition has been primarily concerned with “liberty” while the European tradition focused on “dignity” (Whitman, 2004: 1160-1180), with “free expression” being the primary

itself an important contribution, which Solove employs to illustrate how surveillance-related chilling effects are often associated or related to the individual, but they also impact on society as a whole, as it impedes individuals from contributing to the “greater social good” (2006: 487-488).

Solove goes on to note that visual and audio surveillance both have potential to cause chilling effects. That “chill”, he argues, not only promotes “self-censorship” but is also a “tool of social control” encouraging conformity (Solove, 2006: 493). Like Schauer, Solove readily admits that a certain amount of social conformity is not necessarily a bad thing. Lawmakers may want to discourage certain criminal norms, for example, through criminal prohibitions. But too much conformity and social control— like surveillance that “chills” legal activities—is not desirable in free, open, and diverse democratic societies. And what of more secretive or *covert* surveillance? Drawing on Jeremy Bentham’s concept of the “panopticon effect” (in Bentham’s prison, inmates were not observed at all times, but *could* be) Solove argues that covert surveillance leads to even *greater* chill:

A more compelling reason why covert surveillance is problematic is that it can have a chilling effect on behavior. In fact, there can be an even greater chilling effect when people are generally aware of the possibility of surveillance, but are never sure if they are being watched at any particular moment. This phenomenon is known as the Panoptic effect, based on Jeremy Bentham’s 1791 architectural design for a prison called the Panopticon (2006: 494-495).

This reality, Solove persuasively argues, means that surveillance in public places, as much as private and more intimate ones, can lead to chilling effects, deterring entirely legal and socially constructive activities. Yet, Solove goes beyond just surveillance to discuss a range of

obstacle to “continental style” privacy in America. Chilling effects theory arguably provides a means of spanning this chasm, by addressing both free speech and privacy related concerns.

information and data collection practices—collection, storage, aggregation, use, etc.—that can be deployed both by state as well as private actors with similar chilling effects; once an individual loses control over her own information and data, now in the hands of third parties, an individual will likely self-censor and avoid certain legal activities to avoid identification through disclosure or abusive targeting by those who control the information (2006). All of these effects are detrimental, leading to something he calls “decisional interference”, that is, interference with an individual’s choices or decisions about her life, including what legal activities she may engage in (2006: 491).

2.4.1 Contributions to Chilling Effects Theory

Solove’s integration of both the American and European privacy traditions to better understand the complexities of surveillance and information practices is an important contribution, which Citron (2010) aptly describes as “refreshing in its thoroughness” (1109). Beyond his expertise on privacy, however, Solove, has made important contributions to chilling effects theory; though he essentially adopts Schauer’s overarching framework for chilling effects there—his account is largely individually focused (though not narrowly so) and understands and defines chilling effects as a deterrence of legal (and desirable) activities. Solove’s key contributions to the theory is a demonstration that surveillance and information collection practices can have a chilling effect on an individual’s legal activities. Further, while Solove’s account is no doubt individual focused, his use of “environmental pollution” as an analogy to illustrate the atmosphere of “risk” created by such surveillance and data gathering about people, offers a powerful and useful metaphor to analyze and understand more *networked* forms of chilling effects in modern Internet and technological contexts online and off.

Seltzer (2010) offers a helpful illustration of this new dimension that Solove brings to chilling effects theory. An important development in chilling effects theory, Seltzer notes, is the recognition that the “architecture of the law” or the broader structure of the regulatory environment has an impact “beyond the courtroom and the four corners of a state” (2010: 196). The mere existence of laws and regulations (not just their application or prosecution with respect to individuals in specific cases) effectively “changes activity” (2010: 196). Thus, in cases like *Sullivan v New York Times*, *NAACP v Claiborne Hardware*, and *Hustler Magazine v Falwell* represent judicial recognition that:

....wide spread private behavior, in the form of self-censorship, can be directly traceable not only to particular enforcement actions by specific state official but to the very existence of a set of rules or lines that the state stands ready to enforce or to draw (Tribe, 1989: 26; Seltzer, 2010).

For Seltzer (2010), the necessary implications of this is that as you impose greater numbers of laws and regulations, or increase their complexity and scope, the greater chilling effects they may have on a wider range of individuals. As noted, Solove’s “environmental pollution” analogy provides a powerful means of understanding the “risks” of how an overreaching regulatory climate may promote chilling effects and self-censorship, caused both by laws but also state practices, like surveillance.

Of course, not all activities that are deterred by laws, surveillance, or other regulatory pressures necessarily give rise to “chilling effect” concerns. Following Schauer, the definitional approach in this thesis focuses on legal activities. That is, regulatory chilling effects concerns, at the very least, how law, regulations, or state surveillance may deter legal activities.

2.4.2 Limitations and Criticism in Literature

But Solove's account also has limitations. One central criticism, similar to one discussed in relation to Schauer's theory, is that it involves behavioral assumptions for which Solove does not offer sufficient empirical support. That is, like Schauer, Solove's theory assumes "chill" or deterrence resulting from surveillance and laws. His reasoning makes sense, but he does not offer clear empirical support or citations on point. Several commentators have noted this weakness (Freedman, 2007; Rosenthal, 2011) and though Kendrick (2013) takes aim mostly at Schauer, her criticisms apply equally to Solove's theory of chilling effects. In fact, Solove acknowledge this weakness:

Determining the existence of a chilling effect is complicated by the difficulty of defining and identifying deterrence. It is hard to measure the deterrence caused by a chilling effect because it is impossible to determine with certainty what people would have said or done in the absence of the government activity. Often, the primary evidence will be a person's own assertions that she was chilled, but merely accepting such assertions at face value would allow anyone claiming a chilling effect to establish one. At the same time, demanding empirical evidence of deterrence is impractical because it will often be impossible to produce (2007a: 121).

Like Schauer's response to anticipated criticisms about his "behavioral assumptions", Solove's argument is not a comprehensive answer. Certainly, providing evidence of chilling effects is a difficult endeavour but that does not mean chilling effects theorists should be absolved from offering additional empirical evidence or support for their assumptions, notwithstanding the impracticalities or difficulties in doing so.

Another criticism that may be raised about Solove's account of chilling effects—like his broader work on privacy—is his failure to fully explore how chilling effects theory is, if not transformed, then at least altered or impacted in application or operation in “cyberspace”, that is, the new digital and technological contexts in which it will surely apply in today's Internet age. Schwartz (2009) offers a persuasive criticism along these lines. He argues that while Solove has a powerful grasp on the ways in which new technologies can have a profound impact on privacy and related practices and norms (2009: 1433). Despite that understanding, however, Solove's solutions in both legal theory and the law are unusually conventional and modest, asking only to “tweak” the “status quo” (Schwartz, 2009: 1435-1436). Solove, Schwartz argues, knows “cyberspace is different” but fails to fully explore that difference in his theories, including chilling effects. Citron (2010) similarly argues Solove falls short in sufficiently exploring the technological and technical angle of his work, including failing to provide technical solutions beyond more conventional legal proposals, tweaks, or reforms.

This is a fair criticism. Solove does an admirable job of delineating potential chilling effects for information practices—all very relevant in technological settings—but has yet to explore more fully, how chilling effects theory itself might be affected in certain technological spaces. Are people more chilled online? Or less? Is there reason to expect either? Certainly the pervasiveness of information and data collection makes these questions all the more urgent—and Solove understands this—though this remains a gap in his scholarship. However, Solove is primarily a theorist, so it is not surprising he does not provide empirical or social scientific evidence for every aspect of his work. Nevertheless, his account would be more persuasive if he provides at least some reasons for why his assumptions about surveillance and chilling effects,

derived in part from traditional First Amendment cases decided before the Internet was even conceived also hold true in new technological contexts such as online environments. This research will shed light on such questions.

2.5 Chilling Effects Research

Schauer (1978) and Solove (2006; 2007a) taken together provide the overarching theoretical framework for this thesis. However, as the above criticisms in the literature suggest, chilling effects theory is not quite a comprehensive framework. There are theoretical and empirical gaps, not the least of which, is seeking further guidance for how it might apply, or apply differently, in online contexts. To get a better handle on these issues a further review of additional chilling effects scholarship, theory, empirical studies, and other relevant bodies of research will be undertaken in the next section.

2.5.1 Traditional Legal Scholarship

The majority of legal theory and scholarship raising or investigating chilling effects, like this thesis' theoretical framework, focus on individuals. After the idea of “chilling effects” received prominent recognition in mid twentieth century U.S. Supreme Court jurisprudence, theorists like Schauer and Solove helped shape case law and judicial reasoning into a more coherent doctrine and theory. Subsequent legal work has sought to explore and apply chilling effects in a broad range of contexts.

Not surprisingly, given that chilling effects was first raised in the context of free speech constitutional cases, a lot of this additional legal scholarship has been carried out by First Amendment lawyers and scholars. There is a rich body of scholarship, for example, examining how vague or overly broad laws may contribute to chilling effects (Bogen, 1978; Shaman, 1979; Alexander, 1985; Zacharias, 1987; Farber, 1991; Schauer 1992) or the concept in the broader contours of the First Amendment (Sedler, 2011). Legal scholars have also subsequently raised chilling effects concerns in relation to a number of laws, regulations, and related contexts, including defamation law (Sunstein, 1984; Passaportis, 2004), privacy law and surveillance (Solove, 2008), anti-terrorism and national security law (Johnson, 2007); speech deterrence (Volokh, 2005); and strategic lawsuits against public participation (SLAPP) statutes (Lopez, 2012). New digital technologies have posed challenges for this scholarship. In the last decade, commentators have applied chilling effects theory (or the “doctrine”) to a number of Internet-related laws and regulations including, online trademark law (Dogan and Lemley, 2004), Internet defamation law (Ciolli, 2009), “cyber-libel” (Mansfield, 2006), and other private legal actions (Youn, 2013).

Of particular note for this research—and noted earlier—is scholarship on the DMCA and copyright enforcement online (Sheets 2000; Samuelson 2001; Liu 2003; Schaffner, 2004; Seltzer 2010). Seltzer (2010), for example, discusses a notable copyright controversy from the 2008 U.S. Presidential elections. Republican Presidential candidate John McCain had established a YouTube channel for campaign videos but in the lead up to the election a number of media companies sent copyright notices to YouTube claiming copyright in some of the materials appearing in McCain’s campaign videos. YouTube, which uses an automated response for

DMCA takedown notices, removed several videos from the McCain YouTube channel leaving a message that “[t]his video is no longer available due to a copyright claim” (2010: 172). The McCain-Palin campaign wrote the following letter to YouTube:

We write... to alert you to a problem that has already chilled this free and uninhibited discourse... [O]verreaching copyright claims have resulted in the removal of non-infringing campaign videos from YouTube, thus silencing political speech... [O]ur advertisements or web videos have been the subject of [Digital Millennium Copyright Act] takedown notices regarding uses that are clearly privileged under the fair use doctrine. The uses at issue have been the inclusion of fewer than ten seconds of footage from news broadcasts in campaign ads or videos, as a basis for commentary on the issues presented in the news reports, or on the reports themselves (quoted in Seltzer, 2010: 172).

The McCain-Palin campaign emphasized the chilling effects caused by the DMCA’s enforcement of copyright claims. Yet, YouTube’s general counsel replied that the company’s hands were tied and that if the McCain-Palin campaign wished to dispute the takedown, they could send a “counter-notice” and take steps to move the case to court (Seltzer, 2010: 172). As Seltzer (2010) notes, if the case did end up in court (it did not), the McCain-Palin would likely have a strong argument for “chilling effect” harms on their legal (fair use) activities. This case provides some insights into how chilling effects arguments might be raised in relation to DMCA takedown notices, and how those disputes may end up in court. Moreover, YouTube’s automated implementation of DMCA takedown notice complaints provides a point of entry into more recent concerns raised in legal scholarship about chilling effects caused by “robots” and copyright enforcement, that is, the use of automated “bots” to implement copyright protections and other legal interests online (Raymond, 2013; Depoorter and Walker, 2013; DiLorenzo and Werner, 2013; Hicks and Liu, 2013; Sundin, 2013). This is just some of the large body of legal scholarship that has raised, and applied, the idea of chilling effects.

This scholarship largely involves applications of chilling effects theory or doctrine to different factual, legal, or regulatory situations. Overall, the work generally follows the Schauer (1978) theory or framework and concerns itself most with formulating common sense rules that minimize chilling effects on important legal or constitutional rights, like freedom of expression. However, there is little theoretical depth to most of this traditional legal literature and very few empirical insights. Where evidence is given to support legal claims of chilling effects, it is often anecdotal. In fairness, such criticisms arguably miss the point, at least as far as the aims of this legal scholarship are concerned. This scholarship does not set out to reshape chilling effects theory or its empirical boundaries, but simply explore the notion of chilling effects in new, often complex, factual or technological circumstances and scenarios. From this angle, these works provide some guidance, but leave many of the same empirical and theoretical gaps.

2.5.2 Empirical Legal Research: Online / Digital Media

i. DMCA Studies

In the last decade from 2005 to 2015, there have been a few empirically driven studies explicitly on DMCA-related chilling effects conducted. Two central DMCA studies by Urban and Quilter (2005) and Heins and Beckles (2005) sampled and analyzed DMCA “takedown” notices—including labeling and “coding” each notice to tabulate basic information about the notices—but their focus was mainly on analyzing the legality of the copyright claims found in those notices. Urban and Quilter (2005) is the more well-known and widely cited study. That study examined all 876 DMCA takedown notices in the Lumen Database’s repository as of August, 2005 (2005: 641). The Lumen Database (previously known as the Chilling Effects Project) began as a “joint project between the Electronic Frontier Foundation and several U.S.

law schools to document, index, tag and make publicly available takedown notices and their detailed contents” and is today largely hosted and operated by the Berkman Klein Center for Internet and Society at Harvard University (Seng, 2014). In analyzing these notices, Urban and Quilter found that 30% “presented an obvious question for a court”, most often, a “clear” fair use argument or a complaint over “uncopyrightable” materials (2005: 666). They also found 11% of DMCA takedown notices did not have statutorily required information and that businesses were the primary complainants with 57% of notices seemingly being sent by businesses to potential competitors. Urban and Quilter also documented the DMCA’s international impact, finding 37% of notices targeted sites outside the U.S. (2005: 674). Urban and Quilter did not, as this case study proposes, examine the sites targeted, nor did they pursue chilling effects issues. However, their work suggests that DMCA takedown notices may be targeting legal activities (e.g., use of copyrighted material permissible under fair use); so the further question, then, is whether those notices are chilling those legal activities.

Similarly, Heins and Beckles (2005) examined DMCA takedown notices for the year 2004. Unlike Urban and Quilter (2005), Heins and Beckles took the further step of attempting to locate material targeted for “takedown” by notices; though, still, their primary aim was to track the legality of copyright claims in DMCA takedown notices analyzed and not understand any regulatory effects. In analyzing 320 DMCA takedown notices, they found 20% of notices targeted material for removal that had either a “strong” or “reasonable” fair use or other copyright defense, while another 27% had a “possible” fair use or other copyright defense (2005: 54). Again, this study suggests that substantial legal activities may be targeted, though findings as to the impact of notices on users is not pursued. Slightly less relevant but still noteworthy is

Seng (2014), a recent empirical study of DMCA takedown notices that is less concerned with the legality of DMCA takedown notice claims, or any chilling effects, and more with tabulating and mapping information in the notices themselves (including the name of the copyright holder, reporting agent, recipient OSP, service targeted, nature of the work and infringement at issue (2014: 6)). Seng analyzed 539,558 notices using various parsing programs and mapped his results to understand the number of notices and the influence of corporate content providers sending increasingly greater numbers of notices.

These are the only empirical DMCA studies to date. Though these studies were certainly more empirical and systematic than most other legally oriented scholarship of their time, each has problems. First, though concerned with issues at least tangentially related to “chilling effects”, these studies were really more focused on other concerns, be it tabulating information about the DMCA takedown notices alone (Seng, 2014) or the validity of legal claims set out in samples of DMCA takedown notices (Urban and Quilter, 2005; Heins and Beckles, 2005). In other words, they offer limited empirical support for chilling effects theory. Second, there are issues of reliability and validity, as it is difficult to reproduce or replicate some of the legal claims made in the research. This was a common criticism of the studies, though probably one difficult to avoid when engaging in empirical legal analysis, which remains an enduring challenge of empirical legal research (Hall and Wright, 2008). Third, in the case of Urban and Quilter (2005) conclusions are weakened by a heavily biased sample— an issue recognized by the authors. These studies provide important methodological guidance, but remain theoretically and empirically thin.

ii. Other Notice and Takedown (NTD) Studies

There are also a few related empirical legal studies of “notice and takedown” (NTD) systems in Europe. The European Directive on Electronic Commerce (EDEC) provides the legal basis for notice and takedown systems in Europe comparable to the DMCA (Brown and Marsden, 2013; Kleinschmidt, 2010). Much like the DMCA, its articles maintain that online service providers that are “mere conduits” or simply storing content will not be liable (for copyright liability, for example) so long as a provider “acts expeditiously to remove or disable access to information” once made aware of that problematic content (Brown and Marsden, 2013: 78; Kleinschmidt, 2010). Nas (2004) offered a well-known study of NTD implementation in Netherlands where researchers tested how willing ISPs in the country would be to remove legal content when served with false takedown notices. Of the 10 ISPs in the study, 7 removed the legal content. Similarly, Ahlert et al. (2004) documented how European ISPs readily accommodated and acquiesced in response to “takedown” notices received alleging copyright infringement in relation to content that is clearly non-infringing (the notices asserted copyright over an excerpt from Mill’s *On Liberty*, an obviously false claim given that the text was first published in the 19th Century and so no longer subject to copyright protections).

A more recent study Dohmen (2008) of the NTD system in Netherlands reaffirmed many of the recommendations made by Nas (2004) such as the need for transparency, fairness, and greater affordance to the values of freedom of expression, in processing claims. These studies do provide important insights as to how ISPs and other private third party actors operate within secondary liability—and NTD—legal regimes, like the DMCA. Moreover, Ahlert et al. (2004) provide additional helpful insights about how these NTD regulatory schemes promote chilling

effects by erecting barriers to speech and expression such as creating legal procedures that force speakers to re-assert online speech or expression in the face of legal threats, a point consistent with Seltzer (2010). Much like Seng (2014) in relation to the DMCA, however, the primary contribution of these studies is their insights into the implementation of NTD regimes—and the role intermediaries—rather than the behavioral impact on individuals. Again, these studies nevertheless provide some methodological guidance but are not directly relevant to all issues addressed in this thesis.

2.5.3 Empirical Legal Research: Traditional Media

Pool (1983), drawing on notions of “chilling effects” in U.S. First Amendment legal cases and analyzing broadcast licensing, warned that new forms of governmental regulation could seriously impact the free press, including broadcast and electronic media. Since then, legal scholars, communications researchers, and regulatory economists have all contributed more empirically oriented studies on how laws and regulation may “chill” individuals and organizations, with particular attention to media organizations. Theoretically, most of these empirical studies employ individually focused chilling effects theory—sometime explicitly citing Schauer (1978) but sometimes not. This includes studies focusing on organizations that often imply or assume that if individuals may be chilled in response to legal risks and uncertainty, so too would organizations operated and managed by individuals. These studies involve a range of different techniques and empirical methodologies, including “law & economics”, litigation data studies, surveys, qualitative interviews, content analysis, and, in some more recent studies, innovative uses of unique data sets.

i. Law & Economics

Schauer (1978)'s theory of chilling effects, as discussed, incorporates some elements of economic theory within its largely legal theoretical framework. Not surprisingly, then, there are works in law and economics that examine questions closely tied to chilling effects. Though there is not necessarily a single predominant approach in this body of work, generally most share a common “focus on the incentive effects” of laws, legal rules, and similar pronouncements (Korobkin, 2000: 24). Some works draw on more classical or traditional economics to explore how uncertain legal rules and standards can lead to over-deterrence and over-compliance—or chilling effects—on legal, legitimate, and even desirable behavior (Ehrlich and Posner, 1974; Calfee and Craswell, 1984; Kaplow, 1990). Other works like Korobkin (2000) employ behavioral economic insights to pursue similar questions. As earlier noted, Korobkin and Ulen (2000) drew on behavioral economics to critique rational choice models, what they call the “major paradigm” for decision-making in the Post-War Period (Schoemaker, 1982; Horwitz, 2003). Korobkin (2000) takes a similar approach, utilizing concepts like “bounded rationalism” and other insights from behavioral economics to analyze “chilling effects” and the legal rules surrounding the theory. Korobkin (2000) argues that behavioral factors like self-serving bias, hindsight bias, norm compliance, and individualized preferences, favour legal standards in some contexts, and more precise legal rules in others. Chilling effects, although not a central focus, is at least a factor here.

Unlike the previously discussed legal scholarship, the law and economics work follows an approach to chilling effects generally consistent with Schauer (1978) and his assumptions about rational decision-making. Also, much of this law and economics scholarship is individual-

focused, and generally supports the central elements of chilling effects through a range of analyses and theoretical arguments. But there are also problems. First, a majority of these works do not address chilling effects on the Internet, so their insights, at least with respect to online environments, are qualified by that important limitation. Do chilling effects change in online contexts? From these works, the answer is neither clear nor apparent. Second, a lot of the conclusions in these works about chilling effects and solutions to uncertainties in legal rules are contradictory and conflicting. As Kendrick (2013) notes, with respect to libel and defamation “chill” alone, some law and economics works conclude that strict liability is the preferable standard; some, in contrast, advocate a standard between strict liability and malice; while others still propose that the difference between malice and negligence standards is negligible (2013: 1680). It is difficult to take strong predictive or theoretical guidance from such conflicting findings on similar questions. Korobkin (2000), in fact, not only acknowledges the “behavioral analysis” is vulnerable to indeterminacy, he defends it as being no more “severe” than economic analysis more generally, which is, he argues, also “prone” to indeterminate results (2000:58). As Acquisti (2002) has noted, economic incentives have failed to resolve challenges relating to privacy harms, especially in the context of complex networked environments, as such harms are difficult to assess and measure; so it would be wrong to expect the same of a related concept like chilling effects. Of course, these limitations do not render these works wholly irrelevant, but it does mean that they need to be supplemented with other theoretical and empirical research.

ii. Litigation Data Studies

One of the most cited and well-known studies by Barendt et al. (1997) used a mixed method approach to explore the impact of British defamation law on “various branches” of the

mass media in the U.K. (1997: v). Their study included examining litigation data; that is, tracking the number of defamation law suits filed against journalists and media organizations (more discussion on their other methods further below). Logan (2001) also drew on litigation data, and anecdotal evidence, to conclude that chilling effects was not a serious problem, largely relying on successful rates of “dismissal” judgments for defendants. Logan believed this disclosed pro-media “bias” on behalf of courts (2001: 211). However, as Kendrick (2013) has pointed out, relying on litigation data is not a reliable measure of chilling effects at least without other corroborating support. Any changes or trends in legal filings or results could be attributed to any range of factors. Given the costs of litigation, for example, fewer filings over time might simply mean plaintiffs are less willing to launch suits; or that defendants are self-censoring before filing is even necessary. Furthermore, fewer filings could suggest that very little speech is being suppressed or chilled through litigation, but it might also mean that individuals and media organizations are self-censoring to avoid litigation; this could suggest widespread chill (Kendrick, 2013: 1676). Alternatively, trends concerning pre-trial dispositions might simply mean *contra* Logan (2001) that weaker claims are being filed; but chilling effects may still be occurring based on risks or threats of legal claims that are never filed. Thus, Barendt et al. (1997) supplemented their litigation data analysis with evidence from other methodological sources—interviews. These, and other similar studies, are discussed next.

iii. Survey and Interview Studies

Most empirical chilling effects research focuses on the impact that libel and defamation law has had on print and broadcast forms of speech and expression, with special attention to

media organizations. In particular, such studies explore how fear of defamation and libel lawsuit threats may deter or “chill” publication of newsworthy content.

One well-known study, already discussed, is Barendt et al. (1997). In addition to litigation data analysis, they employed quantitative surveys, questionnaires, and qualitative interviews. The survey was done in coordination with the U.K.’s Periodical Publishers Association, which helped deliver the survey to its magazine industry members. The questionnaires were sent to representative media organizations and interviews were conducted with journalists, lawyers, news editors, and producers working for newspapers, broadcasters, and other media publishers (1997: 36). The study, among other things, found that risks or fear of libel and defamation led less to stories being wholly suppressed, but rather to a kind chilling effect where content was edited and presented differently, including, most often, where facts “known to be true” were excluded from copy because they would be “difficult or impossible to prove by way of witnesses statements or documents in court” (1997:67).

Another well-known and often cited study by Renas et al. (1989) examined the impact that different legal libel “standards” had on U.S. national general readership newspaper editing decisions about content. Data was gathered through a “national libel survey” delivered to national general readership newspapers across the country. The survey probed potential “chill” by asking editors to contemplate hypothetical scenarios whereby the editor had to decide whether to publish certain legally risky content but using different libel standards. Survey responses were analyzed and results suggested a chilling effect did in fact exist, particularly where the threshold for libel actions were lower. However, the chilling effects were “not uniform”. Rather, they were

most apparent among newspapers that faced little competition, relied very little on machine sales, and had been previously sued (1989: 56).

Other studies relying primarily on surveys and/or interview of editors, journalists, lawyers, and litigants, such as Bezanson et al. (1987: 195) and Ericson et al. (1989: 322), found *some* evidence of chilling effects on the print and broadcasting practices of media organizations. Notably, Hansen and Moore (1989) and Massing (1985) found some evidence that chilling effects created by threats of libel lawsuits had a greater impact on smaller media organizations with less resources. Shapiro (1989) and Ericson et al. (1989) also suggest that chilling effects both influence, and are influenced by, established *networks* within organizations. For example, Shapiro (1989) found professional media lawyers contributed to chilling effects by encouraging journalists to self-censor, but also altered their own approach to providing advice on libel matters to best preserve “First Amendment” free press principles. Other studies on print and broadcast journalism and editing like Gans (1979), Silver and Bow (1983), Douglas and Murdock (1981), and Voakes (1999) found libel law and litigation had some impact on journalistic practices, but sometimes negligible. Douglas and Murdock (1981) found a majority of editors in their study were no more timid about publishing after changes in libel law that may have led to more libel suits. Voakes (1999) involved a study where forty two journalists, who had been previously sued in libel, were interviewed to measure the impact on their work. Defensive changes in practice, rather than clear evidence of “chill” emerged from the studies (1999: 104-105). While these insights are relevant and important, these inconsistent findings suggest more research is required on point.

iv. Content Analysis Studies

To complement survey and interview based research, more recent studies (Dent and Kenyon, 2004; Kenyon, 2010; Stanig, 2011) have utilized content analysis methods to illustrate how different libel and defamation laws can have chilling effects on media organizations. These studies involved either national or cross-national news print media content analysis and comparisons, to demonstrate how national defamation and libel law regimes chill certain kinds of news content. For example Dent and Kenyon (2004) compared content from Australia and U.S. newspaper articles to determine whether different libel and defamation legal regimes have an impact on media content. Despite similar journalistic cultures and common levels of public perception about the pervasiveness of political and corporate corruption, U.S. newspapers—that enjoy stronger legal protection for speech—were three times more likely to print stories concerning political corruption (Dent and Kenyon, 2004: 105).

A related body of research also incorporates content analysis, as well as legal and historical methods, but use a slightly more elaborate theoretical orientation. This research focuses in large part on broadcast and telecommunications regulation in the U.S. including its history and impact on broader trends in broadcast content and coverage (Weare, Levi, and Raphael, 2001: 48). Theoretically, these works similarly predict that laws and regulation can chill media practices and content, but also incorporate a variation of regulatory capture theory proposed by Stigler (1971) and Peltzman (1976) to help explain the impact that regulations have on media content and coverage (Weare, Levi, and Raphael, 2001: 49). Weare, Levi, and Raphael (2001), Hazlett and Sosa (1997), Hazlett and Sosa (1998), Spitzer (1996), and Powe (1982) all provide insights into how media regulation—like the Federal Communication Commission’s

fairness doctrine or broadcasting licensing—create incentives for media organizations to self-censor controversial content or provide favourable coverage to politicians. Legal scholars have complemented these studies with legal and theoretical works, re-orienting chilling effects theory to account for how complex broadcast regulations chill media expression or “mass speech” (Powe, 1982: 1; Hall, 1994; Bollinger, 1976), including a recent study that briefly looks at how broadcast regulations may impact Internet media (Markwordt, 2010).

These empirical studies, many of them legally focused like this thesis, and the insights they have offered, provide both methodological guidance as well as empirical grounding for this doctoral research. However, there are a number of limitations, particularly for studies more concerned with individuals (like this doctoral research). The vast majority of these works focus on organizations, particularly media, with access to resources and assistance atypical to your average Internet user. Research on chilling effects like Barendt et al. (1997), for example, rely on interviews and feedback from journalists, editors, producers, publishers, and, most importantly, lawyers, for their conclusions. There will be choices made by such media organizations, and options uncovered, that most individuals dealing with legal risks would not choose even if aware. Indeed, these studies have been criticized for relying solely on the opinions of industry participants, and not enough on actual media content to illustrate the existence of chilling effects (Ciolli, 2009). Second, there are important limitations based on the *offline* focus of this research. That is, the vast majority of these studies primarily pursue chilling effects in more traditional (and offline) media contexts and not chilling effects online. It cannot be assumed that insights from these works hold true for laws, regulation, or other state actions, that impact online contexts or Internet users. Though debates remain in the literature, it is

generally accepted that people act and respond differently online compared to offline or traditional media settings (Suler, 2004; Suler, 1996; Chisholm, 2013; Chester and O'Hara 2007; Lee, 2006). Again, these studies are relied on for guidance, particularly for methodological diversity, but it would be inappropriate to draw a straight line from these studies to the existence or possibility of chilling effects for individuals online. These shortcomings nevertheless help define the research gap that this thesis addresses.

2.6 Relevant Privacy and Data Protection Research

As has been discussed, there is important theoretical overlap between chilling effects theory and privacy. However, privacy research today is rich and wide-ranging and cuts across multiple disciplines and fields. Given this thesis' more narrow focus on regulatory chilling effects online in relation to individuals, there are three areas of contemporary privacy research most relevant: (i) online surveillance research (empirical studies exploring the impact online surveillance); (ii) self-censorship research (a growing body of research, mostly SNS focused, on how aspects of online environments encourage users to self-censor based on privacy and identity management concerns); and (iii) studies focusing on what Barnes (2006) calls the "privacy paradox", that is, the disconnect between privacy attitudes and privacy-related behavior online. Research on data protection law, much of it legal scholarship and European-focused, is also considered. The most important work discussed in this section, for the purposes of this thesis, is the recent Massachusetts Institute of Technology (MIT) study by Marthews and Tucker (2014) who found evidence of privacy-related chill by examining Google search trends data before and after the Snowden-related NSA/PRISM surveillance revelations in June 2013. This work offers

not only an invaluable contribution in terms of empirical evidence of chilling effects arising from surveillance, but also an innovative research design that this thesis builds upon in Chapter 5.

The remaining works discussed also provide both theoretical and methodological guidance. The online self-censorship and “privacy paradox” research provide important theoretical insights, through a range of methods, on how unique aspects of online environments—like the role of architecture or multiple audiences in online social networks—impact peoples’ online behavior in the face of privacy threats, whether that involves users adapting to shifting online privacy norms or, in other circumstances, engaging in forms of self-censorship. This research is certainly helpful for understanding regulatory chilling effects online, adding an additional theoretical lens to view any chilling effects observed in this research. At the same time, the literature overall, particularly concerning self-censorship, remains relatively thin and narrow in focus. Das and Kramer (2013) recently surveyed the literature and noted that “self-censorship” online has “scarcely been studied in its own right”. As such, the contributions to this thesis are limited but important as a complement to the broader theoretical framework based on Schauer (1978) and Solove (2006; 2007a; 2007b; 2007c). The literature on data protection laws, which analyzes and debates present regulatory approaches to the restriction of information processing and data flows, is mostly helpful in providing a broader legal and regulatory context to the challenges of chilling effects—if people are “chilled” by how information about them is collected, monitored, and detained, data protection laws may offer a means to ameliorate such chill.

2.6.1 Privacy-Related Research

i. The Privacy Paradox

Ever since Westin et al. (1998)'s famous and oft cited "scale" of expressed privacy concerns, a number of studies have demonstrated that stated or expressed privacy concerns do not necessarily reflect actual privacy-related behavior in practice (Harper and Singleton, 2001; Berendt and Spiekermann, 2005; Acquisti, 2004). Susan Barnes has notably called this disconnect between privacy attitudes and behavior the "privacy paradox" (2006). Though people regularly express an interest or concern for privacy, their actual behavior or practices online have often been found to not reflect those stated concerns. In short, self-reported privacy concerns may not be reliable measures of actual behavior when faced with privacy threats or issues in a given context; this paradoxical discrepancy between attitude and practice has been the focal point of research across a range of online platforms (Barnes, 2006; Berendt and Spiekermann, 2005; Acquisti, 2004; 2010; Acquisti et al., 2012; 2013; Acquisti and Gross, 2006; boyd and Hargittai, 2010; Consolvo et al., 2005; Tufekci, 2008; Lewis et al., 2006; boyd and Ellison, 2007). Alessandro Acquisti, in particular (2004; 2010; Acquisti et al., 2012; 2013; Acquisti and Gross, 2006) has developed a notable body of research exploring this so-called "paradox"; his work with Ralph Gross on the disconnect between the privacy attitudes and practices of Facebook users in 2006, for example, set the stage for much of this literature (Acquisti et al., 2013: 249-258). Other key works in this literature, such as Palfrey, Gasser, and boyd (2010), have made invaluable contributions to youth privacy attitudes and behavior.

These works on the "privacy paradox" offer both theoretical and empirical guidance for this thesis. On the methodological side, since much of this literature seeks to explain the

disconnect the between the self-reported privacy concerns and actual behavior, there are helpful recommendations for research methods design, particularly surveys. One major factor in the “disconnect”, it is surmised, is that people have difficulty reasoning about privacy given that the concept is highly complex and contextual (Cranor et al., 2006; Ackerman and Mainwaring, 2005; Lederer et al., 2004; Acquisti, 2004). Another possible factor is bad survey design, with privacy surveys offering provocative or biased questions that lead respondents to certain biased “pro-privacy” answers (Harper and Singleton, 2001). Acquisti et al. (2013) found that simply the ordering of questions in a survey, or having questions that reveal information about how others behave, can influence the level of self-disclosure or privacy concern in survey responses. In light of this, they recommend, for example, designing surveys questions that do not reveal information about how others behave (to avoid conformity in responses). The idea that the “paradox” is mostly a result of methodological problems, or the complexities of reasoning about privacy in networked contexts, is attractive and supports the assertions of Palfrey, Gasser, and boyd (2010) and boyd (2014), at least with respect to youth and online media. Palfrey, Gasser, and boyd (2010), for example, strongly object to assumptions in “privacy paradox” literature that youth care little for privacy, but the literature has failed to sufficiently measure or identify the different, and arguably more savvy, ways that youth do protection their privacy. All of these works provided methodological guidance for the design and implementation of this thesis’ survey-based case study discussed in Chapter 4.

On the theoretical side, this body of research also offers an important counter-weight to the assumption, based on other research, that regulatory chilling effects likely occur in online contexts, and are more than mere ephemeral or temporary in scope. Indeed, a notable portion of

this literature provides reasons for skepticism about the possibility of large scale or broader chilling effects caused by online surveillance for a range of reasons, such as peoples' increasing "desensitization" to privacy concerns in online contexts (Nickel, 2014) or because surveillance is "easily accepted" because it is so "commonplace" (Lyon, 2006: 36). Debatin (2009), for example, found Facebook users' "lax" attitudes about privacy concerns was a result of a combination of "high gratification", "usage patterns", and the "third person effect", that is, the tendency for people to believe "mass media" will have a greater effect on other people than themselves. Rose (2011), another example, observes that increased comfort with using the Internet has led many consumers to conform to new norms, particularly in relation to privacy norms, like online sharing and disclosure of personal information. Trepte and Reinecke (2011) found "loose" and "laissez faire" behavior in terms of how "users deal with threats" to their information privacy. And contrary to the implicit assumption in "much of the literature dealing with privacy trade-offs", that consumers are rationally informed agents with "stable" privacy preferences, Acquisti et al. (2013) found that privacy concerns were "malleable", contextual, and "unstable", raising questions as to whether users can make "self-interested" decisions about their personal information and data in "increasingly complex" technological contexts (173). These latter findings certainly cast doubt over some of the theoretical and empirical assumptions underlying chilling effects theory. Schauer (1978), for example, notes that his account of chilling effects rests on an assumption of a kind of rational process or calculus by which speakers are "chilled" after weighing the risks of speaking against the desire to speak or ask.

At the same time, much of this "privacy paradox" research is narrow in scope, which is not surprising given it is oriented towards studying and explaining a particular empirical and

theoretical phenomenon past privacy studies have identified. But the focus on this specific problem means the literature has neglected other factors and considerations in relation to self-reported privacy and actual behavior. For example, no work tackles laws, regulations, or surveillance, as a potential factor to help explain the paradox, or even aspects of it. As such, it offers *some* helpful contributions for this research, as noted, but there remain important gaps and limits in this literature as well.

ii. Online Surveillance Research

More recently, there have been a range of studies that have aimed to provide chilling effects or related insights, involving the surveillance of online activities by states. These studies—many prompted by revelations and disclosures by Edward Snowden about the practices of the NSA and other state agencies—often focus on Internet surveillance and its impact on peoples’ behavior.

The recent Massachusetts Institute of Technology (MIT) study by Marthews and Tucker (2014) offers not only an invaluable contribution in terms of empirical evidence of chilling effects arising from surveillance, but also an innovative research design. Key to this design was the widely covered revelations concerning NSA/PRISM online surveillance programs in June 2013. On June 6, 2013, stories in *The Guardian* and *Washington Post* detailed previously undisclosed information and leaked classified documents about the surveillance practices of the U.S. government—as well as other allied western intelligence services like Canada and the U.K. The source of the leaked information was Edward Snowden, then an employee of an American defense contractor called Booz Hamilton and the revelations centered on “PRISM” a secret mass electronic surveillance program operated by the NSA (with equivalent programs run in other

allied countries; the leaked documents also suggested a range of major technology companies were involved with the PRISM program. These revelations about PRISM were followed by many other stories in June and the months following covering these and other government surveillance practices, programs, and operations—such as surveillance of phone records or vast databases of emails, online chats, browser histories, etc.—among many others (Lyon, 2014: 2; Qin, 2015: 6; Marthews and Tucker 2014: 5-6; Wright and Kreissl, 2013: 4; PEN America, 2014: 4).

Marthews and Tucker (2014) treated the widespread publicity surrounding the PRISM/NSA revelations in June 2013 as an “exogenous shock” and then examined Google search trends before and after that month to test the hypothesis that those revelations about online surveillance would “chill” or deter Internet users from searching on Google for certain sensitive content or topics. Using a radical discontinuity analysis, they found a statistically significant 4% reduction in Google search term traffic for those privacy-related search terms after June 2013, which suggests a significant chilling effect due to the public awareness (via media reporting) of the potential for government surveillance of online activities. This was a particularly striking finding, not just because it implied a widespread chill due to the June 2013 revelations, but also because so few studies have empirically documented such a chilling effect through web traffic data like this. In fact, Marthews and Tucker (2014) concluded that their study “is the first to provide substantial empirical documentation of a chilling effect” (23).

However, there were also noteworthy shortcomings. First, there were limitations in the data set—it only covered Google search data up until mid-December 2013 so a question may be

asked whether the effects they observe had either permanent or long-term impact. Second, the authors obtained their data from Google Trends, which provides data about Google search term “traffic” and trends in “normalized” (not raw) formatting. This, the authors admitted, meant it was “harder” to make projections based on the findings of the study, such as “economic outcomes” (2014: 8). A third limitation of their study was the lack of a genuine control group; as is the case here, the study examined data trends before and after June 2013, but there was no opportunity to control the PRISM/NSA revelations using a true experimental design (Marthews and Tucker, 2014: 6). Despite these limitations, Marthews and Tucker (2014)’s study remains an important work, with an innovative research design for others to build upon.

Other relevant studies of online surveillance include a recent series of survey-based research reports exploring different aspects of “chill” or similar effects from revelations about NSA surveillance on the online activities of Internet users. PEN America released two “Chilling Effects” reports (2013; 2015) that surveyed writers both in the U.S. and globally, about how they have changed their online behavior in response to revelations about government surveillance. In the first study, researchers found, among other things, 28% of the 520 American writers surveyed had “curtailed or avoided” certain online activities due to “fear of surveillance” (2013: 6). The more recent report surveyed 772 writers internationally, with respondents indicating they were similarly engaging in forms of self-censorship due to fears about government censorship (2015: 9-10). The survey found, for example, that substantial numbers of respondent writers living “in both Free and Not Free countries” have avoided certain “internet searches” or refrained from “visiting websites on topics that may be considered controversial or suspicious”

due to “fear of government surveillance”, including 26% of writers in “Free countries”, 18% in “Partly Free countries”, and 26% in “Not Free countries” (2015: 11).

Pew Researchers have also conducted recent poll-based studies (2015a; 2015b; 2014b; 2014c) drawn on samples of people both in the U.S. and internationally, focusing on similar questions concerning online surveillance and its impact. The most relevant report is also among the most recent (Pew Research Center, 2015a), which surveyed a “representative online panel” of 475 Americans on their “privacy strategies” and related actions since the Snowden revelations about NSA and other governmental surveillance in 2013. Among other things, this study found that among the (30%) of respondents aware of the surveillance, a notable 34% took at least one step to “hide or shield their information from the government”; for example, 17% changed social media privacy settings and 15% used social media less often (2015a: 3). These sorts of subtle changes is a kind of regulatory chilling effect as people self-censor or suppress certain activities in response to surveillance-related concerns. Another Pew Research Center study (2014b), based on a public opinion poll of 1801 American adults carried out in the fall of 2013, had findings that also suggested forms of self-censorship due to revelations about “widespread” online government surveillance, with 86% of respondents willing to have an “in person” discussion of surveillance programs, but only 42% do the same on Facebook or Twitter (2014b: 3). One other survey-based study, more of an empirical legal effort, is Sidhu (2007), which examined privacy concerns for Muslim-Americans based on terrorism related surveillance programs established after 9/11. His survey responses suggest notable privacy related concerns for Muslim Americans “surfing” the web post 9/11 that implied some potential for a chill on certain web-based activities.

These studies all provide important insights but also have notable limitations. First, the PEN studies focus only on writers and authors. This means that it is difficult to extend its findings to understand how members of the general public—or your regular Internet user—is affected by surveillance. It could be argued that journalists and writers have unique concerns based on their work, magnifying any “chill” or self-censorship caused by government monitoring or regulatory actions. Second, the Pew studies while similarly providing some insight into the impact of surveillance on peoples’ behavior, because these studies are public opinion survey-based, they merely elicit self-reported privacy or chilling effect concern, meaning, they are subject to “privacy paradox” criticisms. That is, as noted earlier in this section, studies have demonstrated that stated or expressed privacy concerns often are exaggerated or inflated (and do not match peoples’ actual privacy-related conduct (Harper and Singleton, 2001; Berendt and Spiekermann, 2005; Acquisti, 2004; 2012; Consolvo et al., 2005; Malheiros et al., 2013). Such criticisms certainly do not wholly discount the insights theses survey-based privacy studies offer, but rather that caution should be exercised in interpreting, and making inferences, from the survey results. At the same time, these studies could be significantly strengthened by adding methodological diversity, or simply an additional method, to triangulate the targeted privacy attitude or behavior the research is attempting to measure through “multiple sources” of evidence to “converge in a triangulating fashion” (Yin, 2003: 13-14).

iii. Online Self-Censorship Research

Regulatory chilling effects, it should be remembered, operates as a kind of deterrence, wherein individuals choose not to speak, or act, or engage in legal activities as they would but

for the regulation, law, or state action that may be “chilling” their behavior. In this sense, chilling effects involves self-censorship, though the term suggests users are being deterred from speech alone when, in fact, chilling effects concerns deterrence of any kind of legal activities, though speech and expression remain central concerns (Schauer, 1978). Indeed, Solove explicitly states that audio and visual surveillance can cause chilling effects and that “chill” not only promotes “self-censorship” and “social control” (Solove, 2006: 493). As such, any insights as to how and why users may self-censor online will likewise help elucidate the broader operation of regulatory chilling effects. Though the research, so far, is limited, there are a number of more recent studies that do offer some contributions.

Relevant and important to this thesis is a small but growing body of privacy related Social Network Studies (SNS) research on self-censorship online that provides some explanations for why Internet users may self-censor. In particular, Das and Kramer (2013)’s work on SNS self-censorship as well as boyd and Marwick’s theory of imagined audience (2010), and the privacy concerns underlying it, offer insights into the concerns and factors that motivate self-censoring behavior that informs this thesis’ theoretical framework (Schauer, 1978; Solove, 2006; 2007). SNS studies build upon the insights of traditional CMC research (discussed further below), but focus more on the social web than traditional forms of computer mediated interactions. Both the Google Blogger and Twitter platforms examined in this thesis, for example, sit well with Ellison and boyd (2013)’s flexible SNS definition:

A social network site is a networked communication platform in which participants 1) have uniquely identifiable profiles that consist of user-supplied content, content provided by other users, and/or system-provided data; 2) can publicly articulate connections that can be viewed and traversed by others; and 3) can consume, produce, and/or interact with streams of user-generated content provided by their connections on the site.

Though blogs (Google) and microblogs (Twitter) are not the SNS that boyd and Ellison (2008) most often speak of (that being, Facebook, Myspace, or Bebo), their flexible definition certainly is broad enough to include these platforms and boyd, for example, has explicitly analyzed Twitter as an SNS (see boyd and Marwick, 2010).

Saliently, social network site architecture and design is oriented toward broader communications and information sharing, which has impacted user activities (Zhang and Kizilcec, 2014). Research has found that SNS “seem to require self-disclosure by default” with intimate disclosure “common” (Trepte and Reinecke, 2012: 1; Joinson et al., 2011; Ledbetter et al., 2011; Nguyen, et al., 2012). People share information and self-disclose to “enhance reputation and popularity” among their “audience” (Zhang and Kizilcec, 2014; Lee and Ma, 2012) and on SNS this is particularly so through incentives like increasing numbers of “contacts” or “friendships” (Trepte and Reinecke, 2012: 3; Hargittai and Hsieh, 2010; Steinfield, Ellison, and Lampe, 2008). Moreover, because SNS communications lack most non-verbal cues of traditional face to face (FtF) interactions, SNS may result in greater disclosure of intimate communications to promote understanding in lieu of missing cues (Christofides, Muise, and Desmarais, 2009; Gibbs, Ellison, and Lai, 2011; Trepte and Reinecke, 2012).

However, more recent SNS research has shown that users are strategic and selective in their disclosures and online communications based on a range of concerns (Vitak and Kim, 2014; Zhang and Kizilcec, 2014; Ahern et al., 2007; Das and Kramer, 2013; Brandtzaeg et al., 2010). Key to understanding this aspect of SNS communications is boyd and Marwick (2010)’s theory of the “imagined audience” about strategic self-censorship and presentation in online contexts—

with a focus on the audience with whom online users “imagine” or perceive that they are communicating. Because the Internet (and SNS) present such a diverse array of audiences, users struggle to maintain control over self-presentation in light of their imagined audience. This leads to coping strategies like impression management and selective disclosure. Indeed, online audiences affect users in complex ways. A very recent study on how “emotions” or sentiments spread through online social networks (e.g., Facebook) found that evidence of a kind of “contagion” effect, that is, social network connections may magnify certain “intense” emotions or sentiments connected (Coviello et al., 2014). Specifically, these sentiments can have a “cascading” effect between connected social network users with more positive or negative sentiments expressed in online platforms potentially leading to similar sentiments expressed by users with whom they are connected (Coviello et al., 2014: 5).

Consistent with boyd and Marwick (2010)’s theory of imagined audience and Irving Goffman’s work (1959) on strategic self-presentation—discussed further later—users may be attempting to manage multiple but different identities; they may be affected by online community norms, or perceptions thereof; or they fear disapproval by friends (Frederic and Woodrow 2012; Sleeper et al., 2013; Tufekci, 2007; Wisniewski, Lipford and Wilson 2012; Das and Kramer, 2013; Lampinen et al., 2009). Another dimension to this self-censorship is that online communications take place in what boyd (2007; 2008; 2014) calls “networked publics”. The properties that characterize networked public spaces include (a) “persistence” (durability of expression); (b) “visibility” (broad potential audiences); (c) “spreadability” (content can be easily shared); and (d) “searchability” (content can be easily searched and found) (boyd, 2014:

11; 2007; 2008). These characteristics pose challenges and dangers for users, particularly their privacy and impression management (Brake, 2009: 31; boyd, 2014).

Yet, despite struggling with the necessary knowledge and capacity to do so, users, particularly teens, *do* formulate strategies (like selective expression) to preserve privacy and other interests in networked public spaces (boyd, 2014). Notably, Brake (2009) finds the characteristics (and implications) of networked publics apply to blogging just as much as SNS. Self-censorship, then, might be said to constitute form of “boundary management”, that is, maintaining strategic self-presentation against “context collapse” caused by dealing with multiple platforms, profiles, identities, perceived readers, audiences, and the different norms regulating each coupled with the complexities and challenges of networked publics (Das and Kramer, 2013; boyd and Marwick, 2010; boyd, 2014). One study by Wang (2011) found that users may self-censor if they previously regretted sharing content deemed inappropriate for some members of their perceived audience. Other studies have also found “privacy concerns” play a role in users deciding to self-censor, such as where a user’s communications or content is accessed by (unexpected) third parties (Tufekci, 2007).

Das and Kramer (2013) recently reviewed relevant works and proposed a theory of SNS self-censorship as a form of “audience control strategy”. This was based in large measure on boyd and Marwick (2010)’s theory of the “imagined audience”—discussed in more depth later in this chapter—as users struggle to maintain control over self-presentation in light of their multiple or diverse imagined audience they engage in a process of “boundary management”, which Das and Kramer (2013) links to self-censorship. Das and Kramer (2013) found that 71% of

Facebook users in their study engaged in “last minute” self-censorship that they attributed to considerations or concerns about audience—“status updates” and “group posts” were the most often censored posts (2013: 123). Similarly, Sleeper et al. (2013) found that Facebook users self-censored certain topics (such as personal opinions, politics, offensive material) based on audience concerns, specifically, to avoid conflict or offense. Though it should be noted that self-censorship is merely one strategy for users to deal with the “co-presence” of “multiple groups”; there are others (Sleeper et al, 2013; Lampinen, 2009). The literature, reviewed by boyd and Marwick (2010), suggests similar self-presentation theories have been applied to a range of online media, including blogs, dating sites, and personal home pages.

On this count, communications privacy management (CPM) theory provides additional insight (Petronio, 2010). Though CPM has chiefly been studied in face to face interactions, researchers have more recently explored it in the context of computer-mediated and online interactions (Child et al., 2011). Under CPM, certain events or incidents can cause “turbulence” leading people to “re-evaluate”, “modify”, and “re-adjust” their privacy practices to re-assert control over their privacy interests (Child et al., 2011; Petronio, 2010). Child et al. (2011) explored “privacy triggers” for a practice they described as “blog scrubbing”. That is, there were certain events or factors that “triggered” or prompted bloggers to begin to engage in “blog post deletion practices” where bloggers begin removing certain content from their blogs based on privacy concerns. Consistent with CPM and other related studies, they found a number of motivations for blog scrubbing, including “impression management”, “personal safety”, “relational triggers” and, important for our purposes, “legal/disciplinary” ramifications of the posting (2011: 2022).

Overall, self-censorship and chilling effects are difficult to measure and prove (Czepek, 2009: 40; Strandburg, 2008: 813; Klang and Murray, 2005; Barendt et al., 1997). This is because it involves proving a counterfactual proposition—investigating behavior that would or could have happened but for some regulatory action that deterred said behavior. This explains, at least in part, the scarcity of research that expressly investigates online self-censorship though the literature is slowly but surely growing. Self-censorship in online communications, particularly with respect to SNS as discussed here, is one area of growth. The insight that the orientation of SNS—towards self-disclosure—may lead users to strategically self-censor to manage identity and disclosure is an important contribution to a deeper understanding of how regulatory chilling effects may work online. But there are also limitations. Much of this literature fails to seriously consider the possibility of external legal sanction (e.g., a regulatory chilling effect) as being either a cause, or even a factor, in these disclosure and self-presentation practices. Instead, the focus has been primarily on the unique aspects of online environments and social networks and their role in shaping and influencing user behavior. boyd (2014) recently suggested that “moral panics”, “fear”, and “responses to them”, in fact, “reconfigure the lives of youth in restrictive ways” more than “any piece of legislation” (2014: 106). That may be so, but there is so little SNS and related research exploring regulatory effects on users that it is difficult to say so with certainty. While certainly helpful to this thesis, this leaves important gaps in research of regulatory chilling effects and its understanding. This thesis will offer insights on that count.

Another area of growth in self-censorship research *does* consider states actions but focuses on authoritarian states, particularly China, where the government's promotion of an environment of self-censorship is arguably an official policy objective (Kalathil and Boas, 2010: 26). Stern and Hassid (2012), for example, found evidence of "elite" self-censorship, that is, among journalists, lawyers, and other prominent professions in China, even though only a small fraction of such citizens have faced state punishment (Roberts, 2015: 3-4). Givens (2012) similarly found evidence of self-censorship among both Chinese and Russian elite journalists and lawyers in a comparative study of those two states. Roberts (2015) offered a novel observational study on the practices of Chinese bloggers, including how bloggers react to having a blog post deleted or censored by state authorities. Interestingly, Roberts found bloggers were undeterred by the censorship, often continuing to write on the same topics and sometimes even adding additional "sensitive" information to posts (2015: 16-17). In other words, bloggers who were individually targeted by state censors were not chilled, but rather were encouraged to "seek out" information on the censored topic and oppose government censorship (2015: 26). Roberts concludes that self-censorship, in the face of government censorship or surveillance, may not be as widespread in China as previously thought (2015: 26). Similar "self-censorship" studies have been pursued in relation to other authoritarian regimes. Lee and Lin (2006), for example, found evidence of media and business self-censorship in Hong Kong and Chung (2008) likewise found examples of self-censorship in a comparative study of China and South Korea. Kalathil and Boas (2010) offers a broad-based study of "closed regimes" that examined self-censorship (among other things) in China, Cuba, Vietnam, Burma, Singapore, and a handful of authoritarian Arab states.

Though this is certainly not an exhaustive review of literature on Chinese promotion of self-censorship among civilians, these studies still offer helpful methodological and theoretical guidance like Roberts (2015), whose counter-intuitive findings, for example, suggest regulatory actions rather than creating chilling effects actually encourage users to propagate censored or targeted content. At the same time, the contribution of this literature is limited by a number of factors. First, as these studies focus on authoritarian regimes, self-censorship or related behavioral effects cannot be said to hold true for similar contexts in western countries. Indeed, these studies, and findings, are complicated by social, political, institutional, business, and other related cultural practices that differ greatly from those in the U.S., whose Internet using population is the population of interest in this thesis (Lee and Lin, 2006: 333-334). Second, the literature still remains sparse in terms of exploring the theoretical and empirical dimensions of self-censorship. Stern and Hassid (2012), for example, note that while general statements about the importance of “self-censorship” to China’s strategies of media control are common, little is known about the actual reasons for such self-censorship or what factors influence its scope or subtleties in different contexts (1235-1236). In short, like social-media related work on self-censorship, these studies offers insights but also leave opportunities for this thesis to address.

2.6.2 Data Protection

Data protection law and regulation is a “well studied” field and with a few exceptions (for example, Reidenberg (2013); Schwartz and Reidenberg (1996)), European lawmakers and scholars, with the European Data Protection Directive (DPD) (and its later extensions) have largely led the way (Greenleaf, 2013; Brown and Marsden, 2013; Edwards, 2013). This is not surprising given the European privacy tradition, as already discussed, has focused on matters of

reputation, personal integrity, and self-determination in the public sphere. But the global spread of these laws has also led to a notable body of literature analyzing the adoption, implementation, and different components of these legislative regimes (Greenleaf, 2013).

However, since much of this literature involves traditional legal analysis of the different data protection requirements or principles enacted, it is less helpful in terms of the empirical and theoretical aspects of this thesis. An exception is a recent empirical study by Hermstrüwer and Dickert (2013) in relation to the “right to be forgotten”, another contentious topic in data protection scholarship. An idea popularized by Mayer-Schönberger (2011; 2007) and proposed by the European Commission, it has recently taken on greater urgency and importance when the Court of Justice of the European Union (CJEU) found in 2014 that the “right to be forgotten” actually exists under Article 12 of the European Union Data Protection Directive (Ambrose, 2014). Though different conceptions of the right have been advanced, it is generally understood as an individual right to force hosts and other online service providers (OSPs) to delete, or remove links to, certain information online causing reputational harms to the individual (Ambrose, 2014; Rosen, 2012). Most scholarship so far has debated the proper definition or conceptualization of the right (Ambrose, 2014) but Hermstrüwer and Dickert (2013), by contrast, explore the right’s empirical dimensions, including privacy-related chilling effects.

Specifically, Hermstrüwer and Dickert (2013) empirically assess the impact that a “right to be forgotten” might have on certain “chilling effects” associated with the publication of embarrassing personal information online. Using an experimental research design, and a subject pool of 4500 participants, they found that prior notification (via consent) of the possibility of

publication of “selfish” (or non-conforming) behavior before participation in a standard group game *did* “chill” or decrease the frequency of non-conforming behavior; however, it did not “chill” the “panoply of different behaviours” nor “dampen behavioural idiosyncrasies” (21-22). Given the muted results, they conclude that the “dystopian pictures” of a “uniform society” often painted by privacy and constitutional scholars is likely exaggerated and that in some online contexts (like small web communities) the risks or uncertainties of publicity in certain online contexts would not necessarily generate any chilling effects (22). However, Hermstrüwer and Dickert also qualify this conclusion by noting that privacy concerns (and associated potential chilling effects) are very context-specific, and caution against generalizations (2013: 22). They also make an interesting and counter-intuitive finding that giving participants a “right” to delete any published information (“right to forget”) did not affect privacy valuations (or observed chilling effects). In reality, only 25% of participants took advantage of the option of having published information deleted, despite the low costs involved with doing so (merely sending an Email to the authors) (2013: 23). However, they offer several explanations for this: first, participants may have simply forget this option (they forgot their right to be forgotten!); or second, that participants did not wish to bring attention to the information (the Streisand Effect) (2013: 23).

Like all experimental designs there are limitations. The primary one being that given this was an experimental setting—with informed consent and done under the guidance of the researchers—that participants employed different privacy valuations (and thus different decision-making) than they would in actual online contexts. Other potential problems, also common to experimental designs, is the challenge of self-selection; here, participants with certain privacy

preferences may be more likely to participate in the study thus biasing results or, on the other hand, in actual online contexts, choices are more complicated and thus predictions from this static environment do not hold elsewhere. Hermstrüwer and Dickert (2013) admit this possibility, adding a section of “caveats” to their findings (25). For the purposes of the research in this thesis, a further limitation can be added—this study concerns potential “chill” arising in the context of a private transaction and was designed to mimic a consumer transaction and reputational harms involving choices by private actors. Thus, its findings have less relevance for chilling effects arising in relation to more regulatory actions, like the enactment of harsh laws by states or national security surveillance. Still, there are some important insights in this study that offer reason to doubt the significance or long term impact of regulatory chilling effects in certain online contexts.

The remainder of data protection research largely provides a broader legal and policy context for regulatory chilling effects. Depending on the nature of the data protection laws, for example, they should in theory provide one means to ameliorate or reduce the potential for “chilling effects” stemming from other state or non-state regulatory activities; where, for example, data protection laws are able to sufficiently reduce expected reputational harms by restricting access to the information or data that does the harming (McAdams, 1997). As such, it provides a regulatory option to possibly attenuate chilling effects arising from information practices employed by state and non-state actors. However, works like Edwards (2013) and Koops (2014) are skeptical of such laws. Both provide an excellent overview of the successes and challenges for data protection and are critical of the predominant focus on “consent” in said laws (and related literature) as the foundation for informational self-determination, with Edwards

(2013) calling it an “illusion” and Koops (2014) a “mythology”. Koops (2014) recommends, instead, a return to data protection’s “roots”, that is, a focus on principles and simplicity—or more one-off legislative efforts for specific or unique issues (like profiling)—rather than a broad and complex effort like recent proposals for a “General” (and harmonized) data protection regulation for Europe. Similarly, Edwards (2013) strongly supports more fine grained legislative efforts, particularly in relation to private sector OSPs and SNS (342-343).

Furthermore, many argue that data protection requires comprehensiveness and greater international harmonization to be effective (and thus ameliorate harms resulting from privacy concerns like chilling effects), but whether this is possible or even desirable remains an enduring debate in the literature. Bennett and Raab (2006) provided the first most comprehensive review of data protection law and regulation internationally, seeing no evidence of a “race to the top” but, in fact, predicting a future with “incoherent and fragmented” framework globally for global privacy protection (Greenleaf, 2013: 249). Greenleaf (2013), a half decade on, revisited the matter, and argues that the prediction was wrong—there arguably has been a “race to the top” with “more than 70” countries” now with data protection laws, with the influence of European data protection principles obvious (250). Bygrade (2010) offers a less optimistic assessment, noting “widespread concern” to protect privacy internationally, but also persistent differences between data protection regimes; he concludes that harmonization among efforts is “extremely unlikely” (199). There are clear disagreements about the direction, and success, of data protection among researchers and scholars. Though Hermstrüwer and Dickert (2013) provides important empirical and theoretical insights for chilling effects online, the data protection literature, overall, would benefit from some more empirically oriented studies or analyses to test

the impact that data protection laws, both positive and negative, in relation to chilling effects and other related concerns. While this is not the particular object of this thesis, there will likely be findings (and implications) that overlap with these gaps in this literature.

2.7 Other Relevant Communications Research

As previously noted, people *do* act differently online (Suler, 2004; Suler, 2005; Chisholm, 2013; Chester and O'Hara 2007; Lee, 2006), so the applicability of these previous studies to online chilling effects is uncertain. The opportunity here is to tackle other research that *has*, in fact, explored relevant or related issues in more computer mediated or Internet contexts. Here, computer-mediated communications (CMC) and related research provide an “interesting lens on human behavior” to better understand human communications more generally, but also how computer mediation affected those communications (Tidwell and Walther, 2002: 317).

But not all communications research and Internet studies are equally helpful for this thesis. Earlier (and often more traditional) CMC research is somewhat less helpful simply due to the older communications platforms investigated that are less analogous to online and “networked” communications today; though this work does offer some insights on the impact that the *physical* architectural and technological differences between CMC and face-to-face (FtF) settings had on communications (Trepte and Reinecke, 2012; Walther, 2007). More recent or second generation CMC research has focused on more contemporary platforms and online media, which all raise their own unique questions for CMC including issues of self-presentation and impression management (Trepte and Reinecke, 2012; Walther, 2007). But even here, some

of the research—like early “homepage” or “weblog” studies—explored personal website and blogger platforms that have subsequently evolved in important ways, and now seem dated even by their very research labels or titles. Again, however, relevant research in this literature will be reviewed, but caution should be used in extending their insights to more contemporary online platforms and social media like Google Blogger or Twitter.

However, like SNS studies discussed earlier, traditional CMC research is still important to chilling effects online as it shows how certain contextual features and factors of computerized communications influence peoples’ patterns of online communications and expression. Social Presence and Cues Filtered Out theories suggest that online communication is not necessarily informed, rational, and deliberative. Moreover, SIP and hyper-personal theories research suggest that time constraints play an important role in shaping the nature of communications, potentially promoting uninhibited and deregulated speech while fewer time constraints—or asynchronous CMC—lead to more inhibited and selective communications. This is a useful insight as more instantaneous forms of communication online like instant messaging (IM) are becoming more and more popular (Tremayne et al., 2008: 178). On SIP theory and related theories, such communications are more synchronous and may thus allow less time for non-verbal communication and facilitating uninhibited and deregulated communications.

2.7.1 Traditional CMC Studies

Often conducted in laboratories and more traditional computer settings, traditional CMC research focused on the different physical and other interactive properties of CMC, like its (typically) anonymous character, lack of co-presence, and the fact that it is a written medium,

often allowed for editing and asynchronous communications (Walther, 2007). On anonymity, consistent with earlier work (Zimbardo, 1969), a “substantial body of literature” has shown that anonymity affects “online behavior” (Zhang and Kizilcec, 2014; Bernstein et al, 2011). People in more anonymous settings feel less constrained by social norms and demonstrate less inhibited behavior and communications. This disinhibited behavior manifested in intimate and personal communications as well, with self-disclosure found to be greater when CMC was anonymous (Tidwell and Walther, 2002).

Traditional CMC research on co-presence, or lack thereof in CMC, was dominated by two theoretical approaches (Walther, Loh, and Granka, 2005: 36-37). The first is that CMC is less social and more impersonal, uninhibited. Early research, which formed the foundation of the “Social Presence” and “Cues Filtered Out” theories, held that compared to face-to-face communication, the lack of facial and other contextual cues in computer-mediated communication led to less personal and effective communication, and more uninhibited behavior (Hobman et al., 2002). That is, the “technological features of [computer-mediated communication] trigger psychological states and processes that result in a situation of weak norms and social constraints and more deregulated behavior in the form of uninhibited communication” (Hobman, 2002: 442).

The second position, known mainly for the Social Information Processing (SIP) theory takes a different view. Proponents of this theory argue that Social Presence Theories relied on computer-mediated communication experiments that failed to take into account other features of CMC, like time pressures or constraints. SIP theory research suggests that that lack of cues in

computer-mediated communication promote uninhibited and deregulated communication only when coupled with short time constraints; over longer periods, CMC users adapt to the different elements of the format leaving communications just as personal, deliberative, and regulated as face-to-face communications (Hobman, 2002: 442; Walther, 1996). With enough time, computer-mediated communication and face to face communication show little difference. Social identification/deindividuation or SIDE theory and “hyper-personal” theories are two related theories that also explored how features of CMC impact communications, particularly, how users adjust and adapt cues-filtered-out communications to enhance understanding. SIDE theory found users formed impressions based on other cues like social categories. While hyper-personal theory suggested users took advantage of CMC features like asynchronous timing and editing, allowing them to shape their messages for different aims and strategic purposes (Brake, 2012; Tidwell and Walther, 2002: 319-320; Walther, 2007).

As noted, this CMC research has implications for chilling effects online. It may, for example, illustrate how differences in online platforms, architecture, design, and other related factors, impact patterns of speech or expression online and thus chilling effects. SIP and hyper-personal theories suggest that time constraints built into a communications platform may promote uninhibited speech or communications, which may mean fewer chilling effects if Schauer (1978) is correct in assuming some measure of rational calculus of risks and rewards that can lead to chilling effects. Yet, the insights from traditional CMC are also limited—most of these studies focused on one-to-one communicative settings where a sender could make simple assumptions about the receiver of communications, even where participants were anonymous (for example, in student-based studies, communicators could at least assume they

were dealing with another student). With Internet communications—particularly more dynamic platforms like blogs, micro-blogs, and social media, users are not dealing merely with one-to-one communications, but one-to-many or even many-to-many, as with online social networks (Brake, 2012). Here, social context is of greater importance as simple assumptions about audience are not possible.

2.7.2 Second Generation CMC Studies

The central contributions of second generation CMC literature to this thesis is twofold. First, these works offer insights into how people often express themselves differently through computer-mediated online platforms, often selectively and cautiously depending on the circumstances. This has implications for this thesis, as these subtle differences in online patterns of communication and behavior may impact any chilling effects stemming from regulatory actions. Second, these works also illustrate the deliberative nature of online communications, expression, and related activities. This, too, is relevant to this thesis as chilling effects, at least on Schauer (1978)'s account, is a product of a deliberative decision on the part of the person to refrain from acting or speaking in the face of regulatory risks. This literature is closely related to previously discussed SNS studies on self-censorship and is likewise influenced by Goffman's insight that people present themselves differently in different contexts. However, it also builds on traditional CMC research like SIP, SIDE, and hyper-personal theories that posited that people adapt their communications in response to the differential elements of CMC, including formulating cues and strategies of communication based on assumptions about audience (Brake 2012; 2009). So, these CMC studies have focused on newer communications platforms like websites, personal homepages, and blogs, with emphasis on concepts like self-presentation and

impression management (Trepte and Reinecke, 2012; Walther, 2007). This pursuit of more contemporary CMC platforms is why these works are considered “second generation”.

i. Web/Homepage Self Presentation Studies

Online self-presentation studies—exploring how people present themselves in online settings like personal websites— were among the first CMC studies to build on Goffman’s insight that people present themselves differently in different contexts. Goffman’s leading work *The Presentation of the Self in Everyday Life* (1959) speaks of different fronts or “stages”—different social circles or contexts in which people manage how they present themselves. People desire to give positive impressions and control aspects of their environment and identity, including suppressing information about themselves to manage such impressions. Goffman’s work emphasized how people use “self presentation” as a “tool” to control the facts and impressions about ourselves (Brake, 2012: 1058) and while it concerned traditional face-to-face interactions, it helped lay the foundations for thinking about how people present themselves to “diverse others” on the Internet (Baym and boyd, 2012). Indeed, while his ideas were not absent from more traditional CMC research, Goffman’s work and notions of “symbolic interactionism” online have increasingly been a focus in recent CMC studies (Brake, 2012). Researchers have thus applied and explored his conceptual framework to a range of online contexts.

The central take away in these self-presentation studies, for the purposes of this thesis, is how Internet users are deliberative and strategic in their online expression, especially when communicating about themselves. As Brake (2009; 2012) notes, several early studies of online “home pages” found Goffman’s work a useful theoretical framework for understanding how

people presented and communicated themselves on personal Internet spaces. For example, Barbour et al. (2012) recently showed how people utilize CMC tools to manage different online identities for different online contexts, consistent with Goffman's work on strategic self-presentation and impression management. In other words, web users are persistently aware of any audiences for their online posting and related communications and shape those communications according to those expectations. This would suggest that those same web users may be vulnerable to regulatory chilling effects—if they believed their online activities were being monitored or watched by authorities or a threatening third party, they may well self-censor or be subtly chilled in other ways. At the same time, while there is some overlap in content, blogs or microblogs are different and much more dynamic communications platforms compared to static personal websites or “homepages”, so research on the latter is somewhat less relevant to the former. Moreover, blogs and blogging practices are also not static and have evolved over time (Brake, 2009; boyd, 2006; 2014). This means more focused or specialized study of blogs or micro-blogging platforms like Twitter is required.

ii. “Weblog”/ Blogger Studies

Personal “weblog” or blog studies also provide some illustration of the deliberative nature of online communications, with further insights into how impression and identity management drive certain forms of blogger sharing or online expression. This is important because the third case study in this thesis involves blogs (Google Blogger) and micro-blogs (Twitter). Recently, Bronstein (2013) reviewed literature on personal blog studies, finding a more mature body of work building upon concerns of both first and second generation CMC research, with issue-specific studies examining anonymity, self-presentation, self-disclosure, and

the impact of “environmental cues” on expression (2013: 161-162). Consistent with self-presentation theory with large and “diverse” audiences online (Baym and boyd, 2012), research suggests bloggers tend towards greater self-disclosure,¹⁷ but utilize both anonymity and self-presentation strategies for selective identity creation (Bronstein, 2013: 162). This is consistent with SNS studies finding “social web” users have a tendency for greater self-disclosure (Joinson et al., 2010; Ledbetter et al., 2011; Trepte and Reinecke, 2012), but demonstrate a measure of share selectivity (Walther, 2007).

These findings are highly contextual, however. There are likely unique factors, beyond platform design differences, that account for greater self-disclosure by bloggers in certain instances. A good example of this is Oostveen (2011)’s research on “weight loss bloggers”, which concluded that the greater levels of self-disclosure among these bloggers (as compared to the “reluctance” of individuals to speak openly in other offline contexts) was best explained by the norms of the online community, that provided reinforcement, moral acceptance, and other forms of social support (119). Moreover, as new social media, blogger networks, and micro-blogging platforms have emerged, both the nature and character of “personal blogs” and their online platform, has evolved and definitional lines blurred (Shirky, 2005). For example, boyd (2014) includes blogging and micro-blogging platforms within a broader definition of “social media”—tools and platforms with which users can “create and share their own content”—like other “social network” and “video sharing” sites (2014: 6).

¹⁷ Here, “self disclosure” means both “verbal and non-verbal communication” revealing a person’s information (Trepte and Reinecke, 2012: 1; Greene, et al., 2006).

In short, while these studies provide some theoretical and empirical support for the possibility of regulatory chilling effects on bloggers (and users of comparable platforms), they should not be assumed to apply to different users, platforms, or circumstances. So additional research is needed to test whether these findings may hold where other factors (like regulatory chilling effects) are at issue. As Brake (2009) observes, there is a “paucity” of work on the influence of “social norms” on personal blogging remains a concern—indeed, there are few, if any, studies exploring norms of self-censorship among bloggers or how legal and other regulatory norms might affect blogging. This thesis will address this “need” as well.

2.8 Theoretical Framework and Central Research Questions

Schauer (1978) and Solove (2006; 2007a) taken together provide the theoretical framework to explore regulatory chilling effects in this thesis. It is, as seen, primarily: (1) individual focused; (2) approaches chilling effects as a kind of deterrence of legal activities; and (3) broad enough to encompass laws, regulations, legal rules, as well as certain actions such as surveillance and data collection. Though the theory is most often focused on state enacted laws and actions, it can also account for private action with chilling effects, such as defamation suits or data surveillance. However, as this chapter has illustrated, chilling effects theory, and research supporting it, is neither complete nor comprehensive. There are questions as to its empirical basis, as well as how it might apply, or apply differently, in online contexts. And while the central theoretical framework will be informed by a range of additional theoretical perspectives, particularly, as noted, self-presentation and SNS-based theories of imagined online audiences and self-censorship as boundary management—there remain important empirical and theoretical gaps. As such, the central research themes of this thesis—operationalized through

specific questions for each case study in the next chapter—are designed to address these gaps in the literature. These research questions parallel the central themes that have emerged in this Chapter:

Research Question 1: Empirical / Theoretical Foundations

A central research question will be to establish an empirical foundation for regulatory chilling effects online. This research question is operationalized in the following way:

Do the following regulatory acts:

(i) Internet related laws that threaten individual sanction or punishment for engaging in certain online activities; and

(ii) surveillance by state or non-state actors of online activities of Internet users;

... deter, suppress, or reduce the frequency or scope of, in a non-trivial way (e.g. a non-trivial chilling effect), legal activities of Internet users in online contexts?

Despite mainstream usage and reception in political, legal, and public policy debates, the notion of regulatory chilling effects, and the theory or assumptions underlying it, remains controversial empirically and theoretically. Traditional legal scholarship that invokes the possibility or idea of regulatory chilling effects, or the theory underlying it, predominantly fails to explore it more deeply. Additionally, existing empirical legal studies are generally narrow and concern traditional (offline) media contexts, while fields that specialize in studying behavior online, such as CMC and SNS, have yet to seriously consider the role and impact of legal and regulatory norms in relation to individual chilling effects or related concepts like self-censorship. Thus, a recent assessment of the literature (Kendrick, 2013) questioned its empirical basis and

called for more research to substantiate its claims and assumptions (2013: 1681; Richards, 2013). This research question is designed to address this substantial gap in the literature.

The design of the question, in particular the “regulatory acts” and focus on individuals, reflects the theoretical framework employed in this thesis, with the focus on Internet-related laws that threaten sanction or punishment reflecting Schauer (1978)’s leading account of chilling effects theory (examining chilling effects arising from vague or uncertain laws and threats of civil or criminal punishment) while the second regulatory act interrogated (online surveillance) reflects the focus on privacy and surveillance-related chilling effects in the contributions of Solove (2006; 2007a; 2007b). This focus also reflects the general arch of the literature reviewed in this Chapter, which demonstrated not only that these are the regulatory acts predominantly identified in the literature as potentially creating chilling effects, but also that there is a need for greater theoretical and empirical elaboration and study of any chilling effects these regulatory acts may cause.

Also, the language “deter, suppress, or reduce the frequency or scope of, in a non-trivial way” is how this research question operationalizes regulatory chilling effects in this thesis, as a means to measure it. This is consistent with Schauer (1978) and Solove (2006; 2007a; 2007b) who theorize chilling effects as a deterrent effect or suppression of legal activities due to some regulatory action. It is also consistent with Seltzer (2010) who theorizes chilling effects in relation to the DMCA as, among other things, a failure to re-assert speech in the face of a regulatory or legal threat represented in the DMCA takedown notice. It is also consistent with the empirical findings of Marthews and Tucker (2014) and Hermstrüwer and Dickert (2013) who

theorize and operationalize chilling effects in their studies as either a reduction in the frequency and scope of certain legal activities (searching for privacy-sensitive terms on Google search: Marthews and Tucker (2014)) or as a reduction in the frequency of selfish behavior in response to a threat of information about that behavior disclosed online: Hermstrüwer and Dickert (2013)). Finally, in light of certain “privacy paradox” research—which suggests if there are chilling effects they may only be temporary, ephemeral, or impermanent—the investigation will also ask whether any chilling effects observed are non-trivial. The aim is not to prove or disprove regulatory chilling effects beyond doubt or with certitude, but to address the aforementioned research gap and interrogate the empirical and theoretical foundations for chilling effects online.

Research Question 2: Empirical / Theoretical Elaboration

This second central research question, or theme, is more exploratory, entailing a broader theoretical and empirical exploration as to the factors that impact regulatory chilling effects online, including why some users are affected more than others. This question will be operationalized in the following way:

Do any of the following factors...

(i) the form or type of regulatory action (e.g. Internet-related law or online surveillance);

(ii) the means by which regulatory actions (and any regulatory threats) are communicated to Internet users (e.g. widespread media coverage or individualized legal notice like a DMCA takedown notice or automated);

(iii) the online platform being used by the Internet user (e.g. social media site or basic website);

(iv) the age, gender, education, level of Internet use, level of social media use, and other characteristics of the individual Internet user;

....increase, reduce, or influence the impact, permanence, and scope, of any chilling effects observed?

This theme builds logically on the first, by taking the investigation beyond a basic inquiry into the empirical foundations of chilling effects to a deeper study of its operation and impact in practice, in particular, factors that influence its impact, permanence, or scope. And like **RQ1**, the design of this research question tracks the literature review in this Chapter, essentially offering a range of exploratory questions yet to be addressed by chilling effects or related research. No existing work, for example, attempted to pursue a *comparative* investigation or analysis that tested different chilling effect scenarios in relation to the same population to understand how different forms of regulatory actions may lead to different effects. Thus, this thesis asks whether chilling effects are impacted by different *forms* of regulatory actions (e.g., Internet laws versus forms of online surveillance) (**RQ2(i)**) and how those actions are implemented or communicated to Internet users (e.g., via an individually delivered legal notice like a DMCA takedown notice) (**RQ2(ii)**). This allows for further study of the role of differing regulatory enforcement measures and the role of media, and publicity in privacy-related chilling effects (Marthews and Tucker, 2014; Hermstrüwer and Dickert, 2013).

With respect to **RQ2(iii)**, CMC research suggests that features built into online platforms—like time constraints—may play a role in how uninhibited online communications may be, affecting how likely a law or regulation is to “chill” or deter a user. If they have more time to think about it, a user may be more likely to self-censor. Additionally, some SNS and self-censorship research suggests that orientation of SNS, as well as the social networks or online

communities in which a user may be embedded—that represent the audience with which they are communicating—may affect how likely that user will self-censor. This, arguably, is supported by previous studies of chilling effects in more traditional media organizations, wherein Shapiro (1989) and Ericson, Baranek, and Chan (1989) found chilling effects are influenced by social networks within organizations. This, as well, raises questions as to how regulatory chilling effects operate or spread within online networks; perhaps, as found by Coviello et al. (2014), chilling effects can have a “cascading” effect in a social network spreading sentiment between connected users. Of course, there are limits to all of these previous studies and research so a key object of this thesis, under this theme, will be to explore and illustrate these and other factors impacting regulatory chilling effects. Finally, no existing research has explored the role of basic demographic differences among individuals and what impact, if any, those demographic characteristics (such as age, gender, income, education, etc.) have on any regulatory chilling effects. This research examines this challenge too (**RQ2(iv)**).

These two research questions shape the core focus of this thesis. These questions will drive general research designs and methodology (discussed in Chapter 3) as well as the specific research designs, methodology, and analysis in the empirical case studies discussed in Chapters 4, 5, and 6. They also form the core foundation for the significant contributions to the field that this thesis offers.

Chapter 3

General Research Design and Methods

3.1 Introduction

This Chapter sets out the general research design and methods used in constructing and carrying out this research. The aim is to elaborate (i) the methodological orientation of the thesis and its approach to the empirical case studies discussed in the following three Chapters; (ii) explain and justify the overall research design and case selection; (iii) set out the general procedures employed in relation to research time, data collection, analysis, ethical considerations, and more general methodological questions of validity and reliability. For convenience and to assist the description and understanding of each case study, more specific information about design and method—including data collection, design of research instruments, methods of analysis, measures taken to address questions of validity and reliability, and limitations of findings and results—are discussed in greater detail in each respective empirical case study chapter (Chapters 4, 5, and 6).

3.2 General Methodological Orientation

3.2.1 Empirical Legal Research

The methodological orientation for this thesis is drawn from empirical legal research (Cane and Kritzer, 2010; Epstein and Martin, 2010). Empirical legal research, as a defined field (or subset) of empirical research, first obtained prominence in U.S. and U.K. law schools in the

1990s, though legal research involving empirical methods had been done as early as the 1920s and 1930s (Cane and Kritzer, 2010). In more recent years, however, defined empirical research communities have emerged in Canada and Australia, and empirical legal research is being conducted around the world, including the Americas (Mexico, Peru, Brazil, Argentina, Ecuador), Europe (Netherlands, Belgium, Spain, Germany, Russia), Asia, the Middle East, and beyond (Israel, Japan, Bangladesh, Dominican Republic, Philippines) (Cane and Kritzer, 2010: 3).

The “distinctive feature” of empirical legal research is the “use of systematically collected data”, including both qualitative or quantitative methods, to demonstrate, investigate, examine, or analyze some legal or regulatory phenomenon (Kritzer, 2010: 883). Though many of the empirical methods used in empirical legal research are found in other fields of research or study, the difference is these methods are employed in empirical legal research with a sensitivity toward the unique challenges and demands posed by the complexities of legal and regulatory phenomena, the nature of legal analysis, and the challenges of communicating empirical work within a broader (legal) community generally less statistically or scientifically inclined than other research communities (Hall and Wright, 2008; Epstein and Martin, 2010; Kritzer, 2010). The reality, for example, is that most empirical legal studies will be observational and naturalistic (studies of things in their “natural context” or out “in the field”) as opposed to experimental (Webley, 2010; Epstein and Martin, 2010). As such, empirical researchers must at times modify their approach or use of certain methods, like content coding and analysis, to account for the interpretive nature of legal phenomena and analysis that may resist systematization more so than phenomena studied in other fields (Hall and Wright, 2008). The aim, in most cases, is for the researcher to pragmatically bridge both sides of the “epistemological divide”—legal and

empirical research—by choosing the approach best suited to the needs of the analysis and legal phenomena being studied, whilst also addressing standard methodological concerns, such as questions of reliability and validity, that arise in most other empirical research (Hall and Wright, 2008: 111-112). As such, despite these distinctive features and challenges, empirical legal research nevertheless generally resembles most other empirical research: the scholar designs their research, collects (and where appropriate codes) the data, conducts analyses, and then presents the results (Epstein and Martin, 2010: 904). This is the overall methodological orientation and approach that informs much of this thesis, including the specific approach employed for each of the three “embedded” case studies that are the core of this study of regulatory chilling effects online. In the next section, the overall design and selection of the general (and embedded) case studies are described and justified.

3.3 Case Study Design and Selection

3.3.1 Main Case: Regulatory Chilling Effects Online

This thesis uses an embedded case study design. Case study research, according to Yin (2009: 18), is an empirical inquiry that in its “scope”: (i) investigates a “contemporary phenomena” within “real life contexts” especially where “boundaries between phenomena and context are not clearly evident”. Moreover, there are normally other “technical characteristics” where (ii) due to the complexity and richness of the “real life” context of the phenomenon studied, the case study research tends to rely on “multiple sources of evidence” with “data needing to converge in a triangulating fashion”; and so (iii) benefits from “the prior development of theoretical propositions” to guide data collection and analysis (Yin, 2009: 18). Furthermore, a case can be theoretical, empirical, or both (Ragin, 1992: 3) and, as an in depth investigation, can

go beyond simply documenting a phenomena—be it a thing, event, person, or organization—but also provide a deeper understanding of its context and processes (Berg, 2009: 319).

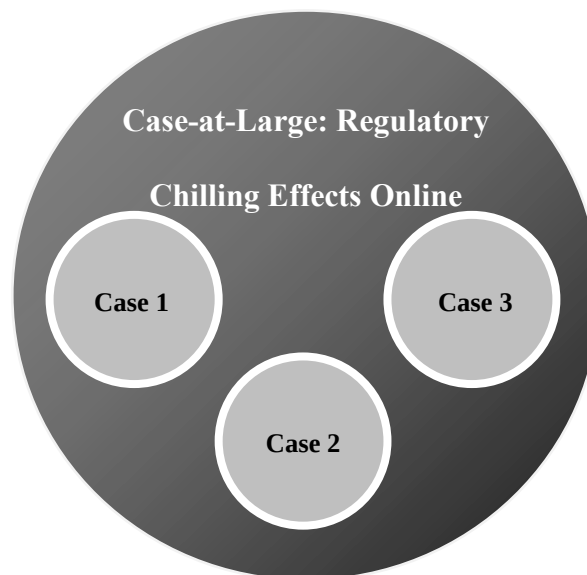
A case study that focuses on regulatory chilling effects in online contexts, as the case at large, clearly fits this definition. In terms of scope, regulatory chilling effects online is clearly a “contemporary” phenomenon where the “boundaries between phenomena and context are not clearly evident”. The Internet, its users, ISPs, OSPs, and other stakeholders have faced increasingly sophisticated regulatory efforts in recent years. These “next generation” regulatory controls, which include complex Internet-related laws and regulatory schemes or forms of online surveillance, can be both overt and covert and often operate to promote legal and “normative pressures” and that “inculcate an environment of self-censorship” (Deibert and Rohozinski, 2010: 17; Brown, 2010). An investigation that aims to understand and elucidate this contemporary phenomena must do so, almost by necessity, within this broader concrete and real world regulatory *context*; separating regulatory chilling effects from their actual operation in practice and this broader context would not likely offer an accurate picture.

Moreover, this case study design also employs strategies for “triangulating” through “multiple sources of evidence” by employing mixed methods to gather evidence via three embedded case studies: (1) a survey-based case study of Internet users’ responses to “chilling effect” scenarios; (2) an observational case study of surveillance-related chilling effects on Wikipedia; and (3) a case study of chilling effects on Google Bloggers and Twitter users arising due to legal threats received through DMCA takedown notices (see **Figure 3.1**). By studying regulatory chilling effects online in three different case study contexts, this thesis triangulates the

phenomenon from multiple sources of evidence for a more accurate, rich, and robust understanding. Finally, through its theoretical framework based on Schauer (1978) and Solove (2006; 2007a), and supplemented by other relevant theoretical work, it also benefits from “prior development of theoretical propositions” to guide data collection and analysis.

Figure 3.1: Multiple Embedded Case Study Design

Regulatory chilling effects studied in online contexts is the main case study or case-at-large, with the three embedded case studies within the main.



In addition to clearly meeting the requirements of a well formed case study research, two additionally central considerations were used in selecting “regulatory chilling effects in online contexts” as this thesis’ case at large: First, it addresses a clear need in the literature. As the review in Chapter 2 demonstrated, there is a substantial gap in the literature highlighted by a general lack of empirical legal research supporting regulatory chilling effects, or related phenomenon like self-censorship, in online contexts (Kendrick, 2013; Richards, 2013; Kaminski and Witov, 2015) and a wealth of other research questioning its existence or significance (Nickel, 2014; Debatin, 2009; Rose, 2011; Bernescu, 2013; Acquisti et al., 2013; Hermstrüwer

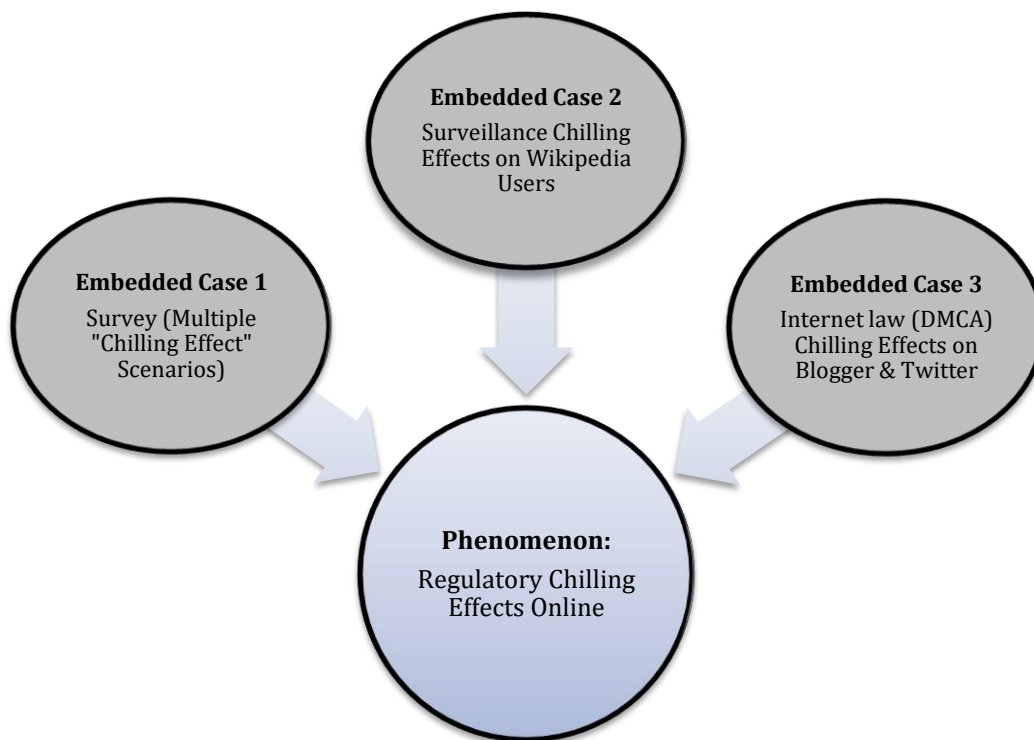
and Dickert, 2013). And while there are a number of studies documenting chilling effects in more traditional (offline) media contexts it cannot be assumed that these findings are applicable to online contexts given the substantial body of research suggesting people simply act, react, and behave differently online (e.g., Suler, 2004; Suler, 1996; Chisholm, 2013; Chester and O'Hara 2007; Lee, 2006). An embedded case study here, interrogating the empirical and theoretical aspects of regulatory chilling effects in online contexts, addresses that gap. Second, the case constitutes a pressing matter of public policy with important international implications. As noted in Chapter 1, worries and concerns about the harms of regulatory chilling effects are increasingly being raised by politicians, journalists, and other stakeholders around the world (see, for example, Nicas, 2014; Townsend, 2014; PEN America, 2013; 2015; Pew Research Center, 2015a; 2015b; 2014a; 2014b; 2014c; Sledge, 2013; Masnick, 2014; Halper, 2013). And now, after the Snowden leaks and attendant revelations, these matters are now a matter of broad and contentious global public policy debate (Qin, 2015: 166; Giles and Hartmann, 2014: 24; Bakir, 2015; Nickel, 2014: 255). This thesis aims to effectively extrapolate from a particular case—with multi-units of analysis represented by three embedded case studies—to a “broader theory” of chilling effects online (Yin, 2009: 43; 2003).

3.3.2 Embedded Case Selection

Having accounted for the general or case-at-large selection, this section explains the basis for selection of the three embedded case studies. Four considerations were used in selecting the cases: First, to address this thesis' research questions and thus address specific gaps identified in the literature. Second, to ensure triangulation (data and methodological) and replication (theoretical) in the research design. Yin (2009: 115-116) recommends “triangulating” the

studied phenomenon for “more convincing and accurate” results. This is accomplished through multiple sources of evidence (data triangulation) or methods for collecting data (methodological triangulation) with results synthesized and analyzed together for deeper or richer findings (Patton 2002; Yin, 2009: 116). And in case studies with multiple case studies (in this thesis they are embedded within the broader one) a logic of “replication” is also recommended, that is, to replicate certain findings concerning the studied phenomena for theoretical or empirical purposes (Yin, 2009: 116) (see **Figure 3.2**).

Figure 3.2: Triangulation and Replication Case Study Design Logic



Gathering evidence from multiple sources for the purposes of triangulation and replication through multiple case studies addresses both *construct* and *internal validity* concerns, by strengthening findings through corroboration, and also rendering them more reliable (Neilsen, 2010: 954; Yin, 2009; Yin, 2003; Webley, 2010). Third, to increase the potential impact of the research, particularly public policy implications. Yin (2003) notes that, depending on the aims, objectives, or broader context of the case study research in question, potential public policy impact can be used as a consideration in case selection (12). As already noted, regulatory chilling effects and their potential harms have become an international public policy concern; so cases were also considered in light of this broader context. Finally, cases were selected in relation to other methodological factors and aims. This includes an aim to meet an identified need in empirical legal studies more generally for more mixed methods research. Neilsen (2010), who defines “mixed method” research as any using “multiple tactics” or methods to study the same phenomena (954), recently argued there is a “need” for more such studies in empirical legal research because it is perhaps the “most effective way to understand law and society” (954-972).

One of the insights apparent from the literature is the methodological challenge chilling effects research poses. Countless researchers made the point that demonstrating “chill” is very difficult, if not at times impossible, as it often involves offering evidence of a “negative”, that is, self-censorship (Solove, 2007a: 155; Czepek, 2009: 40; Strandburg, 2008: 813; Klang and Murray, 2005; Barendt et al., 1997; Hall, 1993-1994). These authors and theorists simply make the point that investigating chilling effects often means exploring or examining certain counterfactual assertions about online behavior—to say “chilling effects” have occurred is to

suggest or show that some speech, expression, or other activity that *has not happened* would have, in fact, happened but for the regulatory action in question that led to the chilling effects or self-censorship. Given this complexity, matters of methodological pragmatism, or practicality, were also considered in case study design and selection, including availability or access to relevant quality data as well as matters of cost and time constraints. Data availability, in particular, should be highlighted here. The availability of unique or special sets of data, or other measurement tools, to assist this difficult research task was therefore an important case selection factor. Below, each embedded case study is explained and justified.

i. Survey-based case study of chilling effects on U.S. Internet users

This case study aims for a fuller account by examining multiple dimensions of regulatory chilling effects, and its empirical basis, with a first-of-its-kind online survey. This particular case was selected for a number of reasons. First, it addresses several important gaps in existing research and literature. Researchers have used survey-based methods to study regulatory chilling effects previously, but they either covered chilling effects in organizations (not individuals) in traditional (offline) media contexts (Barendt et al., 1997; Renas et al., 1989) or were narrowly focused and documented chilling effects only in relation to a single contextual example of it (awareness of U.S. Government surveillance) (PEN America, 2013; 2015; Pew Research Center, 2015a; 2014b; 2014c). As noted in Chapter 2, no existing work has offered an investigation of chilling effects in online contexts for the same population (or participant pool) such that the influence of different factors like different regulatory actions or online contexts or age, gender, level of education, and income (and other demographic markers) can be compared and explored. This survey-based method case study

does this. Besides this more specific contribution, its findings are expected to also address the more general need in the literature for additional empirical evidence for chilling effect claims, and the theory underlying them.

Second, though a survey method is best understood as a quantitative research method, its use here remains consistent with the objects of case study research by offering an additional “unit of analysis” to replicate and triangulate regulatory chilling effects both within this case study itself (it explores chilling effects in relation to a number of concrete regulatory scenarios) and in relation to the other two embedded case studies. Moreover, using a quantitative method to complement qualitative methods in other embedded case studies (such as coding of content in the third case study on the DMCA) is consistent with Neilsen (2010)’s call for more mixed-method designs in empirical legal research.

Third, this case, and the methods used to carrying it out, was selected for greater impact and scale. Survey research and recruitment of randomized samples of target populations (defined later in this Chapter as the U.S. Internet user population) is often costly and time-consuming. For example, face-to-face surveys or questionnaires conducted in person by the researcher would allow for follow up questions (and richer qualitative data) or opportunity for clarification if required by participants. However, such a method would be far too costly and time-consuming to allow for a larger sample of respondents that would achieve the same scale and impact achieved by other recruitment strategies and surveying methods. As such, this case study used an online web-based survey (SurveyMonkey) and the Amazon Mechanical Turk site to recruit participants. This has allowed for greater scale, and thus impact, through a much larger and

diverse participant pool possible through other methods. Key to successful surveys is an “excellent” recruitment strategy and avoiding a biased design (Carter et al., 2014: 2) and Amazon’s Mechanical Turk (“MTurk”), a modern crowdsourcing platform founded in 2005, offers a unique platform for achieving this. MTurk is an “open online marketplace” that provides a means for “task creation”, “recruitment”, “compensation and data collection” (Buhrmester, Kwang, and Gosling, 2011: 3; Carter et al., 2014). Several works have summarized and documented MTurk’s advantages for survey, experimental, and other related research (e.g., Goodman, Cryder, and Cheema, 2012; Mason and Suri, 2012), which include a large user base of more than 500,000 located in over 190 countries—though roughly 250,000 are located in the U.S.—as well as its affordability and ease of use (Paolacci and Chandler, 2014: 184-185; Greenblatt, 2014; Paolacci et al., 2010). MTurk, in fact, has been widely adopted by researchers, with Goodman, Cryder, and Cheema (2012) finding over half of the top 30 universities in the U.S. collect “behavioral data” with MTurk. And in recent years, MTurk-based studies have been used in a wide range of research fields and publications, including “leading” political science, psychology, economics, computer science, and law journals (Chilton and Tingley, 2013: 230(n279)). It is now common to read “empirical articles” based “entirely” on MTurk collected data (Paolacci and Chandler, 2014: 184).

Given this increasing use and adoption, researchers “in various fields” have investigated the data collected from MTurk “participants” in studies, with a focus on validity and reliability (Goodman, Cryder, and Cheema, 2012). Paolacci and Chandler (2014) recently conducted an extensive survey of “available evidence” concerning MTurk collected behavioral data, noting that research has shown that “self reports” of MTurk workers are “psychometrically valid”

(2014: 186; Buhrmester, Kwang, and Gosling, 2011) and replicated some of the “classical findings” in “behavioral economics” and “decision-making” research (2014: 186; Goodman, Cryder, and Cheema, 2012), with MTurk workers exhibiting many of the same “cognitive biases”, “logical fallacies”, and behaviors as “traditional participants” in economic games (Paolacci and Chandler, 2014: 186). MTurk workers have been found to be motivated not just by “monetary” interests but also both “intrinsic” (e.g., “tasks are fun”) and “extrinsic” factors (e.g., some do tasks “to make ends meet”); but also appear to be “truthful” when self-reporting information, with reported locations matching IP addresses, and self-reported demographic information and “individual difference measures” showing a “remarkable” level of consistency over time (Paolacci and Chandler, 2014: 184, 186). Paolacci and Chandler (2014) conclude, after extensively canvassing existing evidence, that researchers can use MTurk for “virtually any study that is feasible to conduct online” (2014: 186). Indeed, the MTurk service has been “validated” as a tool for a range of research, including “decision-making” research, “collective behavior” experiments, “norming” stimuli, conducting both behavioral “linguistic” and “cognitive psychological” experiments, and, importantly for our purposes, conducting “survey research” (Crump et al., 2013: 1-2).

Overall, at least compared to the overall U.S. population, studies have found MTurk samples are “at least as diverse as traditional subject pools” (Paolucci et al., 2010: 414; Greenblatt, 2014), “much more diverse” than traditional college samples, and “more diverse” than other Internet samples (Holden et al., 2013: 1750; Buhrmester, Kwang, and Gosling, 2011). However, there are still limitations as to MTurk’s general representativeness. MTurk workers are “diverse” but because MTurk samples are drawn from among Internet users, they are less

representative of the general population (Paolacci and Chandler, 2014: 185; Goodman, Cryder, and Cheema, 2012). MTurk workers have a “similar” income distribution (with a “slightly” lower mean) to the general U.S. population, and, on average, are “only slightly younger”, slightly more female, and with higher education levels and fewer children (Ipeirotis, 2010; Greenblatt, 2014; Goodman, Cryder, and Cheema, 2012). So, using MTurk samples to generalize about the broader U.S. population has its limitations, but as noted by Greenblatt (2014), “all relevant demographic groups are still present” just with “lower frequencies of occurrence” (2014: 3). And Paolacci et al. (2010) also found, addressing concerns as to generalization and validity, that not only did MTurk samples match the U.S. general population more closely than traditional subject pools, but that non-response error is also “less of a concern” than traditional convenience sample methods (2010: 414).

Even so, the primary source of these limitations—that MTurk samples are recruited from among Internet users—actually makes the platform particularly useful to study the population of interest here—Internet users in the United States. As earlier noted, more than half of MTurk’s 500,000 users are based in the U.S., providing a “large, diverse subject pool” especially for studies based on the U.S. population (and its Internet users) (Greenblatt, 2014: 2); though MTurk samples used in some studies have been slightly younger and more female than even the general Internet user population (Crowston, 2012: 213-214). Still, samples recruited with MTurk have been found to be relatively representative of the U.S. Internet using population (Paolacci et al., 2010: 412; Chen and Yeh, 2013; Wolfson and Bartkus, 2013: 119; McDonald and Cranor, 2010: 5) and thus even “more appropriate” for “Internet research” as such samples can be more representative of Internet users than random samples drawn from the general population

(McDonald and Cranor, 2010: 5). With MTurk employed as this case study's recruitment service, the scale, diversity, and representativeness of the participant pool—and thus validity and reliability of results—are strengthened.

ii. Case study of surveillance-related chilling effects on Wikipedia Users

This case study focuses on English Wikipedia, and traffic to specific Wikipedia articles, as a means to explore regulatory chilling effects on Internet users. This case was likewise chosen first to address important shortcomings in existing literature, in terms of empirical support for regulatory chilling effects (Kendrick, 2013; Richards, 2013; Solove, 2007a) with Kaminski and Witov (2015) particularly speaking to the need for more research documenting chilling effects online arising due to surveillance practices. This case study will address this need, exploring whether there is any evidence for chilling effects due to peoples' awareness of online surveillance through an analysis of Wikipedia article traffic trends before and after the NSA/PRISM surveillance revelations in June 2013. Moreover, results in this case could also contribute a substantial contribution to research and literature on Wikipedia. Researchers have used Wikipedia for a broad range of research, relating to both online and offline concerns, including theorizing and understanding peer-production, mapping online knowledge, probing patterns of local knowledge production, and the subtle ways that popular information platforms like Wikipedia influence far more than just students or researchers seeking knowledge online (see e.g., Graham, Hogan, and Straumann, 2014; Graham, 2014; Graham et al., 2013; Graham and Zook, 2013; Algan et al., 2013; Graham, 2011; Zook et al., 2011; Graham, Hale, Stephens, 2011; Chen, 2011; Benkler, 2006; Benkler and Nissenbaum, 2006). But there are no systematic

studies of chilling effects in relation on Wikipedia users. This case study would constitute the first.

Second, the case is consistent with this thesis' theoretical framework and overall methodological design aims. Though the case study uses Wikipedia article traffic data as a measurement tool for documenting and analyzing any regulatory chilling effects, the ultimate population of interest is individual Internet users who access Wikipedia. This is consistent with the theoretical framework based on Schauer (1978) and Solove (2006; 2007a; 2007b), which is individual-focused and encompasses surveillance-related chilling effects, particularly the work of Solove, who also emphasizes the broader societal level impact that surveillance and other forms of mass data monitoring may have. This case study's design (discussed in more detail in Chapter 5) is essentially naturalistic and observational in that it interrogates regulatory chilling effects in a real world context and does so by analyzing observational (non-experimental) data (Wikipedia article view counts). As such, the case offers an additional embedded "unit of analysis" to replicate findings in the other case studies to strengthen external validity. Moreover, it also helps to triangulate the phenomena being studied here—regulatory chilling effects—and likewise contributes to the methodological diversity of this research overall (Neilsen, 2010). Triangulation is particularly helpful to overcome some of the shortcomings of the first survey-based case study already outlined. One of the weaknesses of surveys is they do not measure actual behavior but rely on self-reports about retrospective or prospective behavior or actions. On this count, there is ample "privacy paradox" research showing that surveys that solicit self-reports about privacy concern (and potentially chilling effect concerns) may not reflect the actual

behavior of respondents (Harper and Singleton, 2001; Berendt and Spiekermann, 2005; Acquisti, 2004; 2012; Consolvo et al., 2005; Malheiros et al., 2013).

Methodological pragmatism was also a key consideration here. Marthews and Tucker (2014) focused on Google search trends due in part to the simple fact there are very few such mass data sources available to pursue such an investigation; Google Trends offered a unique data source that led to unique and important insights about privacy-related chilling effects. Similarly, using Wikipedia as the platform of focus in this case study is a matter of data availability—Wikipedia helpfully offers easy open access to vast array of rich data about the site, including for the purposes of this case study, traffic data to individual Wikipedia articles, as well as to all Wikipedia articles overall (including, specifically, for English Wikipedia articles).

Third, research impact and scale justified this case selection. Again, since this study uses web traffic data as a means of studying chilling effects on individuals, Wikipedia is an ideal platform to choose due to the scale and popularity of its use. Wikipedia is a “unique, online, collaborative encyclopedia” established in 2000 (Bar-Ilan and Aharony, 2014: 243). As historian Roy Rosenzweig has noted, Wikipedia “rather grandly” traces its lineage to “the ancient Library of Alexandria and Pergamon” and the “concept of gathering all of the world’s knowledge in a single place” (Rosenzweig, 2006: 119). In more modern terms, it can at least be said that the aim of Wikipedia, as “Web 2.0” participatory and collaborative site, is to present the “wisdom of crowds” (Bar-Ilan and Aharony, 2014; Kittur and Kraut, 2008; Surowiecki, 2005).

Wikipedia was chosen as the platform of focus for several reasons. First, Wikipedia is widely used online resources, both in the U.S. and abroad; so understanding the impact that government surveillance may have on Wikipedia use can offer insights as to the *scale* of that impact. Since its inception, Wikipedia has grown exponentially with “millions of people worldwide” contributing “time and effort” to building it as a “public resource” (Hargittai and Shaw, 2015: 425; Bar-Ilan and Aharony, 2014: 243). Today, Wikipedia contains over 30 million articles available in 232 languages—the “sixth most-visited” website globally with over 500 million visitors per month—and is growing at a rate of 17,800 articles per day (Mesgari et al., 2015; McIver and Brownstein, 2014: 1). As of May 2014, the English Wikipedia content (this case study concerns English Wikipedia articles) contains over 4.6 million articles.¹⁸ So Wikipedia is remarkably popular online and growing in scope and influence. Any carefully designed study of Wikipedia use would likely involve data from visits from tens of millions of individuals accessing the online knowledge platform (as detailed in Chapter 5, the Wikipedia article traffic included in this case study represented over 81 million total article page views over the course of the study).

But Wikipedia is more than just a popular site. Rather, it is widely used as a resource for information and knowledge online (Hilles, 2014). Over 50% of Internet users use Wikipedia as a source of information (Reavely et al., 2012: 1753; Zickuhr and Rainie, 2011) and not just for basic information, but also on more complex topics like personal health (Laurent and Vickers, 2009). In the U.S., over a third of Americans visit Wikipedia “annually” making it one of the top ten most popular sites on the Internet (Hilles, 2014: 247; Miller and Murray, 2010). And in a

¹⁸ Wikipedia provides a wealth of information about its number of articles, editors, page views, etc. See: <https://stats.wikimedia.org/wikimedia/animations/growth/AnimationProjectsGrowthWp.html>

study of college students, Head and Eisenberg (2010) found 52% used Wikipedia “frequently”. Beyond popularity, the nature of Wikipedia as an important online source of information and knowledge is important to this research design. Wikipedia users seeking information about a subject or topic are engaging in entirely legal activities. A “chilling effect” on Wikipedia traffic and access would mean a chill not only of legal activities, but also citizen access to information and knowledge online. In short, it would have far reaching implications. Not only that, the study is timely. As noted in Chapter 1, Wikimedia Foundation launched a legal action against the U.S. Justice Department and NSA and claimed that online surveillance was having a “chilling effect” on Wikipedia users (Wales and Tretikov, 2015). This case study tests and explores those claims.

iii. Case study of DMCA-related chilling effects on Blogger and Twitter users

This case study examines an Internet-related regulatory scheme—the DMCA’s copyright enforcement scheme—and its potential chilling effects on a sample of Google Blogger and Twitter users. Some background on the DMCA is warranted to help explain this case selection. Under laws in the United States, Canada, United Kingdom, and many other countries internationally, authors are given certain rights and controls over the reproduction and distribution of their works. If someone wants to copy, reproduce, distribute, or translate (among other things) a copyrighted work, then they must seek permission of the author or copyright holder, otherwise the copy or reproduction is illegal and may lead to both criminal and civil penalties (Litman, 2006). Obtaining permission often means paying some fee to license the work from the author or copyright holder. The idea, to over simplify, is to incentivize the creation and dissemination of art and knowledge with a dual aim—copyrights allow authors to benefit by

exploiting their works and the general public benefits from the creation and dissemination of these works (Litman, 2006: 15; Vaidhyathan, 2001). Though a simple idea, copyright helped foster, promote, and maintain whole industries in “publishing, music, film, and consumer electronics” (Brown and Marsden, 2013:69). However, the popularization of the Internet and digital technologies—and the near elimination of reproduction and distribution costs—have fostered a “digital media revolution” that has challenged both traditional approaches to intellectual property protections like copyright law, as well as established media industries (Schaffer, 2004: 145; Brown and Marsden, 2013; Litman, 2006; Lessig, 2006). A dimension of these new challenges and changes is the existence of online “piracy”, that is, large scale copyright infringement, particularly digitized music (Cheng, 2006: 694-696).

The DMCA, enacted in 1998, was in large part a response to these changes. Though sometimes described as merely a result of the World Intellectual Property Organization (WIPO) Copyright Treaty being adopted, the DMCA was, in fact, the product of several years of both domestic and international lobbying; a veritable product of a “battle over the institutional ecology of the digital environment” (Benkler, 2006: 413; Nimmer, 2002). A key driver of these lobbying efforts were American content industries—led by “Hollywood executives”—whom feared “losing control over their intellectual property” to mass digital copying and piracy (Johns, 2010: 4). The DMCA would thus include expansive new protections for copyright owners attempting to police their rights online; it was also complex—in fact, “longer than the entire Copyright Act” itself (Benkler, 2006: 383; Litman, 2006; Schaffer, 2004). The DMCA constituted the “most sweeping revisions ever” to the (then) Copyright Act (Nimmer, 2000: 674).

Again, this case was selected chiefly to address a significant gap in the literature. The DMCA has been very controversial. “[M]uch maligned by commentators” (Cheng, 2005: 710) and “pompously named” (Benkler, 2006: 413), the DMCA has been said to create “hurdles” for legal uses of cultural materials (Liu, 2003: 524-25), problems for the “free exchange of scientific, technical, and educational information” (Lipton, 2005: 487) and described as both a “discordant union” for online copyright (Seng, 2014) and a “surrender of balance to control” that “upends more than two hundred years of copyright laws” (Vaidhyanathan, 2001: 159, 174). Most importantly for present purposes, the DMCA’s copyright enforcement provisions, particularly its “notice and takedown” system (the subject of this case study) have been widely criticized for creating a “chilling effect” on free speech and other legal activities online. For a far from non-exhaustive sample, see: Boyle (2009: 68); Deibert (2013: 229-230); Seltzer (2010); Solove (2010); Von Lohman (2010); Zittrain (2006); Urban and Quilter (2006); Goldman (2006); Lipton (2005); Benkler (2003: 214); Netanel (2001); Samuelson (2001; 1999); and Sheets (2000). Despite these criticisms, including suggestions of chilling effects, there remains a distinct lack of empirical legal research testing these chilling effects claims. Speaking explicitly to the DMCA, and its notice-and-takedown regulatory scheme, Ditzler, Limmer, and Lipinski (2010) noted “a void” in research detailing the regulatory effects of Internet laws and regulation. More recently, Seng (2014) noted it was surprising there were so few empirical studies on the DMCA given the wealth of criticisms it has provoked. This case study will address this void.

Second, this case, again, promotes important methodological design aims. Consistent with the purpose of case study research, this case examines chilling effects in a real world context (Yin, 2009; 2003), exploring how a complex regulatory scheme has an impact on

individual Blogger and Twitter users who have received a DMCA takedown notice. In doing so, it draws on both qualitative (interpretative legal analysis) and quantitative (content coding and analysis) to explore this subject matter. As such, it corroborates and complements the other two case studies in this research, one that employs a survey-based quantitative method and another, which is observational in orientation. This is consistent with sound methodological design and strengthens triangulation and replication logic. Moreover, the case adds to the diversity of mixed methods in the overall research design (Nielsen, 2010). A final point concerning the methodological considerations is, again, the availability of resources to carry out the actual study. This case study is made possible by the Lumen Database repository hosted at Harvard's Berkman Klein Center for Internet and Society. Since January 2002, the Project has collected DMCA takedown notices, with OSPs like Google and Twitter forwarding DMCA takedown notices they receive for their services to the database as a matter of corporate transparency policy (Urban and Quilter, 2005). This database of DMCA takedown notices makes it possible to identify and examine for research purposes bloggers, Twitter users, and other online sites, that have received such notices. As will be discussed in more detail in Chapter 6, this database is essential to carrying out this research and the choice of the DMCA as an appropriate choice as an embedded case. As has been already observed, one of the reasons why there is so little empirical study on regulatory chilling effects is the difficulty in proving a negative or demonstrating self-censorship. The Lumen Database provides one invaluable resource for doing so in relation to Twitter and Google Blogger.

Third, research and public policy impact and potential contribution of this case was also considered. As already noted, the DMCA has been among the most criticized and controversial

Internet-related laws, so additional insights and contributions employing empirical legal methods, would likely have an impact on this long term research and scholarly debate. Despite these problems, the DMCA's notice and takedown system has been influential. It has served as a model for similar provisions for countries around the world, including Australia, Bahrain, Central America-Dominican Republic states, Chile, Columbia, Korea, Morocco, Oman, Panama, Peru, and Singapore (Seng, 2014: 1-2) and, additionally, has been mirrored in safe harbor provisions in the European Union's Electronic Commerce Directive (ECD) and People's Republic of China (Seng, 2014: 2; Brown and Marsden, 2013: 78). Moreover, it has been proposed as a potential model for enforcing certain privacy related or reputational interests online (Solove, 2010) including as a potential model for enforcing the European Court of Justice's very recently recognized "right to be forgotten" (Krishnamurthy, 2014). Findings concerning chilling effects and other problems raised by the DMCA's scheme would have international implications as well.

There are also several considerations as to why Google Blogger and Twitter, blogging and microblogging OSPs, were chosen to investigate regulatory chilling effects under the DMCA. First, the focus of this chilling effects study is individual users and a strong majority of blogs are personal, that is, people blog to reflect on their personal lives and other things that they care about personally (Bronstein, 2013; Webb and Yang, 2013; Hendrick, 2012; Hollenbaugh, 2011; boyd, 2006). Blogs, in other words, tend to be owned by a single Internet user, the target of our investigation.

Second, blogs have, since their inception, been heralded as a “powerful medium of communication” and “self-expression” and are designed for constant and regular content exchange and sharing (Webb and Yang, 2013: 207; Bronstein, 2013: 162). This latter feature is particularly salient with microblogs like Twitter, which is built for shorter posts to reduce the “time” and “thought” required for content information and sharing (Ji et al., 2013: 1133; Webb and Yang, 2013). Blogs are also not static, rather, they capture “ongoing expression” (boyd, 2006). Blogging practices thus tend to reflect these features of the platform (boyd, 2006) with most blogs being relatively active (“Overall, 75% of all authors write at least one article per week and can be considered active”: Obradovic, 2012: 6; Shang et al., 2007) and studies suggesting self-expression is central to why people blog—to present themselves (boyd and Marwick, 2010), “motivate, help, and encourage others by sharing information”, “communicate their knowledge and skills” (Hollenbaugh, 2011: 16), provide “commentary and opinions”, “deeply felt emotions” (Nardi et al., 2004: 5); or, more generally, because “they have something to say”—wishing to “bring attention to certain resources” or highlight things “important and worth remembering” (Coates, 2004). Indeed, Nardi et al. (2004) found bloggers surveyed sensitive to the suggestion their blogging is indulgent and of little interest to others; rather, bloggers felt they posted to offer commentary on “pertinent” topics of “importance”. Since this case study aims to explore regulatory chilling effects on legal activities—particularly online communication and expression—these aspects of blogs and microblogs make them well suited platforms. Moreover, blogs and microblogs are linked to broader networks of users and allow for connections and interaction with other users or commentators (boyd and Marwick, 2010). This provides an opportunity examine Blogs or Twitter accounts for any additional evidence of chilling effects (or the absence thereof) including any *secondary* impact (via comments and other

interactions) that DMCA takedown notices may have other Blogger or Twitter users that form part of the audience of a targeted account.

Third, combining a study of a more traditional blog platform like Google Blogger with a microblog like Twitter provides a helpful contrast. Microblogs share many of the aforementioned features with blogs but arguably incentivize even greater sociality by combining reduced time and work investments for posting with design features that promote wider connectivity synonymous with SNS (boyd, Golder, and Lotan, 2010; Li et al., 2013; Webb and Yang, 2013). At the same time, Twitter users are constrained by content limits (140 characters) and time constraints (the tweet stream is less asynchronous than traditional blogs) (boyd, Golder, and Lotan, 2010). As SIP theory in CMC research suggests, this may lead to less inhibited and deregulated expression—and perhaps more carelessness about copyright claims—than blogs. These are the key reasons for choosing Google Blogger and Twitter platforms for this study.

3.3.3 Main Unit of Analysis / Population of Interest

The main unit of analysis is individual Internet users (e.g., how these individuals may be “chilled” by regulatory actions) and the population of interest is Internet users located in the United States. Like traditional libel law, Internet regulation and online surveillance are not local ordinances or concerns with only regional implications; instead, they have national, even international, reach and impact, including any potential chilling effects. However, focusing on the Internet using population in the U.S. makes sense for pragmatic methodological reasons in light of the three empirical case studies pursued—the DMCA is a U.S. statute and the database that makes that case study possible is also hosted and maintained by American universities.

Furthermore, in terms of any surveillance-related chilling effects explored in the Wikipedia case study, and in parts of the first survey-based case study, revelations about expansive national security surveillance are also focused on U.S. security agencies, like the NSA.

3.4 General Methodological Procedures

3.4.1 Approach

As noted at the outset of this Chapter, each embedded case study Chapter includes a detailed description of the methodology, including design, data collection, data analysis, any applicable limitations, and steps taken to address common methodological concerns relating to validity and reliability (Bryman, 2008; Babbie, 2010). However, some more general procedures and similar considerations can nevertheless be described here.

This thesis' methodological procedure and design was primarily informed by empirical legal research authorities with Epstein and Martin (2010), Hall and Wright (2008), and Webley (2010) all relied upon, among others, for guidance on design, data collection, analysis, and results synthesis. This, as noted, involves employing procedures and design choices to address the methodological questions or concerns that typically arise other forms of empirical research, but with a sensitivity to the distinctive features and challenges involved with studying legal or regulatory phenomena (Hall and Wright, 2008; Epstein and Martin, 2010; Kritzer, 2010). This research was also informed by other more general authorities on research design and methodology (e.g., Bryman, 2008; Babbie, 2010; Berg, 2009; Yin, 2003; 2009; Fielding et al., 2008). See **Table 3.1** for a summary of strategies, measures, and procedures adopted to address questions of validity and reliability. For example, while statistical generalization in relation to

the main case was not the primary aim of this thesis, statistical reasoning nevertheless played a key role in the methodology and design of each individual case study, with protocols, strategies, and methods adopted to strengthen *construct*, *internal*, and *external validity*, as well as *reliability* (Swanborn, 2010: 36). Triangulation strategies, as already discussed, were likewise employed to add “rigor, breadth, complexity, richness, and depth to a social inquiry” (Denzin and Lincoln, 2011: 5), which was done, among other things, through a multiple embedded case study design (Yin, 2009; Scholz and Tietje, 2002).

Table 3.1: Summary of methodological measures

This listing is not exhaustive of procedures employed and procedures listed were not necessarily used in each case study (contents of table adapted and/or synthesized from recommendations of Parkhe (1992) and Yin (2009)).

Criterion	Strategy, Measure, Procedure Adopted
PHASE: RESEARCH DESIGN AND DATA COLLECTION	
Construct validity	- Triangulated from multiple sources of evidence - Established chain of evidence: explicit links between the research questions asked, data collected, and conclusions drawn - Field tested and piloted research instruments - Expert and lay review of research instruments - Crowdsourced evaluation of research instruments
Internal validity	- Developed theoretical framework for explanation building - Addressed pattern matching - In-case analysis with cross-case synthesis (and pattern matching) - Used multiple research methods (quantitative and qualitative) - Used time series design, with sufficient research period, to explore causal relationships
External validity	Research questions, and data collected, shaped by theoretical framework drawn from significant interdisciplinary literature review

	▪ Replication from multiple case studies ▪ Within-case purposive and randomized sampling where possible/appropriate ▪ Crowdsourced evaluation of research instruments ▪ Where appropriate, collected sample at different times during days to capture a wider cross-section of respondents
▪ Reliability	▪ Transparency of data sources and procedure ▪ Developed case study protocols (e.g., content coding to minimize reliance upon interpretive legal analysis) ▪ Where appropriate used open access data and related resources ▪ Reliance upon proven / validated research design, recruitment measures, and other components ▪ Used multiple cases and research methods
PHASE: DATA ANALYSIS	
▪ Internal validity	▪ Used existing theory to identify and analyze “chilling effects” in individual case studies ▪ Statistical analysis of data to establish findings / relationships ▪ Where appropriate, used statistical method to control for range of independent variables to establish relationships ▪ Statistical diagnostics, including testing for, and correcting, influential or outlier data and autocorrelation.
▪ External validity	▪ Analyzed/synthesized data and findings from multiple cases
▪ Reliability	▪ Reliance upon proven methods of analysis drawn from existing research and literature ▪ Used statistical software for accuracy in analysis (Stata) ▪ Reporting statistical outputs before and after modifications (e.g., recoding or where outlier data points addressed) ▪ Conducting and reporting statistical diagnostics where appropriate ▪ Produced Excel and Stata data sets to allow for reproduction of statistical analysis and similar conclusions

3.4.2 Research Period

The research for this thesis occurred from 2011-2014. This was, as is often, a balance between collecting the best (and most recent) possible data with other research objectives and completion goals. For example, data collection for the second empirical case study on Wikipedia-related chilling effects continued until as late as August 2014 and a time series data set constructed from the Wikipedia article traffic gathered. This is because with an interrupted time series research design, a lengthier period covered by the time series strengthens the internal validity of results. Furthermore, a time series that is as recent as possible allows for better projections as to future trends in the data.

3.5 Ethical Considerations

The ethical dimensions of this thesis were informed by the recent Menlo Report (Dittrich and Kenneally, 2012) as well as Association of Internet Researchers (AoIR) ethical guidelines (2002; 2012). The research also received ethical approval from the Oxford Internet Institute's departmental Central University Research Ethics Committee (CUREC). A central ethical concern in this research was ensuring the confidentiality of participants, particularly data gathered from any the online survey. This thesis deals with sensitive issues and data, such as the legality of certain kinds of online actions. For this reason, extra pre-cautions were taken to ensure data was kept safe, secure, and confidential, including preventing survey software from tracking IP addresses, allowing respondents to complete the online survey anonymously, and encrypting sensitive stored data (e.g., DMCA notice data obtained from the Chilling Effects database). Furthermore, all information or data obtained was stored anonymously as there was

no need to identify or link information obtained with the specific identities of any participants to achieve the aims of the research.

Another important ethical consideration was obtaining the consent of human research subjects. On this count, informed consent was also obtained from survey respondents through the online survey itself prior to participation (that consent form can be viewed at **Appendix 3.1**). A more difficult ethical challenge is the use of publicly accessible “web” content data obtained from the sample of 500 Google Blogs and 500 Twitter accounts in the DMCA case study (Chapter 6), for which informed consent was not obtained. Hewson et al. (2003) suggest that data intentionally made available to the public on the Internet—like a publicly accessible blog or tweet stream—can be used in research without the need for informed consent so long as steps are taken to ensure the confidentiality and anonymity of individuals in the research.

However, Eynon et al. (2008) and the AOIR ethical guidelines (2002; 2012) recommend a more contextual analysis. On this count, the following factors were considered. First, all content obtained from the Blogger and Twitter accounts was publicly accessible by any Internet user. Second, other than the simple legal coding (for any “potential” legal defenses), the content data collected from Blogger and Twitter accounts was very basic and descriptive, such as blog type, number of comments, number of followers, and, most importantly, the online and offline status of content. Third, it was apparent from both the Blogger and Twitter accounts that the users did not perceive these platforms to be private, but public platforms with blog posts and tweets freely accessible and available to any Internet user. For these reasons, it was determined informed consent was not ethically required for use of this web content.

A final possible ethical concern involved the use of Mechanical Turk as a recruitment service for the survey. Some commentators have raised ethical concerns about using MTurk in research due to lower rates of pay MTurk workers have received for completing tasks on the platform in the past; this is compounded by the fact that MTurk participants have sometimes not been remunerated if they do not complete tasks according to instructions (Winter and Suri, 2012: 16; Bergvall-Kåreborn and Howcroft, 2014). To address this concern, and ensure adequate compensation, MTurk recruited participants in the survey case study and the privacy evaluation exercise in the Wikipedia case study were paid \$1.00 per completed task, which worked out to be \$4.98 USD/hour for the evaluation task and \$6.67 USD/hour on the survey. Both the task completion pay and hourly rates are on the very high end for MTurk rates of pay (the average rate of pay for MTurk tasks is \$1.38USD/hour) (Steinhauer et al., 2013; Shapiro et al., 2013; Buhrmester, Kwang, and Gosling, 2011). Furthermore, MTurk recruited participants were paid no matter if they completed the survey appropriately or not. And more generally, this thesis followed the recommendations of Winter and Suri (2012) conducting behavioral research ethically and effectively with MTurk, including following (as already noted) the usual ethical requirements for informed consent and confidentiality (15-17).

Chapter 4

Case Study One: Regulatory Chilling Effects – Comparative Aspects

4.1 Introduction

If chilling effects—and the regulatory acts and actions that may cause them online—are increasing in complexity, then examining one form of state action or regulation, or a single dimension thereof, will offer an incomplete and narrow account and understanding. This Chapter’s case study aims for a fuller account by examining multiple dimensions of regulatory chilling effects with a first-of-its-kind online survey. The Chapter begins with a description as to the research design and methods employed, including how chilling effects theory is operationalized and implemented, along with recruitment, survey design, data collection, and analysis. The Chapter then sets out the present and analyze the survey results. It concludes with a discussion of the theoretical and empirical insights of the Chapter, as well as limitations and qualifications in findings.

4.2 Regulatory Chilling Effects: Framing the Case Study

4.2.1 Operationalizing/Measuring “Chilling Effects”

As previously noted, Kendrick (2013) recently found evidence for chilling effects theory and doctrine very weak—both online and in more traditional settings—and, in fact, commentators have long disputed the existence of regulatory chilling effects on legitimate

activities (Blasi, 1985; Redish, 1984), including online (Beams 1999; Sydnor, 2009). Indeed, as noted in Chapter 2, there is a lack of evidence for chilling effects online due simply to the lack of any serious or systematic empirical studies on point—in many cases due to the methodological and design challenges of measure self-censorship or chilling effects (Czepek, 2009: 40; Strandburg, 2008; Klang and Murray, 2005; Barendt et al., 1997; Hall, 1993-1994) meaning there is also little known about the factors that may influence chilling effects, or how different “chilling effects” compare.

This case study attempts to overcome these design difficulties with an online survey that explores different forms of regulatory chilling effects and their impact on Internet user behavior. The general theoretical framework—focusing on chilling effects on legal activities, via Schauer (1978) and Solove (2006; 2007a)—is operationalized here by measuring and comparing Internet users predicted responses to these four “chilling effects scenarios”. More specifically, the survey describes certain hypothetical scenarios and then asks questions to understand and measure how the respondent and his or her legal online activities would be impacted by the regulatory act or issue in question. For simplicity and analytical clarity, the online activities that may or may not be impacted by the different chilling effect scenarios are demonstrably *legal* (under U.S. law) such as using the Internet more generally, sharing content online (both content personally created and otherwise), speaking or writing certain things online, contributing to online social networks, websites visited or searches conducted. In examining different scenarios, this case study also provides some *comparative* insights, such as, what sort of state or non-state action would have a comparatively *greater* chilling effect on user activities and behavior. The four chilling effects scenarios, around which the survey is structured and designed, are elaborated in the next section.

These scenarios are based primarily on the Chapter 2 literature review with additional insights from preliminary field studies as well as “chilling effects” observed in the other case studies in this thesis.

4.1.2 Four “Chilling Effects” Scenarios

i. Statute or Regulation

The first scenario involves a vague or uncertain statute or regulation enacted to regulate or prohibit an online activity, with a significant penalty or punishment for transgressions or violations of the statute or regulation is traversed or broken. Schauer (1978) provides a leading account on point, focusing on the chilling effects that may be caused by such laws due, among other things, to fear, risk, and uncertainty about the application of a vague statute or regulation and uncertainties in the legal process itself. The idea is that the statute or regulation over deters; it not only deters some illegal activities but also legal ones, with this chilling effect arising due to people’s fear of penalty or punishment and uncertainty in the legal process. A classic example Schauer cites is a statute that criminalizes “hard core pornography” but, due to uncertainty as to the precise scope of what falls into that definition (and the criminal punishment if the law is violated), deters someone from publishing *Lady Chatterley’s Lover* (discussed in Chapter 2). Much of the legal scholarship—including law and economics work—on chilling effects address this kind of scenario; as does some of the more empirically oriented past research on telecommunications regulation. The target is a potentially overreaching statute or regulation.

ii. State and Non-State Surveillance

The second scenario involves state or non-state surveillance (and related practices like data collection or gathering). Solove (2006; 2007a) expanded chilling effects theory, explaining how modern public and private surveillance and data gathering practices can create a kind of regulatory “environmental pollution” that encourages risk-based chilling effects and self-censorship. Solove wrote, for example, that surveillance posed a threat for chilling effects particularly where “people are generally aware of the possibility of surveillance, but are never sure if they are being watched at any particular moment” (2006: 494-495). Notably, such surveillance need not be state only; private sector data practices could also have similar chilling effects. Legal and related scholarship in the years after 9/11 often focused on state surveillance, but also corporate data collection practices. And more recent revelations about expansive national security surveillance among Western countries means this will continue to be an important focus for researchers, scholars, and activists.

iii. Personalized or Individualized Legal Enforcement or Threat

A third (3) scenario is related to the first two, in that vague laws and uncertainties in the legal process are part of what creates a chilling effect, but differs in how the threat of legal penalty or punishment is delivered—rather than a vague statute or regulation with a tough penalty being simply passed or enacted or surveillance conducted, here a legal threat (backed by some penalty or punishment) is delivered personally to an individual. In other words, this scenario involves a special kind of personalized transmission of the legal threat to the person targeted. This scenario is based on the plethora of studies on libel or defamation “chill” such as Renas et al. (1989); Bezanson, Cranberg, and Soloski (1987); Ericson, Baranek, and Chan

(1989); Barendt et al. (1997); Dent and Kenyon (2004); Kenyon (2010); and Stanig (2011). These studies, using a range of methodologies, all explore chilling effects caused by vague libel or defamation laws on media and news organizations, usually as a result of libel notices or defamation law suit threats delivered to those media or news organizations. Such personalized or individually targeted or delivered legal notices or “threats” can also be delivered electronically or online. Thus, this scenario also invokes studies and scholarship on more recent “next generation” Internet regulatory efforts, like the DMCA’s notice and takedown system for enforcing copyright law online (explored more in-depth in Chapter 6), where DMCA takedown notices (basically copyright legal claims against users) are received by Internet users for content posted online or other online activities. The DMCA is just one example. In fact, Zittrain (2008) discusses future forms of “perfect” legal enforcement via “tethered” personal devices like smartphones; in the future, perhaps all legal notices will be individualized and digitally delivered immediately.

iv. Secondary or Networked Chilling Effects

A fourth (4) scenario is closely related to earlier ones outlined—also based upon legal uncertainties and potential penalties and punishments—but is analytically and conceptually distinct, in that primarily concerns a kind of *secondary* or indirect chilling effect in online environments. Here, an Internet user is “chilled” or deterred from certain legal activities after learning, perhaps informed by a post on social media, that friends or other members of their network (online or otherwise) have been targeted or received a legal threat. This scenario is based mainly on SNS studies reviewed showing how Internet users self-censor based on factors in their online networks like their (perceived) audience (Das and Kramer, 2013) and studies showing a “contagion” or network effect in online social networks and communities, where

sentiments (like a chilling effect) can spread through a network (Coviello et al., 2014; Gruz, 2013). Here, the individual is not personally targeted with a legal threat or notice, but are still “chilled” because someone in their network has been targeted (presumably they feel that they may be next).

4.2.2 Research Predictions

These predictions are informed by this thesis’ primary research questions and literature review set out in Chapter 2, as well as this thesis’ theoretical framework. This survey’s design was centered on four “chilling effect” scenarios. If these scenarios lead Internet users to be less likely to engage in these activities or more careful about how they do so, this is evidence of such regulatory chilling effects. Taking into account the research questions set out in Chapter 2, it is predicted that *due to regulatory chilling effects Internet users will be less likely to engage in certain legal online activities (across the different scenarios designed into the survey) or will be more careful about how they engage in such online activities (H1)*. The next prediction focuses on some basic user demographics and other factors to explore some potential factors that influence regulatory chilling effects. Though this is mostly exploratory—these demographics may be a proxy for other unknown factors or consideration—it is predicted here: *an Internet user’s gender, age, income, education, or amount or nature of Internet use will impact how likely they are to experience regulatory chilling effects (H2)*.

4.3 Case Study Design and Method

4.3.1 Recruitment and Sampling

MTurk, and the method and justification of employing for recruitment and sampling in this case study, were already discussed at length in Chapter 3. However, a few more things may be said here about the mechanics of MTurk's platform. On MTurk, people can register as either "requesters" (task creators) or "workers" (users that complete tasks for pay). Requesters can create and post on MTurk tasks that can be done with a computer (and online), including "surveys, experiments, writing, etc." and can do so using MTurk's own templates or also link to outside platforms or survey tools like SurveyMonkey (Buhrmester, Kwang, and Gosling, 2011: 3; Carter et al., 2014). The "workers" can browse tasks—called HITs which stands for "Human Intelligence Tasks"—that have been posted on MTurk and can select those tasks they wish to complete. Each task or HIT is remunerated by a nominal fee set by the requester before posting the task paid to the workers on completion of the task. Workers and requesters are anonymous, with tasks, requestors, and workers, all assigned unique numerical IDs. Payments can be automatic on completion of task or paid through a manual approval process facilitated by downloadable CSV files created through MTurk's requester interface.

Using MTurk for recruitment means that this survey does not use randomized probability sampling (a method ideal for a representative sample) (Berg, 2009; Bryman, 2008). Rather, the strategy was purposive sampling, in that while the sample included only willing MTurk user participants (and thus introduces concerns about self-selection and sampling bias in the participant pool), MTurk was purposefully chosen for recruitment as MTurk has been found to be relatively representative of the U.S. Internet using population (Paolacci et al., 2010: 412;

Chen and Yeh, 2013; Wolfson and Bartkus, 2013: 119; McDonald and Cranor, 2010: 5) and thus even “more appropriate” for “Internet research” like this thesis (McDonald and Cranor, 2010: 5). In this sense, all eligible U.S. based MTurk users form part of the sampling frame. Additional measures taken to address questions of validity and reliability are set out in **Table 4.1**).

4.3.2 Design

i. Hypothetical Scenario Design

Chilling effects have been previously studied using survey methods. Barendt et al. (1997), for example, studied libel chill with a survey sent to representative media organizations to explore, among others things, whether libel and defamation liability caused a “chill” on publishing and content editing decisions. However, survey was not designed specifically for the research—it was initially put together by an industry group seeking information from members—and was far from comprehensive; its results mainly supplemented other findings in the authors’ broader study, which included litigation data as well as interviews.

Another well-known empirical study on regulatory chilling effects—*An Empirical Analysis of the Chilling Effect*—by Renas et al. (1989) was also survey-based and, by contrast, more comprehensive and systematically designed. That study explored libel “chill” on U.S. national newspapers using a national survey. Due to the broad national reach of libel laws—and thus potential for chilling effects nationally—the population of interest in the study was general readership newspapers across the United States. Their survey, which they called a “national libel survey”, was sent to general readership newspapers across the country, with 1688 in total included. The survey was designed around a series of hypothetical scenarios—involving different content that could lead to libel lawsuits being launched against the newspaper if

published—with subsequent questions probing how the newspaper’s editorial team would respond to the hypothetical scenario, particularly decisions on content and publishing. Questions elicited responses using a Likert-scale style format. Once questions about the hypothetical scenarios were complete, the latter part of the survey asked questions about the paper’s general characteristics, such as “market size”, “competitive environment”, any “history with libel”, or libel insurance (1989: 45-46), in order to understand more comprehensively factors that may influence any observed chilling effects. The survey itself was pre-tested and field studied before deployment. Of the 1688 mailed out, 220 were returned, constituting a 12.2% response rate; a few more were filtered out as incomplete leaving 206 total responses (1989: 46). These were analyzed and results demonstrated that lower proof requirements for libel claims had a chilling effect; among other things, the results showed that as the standard of evidence required for libel claims is reduced so did the percentage of editors “absolutely willing” to publish the hypothetical content in question (1989: 48).

To strengthen validity and reliability, this case study’s survey was formulated following the general approach recommended by Gehlbach and Brinkworth (2011), which included literature review and synthesis, expert validation, piloting, and field testing. This survey also closely tracks the approach and design features used by Renas et al. (1989). First, this case study’s survey is also designed around a series of hypothetical scenarios described to respondents with subsequent questions probing expected behavioral responses to the scenarios that may suggest a chilling effect on analysis. Second, this survey is also structured similarly; it begins with questions based on the hypothetical “chilling effect” scenarios and then later asks respondents general demographic questions to likewise understand, through analysis, factors that

may influence any chilling effects observed. Third, this survey also uses closed-ended questions with Likert-scale style question formatting for greater analytical clarity and simplicity and to increase response rates with shorter survey completion times. Fourth, these questions similarly were piloted and field tested among both experts and laypeople, including multiple field tests, with the final pre-study pilot that elicited over 100 survey completions to test, refine, and recalibrate survey structure and question design.

However, this case study (and survey) is also designed to be more comprehensive. Whereas Renas et al. (1989) only concerned libel chill in traditional news media settings, this survey covers a wider spectrum of regulatory actions and is trained toward online contexts. Moreover, questions were formulated and designed using not only the survey and questions used in Renas et al. (1989), but other related survey studies like Barendt et al. (1997) as well as more recent research reports relating to surveillance chilling effects such as PEN American Center (2013), which polled authors about how NSA surveillance practices were impacting their own writing. Questions were also shaped based on results and findings from other case studies in this research and the literature review.

Though there is not a wealth of prior survey-based studies on chilling effects, privacy research—which has some conceptual overlap with chilling effects—provides some additional guidance. As has been discussed in Chapters 2 and 3, stated or expressed privacy concerns (such as those captured or measured in survey instruments) do not necessarily reflect actual privacy-related behavior (Harper and Singleton, 2001; Berendt and Spiekermann, 2005; Acquisti, 2004; 2012; Consolvo et al., 2005; Malheiros et al., 2013) and a likely factor in this disconnect is

privacy-related matters are complex highly and contextual (Cranor et al., 2006; Ackerman and Mainwaring, 2005; Lederer et al., 2004; Acquisti, 2004). However, another factor is bad survey design, with privacy surveys offering provocative or biased questions (Harper and Singleton, 2001).

To mitigate these problems, first, this survey, as noted, is structured around four hypothetical online “chilling effects” scenarios described to respondents. Here, each scenario is described separately to respondents followed by subsequent questions designed to elicit likely *behavioral* responses to each scenario described rather than basic self-reports or *stated* attitudes about regulatory chilling effects. Of course, the limitations of hypothetical survey questions are also well established in literature, including related fields like privacy (e.g., measuring privacy attitudes) and behavioral economics (e.g., measuring risk attitudes and calculations). Behavioral economists recognize that “standard” hypothetical questions can be “systematically biased”, often exaggerating “willingness to pay” in the same way privacy researchers have found stated privacy concerns are exaggerated as compared to actual privacy choices (Bernheim et al., 2013; Morrison and Brown, 2009; Liljas and Blumenschein, 2000). Though the methodological “approaches” in this literature to address these biasing problems are more attuned toward behavioral economics, one “fix” recommended is to ensure questions have “response categories beyond simple yes and no responses”, which avoids forcing respondents into unreliable commitments with dichotomous choices (Morrison and Brown, 2009: 310; Bernheim et al., 2013). This design feature is used here, with questions designed in a Likert scale-style format, offering respondents a range of response categories for each posed.

Privacy researchers have also noted the limitations of hypothetical questions based on the aforementioned point that privacy is complex and contextual, and so respondents may have difficulty reasoning or “abstracting” about the concept in relation to hypothetical questions. On this count, some measure of abstraction is difficult to avoid, especially if, as here, a hypothetical scenario design is employed in order to focus on behavioral responses rather than (much less reliable) expressed or stated concerns (about privacy or chilling effects). Indeed, hypothetical scenarios (and behavioral questions) were not only used in Renas et al. (1989), one of the leading previous empirical studies of chilling effects, but have also been used widely to by researchers in a range of fields, including recent studies on privacy and online behavior (see, e.g., Mamonov and Koufaris, 2014; Keith, Ngo, and Babb, 2014; Seih, Buhrmester, and Lin, 2013).

Furthermore, the leading survey-based studies on surveillance-related impact in recent years have all employed hypothetical questions, and hypothetical scenarios, to explore potential privacy-related harms and potential chilling effects. PEN America recently released two “chilling effects” related research reports (2013; 2015) that surveyed writers both in the U.S. and internationally about the impact that revelations about NSA surveillance had on their online (and offline) behavior. The most relevant of the two studies (a 2013 U.S. survey focused more precisely on “chilling effects” and related responses to the surveillance) was based on an online survey developed and administered by the FDR Group, a professional full service public opinion research firm, in consultation with PEN members (2015: 19; 2013). Each employed multiple hypothetical scenarios and questions to probe privacy concerns (2015: 23, 24). Pew Research Center’s recent Snowden and surveillance related survey studies (2015a; 2015b; 2014a; 2014b; 2014c) with four out of the five all likewise employing hypothetical questions, to greater or

lesser extent, to probe privacy and chilling effects-related information (2015b (Q.6); 2014a (Q.34); 2014b (Q.9 sets out 6 different scenarios); 2015a (Q 25); 2015b (Q6)). In other words, this is a research technique used in leading privacy surveys done in the past and more recently, and will similarly be used in this thesis. However, to mitigate reliability and internal validity concerns about complexities and abstraction, the defined hypothetical scenarios used in this survey are based on extensive literature and were subject to peer scrutiny and extensive field testing. In terms of field testing and piloting, the survey was first piloted with small groups of academic peers and lay people for feedback on design, clarity, and functionality, and then subjected to a larger scale field test (via MTurk) that included 100 participants.

ii. The Four Primary Scenarios

This survey is constructed primarily based on four hypothetical scenarios, with some modification in certain contexts to explore different elements or dimensions of chilling effects. The first hypothetical scenario concerns a newly enacted Internet law:

For the questions on this page (Questions 2 to 7), assume you knew, for a fact, that the government enacted a new law that introduced tough civil and criminal penalties for posting information or other content online, with the intent to harass or intimidate another person...

A form of “anti-cyberbullying” statute was used as the new Internet law/regulation in this scenario (a statute that criminalizes the “intent” to “harass or intimate another person” online). This is because such anti-cyberbullying statutes are increasingly being proposed in various jurisdictions to regulate anti-social online behavior and, due to vague terms like those used here (intent to “harass or intimidate”), can lead to chilling effects on expression and other activities online (Hayward, 2011; Gordon, 2009; Kaspar, 2012; McDonough, 2013).

This scenario is followed by a series of questions exploring how this new law would impact each respondent's (future or predicted) behavior. It is from these responses that any potential or expected regulatory chilling effects are observed, as the questions all target presumptively legal activities that may be "chilled" or deterred based on the scenario. These questions include whether the law would make the respondent "more likely or less likely" to spend time on the Internet (Question 2); to speak or write about certain topics online (Question 3); to share or post content online that the respondent personally authored or created (Question 4) or content more generally (Question 5); to contribute to online social networks, communities, or forums (Question 6). All of these questions are based on a 5 point Likert Scale ranging from "More likely", to "Somewhat more likely", to "No impact", to "Somewhat less likely", and "Less likely". The final question in this series (Question 7) has a slightly different format; it asks if the new law would affect the respondents' online activities "in any other way"; it then lists a series of statements that the respondent indicates their level of agreement with, including whether the respondent "would be more careful" about websites visited; online searches conducted; what they say or share in online contexts; and whether the law would make them "more concerned" about their privacy. The question is also based on a 5 point Likert Scale style format, with answers ranging from "Strongly agree", to "Somewhat agree", to "Don't know", "Somewhat disagree", "Strongly disagree".

This series of questions is generally repeated for each of the three hypothetical scenarios to allow for comparisons between results from the different described scenarios with some additional questions more tailored to two other hypothetical "regulatory" scenarios. These two

additional scenarios concern, first, government surveillance online (questions are also posed concerning a slightly modified version of this scenario, to probe private sector surveillance in addition to state); and, second, a scenario wherein the respondent personally receives a legal notice (or legal threat) about content they have posted online:

[Second Scenario]

For the questions on this page (Questions 8 to 15), assume you knew, for a fact, that the government was monitoring internet use and collecting data about online activities more generally...

[Modified Second Scenario]

What if it was an internet company, rather than the government, that was collecting information about internet use and online transactions...

[Third Scenario]

For questions on this page (Questions 26 and 27), assume the following hypothetical situation: You post some content on a website that you really want to share with other people. However, a week later you receive by email a legal notice from the website's administrators. The legal notice states that the website received a complaint that the content you posted on the website violated a law. The legal notice states that the content you posted has been removed from the website to avoid a lawsuit. The legal notice also states that further legal steps will be taken against you, if you re-post the content online.

[Fourth Scenario]

For questions on this page (Questions 26 and 27), assume the following hypothetical situation: A friend of yours posts on Facebook that he received a legal notice from his internet service company. The legal notice warned him that some of his online activities may have been illegal, including downloading unauthorized copies of computer programs. The legal notice warned him to avoid such activities in the future.

A few additional questions are posed with respect to the third scenario (and how likely the Internet user would challenge the legal notice received) and the fourth scenario, to explore contagion theory, that is, how any chilling effects may “spread” through an online network or community. By using 5 point Likert scale style question formatting, respondents are not “pushed” towards a specific outcome thus minimizing bias. Additional measures taken to avoid bias include avoiding provocative questions and omitting any reference to “chilling effects” anywhere in the survey or in the materials used for respondent recruitment.

4.3.3 Procedure and Implementation

Berinsky et al. (2012) provide a helpful explanation of the procedure for implementing an online survey using MTurk to recruit subjects. For the present case study, the survey itself was hosted using SurveyMonkey (“SM”) survey software, a popular platform for online survey-based research (Hsiao et al., 2014). The survey was uploaded to SM’s platform and then field-tested and implemented using MTurk to recruit respondents. Amazon charged a 10% commission on top of compensation paid to survey respondents. The survey was posted to the MTurk task list entitled “Internet regulation survey”, with the survey described as a “10-15 min academic study on internet regulation” (though 40 minutes was allotted so respondents could take their time if they wished) with a payment of \$1.00 USD for each fully completed survey. The description made clear that participation in the HIT or survey task was limited to those 18 years of age or older, and who had not previously completed the survey; it also stated that participation was voluntary and that confidentiality in responses would be maintained.

After agreeing to the survey task, MTurk participants were provided with a unique URL to locate the survey hosted on the SM site and further instructions on how to ensure they would be compensated through entry of a unique 5 digit code obtained at the conclusion of the survey; this technique, used in other surveys, also provided a means to verify survey completion by each MTurk user that had taken on the survey task. Once MTurk users, on visiting the survey, were welcomed with information on the aims of the research and the survey, another assurance of confidentiality and voluntary participation, as well as an informed consent agreement to be completed before the survey could be undertaken.

In implementing the survey with MTurk, many of the recommendations made, and procedures employed, by Berinsky et al. (2012)—to preserve internal and external validity of results from MTurk recruited samples and experiments—were adopted. First, MTurk participants that had completed the survey more than once were excluded from the actual data-set later. Second, to improve the quality of responses (in this case, their accuracy and truthfulness)—and for ethical reasons—compensation was generous by MTurk standards (Paolacci and Chandler, 2014; Mason and Suri, 2011). Given the time expected to complete the survey, the rate of \$1.00 USD per survey is at the very high end of the range of rates of pay for similar MTurk tasks; an average hourly wage almost double the usual MTurk average rate (See Mason and Suri, 2011; Buhrmester, Kwang, and Gosling, 2011). Third, to further incentivize accuracy and quality in survey responses, the survey task was restricted to only those MTurk users with a 95% approval rating. That means to participate in the survey task, an MTurk user's prior work must have been approved or satisfactory 95% of the time. Approval rating is another one of the “checks and balances” incorporated in MTurk to incentivize the quality of work provided by users (Carter et

al., 2014: 4). However, given the importance of compensation, all survey and study descriptions, instructions, and information provided to respondents were constructed in neutral terms to avoid “signaling” to respondents the aims of the survey to minimize internal validity concerns that respondents fashion “desired” answers (Berinsky et al., 2012: 16).

Moreover, “attention checks” were used, that is, a few basic questions (e.g., “Q31: How many legs does a horse have?”) were incorporated into the survey as a means to promote attentiveness and thus the quality and accuracy of responses; though, following Paolacci and Chandler (2014), since such checks are not necessarily indicative of inattentiveness throughout a given task (and, if disregarded, may limit sample diversity); respondents that answered “attention check” questions incorrectly were not automatically screened. However, following Marshall and Shipman (2013) and Carter et al. (2014) some screening criteria was used: substantially incomplete surveys and surveys completed too quickly were excluded. These and other concerns for both internal/external validity and reliability of results were considered at each stage of the survey design and implementation. A summary of some of the more notable steps taken to address methodological limitations in this process are summarized in **Table 4.1**.

Table 4.1: Summary of Methodological Limitations and Steps Taken

Methodological Limitation	Steps Taken To Address
SURVEY DESIGN (CONSTRUCT VALIDITY / INTERNAL VALIDITY / RELIABILITY)	
▪ Biased survey design	▪ Survey design tracks successful methodological features of prior leading surveys ▪ Extensive field-testing

	▪ No mention of “chilling effects” or related concepts in survey ▪ Neutrally-designed questions 5pt Likert scale-style, with multiple response categories for questions ▪ To avoid “priming” respondents and biasing responses, demographic questions were posed near the end of the survey, rather than the beginning
▪ Self-reports in surveys not always reliable	▪ Survey design primarily based on hypothetical scenarios to measure behavioral response, not self-reports of concern ▪ MTurk recruitment for sample: self-reports by respondents in MTurk recruited samples have been shown to be “psychometrically valid” and appear to be “truthful” (Paolacci and Chandler, 2014: 186; Buhrmester, Kwang, and Gosling, 2011)
▪ Validity/accuracy of survey responses	▪ “Attention checks” incorporated into questions ▪ Avoids provocative questions and scenarios that may deter respondents from providing honest and accurate answers
RECRUITMENT / SAMPLING / DATA COLLECTION (EXTERNAL VALIDITY)	
▪ Representativeness	▪ MTurk recruitment for sample: MTurk samples reflect characteristics and demographics of Internet user populations in the U.S better than traditional recruitment methods ▪ Sample collected at different times during days, to capture a wider cross-section of respondents
▪ Self-selection bias	▪ Survey information and description neutrally designed with no mention “chilling effects” or related concepts
▪ Replication	▪ Transparency about rules / protocols / eligibility for recruitment via MTurk
PROCEDURE / IMPLEMENTATION (INTERNAL VALIDITY / RELIABILITY)	
▪ Validity/accuracy of survey responses	▪ Recruitment restricted to MTurk users with a 95% approval rating for past tasks ▪ Respondents recruited through MTurk compensated at high end of range for rates paid on similar tasks ▪ Incomplete surveys and surveys completed too quickly excluded

ANALYSIS (INTERNAL VALIDITY / RELIABILITY)	
▪ Replication of findings	▪ Created data-sets, including all variables and re-coded variables, to allow easy reproduction ▪ In-text reporting of relevant statistical values
▪ Accuracy in identifying relationships in data	▪ Used proven statistical tests and statistical software

4.3.4 Data Collection

For this case study, data was collected over the course of a week in March 2014. Respondents took on average 537.37 seconds to complete the survey. A total of 64 survey responses were excluded for being substantially incomplete (defined by 10 or more questions left unanswered; many of these were likely false-starts by respondents); another 18 excluded for being completed too quickly, and 2 more screened because the respondents had completed the survey before (likely in a field test). The dataset thus constituted 1212 total surveys. Beyond legitimate skips, to accommodate any concerns or sensitivities as to the nature of specific questions or topics covered each individual surveyed, respondents were entitled to skip questions. However, the vast majority of respondents answered all questions and most questions usually resulted in only handful of skipped or “missing” values (the most skipped question was Question 10, skipped 9 times out of a possible 1212 total responses).

4.3.5 Method of Analysis

Responses to questions are first analyzed (via percentages, summary, and descriptive statistics) to illustrate any apparent “chilling effect” caused by the hypothetical scenarios on

various aspects of the respondents' behavior and other legal activities. Similar analyses are used to *compare* responses as between each "chilling effect" scenario, for comparative insights. To explore and identify potential factors that may impact or influence any apparent "chilling effects" (e.g. being less likely to speak, search, or share online, due to knowledge of online surveillance) were statistically analyzed for any associations with a range of other demographic (and related) variables: age, gender, level of education, level of income, their level of Internet use, whether they have followed the news about online surveillance, how often they share personally created content online, how often they contribute to social network sites and other online forums, and, the respondents' familiarity with laws that regulate the Internet (assessed by the respondents on a scale). Pearson chi-square (χ^2) and Fisher's exact tests were employed to determine statistically significant associations in this analysis,¹⁹ and the gamma (γ) test statistic was used, where appropriate, to calculate the effect size (and direction) of any such associations.²⁰

¹⁹ Chi-square is a common test of statistical significance for an association between categorical variables and gamma is an appropriate measure for any association between ordinal categorical variables like those in this case study. The null hypothesis for each test is that there is no association between the variables analyzed. The generally accepted standard or "rule" for chi-square testing was followed, that is, chi-square was not used where any expected frequency (in the contingency table) was less than 1 in any cell nor where the expected values were less than 5 in more than 20% of all cells: Coolican (2013); Cochran (1954). In any such case, Fisher's exact test was instead used to test significance.

²⁰ Gamma is a proportional reduction in error (PRE) statistic, which means it provides a measure of how many fewer errors we might make in predicting the value of one variable by taking to account the values of another. It is an appropriate measure of effect size when using ordinal categorical data (as here) and has an identical values range to r (Less than + or - 0.10: very weak association; + or - 0.10 to 0.19: weak; + or - 0.20 to 0.29: moderate; + or - 0.30 or above: strong) (Ferguson (2009)). Gamma is expressed on a spectrum of -1 to 1, with -1 suggesting a perfect negative association and 1 a perfect positive association; a return of 0 suggests no association between variables at all: Healey (2012: Ch. 12); Stamatis (2003).

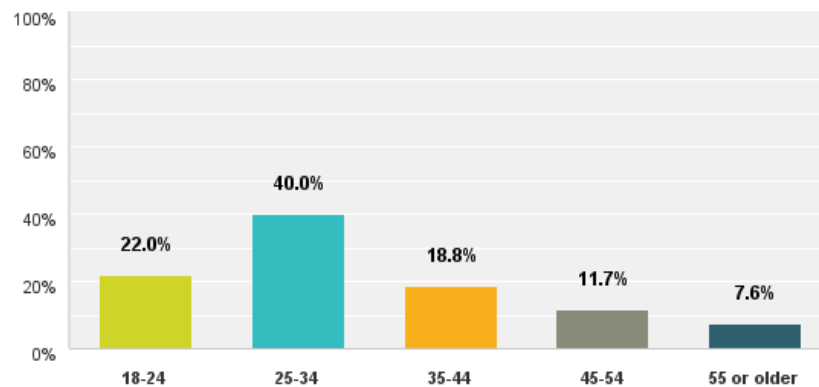
4.3.6 Participant Characteristics

i. Demographics

In the final dataset, there were 1212 total participants. Gender wise, the sample was fairly balanced with 608 participants male (49.7%) and 608 female (50.3%). In terms of age (see **Figure 4.1**), there was also a healthy range with 266 participants aged 18 to 24 (22%), 483 aged 25 to 34 (39.9%), 227 aged 35 to 44 (18.8%), 141 aged 44 to 54 (11.7%), and 92 were 55 years old or older (7.6%).

Figure 4.1: Age Distribution

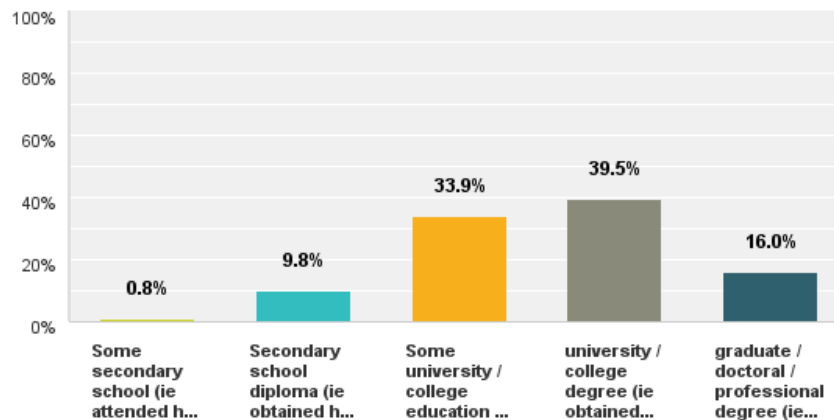
The x-axis is the age category and the y-axis is the percentage of the total sample



Beyond age, a vast majority (98.7%) of participants spoke English at home (presumably as their first language). On education level (**Figure 4.2**), at least 39.5% of participants had a university degree and 16% more had post-graduate or professional education. Another 33.9% had “some university” education (presumably, presently students). Less than 1% of participants had only “some secondary” schools, while 9.7% had graduated from high school. The mean education level for participants was university educated (falling between “some university” and “university degree”).

Figure 4.2: Education Level Distribution

The x-axis is the education level category and the y-axis is the percentage of the total sample



Income-level wise, almost 28% of participants made less than \$15,000 per year in annual salary. Another 26% earned between \$15,000 and \$30,000, and 23% earned between \$30,000 and \$50,000. 15.8% of participants earned \$50,000 to \$80,000 while only 7.3% of participants made \$80,000 or more. The mean income level was roughly \$15,000 and \$30,000 annual income range and the \$30,000 and \$50,000 range.

These characteristics are similar to other MTurk participant pools, which have been found to be “relatively representative of the population of U.S. Internet users” with a few biases, mainly, that MTurk samples are somewhat younger, more female, and have slightly lower incomes than the general U.S. Internet population (Ipeirotis, 2010). That is all approximately

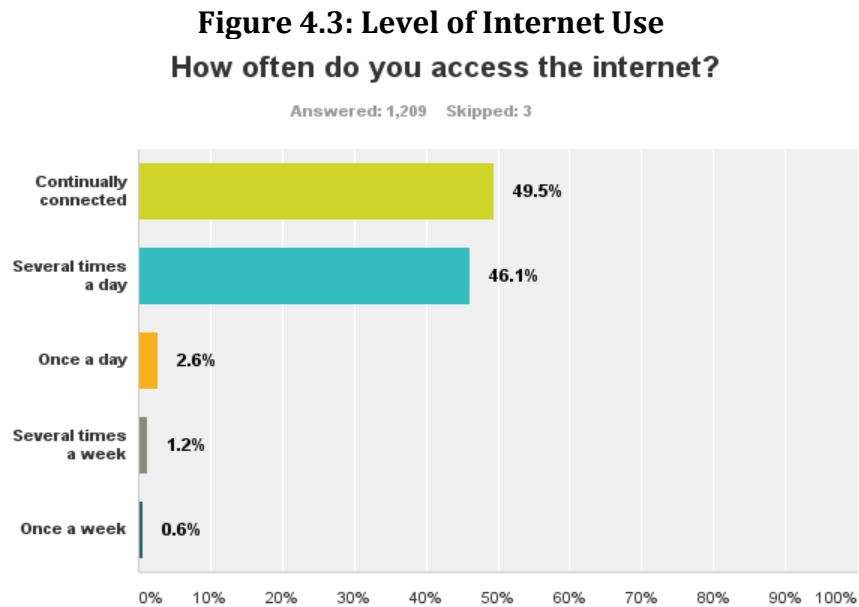
true of this sample, except on gender where it is much more balanced. Ipeirotis (2010) and Marshall and Shipman (2013), for example, found “over participation” by females (approximately 55% females and 44% males in their samples), whereas here there is nearly a 50/50 gender split.

Like Ipeirotis (2010), Ross et al. (2010), Marshall and Shipman (2013), and Carter et. al. (2014), this sample was also skewed younger than the general U.S. population and the Internet user population (with the mean age approximately 30 years of age) and was well educated, with 55% of participants possessing university degrees and 88% possessing “some” university education. This is a comparable though slightly less educated sample than Ipeirotis (2010) and Marshall and Shipman (2013), who found 60% of their participants had university degrees and 90% had some university education. On income, similar to Ross et al. (2010), the participants in this sample skewed less wealthy than the general U.S. population and the Internet population; in fact, this sample had the same amount of participants earning \$30,000 or less (54%) and the same number of participants earning \$50,000 or more (23%) as in Ross et al. (2010). In short, consistent with Ipeirotis (2010), this sample was “relatively” representative of the U.S. Internet user population (the population of interest), but retains the same biases noted in that study and subsequent ones.

ii. Internet Use

Like most MTurk and Internet user samples, this participant pool included heavy Internet users overall, but with some variability in other aspects of Internet use. Almost half (49.5%) of

the participants indicated they were “continually” connected to the Internet, while another 46.1% reported connecting several times a day (see **Figure 4.3**).

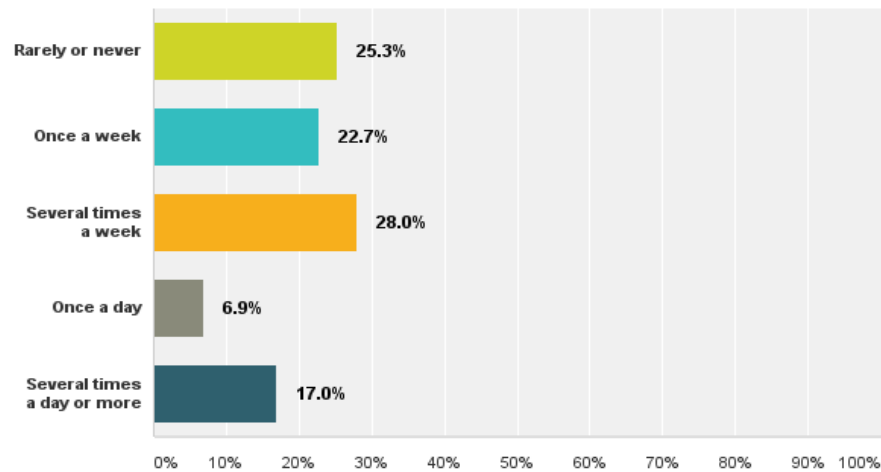


So, general access was high for the sample, but participants showed more variability—and wider distribution—both in terms of their habits in sharing content online, as well as contributions to online social networks, communities, and/or discussion forums:

Figure 4.4: Sharing Online

**Q33 How often do you share content or post things on the internet more generally?
This sharing could be public (e.g., on a blog) or private (e.g., via email).**

Answered: 1,209 Skipped: 3



A slight majority (51.9%) shared content or posted things online at least “several times a week”, and almost 17% sharing content several times a day. Similarly, responses to questions 32 and 34 indicated very nearly half (49.8%) contributed to online networks and related communities at least several times a week, with almost 16% contributing several times a day. Sharing of content respondents “personally created” was less pronounced, with 41.2% of respondents indicating “[r]arely or never” share such content, while 27% sharing such “personally created” content once a week, 21.7% answered “[s]everal times a week”, 4.8% sharing “[o]nce a day” and 5.4% sharing “[s]everal times a day or more”.

Sharing of content respondents “personally created” was less pronounced, with 41.2% of respondents indicating they “[r]arely or never” share such content, while 27% sharing such

“personally created” content once a week, 21.7% answered “[s]everal times a week”, 4.8% sharing “[o]nce a day” and 5.4% sharing “[s]everal times a day or more”.

4.4 Results and Analysis

4.4.1. Chilling Effects: Results from the Four Scenarios

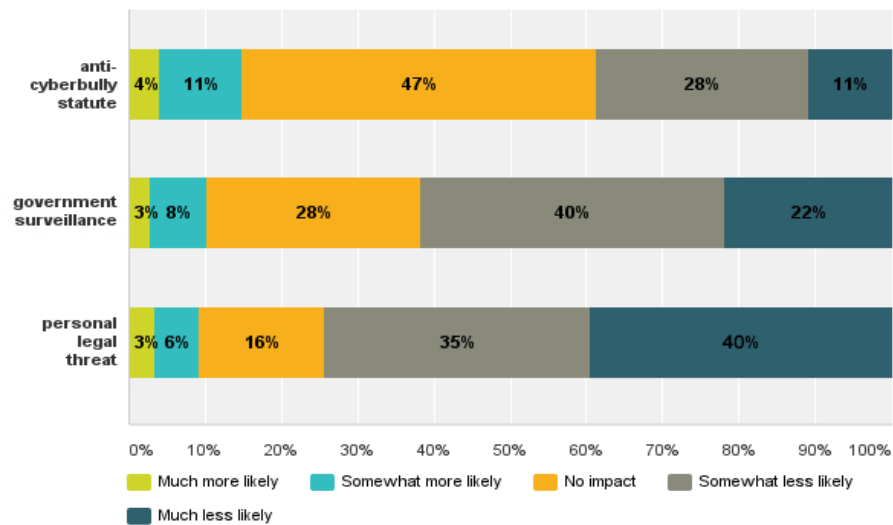
The survey results strongly suggest chilling effects on respondents’ potentially legal activities in each of the hypothetical scenarios.

i. Online Speech

All scenarios evidence a chilling effect on online speech and expression. A comparison of results from the three primary hypothetical scenarios concerning any potential “chill” on speech is charted in **Figure 4.5**:

Figure 4.5: Impact on Online Speech I (More or Less Likely to Speak/Write)

Respondents were asked whether they would be “more likely or less likely to speak or write about certain topics online” in response to each hypothetical scenario. Again, this chart collates and compares the responses. The cumulative percentage of responses is mapped on the x-axis in relation to the three primary hypothetical “chilling effect” scenarios on the y-axis.



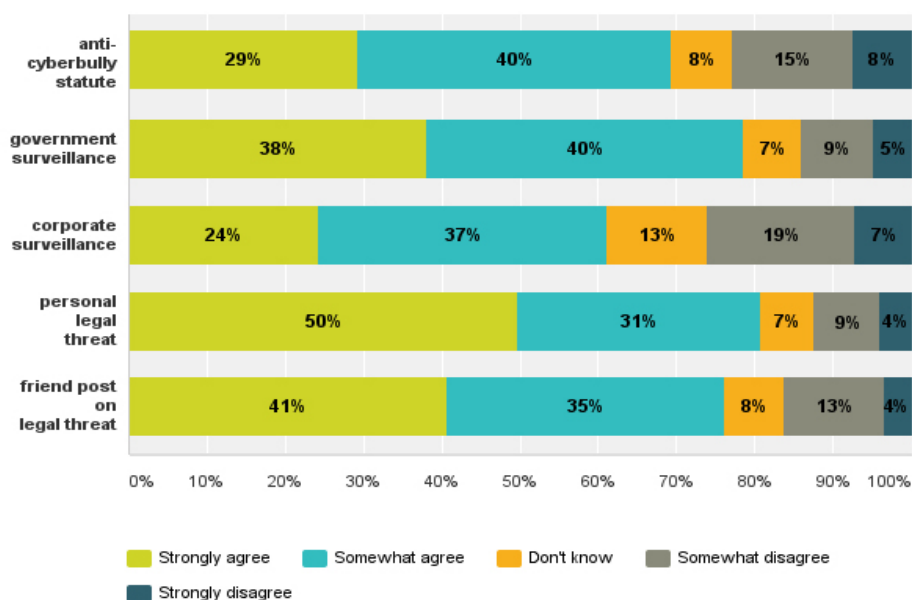
The results show that for respondents, personally receiving a legal threat from a third party about some online activities had the greatest chilling effect, with 75% of respondents being “much less likely” (40%) or “somewhat less likely” (35%) to “speak or write about certain topics online” as a result. The next most “chilling” was government surveillance, with 62% of respondents “much less likely” (22%) or “somewhat less likely” (40%) “speak or write about certain topics online” due to such online monitoring. Interestingly, the vague anti-cyberbullying statute did have some chilling effect (39% much less or somewhat less likely) but a near majority (47%) indicated the law would “have no impact” on their online speech.

In a comparison of all four scenarios concerning any potential “chill” on speech (see **Figure 4.6**), again, personally receiving a legal threat from a third party about some online activities had the most impact, with 81% of respondents indicating they “strongly agreed” (50%)

or “somewhat agreed” (31%) with the statement that receiving such a legal notice would make them “more careful” about what they “say or discuss in certain contexts online”.

Figure 4.6: Impact on Online Speech II (Carefulness About Speech)

Respondents were asked to indicate their level of agreement with the following statement, “I would be more careful about what I say or discuss in certain contexts online” in response to each hypothetical scenario. This chart collates and compares the responses. The cumulative percentage of agreement or disagreement with the statement is mapped on the x-axis in relation to each hypothetical “chilling effect” scenario on the y-axis.



Government surveillance, consistent with earlier results, was the next most chilling, with 78% of respondents “strongly” agreeing (38%) or “somewhat” agreeing with that statement. A close third was the scenario where the respondent sees a friend posting online about receiving a personal legal notice warning the friend about the legality of certain online activities. Here, 76% of respondents “strongly” (41%) or “somewhat” agreed (35%). Next in terms of impact is the anti-cyberbullying statute scenario followed by corporate surveillance—with a 69% either “strongly” (29%) or “somewhat” agreeing (40%). The results suggest corporate surveillance may cause the least chilling effects. Here, in the question, respondents were asked the same

question as those in the government surveillance scenario, but with the small change that it was an Internet company monitoring online activities instead of the government. On this count, 61% either “strongly” (24%) or “somewhat” (37%) agreed with the statement that such corporate surveillance would make them “more careful” about what they “say or discuss in certain contexts online”.

A few observations would be helpful here. First, results from both comparisons are certainly consistent with chilling effects theory and all suggesting some chilling effect on the online speech and expression of respondents. The results from the second comparison (**Figure 4.6**)—involving the three primary scenarios: statutory, government surveillance, and individualized legal notice—as well as the two additional exploratory ones (corporate surveillance and secondary/networked “chill” or regulation) suggest a greater impact than the findings from the first (**Figure 4.5**). This makes sense, as arguably chilling effects often work in subtle ways; these results indicate that the “chill” might be that respondents become more careful in their online speech, rather than simply being chilled or deterred from speaking at all or rendered much less likely to do so. Still, **Figure 4.5**, also reveals substantial chilling effects, with noteworthy percentages of respondents rendered “much less” or “somewhat less” likely to “speak or write about certain topics online”.

Second, it also makes sense that the scenario involving individualized and personally received legal notice (threatening legal repercussions for online activities) had the greatest apparent chilling effect, since such an “individualized” legal or regulatory measure would send the message that the targeted person is already targeted, or being watched closely, thus raising

the risk of punishment or penalty for any online activities they pursue. This would likely lead to a more pronounced chilling effect apparent in the results. And there is probably good reason why government surveillance appears to have a more chilling effect than corporate surveillance, given that respondents would likely assume that a company is monitoring activity online to protect only a narrow set of corporate interests (e.g., financial), while government monitoring would be more sweeping and sophisticated, and thus respondents would be more chilled as a result.

Third, the reaction among respondents to the hypothetical anti-cyberbullying statute is interesting for, as will be seen from later results, this “statutory” scenario often appears to have less of an impact, at least comparatively speaking, than other kinds of scenarios explored. Not here, however. Rather, the response is fairly consistent with, and comparable to, results from the other scenarios, with the findings for the anti-cyberbullying statute suggesting it has more of a chilling effect than corporate surveillance. This, too, might be explained by respondents perceiving action by state authorities to be more of a threat than private entities with only corporate or profit motives.

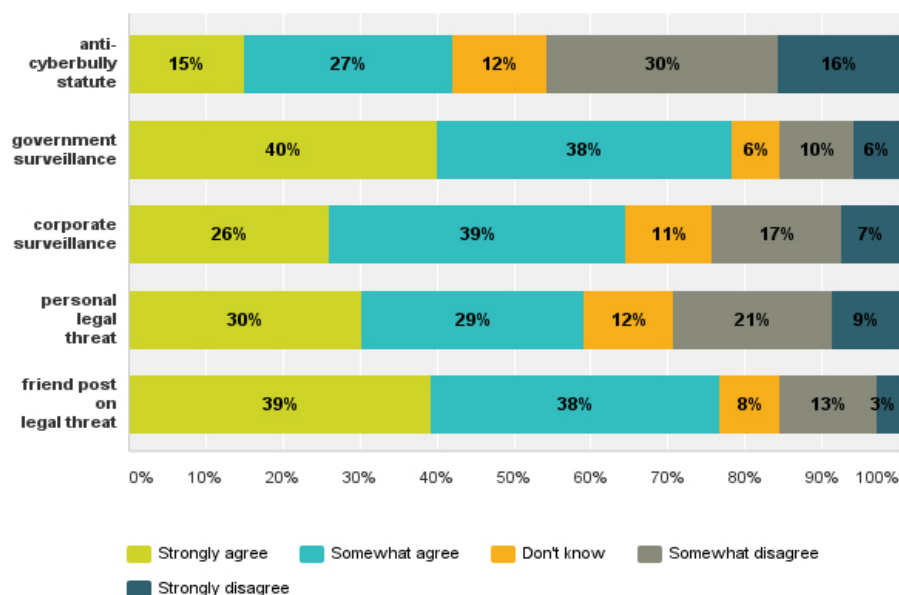
ii. Online Search

Responses suggest online search activities may also be affected, as apparent in **Figure 4.7**, a comparison of all four scenarios concerning any potential “chill” on online search activities. Government surveillance had the greatest likelihood to chill respondents’ future Internet search activities, with 78% of respondents either “strongly” (40%) or “somewhat” (38%) agreeing with the statement that government monitoring of online activities would make them

“more careful” about what they “search for online”. Interestingly, seeing a friend posting online about receiving a personal legal notice warning the friend about illegal activities online (e.g., downloading copyrighted material) had the next most effect, with 77% of respondents “strongly” (39%) or “somewhat” (38%) agreeing with the statement that seeing such a post would make them “more careful” about what they “search for online”.

Figure 4.7: Impact on Online Search

Respondents were asked to indicate their level of agreement with the following statement, “I would be more careful about what I search for online” in response to each hypothetical scenario. This chart collates and compares the responses. The cumulative percentage of agreement or disagreement with the statement is mapped on the x-axis in relation to each hypothetical “chilling effect” scenario on the y-axis.



The next in terms of potential chill on Internet search is corporate surveillance, with 64% either “strongly” (26%) or “somewhat” (38%) agreeing, and the personal legal notice, with 59% of respondents indicating they “strongly agreed” (30%) or “somewhat agreed (29%) with the statement that receiving such a legal notice would make them “more careful” about what they

search for online. The anti-cyberbullying statute is a distant fourth, comparatively, with almost as many people agreeing with the statement (43%) as those that disagreed (46%).

These results are also consistent with chilling effects theory, with the relatively stronger chilling effect of some of the hypothetical regulatory acts or actions—like government surveillance—likely explained by the aspects of such government monitoring earlier; people would be deterred from certain online search queries assuming government may be monitoring for illegal or anti-social and even non-conforming behavior, which might suggest future illegal conduct. However, the results also suggest a strong measure of potential “chill” relating to the secondary or “networked” regulatory scenario, where the hypothetical involves the respondents being made aware, via a friend’s Facebook posting, that the friend has received a personal legal notice warning them about potentially illegal online activities. This scenario had the second most substantial impact after government surveillance. One possible explanation for this comparatively greater “impact” for this hypothetical scenario on search, is that the legal notice (as described in the scenario) was targeting illegal downloading of copyrighted material. Given that seemed to be the target, it makes sense that respondents would be much more careful about what they search for, so as not to attract attention or penalty for likewise accessing or following links to pirated material via search.

Also, by contrast to online speech (in **Figure 4.6**) the anti-cyberbullying statute here is, interestingly, a distant fourth with answers almost evenly distributed across the spectrum of possible responses. This can probably be explained by the fact that the anti-cyberbullying statute here would appear to target speech and other forms of communication online—it is vague and

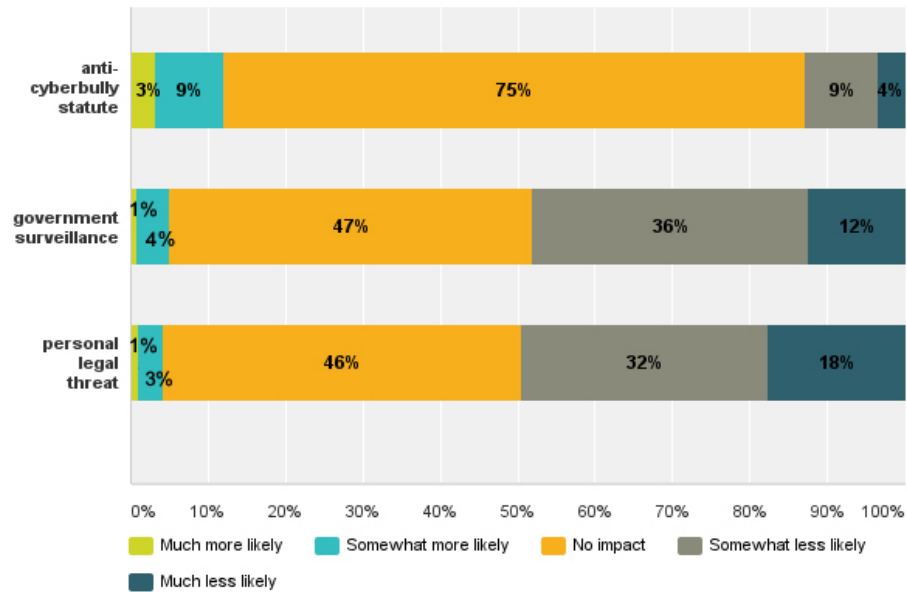
has uncertain application and *aims* to prevent “harassment” or “intimidation” online. Online search, as a discrete and non-communicative online activity, would expectedly be far less impacted.

iii. Impact on Internet Use More Generally

General Internet use is also impacted in the three primary scenarios, though not as much as either online speech or search. The results (charted in **Figure 4.8**) show that for respondents, personally receiving a threatening legal threat notice about their online activities had the greatest chilling effect, with 50% of respondents being either “much less likely” (18%) or “somewhat less likely” (32%) to “to spend time on the Internet” as a result. It should also be noted, however, that 50% indicated that such a notice would have no impact (46%) or would make them “somewhat” (3%) or “much more likely” (1%) to spend time on the Internet. Government surveillance of online activities had the next most cumulative chill, with 47% indicating they were “much less likely” (12%) or “somewhat less likely” (36%) to spend time on the Internet as a result of that surveillance.

Figure 4.8: Impact on Internet Use

Respondents were asked whether they would be “more likely or less likely to spend time on the Internet” in response to each hypothetical scenario. This chart collates and compares the responses. The cumulative percentage of responses is mapped on the x-axis in relation to the three primary hypothetical “chilling effect” scenarios on the y-axis.



The anti-cyberbullying statute, once again, is somewhat of an outlier; while a not insignificant percentage of respondents indicating they would be “much” or “somewhat” less likely to spend time online (13%), but the vast majority (87%) indicated they would not be impacted either way (75%), or even “somewhat” (9%) or “much more likely” (3%) to spend time online as a result of the anti-cyberbullying law being enacted. This latter finding makes sense if users interpreted the law as potentially deterring online harassment and bullying; thus, some users may be encouraged to spend more time online as a result.

Chilling effects were much less pronounced here. In fact, a majority of respondents for *each* scenario indicated that their Internet time spent would either be unaffected by the enactment of such a statute, or that it would make them more likely to spend time online. On this count, the anti-cyberbullying statute has a net result opposite of a chilling effect; it would seem to stimulate

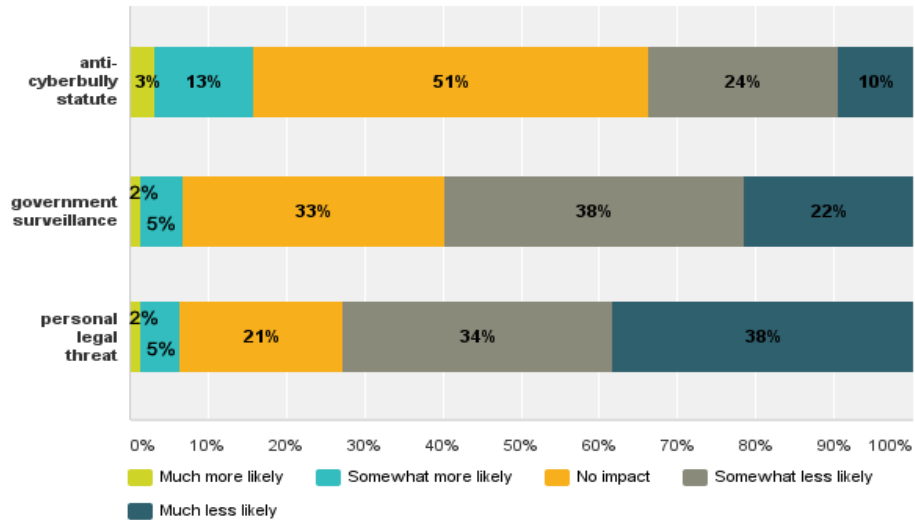
Internet use, at least when speaking more generally. Again, each of these findings make sense, if we appreciate that respondents (and perhaps people more generally) would likely assume the regulatory acts or actions described in each hypothetical scenario—anti-cyberbullying statutes, surveillance, personally received legal notice—are meant to target certain kinds of illegal, anti-social, or socially stigmatized activity, not Internet use more generally. As such, it is not surprising that these measures would not have a significant overall chilling effect on the amount of time respondents spend on the Internet; though, as the results suggest, there is still some measure of “chill” nevertheless.

iv. Impact on Online Sharing

Online sharing of content personally created by the respondent in question was also demonstrably chilled in each of the scenarios, though not as much as either online speech or search chill noted earlier, but certainly more so than time spent online. This is an important category of activities, because they concern creativity, authorship, and even innovation on the part of the person being potentially “chilling”. The results (see **Figure 4.9**) show that, again, personally receiving an individualized legal notice about online activities (72% of respondents either “much less” or “somewhat less” likely to share) and government surveillance (60% of respondents “much” or “somewhat” less likely to share) would have had the greatest chilling effect on such legal online activities. The anti-cyberbullying statute also suggested some chilling effect (34% of respondents “much” or “somewhat” less likely), though a majority (51%) indicated that their sharing would not be impacted by the statute.

Figure 4.9: Impact on Online Sharing (Personally Created Content)

Respondents were asked whether they would be “more likely or less likely to share content on the internet that [the respondent] personally created, authored, or made (e.g., a digital photo, song, blog post, Facebook status update, etc)” in response to each hypothetical scenario. This chart collates and compares responses. The cumulative percentage of responses is mapped on the x-axis in relation to the three primary “chilling effect” scenarios on the y-axis.



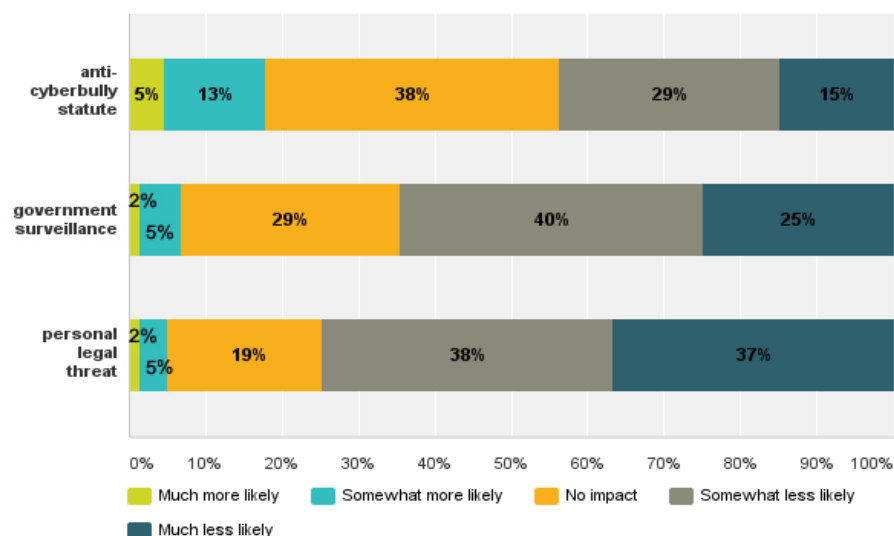
Again, these results also provide support for chilling effects especially so since the content in this hypothetical scenario concerns creative output (“personally created” content), which also means such content would almost always be legal (e.g., does not raise any copyright concerns, unlike content being shared that has been created by someone else). The comparative ranking in terms of chilling effects here, with the personally received legal threat and government surveillance much more significant than the anti-cyberbullying statute, can likely be explained for similar reasons noted for the “online speech” section above (See **Figure 4.5** and **Figure 4.6** and accompanying interpretation)—for example, more targeted enforcement (like individualized notice) will have a more profound impact; government surveillance, rather than simply a vague law, has more impact. That seems to be the case with creative output as well.

v. *Impact on Online Social Network / Community Contributions*

The survey also suggests that user contributions to online social networks and communities would be “chilled” in each scenario (see **Figure 4.10**). The personal legal threat would again have the most impact (75% of respondents “much” or “somewhat” less likely to contribute) as well as government surveillance (65% of respondents “much” or “somewhat” less likely to contribute) would have the most substantial impact. The anti-cyberbullying statute also was a factor (44% of respondents “much” or “somewhat” less likely), though a majority (56%) indicated that their sharing would not be impacted by the statute (38%) or would they would be “much more likely” (5%) or “somewhat more likely” (13%) to contribute to social networks and online communities if such a statute was enacted.

Figure 4.10: Impact on Contributions to Online Social Networks / Communities

Respondents were asked whether they would be “more likely or less likely to contribute to online social networks, communities, and discussion forums” in response to each hypothetical scenario. This chart collates and compares the responses. The cumulative percentage of responses is mapped on the x-axis in relation to the three primary hypothetical “chilling effect” scenarios on the y-axis.



These results suggest contributions to online social networks and communities would similarly experience some “chill” due to regulatory actions like those described in the primary scenarios explored in this comparison—anti-bullying statute, government surveillance, and the individualized legal enforcement (via legal notice). The results are quite similar to the comparative impact the different hypothetical “chilling effect” scenarios would have on Internet speech (**Figure 4.5**) and online sharing of personally created or authored content (**Figure 4.9**).

vi. *Other Effects: Downloading / Taking Steps to Challenge Legal Threats*

Other related questions, for specific scenarios, also suggested subtle forms of chilling effects. For example, respondents were also asked—only in relation to the scenario where a friend posts on Facebook about receiving a legal notice—whether in light of this, their level of agreement with the statement that they would be “more careful” about “files [they] download”; 95% of all respondents either “strongly agreed” (70%) or “somewhat agreed” (25%); a fairly remarkable indication of significant chilling effects, given the person was not themselves targeted, but only someone they knew.

Questions were also posed concerning the third scenario—the personally received legal notice concerning content posted online—about how likely the respondents would take steps to legally challenge the notice they received if they believed it was wrong or mistaken. Here, responses were fairly evenly distributed, with 34% saying they would challenge; 36% saying they would not; and 30% saying they “Don’t know”. For those who indicated they would not challenge the legal notice, or did not know, the potential costs of (legally) challenging the legal notice received was the most significant factor with 81% of respondents citing it as a reason not

to take such steps. Other concerns were time costs (66%), wishing to avoid trouble (legal or otherwise) (53%), not understanding the legal issue at stake (28%), or not knowing how to legally challenge the notice (34%).²¹ Also, these legal notices were mostly effective in deterring re-posting or re-sharing of content that the notice had targeted—70% of respondents were “very unlikely” (54%) or “somewhat unlikely” (16%) to re-post or re-share. However, a notable percentage of respondents (15%) also said receiving the notice would actually make them “very likely” (4%) or “somewhat likely” (11%) to re-post or re-share.

4.4.2 Chilling Effects Factors: Analyzing Underlying Relationships

i. Basic Demographics and Similar Factors/Variables

Beyond the analysis of percentages and comparisons above, factors underlying or influencing the “chilling effect” evidenced in the hypothetical scenarios were statistically analyzed in relation to a range of demographic and comparable variables to identify any associations or relationships between forms of chilling effects (e.g. being less likely to speak, search, or share online, due to knowledge of online surveillance) and a broad range of demographic (and related) variables such as: age, gender, level of education, level of income, their level of Internet use, whether they have followed the news about online surveillance (e.g., news about the NSA surveillance programs), how often they share personally created content online, how often they contribute to social network sites and other online forums, and, the respondents’ familiarity with laws that regulate the Internet (assessed by the respondents on a scale). This was done to understand and identify

²¹ For this question, respondents could select “any” option that applied; hence, the percentages cited here do not add up to 100%. Not surprisingly, most respondents selected more than one factor being at play in a decision not to take steps to legally challenge the notice in the hypothetical scenario.

any potential background factors and influences on any potential chilling effects suggested by responses.

There are some interesting results here too. Age had a statistically significant negative association in relation to all three forms of chilling effects in the first hypothetical scenario that involved the vague anti-cyberbullying statute (with harsh penalties attached). That is, as the age of respondents increased, chilling effects in relation to the anti-cyberbullying statute decreased.²² It also had a statistically significant negative association with all three forms of chilling effects (according to the Gamma test statistic) for the government surveillance scenario (hypothetical scenario two).²³ It should be noted that these associations were weak to moderate, but the pattern, nevertheless, is noteworthy. Interestingly, that pattern breaks with the third hypothetical scenario (individualized and personally received legal notice). Here, age does not have a statistically significant relationship with chilling effects on any of the “chilled” activities—being less likely to discuss certain topics online, search for certain things online, or share online. One explanation is that the first two hypothetical scenarios—the anti-cyberbullying statute and the government surveillance—both involve a measure of vagueness and uncertainty—respondents are not personally targeted and so must make a judgment as to whether they think they might be targeted, and this would have an impact on their searching, speaking, and sharing online. On that

²² For the anti-cyberbullying statute (scenario #1), there was a statistically significant and negative association between the age of respondents and their being less likely to discuss certain things online ($\gamma = -0.07$; $X^2 = 37.8$; $df = 16$; $p = 0.00$), search online ($\gamma = -0.19$; $X^2 = 48.6$; $df = 16$; $p = 0.00$), and share online ($\gamma = -0.07$; $X^2 = 28.5$; $df = 16$; $p = 0.02$). Similar for government surveillance (scenario #2), with results showing a statistically significant and negative association between the age of respondents and their being less likely to speak online ($\gamma = -0.07$; $X^2 = 36.2$; $df = 16$; $p = 0.00$), search online ($\gamma = -0.19$; $X^2 = 41.0$; $df = 16$; $p = 0.01$), and share online ($\gamma = -0.08$; $X^2 = 24.4$; $df = 16$; $p = 0.08$).

²³ Results showed a statistically significant and negative association between the age of respondents and their being less likely to discuss certain things online ($\gamma = -0.07$; $X^2 = 36.2$; $df = 16$; $p = 0.00$), search for certain things online ($\gamma = -0.19$; $X^2 = 41.0$; $df = 16$; $p = 0.01$), and share online ($\gamma = -0.08$; $X^2 = 24.4$; $df = 16$; $p = 0.08$).

count, it seems youth may be more impacted or cautious in their activities, assuming they are more likely to be targeted as compared to older respondents, who are less concerned. By the third scenario, that uncertainty is significantly reduced in the sense that the legal notice is personally delivered; here, youthful cautiousness is no longer a factor with people being “chilled” more uniformly.

A second notable point concerns gender. This variable has no statistically significant factor for any of the different measures of chilling effects in the first two scenarios (less likely to discuss certain topics online, search for certain things online, or share online), but notably becomes a factor in the third scenario—where a threatening legal notice is received.²⁴ Due to the way in which the gender variable was coded, the positive association suggests that female respondents were “chilled” in relation to all three forms of activities in this hypothetical scenario. It is difficult to say why this is but the results no doubt suggest that the females in this sample were much more cautious (or are chilled) once they had received a personal legal notice, as compared to other “chilling effect” scenarios.

A third observation of note concerns the impact that respondents’ familiarity with news stories concerning surveillance by the “NSA” has on comparative chilling effects. Respondents were asked to indicate how closely they were following news stories concerning NSA surveillance; as it turns out, at least for the second hypothetical involving government surveillance, how closely the respondent follows NSA news helps predict how much respondents

²⁴ In this scenario, results showed a statistically significant and positive association between being female and, due to receiving a individualized legal threat, being less likely to discuss certain things online ($\gamma = 0.19$; $X^2 = 23.4$; $df = 4$; $p = 0.00$), search for certain things online ($\gamma = 0.13$; $X^2 = 14.9$; $df = 4$; $p = 0.00$), and, on the gamme test, to share online ($\gamma = 0.09$; $X^2 = 5.75$; $df = 4$; $p = 0.21$).

were “chilled” in relation to the three online activities in this scenario. The gamma values are all positive here, indicating a statistically significant positive measure of association.²⁵ This is not surprising; it makes sense that those respondents following the news about the NSA’s pervasive and invasive surveillance practices would be more likely to be “chilled” by the government surveillance in hypothetical scenario two. The NSA, however, is much less relevant to the other “chilling effects” scenarios—statutory and individualized legal notice; this likely explains why this variable was not a factor in these other scenarios.

Also interesting are those things that turned out to *not* be associated with chilling effects. While education and income levels had a statistically significant (negative) association with chilling effects in a handful of cases, overall, they were simply not a notable factor. Also, amount of time spent online, level of personal sharing, level of regular contributions to social network sites and other online forums, and even familiarity with laws applying to the Internet, were, apart from one or two instances, mostly non-factors in terms of responses to hypothetical chilling effect scenarios. It should be noted, however, that the latter (legal awareness) did have a negative association concerning the impact the personally received legal notice (scenario three) had on online speech and content sharing (personally created content). This also makes sense, as familiarity with the law would lead respondents to feel less threatened.

²⁵ The results showed a statistically significant positive association between the level of awareness of news concerning NSA surveillance and related revelations and chilling effects relating to government surveillance, that is, being less likely to discuss certain things online ($\gamma = 0.12$; $X^2 = 79.3$; $df = 16$; $p = 0.00$), search for certain things online ($\gamma = 0.10$; $X^2 = 24.3$; $df = 16$; $p = 0.01$), and share online ($\gamma = 0.13$; $X^2 = 42.3$; $df = 16$; $p = 0.13$).

ii. Factors in Responding to Chilling Effects

As noted earlier, respondents were asked in relation to hypothetical scenario three how likely they would take steps to legally challenge the legal notice they received if they believed it was wrong or mistaken. Additional statistical analysis was conducted to explore what demographics (and related variables) may be a factor or be associated with respondents' willingness to legally challenge the notice. Here, there was a small negative association between age and willingness to challenge ($\gamma = -0.10$; $X^2 = 7.89$; $df = 4$; $p = 0.09$).²⁶ The analysis also found a small negative association between respondents being female and willingness to take steps to legally challenge suggesting females were mildly less likely to do so ($\gamma = -0.12$; $X^2 = 3.95$; $df = 1$; $p = 0.04$). There was also a positive association between willingness to challenge and two Internet "engagement" variables: time spent online ($\gamma = 0.19$; $X^2 = 11.7$; $df = 2$; $p = 0.00$) and for level of social network site (and related) engagement ($\gamma = 0.13$; $X^2 = 11.4$; $df = 4$; $p = 0.02$). Notably, there were also somewhat stronger *positive* associations between willingness to take steps to challenge the legal notice in this scenario and two other variables—familiarity with Internet laws ($\gamma = 0.34$; $X^2 = 50.83$; $df = 4$; $p = 0.00$) and how closely respondents were following NSA news ($\gamma = 0.23$; $X^2 = 35.4$; $df = 4$; $p = 0.00$).

Also interesting to note: despite respondents citing the potential costs of (legally) challenging the legal notice received as the most significant deterrent for taking steps to legally challenge a note that they receive (81% citing it), annual income of respondents had no

²⁶ Here, the chi-square result did not show a statistically significant relationship ($p > 0.05$); however, the gamma test—a stronger test for ordinal variables—did. In other cases noted here, chi-square and the gamma tests returned significant results.

statistically significant association with respondents' indication that they would challenge the legal notice. Education levels also disclosed no significant association.

These results suggest that notwithstanding what respondents might say to self-report as their reasons for deciding to challenge a legal notice or not, it would seem that other factors may be more influential in their decisions either way. Certainly, knowledge of the law would likely encourage a person to challenge a notice; and, similarly, someone who spends a lot of time online or contributes heavily to social network sites and other online communities may be more motivated to challenge in order to defend a practice they do regularly (and thus feel is important).

4.5 Conclusion and Limitations

4.5.1 Evidence for Chilling Effects More Generally

There are several important implications of this study. First, most importantly, these results provide a strong empirical basis for the existence of chilling effects on the legal activities of Internet users due to a range of regulatory activities, including chilling effects caused by (i) statute or regulation; (ii) state and corporate surveillance; (iii) (state or non-state) individualized legal enforcement via personally delivered legal notices; and (v) secondary (or network) chilling effects, where users are chilled simply due to becoming aware, via online social networks or otherwise, that a friend or other member of their social network have been targeted by such regulatory actions. The notion of *an online chilling effect* due to a range of regulatory acts or actions has strong support in these findings.

4.5.2 Comparative Chilling Effects

When examining the chilling effects evidence *comparatively*, the results also provide insight into what sort of regulatory acts or actions may have the *greatest* online chilling effects. On a comparative angle of view, scenario three, that is, the individualized legal enforcement via personally delivered legal notice consistently suggested greater levels of chilling effects among respondents across the different scenarios—rendering respondents less likely to speak or write in certain contexts online (or more careful about what they say or write online), less likely to share of personally created content online, less likely to contribute to social networks and other online forums, and less likely to spend time on the Internet more generally. The only form of online activity that this “individualized” legal notice did not have the greatest impact was online search—here, government surveillance had a slightly greater impact, with a full 78% of respondents agreeing with the statement that knowing that the government was monitoring online activities they would be “more careful” about what they search for online. Though even here, the personally received individualized legal notice also had a substantial impact with 77% responding agreeing they would be “more careful”. Indeed, comparatively, government surveillance consistently had the second most “chill” or impact across all forms of online activities explored.

Neither of these findings are unexpected given that chilling effects theory hypothesizes that people are deterred both by the threat of punishment pursuant to vague or unclear laws or rules but also, as Solove (2006) suggests, a chilling effect due to a kind of “environmental pollution” wherein regulatory actions like state surveillance chill or deter certain legal activities. In such cases, the chilling effect might arise out of concern for privacy, fear of potential

government targeting, and/or social conformity (e.g., to avoid being associated with unpopular ideas or causes). The individualized legal notice and the government surveillance scenarios both implicate such chilling effects. With individualized or personally received legal notices (disclosing legal claims or threats), people would feel specifically targeted and would thus increase the likelihood of punishment or penalty greater, leading to more of a chilling effect as noted in the results. In terms of online speech and online search activities, corporate surveillance also had a chilling effect comparable to, but not as significant as, government surveillance. This could be explained by the respondents viewing corporate surveillance as less broad or effective as government; or, perhaps, the findings may also reflect the Weberian view of state power, where only the state has a legitimate claim to the use of force and violence (Weber, 1965); here, the “violence” is done through corporate surveillance.

Results concerning the fourth scenario deserve some additional attention, as this was more of an exploratory aspect of the case study. These findings provide a novel contribution in laying empirical foundations for a form of *networked chilling effects*; that is, people who simply read, or are made aware of, online regulatory actions are themselves chilled or deterred. Comparatively speaking, across the range of online activities explored (in relation to different potential “chilling effects” scenarios), this networked impact was consistently comparable to the impact or effects caused by hypothetical scenarios involving other kinds of regulatory acts or actions. There were instances, in fact, where this secondary or networked impact was greater than most others. In the comparative results for online search (**Figure 4.8**), this scenario had the second most substantial impact just behind government surveillance, with 39% “strongly” agreeing and 38% “somewhat” agreeing with the statement that they would be “more careful”

about what they search for online; even outstripping a personal legal threat. And in the comparative results for online speech across five scenarios (three primary and two more exploratory in **Figure 4.7**), the results suggest that this kind of networked regulatory effect. Here, seeing a friend posting on Facebook about receiving a personal legal notice may have a greater “chill” than both corporate surveillance or even effects caused by a vague statute or regulation enacted in relation to online activities (though, this will likely depend on the nature of the statute in question and the context of the activities).

Again, these findings are consistent with chilling effects theory—knowing that someone in your peer group or social network is being targeted by public or private legal threats concerning their online activities—could raise concerns of similar legal targeting, mistaken punishment, pressures to conform, or guilt by association; thus, causing a “chill” on otherwise legal activities. With respect to online search, it may be that respondents understood the legal notice in the hypothetical scenario (e.g., sent to a friend about potentially illegal downloads) most likely concerned online searches for copyrighted material, hence the greater number of respondents indicating they would be more “careful” in their online searching compared to other kinds of online activities.

4.5.3 Limitations

Notwithstanding these noteworthy findings and contributions, this research had a number of limitations. First, despite the advantages that MTurk offered in terms of recruitment, its use in this case study meant sampling was non-random and non-probability-based and self-selection of participants could have biased results. This also means there are problems with the

representativeness of the participant pool and thus the results should not be taken as conclusions that can be generalized to the broader U.S. population. A second limitation arises due to this case study employing an original means, developed specifically for this research, to measure and operationalize “chilling effects” in relation to a range of regulatory actions. While innovative, this also means the scales and methods used have not been “validated” by other research like other proven scales have been (such as Westin et al. (1998)’s oft cited “scale” of expressed privacy concerns). Third, as has been stated already, “privacy paradox” research has shown that privacy-related reports in surveys are not always accurate or reliable. So, some of those same qualifications and potential concerns could be applied to the findings here, which are focused on regulatory chilling effects but also privacy related. Finally, this survey was primarily quantitative in design and employed Likert-style questions creating categorical variables. This was to allow greater ease of comparison as examining chilling effects across different scenarios with different forms of regulatory actions was a key aim; however, it also meant more qualitative data (and accompanying insights) were not obtained.

These are all important limitations that qualify the findings of this case study to a greater or lesser extent. However, these issues are not terminal to the research or its contributions. On the matter of self-selection bias and representativeness, this is a limitation common not only to case study research like this but also survey-based studies more generally. Though there are problems with the representativeness of the sampling pool, and risks of self-selection, the recruitment method was, as is often in matters of research design, a product of balancing research aims with the costs and time constraints of carrying out the research. However, MTurk offered a cost effective means to recruit a sample that would be “relatively representative” of the

U.S. Internet using population, the population of interest for this thesis (Paolacci et al., 2010: 412; Chen and Yeh, 2013; Wolfson and Bartkus, 2013: 119; McDonald and Cranor, 2010: 5). As outlined in **Figure 4.1**, and in Chapter 3, additional measures were taken to minimize the impact of problems based on representativeness, self-selection, or the reliability of self-reports in surveys, including strengthening external validity through triangulation and replication strategies via multiple case studies. Finally, though the instruments and measures used in this survey were specially developed for this study, it was, in part, a product of the fact that there has been so few empirical studies of regulatory chilling effects that there are no such validated scales or metrics to employ. Furthermore, this is also be understood as a strength and important methodological contribution of this thesis—it has developed and employed original and unique methods and approaches to study and explore regulatory chilling effects online.

Chapter 5

Case Study Two: Wikipedia, Surveillance, and Chilling Effects

5.1 Introduction²⁷

Inspired by Snowden revelations about widespread government Internet surveillance, a range of recent public opinion poll and survey-based studies have been conducted, including studies by PEN America (2013; 2015) and Pew Research Center (2015a; 2015b; 2014a; 2014b; 2014c) to explore of the resulting impact or effects of these government actions. These studies all provide at least some indication that such surveillance likely has or will have a “chilling” or “conforming” effect, to use the words of Kaminski and Witnov (2015). Yet, more needs to be done to address the empirical shortcomings underpinning chilling effects theory as identified by Kendrick (2013) and others, such as evidence of chilling effects based on actual user behavior in practice and not just self-reports in surveys.

Marthews and Tucker (2014) provided an important contribution in this regard, offering evidence of chilling effects arising due to the Snowden-related surveillance revelations in June 2013. Though there were limitations to the study, as discussed in Chapter 2, it nevertheless remains an important work and the case study set out in this Chapter seeks to build on its findings and research design. The case study set out here constitutes the first original study of

²⁷ A paper based on this chapter has been accepted for presentation at the inaugural Society for Empirical Legal Studies (SELS) global empirical legal scholars workshop, Hebrew University, Jerusalem, December, 2015 (sponsored by Cornell Law School and Hebrew University). The paper has also been accepted for publication by the Berkeley Technology Law Journal (University of California, Berkeley) and is forthcoming in 2016.

the impact such surveillance may have on peoples' use of Wikipedia, one of the most popular and widely used sources of information on the Internet. This Chapter sets out the case study's findings, including its design, methodology, analysis, and conclusions.

5.2 PRISM/NSA Surveillance Program Revelations

Similar to Marthews and Tucker (2014), this case study also examines Internet traffic before and after the “exogenous shock” associated with news, media stories, and publicity surrounding NSA surveillance activities in June 2013; in particular, it explores whether Wikipedia article traffic for articles that contain more “terrorism” and “security” related content decreased after the widespread publicity about NSA’s online activities. Leaks and disclosures about NSA/PRISM online surveillance operations were widely covered in media that month, and was followed by many other stories in subsequent months covering a range of covert government surveillance practices, programs, and operations—such as surveillance of phone records or vast databases of emails, online chats, browser histories, etc.—among many others (Lyon, 2014: 2; Qin, 2015: 6; Marthews and Tucker 2014: 5-6; Wright and Kreissl, 2013: 4; PEN America, 2014: 4). With respect to the PRISM surveillance program, it was reported in June 2013 that nine service providers were part of the program—specifically Google, Microsoft, Facebook, Apple, Youtube, Skype, AOL, and Yahoo—though each company released statements at the time variously denying knowledge of the program or explicit involvement (Giles and Hartmann, 2014: 26).

The revelations caused a “media and political storm” (Bakir, 2015: 132) receiving widespread media coverage—both in traditional and new media outlets—and sparked a broad

“heated international debate” in the “U.S., Europe, Russia, and beyond” (Qin, 2015: 166; Giles and Hartmann, 2014: 24; Bakir, 2015; Nickel, 2014: 255). The U.S. (and other) governments defended the surveillance programs as essential to fighting the “War on Terror” (Bakir, 2015: 172; Nickel, 2014: 255; Wright and Kreissl, 2013; Marthews and Tucker, 2014) and, according to recent studies that have analyzed media coverage of the Snowden leaks and surveillance disclosures, this link between the surveillance programs and government aims to fight terrorism was reflected in coverage, particularly in traditional “legacy” news media (Qin, 2015: 172; Bakir, 2015; Wu et al., 2015). As Bakir (2015) notes, the Snowden leaks and their coverage “highlighted” the “heretofore limited” public awareness about the surveillance activities of national security and intelligence agencies; but these leaks and coverage have now changed this (2015: 133-134). Indeed, the widespread media coverage has, not surprisingly, led to greater awareness and concern among the general public about these government activities, at least in the U.S. (Bakir, 2015). A Pew Internet study in 2014, found 87% of American adults had heard something about “the government collecting information about telephone calls, emails, and other online communications as part of efforts to monitor terrorist activity”, with 43% hearing “a lot” and 44% hearing “a little”. Furthermore, 80% of agreed or “strongly” agreed with a statement “Americans should be concerned” about the government’s surveillance operations (Pew Research Center, 2014c: 2-3; Bakir, 2015: 133-134). Moreover, as discussed in Chapter 2, respondents in surveys and polls conducted by both Pew Research Center (2015a; 2015b; 2014b; 2014c) and PEN America (2013; 2015) have said they have changed their activities online, as a result of the government surveillance. These insights are important to the design of this case study.

5.3 Case Study Design and Method

5.3.1 Interrupted Time Series Design

This case study focuses on English Wikipedia as a means to explore regulatory chilling effects online. To do so, it employs an interrupted time series (ITS) design to analyze certain Wikipedia article traffic data (Mark, Reichardt, and Sanna, 2000; Wagner et al., 2002; Fok, Henry, and Allen, 2015: 4; Penfold and Zhang, 2013; Campbell and Stanley, 1963: 37). An ITS design uses a time series, that is, a series of measurements or observations over time that is “interrupted” by some intervention or exogenous event that divides the time series into two segments with measurements in the time series before the intervening event and after. Thus, the interrupting intervention or event can be then assessed by “comparing” patterns in the time series data before and after the interruption (Mark, Reichardt, and Sanna, 2000: 354-355; Fok, Henry, and Allen, 2015: 4; Wagner et al., 2002: 299; Penfold and Zhang: S39-S40; Campbell and Stanley, 1963: 37).

ITS design, when combined with segmented regression analysis (to analyze data trends and control for other factors and variables), is a particularly powerful research design for exploring the effects of interventions, events, or policy changes where, as here, there was no opportunity for a controlled experiment and there is a “clearly identified time point of intervention”—being the June 2013, surveillance revelations (Fok, Henry, and Allen, 2015: 10; Mark, Reichardt, and Sanna, 2000: 354-355, 383; Wagner et al., 2002: 299; Penfold and Zhang: S38). ITS designs—with their capacity to visualize observed and analyzed data in a compelling way—have been applied to a range of fields (Lagarde, 2012: 76) and are particularly popular among policy researchers (Wagner et al., 2002; French and Heagerty, 2008). Empirical legal

research has employed ITS designs as well, with the method previously used to explore the effects of laws, policing (including surveillance by law enforcement), and other regulatory actions in the past and more recently (Nagin, 1998: 8-12; Cameron, 1988: 314; Phillips and Calder, 1980; Décary-Hétu, 2014; Bonander et al., 2014; Briesacher, 2013; Ward et al., 2011).

5.3.2. PRISM/NSA Revelations as an Interrupting Event

In order to have an ITS design, an intervention or interrupting event is required. Here, the widely covered revelations concerning government surveillance in the month of June 2013 is the key intervention or interrupting event. The media and political furor, and evidence of a shift in public awareness, reinforce Marthews and Tucker's (2014) observation that the June 2013 revelations and widespread surrounding publicity constituted an "exogenous shock", that is, a kind of intervening "focusing event" that provides a reference point for study (Boushey, 2012: 130). In policy research, the "most prominent" empirical studies of policy change often focus on the impact of certain "triggering" events like these, which usually involve significant "unplanned jolts" or "shocks" like natural disasters or major international social or economic change to understand policy impact and change (Lowry, 2006: 313-315; Boushey, 2012; Baumgartner and Jones, 2010; Birkland, 1997; Sabatier and Jenkins-Smith, 1993). Such events provide a helpful reference point to understand their impact by comparing observable data before and after the intervening or focusing event. Indeed, Baumgartner and Jones (2010) have observed that "changes in the tone of media coverage" can create exogenous pressures that can lead to important policy and behavioral changes (Boushey, 2012: 130).

Following this framework, Marthews and Tucker (2014) treated the widespread media coverage and resulting increased public awareness of government surveillance practices as such a focusing event, and examined Google Trends data before and after June 2013. They found that “Google Trends search index” traffic fell for ‘high government trouble’ search terms after the “exogenous shock of publicity” surrounding the NSA’s online surveillance activities. The 4% decrease in “overall search volume” after June 2013 for the search terms they measured, offered noteworthy empirical evidence of chilling effects—with the findings suggesting people were avoiding certain sensitive search terms online, due to concerns about government surveillance or monitoring.

Yet, despite the aforementioned surveys and poll-based studies suggesting such chilling effect may exist, extremely few studies have empirically documented it, with Marthews and Tucker (2014) concluding that their study “is the first to provide substantial empirical documentation of a chilling effect” (23). This case study also aims to fill this research void, adopting a research design that builds upon the work of Marthews and Tucker (2014), examining whether Wikipedia article traffic for certain topics (topics that reasonably raise privacy concerns for Internet users) decreased following the widespread media coverage surrounding NSA surveillance activities in June 2013. This would be consistent with chilling effects theory as set out by Schauer (1978) and Solove (2006; 2007a), wherein government actions—surveillance online—“chill” or deter peoples’ activities online for a range of reasons, such as the more general concern of avoiding invasive monitoring by government, fear of being targeted for prosecution and sanction, or to avoid some of the more specific risks associated with being monitored by third parties like long term ongoing scrutiny or embarrassment if these or other

activities were disclosed. Moreover, the activity being measured—Wikipedia article traffic—is not only demonstrably legal (at least in the U.S.) but merely suggests Internet users wanting to inform themselves about important topics subject to widespread social, political, legal, and public policy debates today. Such an observable chilling effect—related to online surveillance revelations—would also be consistent with Marthews and Tucker (2014)’s empirical findings, as well as their conclusion any chilling effects they observed in Google Trends “may not be limited simply to search engines” but may be observed with other online platforms or contexts (2014: 23). This case study investigates if such a chilling effect can be observed with respect to certain Wikipedia content.

5.3.3 Research Predictions

The research predictions for this case study are straight forward: *due to chilling effects caused by awareness of government surveillance of online activities, Internet users will be less likely to view or access Wikipedia articles on topics that raise privacy-related concerns thus reducing the total number of articles views after June 2013 (H1).*

5.3.4 Data Collection

This case study uses data concerning English language Wikipedia article view counts from the online service stats.grok.se, a portal maintained by a Wikimedia Foundation member that provides access to a range of Wikipedia analytics, stats, and data; in particular, the portal

aggregates Wikipedia article view data on a daily and monthly basis.²⁸ Wikipedia traffic data obtained from the stats.grok.se Wikimedia portal has been used in a range of research and studies such as Moat et al. (2013) (investigating Wikipedia article traffic and usage in relation to stock market changes), Laurent and Vicker (2009) (which used Wikipedia traffic data from stats.grok.se to study the relevance of Wikipedia to how people access to health information online), or Ferron and Paolo (2011) (examining Wikipedia as a “lens” through which to understand real-time social and political upheaval and change).

This case study also followed Marthews and Tucker (2014) in determining what Wikipedia articles should be included in the time series; the aim would be to include articles that reasonably would cover the kind of Wikipedia content or topics whose traffic may be affected by the PRISM surveillance revelations. Like Marthews and Tucker (2014), this case study used a list of keywords that analysts with the U.S. Department of Homeland Security’s “Media Monitoring Capability section” use to track and monitor social media as a primary source for those topics. This keyword list, which categorized terms in relation to a range of different issues—such as “Health Concern”, “Infrastructure Security” and “Terrorism”—was first made public in 2012 when a redacted copy of the DHS “Analyst’s Desktop Binder” circulated online and has since been re-updated and re-posted online in other public DHS documents in 2013 (DHS, 2011; 2013; Marthews and Tucker, 2014). The keywords are meant to assist analysts to monitor social media and potentially “flag” users for further “analysis by the NSA” (Marthews and Tucker, 2014: 6). However, as Marthews and Tucker (2014) also observe, the keyword list is likewise helpful to assess the kinds of online content or topics the U.S. government may be

²⁸ Stats.grok.se is maintained by Domas Mituzas, a Wikipedia developer, past Board of Trustee on the Wikimedia Foundation, and present member of its Advisory Board, see: <http://stats.grok.se/about>.

interested in tracking or monitoring beyond social media—including popular online websites like Wikipedia—through PRISM or other surveillance operations (6-7). Researchers using keyword lists produced by governments (for online monitoring purposes) as a window through which to study such government surveillance or censorship is not new. Knockel, Crandall, and Saia (2011) and Crandall et al. (2013), for example, recently used decrypted Chinese government keyword lists to study censorship and surveillance employed by that government on two instant messaging services.

The DHS keywords similarly provide a helpful basis to determine what Wikipedia articles to track in the study. To be clear, this keyword list is non-random and is also not chosen based on any assumption that the general public is aware of the list or the topics attached (i.e., it is not assumed people are avoiding topics relating to these keywords due to the DHS’ media monitoring program). Rather, it is simply used here as a means of methodological pragmatism similar to how the list was used in the MIT Google search trends study (Marthews and Tucker, 2014), the DHS documents, and the keywords therein, are a useful and logical source to decide what Wikipedia articles should be included in the case study that reasonably represent the sort of articles that users may be chilled from accessing in light of government surveillance.²⁹

So, using the DHS keyword list (2013), 48 Wikipedia articles that corresponded with DHS keywords listed as relating to “terrorism” were included as part of the case study. The full

²⁹ More will be said on this point later, but while 48 Wikipedia articles do not seem to be a massive sample, the Wikipedia traffic attracted by these articles is not trivial, representing almost 81 million total views over the course of this relatively brief study. In short, though a precise number cannot be estimated (the Wikipedia data tracks “Page View” statistics, that is, total views or loads of the Wikipedia articles or pages, not unique visitors – see the definition of “Page View” statistics at https://en.wikipedia.org/wiki/Wikipedia:Pageview_statistics) the data arguably still involves a large number of Internet users—many millions.

list of the keywords used, and the corresponding English language Wikipedia articles for which Wikipedia article “page view” counts were collected via stats.grok.se, can be found at **Appendix 5.1**. The keywords/topics relating to “terrorism” were used to select the Wikipedia articles in this case study because the U.S. government cited terrorism as a key justification for PRISM and NSA surveillance, and much of the media and news coverage in June 2013 framed the revelations around terrorism and national security (Bakir, 2015: 172; Wright and Kreissl, 2013; Marthews and Tucker, 2014; Qin, 2015; Wu et al., 2015). As such, Wikipedia articles coinciding with these terrorism-related topic keywords may include the kind of information or content users may avoid accessing in light of potential government surveillance. Wikipedia article traffic (or view counts)—aggregated on a monthly basis—were obtained for the 48 Wikipedia articles over a 32 month period, from the beginning of January 2012 to the end of August, 2014. Those 48 Wikipedia articles corresponded with all DHS keywords listed in the “terrorism” category.³⁰ The data obtained is not normalized but raw and represents the actual number of article views or visits for a given article in each month in the 32 month period covered. A “general recommendation” for ITS designs is to include 12 data points before and after the interrupting event (so, 12 months before and after), so this 32 month period (17 months before, 14 after) allows for additional data points to strengthen results (Wagner, 2002: 300). It should also be made clear, again, that findings in this study primarily concern the English speaking world, as only English Wikipedia article view counts are tracked in the Wikipedia data.

Though this selection of 48 Wikipedia articles does not seem to be an extraordinarily large sample, in fact, the Wikipedia traffic attracted by these articles is significant, representing

³⁰ Locating Wikipedia articles coinciding with each keyword was done manually; this was a rather simple exercise as with the vast majority of keywords in the “terrorism” DHS category there was a Wikipedia article that coincided perfectly.

over 81 million total article page views over the course of this relatively brief study; meaning the potential number of Internet users also represented in the data analyzed is arguably in the tens of millions.³¹ Moreover, additional steps were taken to ensure the sample of 48 articles had external validity and could be generalized to a wider sample of content (both terrorism-related and other topics that may raise privacy concerns) that may lead users to be “chilled” or deterred from accessing such content as a result of potential government surveillance of their activities online. Following the approach of Marthews and Tucker (2014), crowdsourcing was used to have independent respondents evaluate the privacy value of the topics in question.

5.3.5 Independent/Crowdsourced Evaluation of Topics

Crowdsourcing, particularly using MTurk, has become a common technique to evaluate or assess research measures and other research components for privacy or privacy-related concerns (see, for example, Lin et al., 2012; Korshunov et al., 2013a; 2013b; Korshunov and Ebrahimi, 2014; Agir et al., 2014; Paralic and Jarina, 2014; Bonetto et al., 2015). Here, 415 independent Internet users were recruited via MTurk to “rate” each of the 48 topics (for which the Wikipedia articles in the data set correspond with) via questions aimed to explore the likelihood that the topics raise privacy-related concerns for Internet users. Specifically, respondents were asked to indicate on a scale of 1 to 5 (1 being very unlikely and 5 being very likely): how likely they would be in trouble if the U.S. Government found out they accessed information relating to the keyword topic in question (Government Trouble Rating); how likely they view the topic as “privacy-sensitive” (Privacy-Sensitive Rating); how likely they would delete the browser history on their computer after accessing information about the topic; and how

³¹ See footnote 29.

likely they would avoid viewing or accessing information on the topic if they knew the Government were monitoring peoples’ activities online (Avoidance Rating).³² These were the same questions and ratings categories used by Marthews and Tucker (2014).

Like the survey in Chapter 4, the respondents were similar to other MTurk participant pools, that is, “relatively representative of the population of U.S. Internet users”, though younger, more educated, and with slightly lower incomes than the broader American Internet population (Ipeirotis, 2010). Notably, however, the sample was not as gender balanced with 56% of respondents male and 44% female. A summary of the mean scores for participants’ independent ratings can be viewed **Table 5.1** (ratings for each individual topic keyword at **Appendix 5.1**):

Table 5.1: Independent Ratings Results

The rating is on a scale of 1 to 5, with 1 being “very unlikely” and 5 being “very likely”. The “mean rating” is the mean of ratings for all respondents for all 48 topics

Rating Type	Mean Rating
Government Trouble Rating	1.95
Privacy-Sensitive Rating	2.01
Browser History Delete Rating	2.00
Avoidance Rating	2.62

On balance, the results from the first three categories suggest that the topics raised privacy concerns for respondents, but not overly strong concerns or at least not on their own. This is not

³² This is not a standard scale, but one developed for this case study. For methodological consistency, these questions were designed to track ratings categories used Marthews and Tucker (2014: 33).

entirely surprising—there is no particular reason why someone would expect to be in “trouble” with the government for simply accessing information online—such as on Wikipedia—on such topics, as these are common topics discussed in the news and accessing such information is entirely legal.

What *is* noteworthy from the rating scores is how things change if people are aware of government surveillance. This is apparent from the higher “Avoidance” rating of 2.62, which suggests that respondents were overall more likely to avoid the topics in question if they *knew* the government was monitoring online activities. In short, the ratings *do* suggest that topics that the 48 Wikipedia articles cover raise privacy concerns for Internet users, particularly when people suspect government is monitoring them—possibly leading them to “avoid” or be chilled or deterred from accessing.

5.3.6 Method of Analysis

A strength of an ITS design is that the “multiple” assessments or measures before and after the event or intervention in the time series control for changes in level and secular trends in the data and thus increasing the robustness of results (Wagner et al., 2002: 308; Fok, Henry, and Allen, 2015: 7; Penfold and Zhang, 2013: S39; Campbell and Stanley, 1963: 37; Lagarde, 2012). This case study uses Wikipedia article view counts (e.g. article traffic data) to create a time series data set over a 32 month study period from January 2012 to August 2014 ($n=32$), with the “intervention” or interrupting event dividing the time series into two segments is the “exogenous shock” of NSA/PRISM surveillance revelations in June 2013. Two empirical approaches are used to analyze the interrupted time series: The first is a simple comparison of the mean number

of views for all the Wikipedia articles in the dataset before and after June 2013. The theory here, is that if there is a chilling effect due to surveillance revelations in June 2013 it is expected that the average or mean number of views for the 48 Wikipedia articles should be lower for months following June 2013 than the months before. The second is a model-based empirical analysis that employs segmented regression of the time series, the recommended method of analysis for ITS designs (Wagner et al., 2002: 299; Penfold and Zhang, 2013: S41-S42; Lagarde, 2012). Lagarde (2012) recently set out and analyzed this method comprehensively, providing this simple equation that expresses the specification for the regression analysis:

$$Y_t = \beta_0 + \beta_1 * \text{time} + \beta_2 * \text{intervention} + \beta_3 * \text{postslope} + \varepsilon_t$$

Here, Y_t is the “outcome” or dependent variable at time t ; time is a continuous variable representing time from the beginning of the study to the end of the time series; intervention is coded as 0 for time points before the “intervention” and coded as 1 for time points after the intervention; postslope is coded 0 up to the last time point before the intervention period and coded “sequentially” from 1 thereafter (Lagarde, 2012: 79). In this case study, the “outcome” or dependent variable is the raw aggregate total Wikipedia article views or view count and the time variable includes 32 time points in the time series, representing each of the 32 months in the time series dataset from January 2012 to August 2014, which is the period of study. So in this time series dataset, the “outcome” or dependent variable is the aggregate views of all 48 Wikipedia articles totaled on a monthly basis for each of the 32 months in the time series.

For greater clarity, in this model, β_0 captures the baseline level of the outcome variable at time 0—here, that would be the expected total views for all 48 Wikipedia articles in the dataset

at the beginning of the study; β_1 estimates the secular trend or growth rate in the total number of views for the 48 Wikipedia articles, independently from the “intervention” or intervening event (the June 2013 surveillance revelations); β_2 estimates the immediate impact of the “intervention” or the exogenous shock of PRISM/NSA surveillance publicity in June 2013 by reflecting the change in the “level” or the total number of views for the Wikipedia articles immediately after the June 2013 events; and, finally, β_3 reflects any change in the trend of the data; that is, any growth or decline in total views for the 48 Wikipedia articles on a month-to-month basis, after the intervention (Lagarde, 2012: 79).

Though ITS designs controls for secular trends in the time series data (Lagarde, 2012: 79), to further preserve the robustness and validity of results, additional controls can be included in the model and, where appropriate, auto-correlation is tested and corrected (Mark, Reichardt, and Sanna, 2000: 385; Lagarde, 2012: 79, 81; Wagner et al., 2002: 305; Penfold and Zhang, 2013: S42 Campbell and Stanley, 1963: 37). Here, although a true control group was not possible in these circumstances (online surveillance potentially affects everyone, and there was no opportunity, before the June 2013 revelations to isolate a control group), to increase the robustness of the analysis a further control variable was added that includes monthly raw aggregate total views counts for all English Wikipedia articles on all platforms (desktop and mobile).³³ This was done to control, more precisely, for broader use trends in Wikipedia over the course of the 32 months in the study and to isolate the impact that the PRISM/NSA surveillance revelations had on the 48 Wikipedia articles in the case study. Again, a prediction based on chilling effects theory is that there will be a statistically significant decrease in the total views of

³³ As previously noted, Wikimedia provides a wealth of information about <http://stats.wikimedia.org/EN/TablesPageViewsMonthlyOriginalCombined.htm>

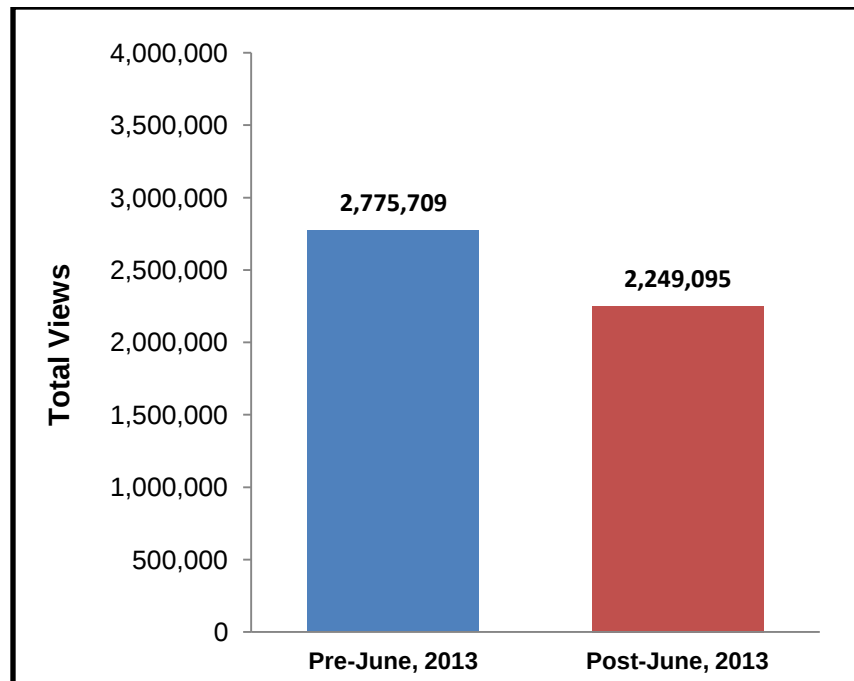
the 48 Wikipedia articles after June 2013—and possibly even a change in the trend of the data—due to chilling effects caused by awareness of government surveillance online via the PRISM/NSA revelations.

The segmented regression analysis was performed using the statistical software package Stata and as recommended, auto-correlation is also tested for using the Durbin Watson statistic and, where necessary, controlled for using the Prais-Winsten method (Judge et al., 1988; Lagarde, 2012; Wagner, 2002). The results of this analysis will allow us to compare view counts on the 48 Wikipedia articles in the dataset both before and after June 2013, to see if the surveillance revelations had any impact on those view counts in the short and longer term.

5.4 Non-Model Empirical Results and Analysis

It is worthwhile first to analyze the data using a more basic empirical analysis, that is, by comparing the means or average number of Wikipedia article views before and after the “focusing event” of June 2013. Here, the mean total article views for all Wikipedia articles in the data set, for the months prior to June 2013 and the months after, are visualized and compared in **Figure 5.1**:

**Figure 5.1: Average monthly view counts for all 48
Wikipedia articles, Pre and Post June 2013**



The difference in means is not insubstantial—a reduction of 526,614 in the average monthly views for the article after June 2013, which represents approximately a 19.5% drop in article view counts. This is more than mean differences found in the Google search terms study before and after June 2013 (see Marthews and Tucker, 2014: 13-14). Moreover, this difference or reduction in average monthly article views before and after June 2013 is both large and highly statistically significant at the 99% confidence level.³⁴

This, itself, offers some evidence of a “chilling effect”, that is, users may be chilled from accessing Wikipedia articles in question, out of concern for potential government surveillance. Of course, there are alternative explanations for these results, than a chilling effect. One possible explanation may be that overall Wikipedia traffic (and thus, all Wikipedia article view counts)

³⁴ The Cohen’s *d* value was over 1.

decreased after June 2013 for other reasons—perhaps seasonal trends are simply that people are using Wikipedia less and less and this data is simply reflecting this overall declining trend unrelated to any surveillance revelations. So while these findings are intriguing, a model-based empirical analysis is required to control for such overall trends in the data, for more robust empirical results.

5.5 Model-Based Empirical Results and Analysis

As earlier noted, the “outcome” or dependent variable in this empirical analysis represents the raw aggregate total Wikipedia article view counts per month for all Wikipedia articles in the data set; and the method of a segmented regression analysis of an interrupted time series data set (“interrupted” by the June 2013 PRISM surveillance revelations) lets us understand the impact that the intervening or focusing event constituted by the exogenous shock of PRISM surveillance publicity. Two sets of results are reported here. Analysis, as noted, was conducted in Stata.

5.5.1 First Results

The first set of results is represented in **Table 5.2**:

Table 5.2: First Results, Segmented Linear Regression Analysis

Independent Variable	Coefficients	Standard Error	p-value
Coefficient (β_0) Expected Total Views at Beginning of Study	1586224	1156233.0	0.181
Secular trend in data (β_1) Change in Total Views (Month to Month) Before 6/2013	36498.2	23105.8	0.126
Change in level (β_2) Change in Total Views Immediately After 6/2013	-853585.5*	322969.0	0.014
Change in slope (β_3) Change in Total Views (Month to Month) After 6/2013	-31192.5	27308.2	0.263

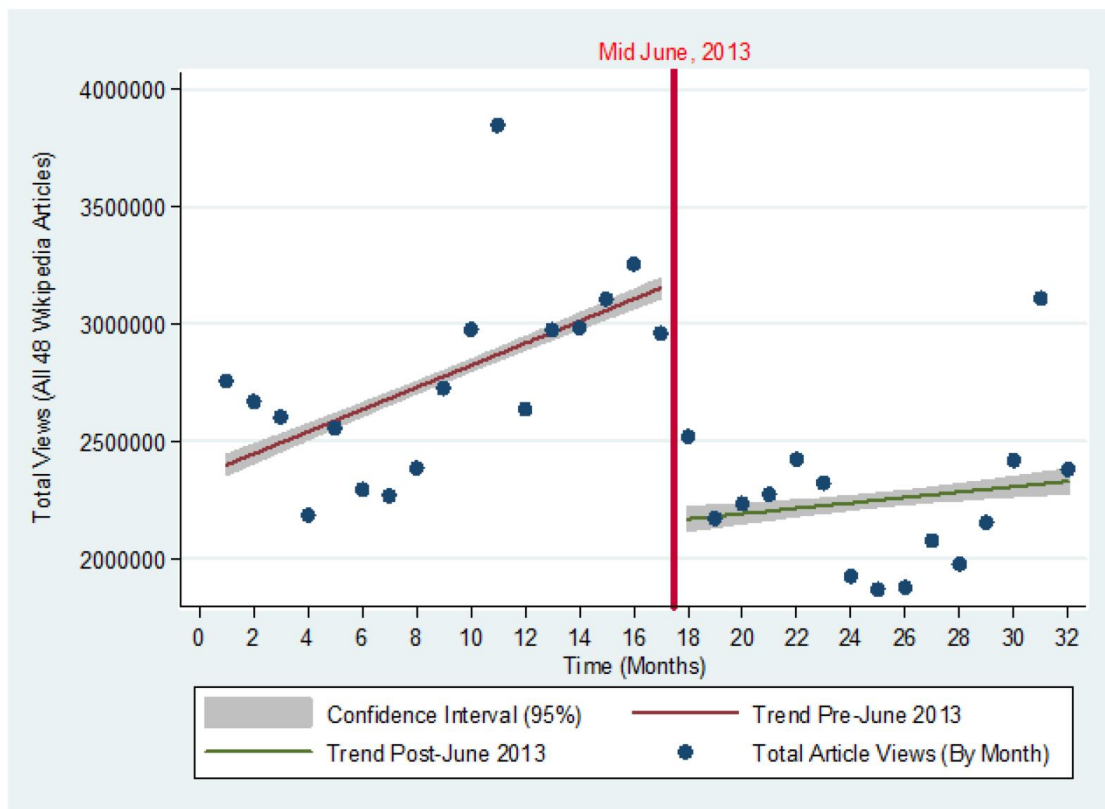
Note 1: * $p < 0.05$, ** $p < 0.01$

Interestingly, the results indicate there was a large, sudden, and statistically significant drop in the total view counts for the Wikipedia articles immediately following the June 2013 revelations (of 853,586 views). Using the total article views as of May 2013 (2,960,778), that represents an immediate drop off of just under 30%, a substantial reduction in a single month.³⁵ However, the results also indicate there was no statistically significant change in the overall secular trend in the data; though the results suggest the slope, which was a monthly increase in views of 36498.2 before June 2013 was reduced after that month by 31192.5 views per month—leaving a more modest slope of an increase of 5305.7 views per month—the p -value for this reduction was not significant. In other words, the data provides evidence consistent with an

³⁵ There is little consensus for the appropriate method to measure effect size for single group ITS designs like the one used for this case study (Hedges, Pustejovsky, and Shadish, 2012: 224-225). The most common method in “intervention” studies is the percentage of non-overlapping data (PND) (the percentage of data points after the interrupting event the fall below the highest baseline data post before the intervention). Here, as is readily apparent from the data graph in **Figure 5.2**, the PND value is clearly above the 80% threshold for a “large” effect size: Scruggs and Mastropieri (2001). A few additional points on the regression results: the “model fit” for the results was highly statistically significant with a strong adjusted r-squared value (0.4301) and the F test value was highly significant (0.0006). Model diagnostics were also performed. Autocorrelation was tested for using the Durbin-Watson test statistic and was not a concern. However, model diagnostics identified two influential outlier data points. The first outlier concerned view counts for the Wikipedia articles in the data set in November, 2012 (Cooks D value = 0.1286922) the other was for view counts in July, 2014 (Cooks D value = 0.3244882). Both of these are extreme Cooks D values, particularly the July 2014 data point. These outliers are visible from the visualization in **Figure 5.2**, and are corrected for in second results.

immediate and substantial chilling effect following the June 2013 surveillance revelations, with the large drop in total view counts for the 48 Wikipedia articles. These points can be observed in the following graphic visualization in **Figure 5.4**, which includes a scatter plot of the data points in the set, but also a trend line based on the fitted results produced by the regression analysis:

Figure 5.2: First Results: Total Views and Pre/Post June 2013 Trend Lines



In this graph, the large and statistically significant immediate drop (-853585.5) over the course of June 2013 can be seen, with the trend line (regression/line of best fit) substantially lower immediately after June 2013 compared to the trend in the data before June. Also, the fact there was no statistically significant change in the secular trend in the data is also observable, as the slope in the data before June 2013 and after that month are comparable; in each, the trend in view counts for the 48 Wikipedia articles is modestly increasing overall.

These results offer some evidence of a sudden and immediate chilling effect due to the revelations in June 2013, which caused a precipitous drop off in the total view counts for the Wikipedia articles quite clear from this visualization. Though there was not a statistically significant change in the trend of the data, the graph still suggests something more than a mere temporary or ephemeral chilling effect that dissipates quickly; but rather a lasting impact on total article views—for example, the total article views as of August 2014 (month 32) is still lower than the views in April and May 2013 (months 15 and 16). At the same time, the results also suggest that any chilling effect did not influence the long term increasing monthly trend in the data—though the number of views dropped off after June 2013, the trend in the data is still increasing at a modest but apparent rate on a month to month basis. In short, the results are consistent with a sharp immediate chilling effect, possibly with a lasting impact on total views, but not one that alters the increasing secular trend in the Wikipedia article traffic.

5.5.2 Outliers: The ‘Exogenous Shock’ of War

However, two outliers are clearly apparent in the data as well. The first is at month 11 (or November, 2012) and the second is at month 31 (July, 2014); the view counts for the 48 Wikipedia articles in the data skyrocketed in those months, far beyond any other months before and after, clearly out of step with other data points. In November 2012, the total views dramatically and temporarily increased, approaching almost 4,000,000 total views. In July 2014,

again total views skyrocketed far beyond previous or subsequent months. Model diagnostics confirm that these are highly influential outliers with extreme values.³⁶

What happened during these months that caused the total view counts for the Wikipedia articles in the dataset to suddenly skyrocket? In short, it was very likely war and conflict in the Middle East. In November 2012, Israel launched “Operation Pillar of Defense”, an eight day Israeli Defense Force (IDF) operation in Gaza in response to rocket attacks being launched by Hamas, the Palestinian militia group, into southern Israel (Haaretz, 2012; BBC News, 2012). The operation officially began on November 14 and ended on November 21, 2012, with an Egyptian brokered ceasefire. In July 2014, Israel launched “Operation Protective Edge” another IDF operation in Gaza against Hamas (Hartman, 2014; Harel, 2014; BBC News, 2014). This operation ended after 50 days, with widespread media coverage of the thousands of rockets fired from Gaza into Israel, and the likewise several thousand strikes, many by IDF air force, on Hamas targets in Gaza (Harel, 2014; Zeitzoff, 2012: 13; Zeitzoff, Kelly, and Lotan, 2015: 2-5).

These two high profile conflicts coincide with a dramatic and anomalous increase in the view counts during those months for the Wikipedia article on “Hamas” in the dataset. Examining more closely the view counts for the Hamas article over the 32 months in the data set, the “Hamas” Wikipedia article view count was 928,533 for November 2012 and then 1,220,490 for July 2014, far beyond the mean number of view counts for the article across all months in the study – 134,574. Excluding these two outlier months the contrast is even more stark, with the

³⁶ The first outlier concerned view counts for the Wikipedia articles in the data set in November, 2012 (Cooks D value = 0.1286922) the other was for view counts in July, 2014 (Cooks D value = 0.3244882). Both of these are extreme Cooks D values, particularly the July 2014 data point.

mean being 71,912.³⁷ It can be inferred that the media coverage of these two conflicts involving Hamas led to a dramatic increase in Internet users seeking information about Hamas on Wikipedia. This conclusion is supported by the fact view counts for the Wikipedia article “Palestinian Liberation Organization” also increased in those same months.³⁸ It is also consistent with the findings of Zeitzoff (2012) and Zeitzoff, Kelly, and Lotan (2015) who have found that major conflicts, including the 2012 Gaza conflict, drew “significantly higher levels” of social media activity. These outliers are dealt with in the second set of results. The two influential outliers (due to the “Hamas” article) are dealt with in the second set of results.

5.5.3 Second Results, With Outliers Excluded

Consistent with “best practices”³⁹ for dealing with outliers, results including the outlier “Hamas” Wikipedia article data were reported above; here, a second set of results from the analysis (set out in **Table 5.3**) are reported, this time excluding the outlier data:

³⁷ This is confirmed by the z-scores for those two data points. Specifically, the z-scores are 3.01 and 4.11, respectively. The general rule, is that z-scores greater than +3.0 or less than -3.0 suggest the observation is an outlier: Westfall and Henning (2013: 247).

³⁸ However, these increases although noticeable in the data were not so extreme as to constitute outlier observations. The PLO Wikipedia article view count for November 2012 had a z-score of 3.0 while for July, 2014, it was 2.61. A z-score that is neither greater than +3.0 nor less than -3.0 is considered a significant outlier according to the general rule for outlier observations: Westfall and Henning (2013: 247).

³⁹ Herman Aquinis et al. (2013) recently conducted a comprehensive survey of relevant literature, and set out “best practices” for dealing with outliers. One such practice was to clearly indicate the method or technique of outlier detection (the authors suggest Cooks D values for “influential outliers” as has been employed here), and another is to report results of the analysis both with and without the outlier data.

Table 5.3: Second Results, Excluding Outliers and Correcting for Auto-Correlation

Independent Variable	Coefficients	Standard Error	P-value
Coefficient (β_0) Expected Total Views at Beginning of Study	1969435.0**	691764.1	0.008
Secular trend in data (β_1) Change in Total Views (Month to Month) Before 6/2013	30367.3	16015.5	0.069
Change in level (β_2) Change in Total Views Immediately After 6/2013	– 540318.4*	210584.8	0.016
Change in slope (β_3) Change in Total Views (Month to Month) After 6/2013	– 63593.4*	23221.5	0.011

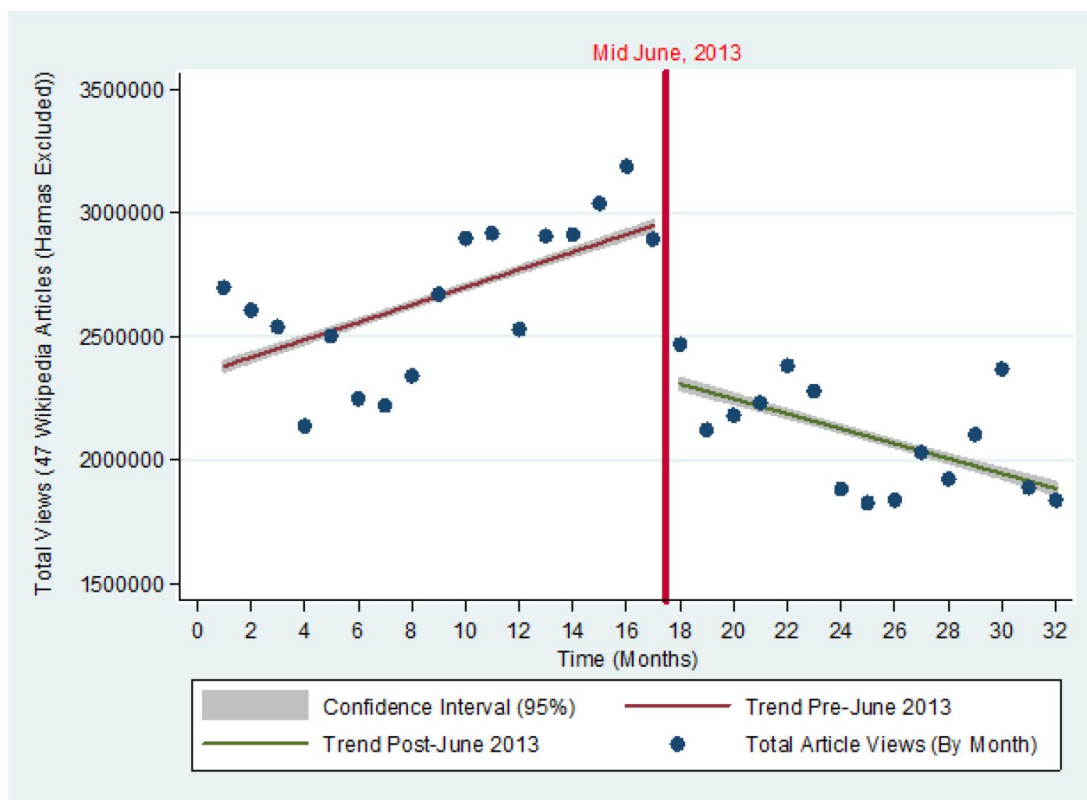
Note 1: * $p < 0.05$, ** $p < 0.01$

Removing the outlier data significantly improved the predictive value of the model (the adjusted r-squared value increased to 0.633, indicating a strongly predictive model).⁴⁰ Importantly, removing the outliers also led to additional statistically significant results. To begin, as with the first reported results, there was a sudden and statistically significant decrease in view counts for following the June 2013 revelations—an immediate drop of 540,318 total views. Again, using the total article views as of May 2013 (2,960,778), that represents an immediate drop off of just under 20%. This is also evidence of chilling effects—the revelations in June 2013 causing a sharp and sudden decrease in traffic to the 48 Wikipedia articles. However, even more noteworthy is after June 2013 there is not just the already noted large and immediate drop in views, but a statistically significant change in the overall trend or direction in the data. Now, rather than trending upwards, increasing on a monthly basis, the trend after June 2013 has

⁴⁰ The “model fit” was highly statistically significant with an F test value of = 0.0000. Model diagnostics suggested auto-correlation concerns, with the Durbin-Watson statistic test returning a value of 1.31. So, the results were corrected, controlling for auto-correlation using the Prais-Winsten method as recommended by Lagarde (2012); Judge (1988). Once “transformed”, the Durbin-Watson statistic value was 1.85, much more acceptable. VIF scores suggested some minor multi-collinearity that was, again, expected, given the inclusion of an additional predictor variable that includes aggregate raw monthly total views for all Wikipedia articles on all platforms. However, flexibility should be used on this count: O’Brien (2007). The results reported in **Table 5.3** and **Figure 5.3** are corrected for auto-correlation.

completely changed; the statistically significant decrease of 63,593.4 monthly views, overall, has shifted the secular trend from an increase of 30,367.3 views per month to a decrease of 33,226.1 per month. This is important. It means that the NSA/PRISM surveillance revelations in June 2013 may not have only caused a large and immediate drop—a sudden chilling effect—but the downward trend in the data post-June 2013 the chilling effects appear not only to have much longer term, possibly even permanent, impact. These points seen in the following graphic visualization in **Figure 5.3:**

Figure 5.3: Second Results: Total Views and Pre/Post June 2013 Trend Lines



Here, the increased predictive strength of the model is apparent from the narrower confidence interval for regression/trend lines in both segments of the graph. And, again, the data, especially the shifting trend, is consistent with a chilling effect arising from PRISM/NSA surveillance

revelations in June 2013. The sudden and immediate drop just after June 2013 is easily observed, consistent with an immediate chilling effect. With the outlier data relating to Hamas view counts excluded—which, due to its abnormally high view count in November 2012, dragged the regression line upwards—the drop off is not as steep (20% immediate drop off for these results compared to the 30% drop off in the first). But it is still substantial, statistically significant, and quite apparent from this graph.

Also clearly apparent is the noteworthy change in the overall trend in the data.⁴¹ Before June 2013 total views of the Wikipedia articles in the dataset are slowly increasing month to month. They are clearly on the rise at least until June 2013. After that month, with the widespread “exogenous shock” of publicity surrounding the PRISM/NSA surveillance revelations, a statistically significant change in the “slope” or data trend is clear. Without the outlier “Hamas” view counts in July 2014—distorting results after June 2013—now it is clear total views are on a downward path. This, again, elegantly visualizes empirical evidence consistent with a long term chilling effect due to the PRISM surveillance revelations, which is here associated with a drop in views immediately, but also a long term chill on accessing these Wikipedia articles; with users apparently seeking out and accessing information on these topics less and less.

⁴¹ Again, using percentage of non-overlapping data (PND) method to determine effect size, here the “intervention” in June 2013 clearly has a PND value of over 80% for a very large effect size: Scruggs and Mastropieri (2011).

5.5 Discussion

5.5.1 Chilling Effects: Evidence and Theory

The results in this case study provide compelling empirical support for the existence of chilling effects on the online activities of Internet users due to government surveillance. And, to be clear, the activities here are not only legal—accessing information on Wikipedia—but arguably desirable; it involves Internet users wanting to inform themselves about important topics subject to widespread social, political, moral, and public policy debates today (McCauley, 1991). The large, statistically significant, and immediate drop in total views for the Wikipedia articles after June 2013 implies a clear and immediate chilling effect. Moreover, the broad and statistically significant shift in the overall trend in the data (from the second results excluding outliers) is also important. This suggests that any chilling effects observed may be substantial and long term and not weak, temporary, or ephemeral. Determining if this trend continues further into the future is limited by the data set in this study (it only extends to August 2014), but the downward trend in the data, overall, does provide evidence of a more permanent “chill”. As such, this case study offers an essential contribution to our understanding of chilling effects; it is among the first studies to demonstrate evidence of such a chilling effect using web traffic data (instead of survey responses or search), and the first to do so in relation both to potential chilling effects on Wikipedia use, and, more broadly, how such government surveillance and other actions impact on how people access and obtain information and knowledge online.

In ways, these results are counter-intuitive. As noted earlier in this thesis, privacy researchers have also expressed skepticism about the possibility of large scale or broader chilling effects caused by online surveillance due to “desensitization” about privacy concerns in online

contexts (Nickel, 2014), with research suggesting uninformed, lax, or loose attitudes or practices towards privacy concerns online or that users adapt quickly to shifting privacy norms in online contexts, including in relation to privacy related practices (Trepte and Reinecke, 2011; Debatin, 2009; Acquisti et al., 2013; Bernescu, 2013). And then there is a substantial body of privacy research focused on the “privacy paradox”, that is, the disconnect between privacy attitudes and behavior online—though people regularly express an interest or concern for privacy, those concerns have been reflected in their actual behavior or practices online. In short, self-reported privacy concerns may not be reliable measures of actual behavior when faced with privacy threats or issues in a given context, with loose privacy practices and attitudes online being one of the potential explanations for the paradox (Acquisti et al., 2013: 249-258).

All this research suggests that even if there *are* any chilling effects they would likely, at most, only be temporary or ephemeral. That is, though it might be expected that users would, at first, be jarred or surprised by the PRISM/NSA surveillance revelations in June 2013, causing perhaps an immediate “chill” in relation to privacy concerning activities online; that chilling effect would dissipate as users do not encounter any trouble from government or merely adjust to the new regulatory, legal, or privacy norms online. These results contradict these predictions with a downward trend in the data apparent from the second set of result suggesting a more permanent “chill”.

This case study also provides important insights as to how to understand chilling effects, particularly how it operates online. Though Schauer and Solove’s accounts of chilling effects are closely related, there are important distinctions—Schauer approached chilling effects as

mainly resulting from uncertainty in the legal system (e.g., vagueness of legislative enactments) and peoples' fear of prosecution and legal sanction (Schauer, 1978: 689) while Solove, on the other hand, focused his efforts on surveillance and "executive information gathering". For Solove, people are "chilled" not necessarily by fears of individual sanction, but a broader regulatory environment that encourages chilling effects and self-censorship. Examining these results, it might be argued that they support Solove's conceptualization more strongly than Schauer's. This is because no one has yet been arrested or charged for merely reading Wikipedia articles. That means Internet users are unlikely to be worried about actual prosecution, yet the findings still suggest chilling effects. Solove's focus on privacy and how merely being monitored or watched can encourage people to confirm, self-censor, or merely subtly alter their activities in response, better explains these findings. At the very least, the findings provide some intriguing threads to follow in future research.

This case study also provides an important methodological contribution. The ITS design, and the segmented regression method of analysis, has provided a powerful design and approach to use observed behavior—tracked, for example, through web traffic online—to explore potential chilling effects. In particular, the use of time series data allows for compelling visualizations of the data and the evidence for chilling effects.

5.5.2 Chilling Effects and Other Exogenous Shocks

Another important insight from the study is how other dramatic external pressures or "exogenous shocks" impact on chilling effects. Notwithstanding the evidence both of immediate, substantial, and potentially long term chilling effects due to awareness of government

surveillance, those chilling effects can be affected or impacted by other dramatic intervening events or “exogenous shocks” like war. The impact that Israeli-Hamas conflicts in November 2012 and July 2014 had on the Wikipedia use chilling effects can be interpreted in two ways. It could be argued that these instances of high profile armed conflict “ameliorated” the chilling effects caused by publicity and public awareness of PRISM/NSA surveillance, as article traffic, at least for one or two of the Wikipedia articles among the 48 retrospectively analyzed in the case study, dramatically increased as those conflicts unfolded. Peoples’ desire to learn about the Israeli-Hamas conflicts simply overrode any concerns they may have had about the government monitoring information they were accessing online, thus reducing chilling effects.

However, another way of interpreting the results is that the Israeli-Hamas conflicts essentially “hid” or “masked” a broader chilling effect (apparent once the “ Hamas” article—an outlier like due to the armed conflicts—was excluded), by bringing new populations of users to Wikipedia in November 2012 and July 2014 that may be atypical Wikipedia users less aware of, or concerned by, government surveillance. This would seem to support the findings of Zeitzoff, Kelly, and Lotan whose work explored how major conflicts, including the 2012 Gaza conflict, drew “significantly higher levels” of social media activity, including the emergence of what they called “ephemeral” users, that is, those that, according to their analysis, seemed to only “tweet” about the 2012 Gaza conflict and nothing else (Zeitzoff, 2012; Zeitzoff, Kelly, and Lotan, 2015). Perhaps those visiting the Hamas and Palestinian Liberation Organization Wikipedia articles in November 2012 and July 2014 were atypical Wikipedia users; but ephemeral users who came to learn about the conflict, and did not return. It may be that this subpopulation is, for reasons

unclear, less concerned about online government surveillance; but there is nothing in this study to so suggest.

5.6 Conclusion and Limitations

This case study offers a critical research contribution—it is among the first studies to clearly demonstrate a statistically significant chilling effect based on web traffic data (instead of survey responses or search) using an empirically robust ITS design and regression analysis; the first to demonstrate such chilling effects in relation to NSA/PRISM surveillance and Wikipedia use, and the first in relation to the broader concern about how such government surveillance, information gathering, and related actions impact on how people seek and access information and knowledge online. As noted, these findings have a number of important implications: first, for understanding the theoretical and empirical dimensions of chilling effects, including their existence, potential permanence, and how they interact and are impacted by other factors such as large scale “exogenous shocks” like war or armed conflict.

This case study’s ITS design, and segmented regression analysis also provides an important methodological contribution—a research design for analyzing data about observed behavior to explore potential chilling effects with powerful visualizations of the data evidence. Nevertheless, there are important limitations to this case study as well. First, the time period of the dataset only extends until August, 2014, so the persistence of any chilling effects beyond that point remains an open question. Second, given the secrecy surrounding government surveillance practices and their potential wide scope, the research design could not be strengthened by comparing Wikipedia users affected by surveillance with a true control group (that had not been

exposed to online surveillance). Third, the nature of the Wikipedia data also limited ways to strengthen the research design of the case study; though the study focused on English Wikipedia articles, article traffic view counts used to construct the time series data set did not distinguish the geographic origins of article views, this would have provided some insight as to whether evidence of chilling effects varied across geographical regions. Additional research could problem some insights on this count.

Chapter 6

Case Study Three: Chilling Effects and the DMCA

6.1 Introduction

This chapter examines an Internet-related regulatory scheme and any chilling effects it may cause in practice. This exploration is pursued through a case study of the DMCA and its impact on Google Blogger and Twitter users. The DMCA regulates and enforces copyright online through an elaborate “notice and takedown” scheme that commentators have argued, in practice, has a chilling effect on people’s legal activities. The reasons for focusing on the DMCA and Google Blogger and Twitter users was explained and justified in Chapter 3. However, additional background to the DMCA’s legislative scheme is necessary.

6.2 The DMCA: A Regulatory “Chilling Effects” Scheme?

6.2.1 The DMCA’s Notice and Takedown Regime

Enforcing copyright online is indeed one of those contentious “hard cases”, requiring regulation to accommodate a range of complex and competing public policy and private interests (Brown and Marsden, 2013). Before the Internet era, for example, “end-users” or consumers merely bought and consumed copyright material obtained from intermediary distributors and retailers; however, the Internet has enabled end-users to copy, communicate, and distribute high quality digital versions online and transformed the role of intermediaries—in the Internet age, being ISPs and OSPs (Ginsburg, 2012: 493). The DMCA’s “notice and takedown” (NTD)

system, a central part of its scheme and embodied in Section 512 of the Act,⁴² is an attempt to deal with this reality and the competing interests of copyright holders and intermediaries; and includes enforcement and remedy provisions (Cobia, 2009).

Section 512 does not limit the rights of copyright holders to sue Internet users that infringe their copyrights in material they upload to online services, but does limit copyright holders' capacity to sue "deep pocketed" OSPs if those OSPs adhere to certain requirements for enforcing copyrights online (Nimmer, 2002: 917-919; Ginsburg, 2012). Put in simplest terms, the DMCA requires, among other things, that OSPs remove, disable access to, or "takedown" hosted content "expeditiously" if they receive notice such content infringed the rights of a copyright holder. In return for responding to such takedown notices and requests, the DMCA provided the OSP with a "safe harbor", that is, immunity or protection from lawsuit or liability for any infringing acts by users of their services (Urban and Quilter, 2005; Nimmer, 2002; Ginsburg, 2012; Seng, 2014).

Though an elaboration of all the complex components of Section 512's scheme is not necessary, some further detailing of its "notice and takedown" system and "safe harbor" is required. When content is uploaded or posted by users to an online service like YouTube or Google Blogger these OSPs become a "service provider" under the DMCA (Cobia, 2009).⁴³ As a service provider—providing internet services, hosting, or linking, etc.—the key to OSPs remaining in the DMCA's "safe harbor" (in Section 512) and avoiding liability for the actions of

⁴² Section 512 was actually enacted by the Online Copyright Infringement Liability Limitation Act (OCILLA) and is now codified as Title II of the DMCA at 17 U.S.C § (2000).

⁴³ 17 U.S.C § 512(c)(2).

their users, is their knowledge of infringing acts: an OSP must “not have actual knowledge”⁴⁴ of copyright infringement on its network, servers, or system, and if it does obtain such knowledge, then it must take immediate action to remove or disable access to the infringing material (Nimmer, 2002: 435). This is where “takedown notices” come into the scheme:

- If a copyright holder discovers her work has been copied and uploaded to a blog or website without permission, she can send a takedown “notification” or notice to notify the website or OSP (in this thesis, the targeted content would be hosted on an online service or linked to from an online service like Google Blogger or Twitter).⁴⁵
- The takedown notice must conform to certain statutory requirements or it is “void” (Cobia, 2009).⁴⁶ Once an OSP has received the takedown notice it must act quickly or “expeditiously” to remove or disable access to the infringing content.⁴⁷
- The OSP must also “promptly” notify the user whose content has been removed or disabled.⁴⁸ For example, Google Blogger sends a message to a blogger on its service indicating it has received a DMCA notice and has disabled access to certain content posted by the blogger. This notice is mandatory because it gives the user (here, blogger) a chance to send a “counter-notice”—which also requires certain information—back to the OSP denying that content or links posted infringed copyright.⁴⁹
- If no counter-notice is sent by the user, the content remains removed or disabled.⁵⁰ If a counter-notice is sent, the OSP must notify the complainer (who sent the original takedown notice) and replace or re-enable the removed content 10-14 days *after* the

⁴⁴ 17 U.S.C § 512(c)(1)(A)(i) (2000).

⁴⁵ 17 U.S.C § 512(c)-(d).

⁴⁶ Generally, the notice must be a “written communication” and it should contain: (i) a signature (digital or otherwise) of the person acting on behalf of the copyright owner; (ii) identification of copyrighted work that is allegedly infringed (like a URL to the work’s location); (iii) identification of allegedly infringing content that should be removed or access to which should be disabled (often a URL if content is on the web); (iv) contact information for the complainer; (v) a statement as to the complainer’s good faith belief and accuracy of the notice’s contents and claims. See: 17 U.S.C § 512(c)(3)(A).

⁴⁷ 17 U.S.C § 512(c)-(d).

⁴⁸ 17 U.S.C § 512(g).

⁴⁹ 17 U.S.C § 512(g)(3).

⁵⁰ It should be noted that some online services like Google Blogger, the user may have an opportunity to edit their blog post, remove any infringing material, and re-post).

counter-notice is received (so, material is inevitably offline for at least 10 days whether or not a counter-notice is filed) (Quilter and Heins, 2010: 9; Cobia, 2009).⁵¹

If the OSP does all of this, it is protected by Section 512's safe harbor from lawsuits both by copyright holders *and* the users who posted the alleged infringing content that was removed (Quilter and Heins, 2010: 91; Ginsburg, 2012).⁵² It should be also noted that if a counter-notice is filed then the original complainer (who sent the takedown notice) may then file an action in court seeking to restrain the infringing activity before the content is replaced by the OSP,⁵³ though they need not wait for that point to bring such a court action—they can do so at any time. In practice, DMCA takedown notices are sometimes sent directly to users but most often are sent to “service providers” (ISPs / OSPs), counter-notices are very rare, and there have been only “a few lawsuits” that have been filed after the initial notice-and-takedown procedure (Cobia, 2009: 391; Urban and Quilter, 2005). In other words, most copyright claims raised through the notice and takedown system are settled outside the judicial process.

Instead, a typical notice and takedown scenario, in relation to a blog, might look like this: A blogger hosted on Google's Blogger service posts a digital image on his blog. A copyright owner sees the image and believes it is a copy of a digital photo she originally took and posted on her website. She owns the copyright in the photo and has not authorized the copy so she sends a DMCA takedown notice to Google. Google, finding the notice adequate, disables public access to the blog post and notifies the blogger that it has received the DMCA takedown notice, provides a link to a redacted copy of the DMCA takedown notice for the blogger to view, and

⁵¹ 17 U.S.C § 512(g)(2). As will be seen few counter-notices are ever sent.

⁵² 17 U.S.C § 512(c)-(d), (g).

⁵³ 17 U.S.C § 512(g)(2)(C).

informs the blogger of his right to file a counter-notice. The blogger in this scenario decides not to file a counter-notice. The content thus remains removed or inaccessible permanently.

This is, essentially, the DMCA's notice and takedown system. Though the DMCA was enacted in response to lobbying by content and media industries (Benkler, 2006), the notice and takedown system in Section 512 was seen as a compromise between content industries and ISPs and OSPs in addressing the "controversial and complex issue" of "securing safeguards to online service providers complementary to the protection afforded to copyright owners" (Nimmer, 2002: 917; Urban and Quilter, 2005). The safe harbor provides strong incentives for OSPs to respond quickly to DMCA takedown notices but also encourages copyright holders to send out multiple notices to multiple OSPs to deter and prevent the unauthorized copying and distribution of their works.

6.2.3 Notice and Takedown: In Practice

i. Vague Terms

Despite its widespread influence and adoption, there are also contentious problems with how the DMCA notice and takedown system works in practice. First, the legislative scheme contains a number of vague and uncertain terms (Nimmer, 2002), ranging from the provisions governing the content required for DMCA takedown notices to be valid,⁵⁴ to the requirement that OSPs "take reasonable steps to promptly notify" users whose content has been removed or

⁵⁴ 17 U.S.C § 512(g)(3)(A).

disabled⁵⁵ (Nimmer (2002). Undefined and vague terms like this pervade Section 512 rendering its application from case to case uncertain and unclear.

ii. Uncertain Role for Fair Use

Second, and perhaps even more problematic, there is little guidance as to the role of the “fair use” copyright defense in the notice and takedown system. Originally a judicially created legal doctrine, but now recognized in Section 107 of the U.S. Copyright Act,⁵⁶ fair use is the “most important” defense to the copyright infringement and is an essential element of copyright law—rendering expansive copyrights both “possible—and bearable” (Beebe, 2008: 551; Lipton, 2005). The most “common” justification for fair use was that certain “reasonable” appropriations (e.g., copies) of works were legal and permissible because their purpose advanced the “public interest” without inflicting “grave harm” on copyright holders (Litman, 2006: 84). Given that “fair” uses might change over time, the doctrine is “flexible” with its “precise boundaries” never entirely “clear” to allow for new uses to be recognized as fair and legal or old ones to evolve (Beebe, 2008: 551; Lipton, 2005: 121).

As such, there is no precise statutory definition for fair use but instead the U.S. Copyright Act offers a non-exhaustive list of common fair use “purposes”—copying for “criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research”—and then outlines four factors to determine whether a use is “fair” in a given situation

⁵⁵ 17 U.S.C § 512(g).

⁵⁶ 17 U.S.C § 107.

(e.g., purpose of use, nature of the work being used, amount used, and the effect of the use).⁵⁷ There is no “bright line rule” for fair use; these factors must be applied on a case-by-case basis (Seltzer, 2010: 178; Cobia, 2009: 389; Litman, 2006).⁵⁸ Since copyright law “leans toward protection”, fair use is important because most other copyright defenses are narrow and highly specific; fair use is a flexible and open ended defense that can apply in a range of circumstances (Beebe, 2008: 557). Though, as noted, there are no bright lines for fair use, given the listed fair use categories in Section 107 (e.g. criticism, comment, news reporting, teaching, scholarship, research) there is some certainty as to its application in some contexts certain forms of use of copyrighted materials that have been long established by courts as constituting fair use, such as quotations, small excerpts (of texts but also music or video via brief video or music clips), parodies, photocopies (e.g., for the classroom), home video-taping of television programs (Litman, 2006: 18, 84).

A key “public interest” served by fair use is freedom of expression (Boyle, 2009; Beebe, 2008; Burk and Cohen, 2001; Benkler, 1999). Burk and Cohen (2001), for example, call it an essential “safety valve” between expansive copyrights and freedom of expression (43). Copyright protection is a restriction on freedom of expression as it prevents people from using copyrighted materials for their own speech and expression without permission (Burk and Cohen, 2001). Fair use ameliorates these restrictions, at least in part, by allowing certain uses of copyrighted works—“such as” criticism, comment, news reporting, teaching, scholarship,

⁵⁷ Put in more detailed terms, the factors in fair use include: (1) purpose and character of use (whether the copying is for commercial reasons is important here); (2) the nature of the copyrighted work; (3) the amount and substantiality of the copyrighted work used; and (4) the effect of the use upon the potential market for or value of the copyrighted work. See 17 U.S.C § 107.

⁵⁸ *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 577 (1994) (“...The task [of fair use analysis] is not to be simplified with bright-line rules, for the statute, like the doctrine it recognizes, calls for case-by-case analysis...”).

research—that would otherwise require permission. This balances copyright restrictions with the “public interest in open dialogue, deliberation, and the advance of knowledge” (Burk and Cohen, 2001: 43).

Yet the way in which fair use is considered in the DMCA notice and takedown scheme is vague and unclear (Seltzer, 2010). Though some OSPs like Google consider potential fair use issues on reviewing DMCA takedown notices it has received,⁵⁹ there is no explicit requirement to do so. This is because parties sending DMCA takedown notices are legally required to consider fair use before sending, but this does not always happen; both good and bad faith mistakes about fair use occur (Seltzer, 2010: 178; Nathenson, 2009: 143-147).⁶⁰ Furthermore, there are few safeguards in the DMCA to detect, penalize, or punish abuses of the notice and takedown system, despite anecdotal and high profile cases suggesting abuse and overreach (Seltzer, 2010; Cobia, 2009).

6.2.4. Chilling Effects: Criticisms

Based on these problems and other concerns, commentators, legal scholars, and researchers have criticized the DMCA notice and takedown system for creating “chilling effects” on people’s activities online. As noted earlier, these criticisms include general concerns about

⁵⁹ See Google. (2015). *Transparency Report FAQ on Copyright Removal Requests*, <https://www.google.com/transparencyreport/removals/copyright/faq/> (“...It is our policy to respond to clear and specific notices of alleged copyright infringement. Upon review, we may discover that one or more URLs specified in a copyright removal request clearly did not infringe copyrights. In those cases we will decline to remove those URLs from Search. Reasons we may decline to remove URLs include not having in enough information about why the URL is allegedly infringing; not finding the allegedly infringing content referenced in the request; deducing that the copyright removal process is being used improperly... or fair use...”).

⁶⁰ See *Lenz v. Universal Music Corp.*, 572 F. Supp. 2d 1150, 1152 (N.D. Cal. 2008); Nathenson (2009) discussion (143-147).

the DMCA's chilling effects on the activities of Internet users: (for far from non-exhaustive sample, see: Boyle, 2009: 68; Deibert, 2013: 229-230; Seltzer, 2010; Solove, 2010; Von Lohman, 2010; Zittrain, 2006; Urban and Quilter, 2006; Goldman, 2006; Lipton, 2005; Benkler, 2003: 214; Netanel, 2001; Samuelson, 2001, 1999; Sheets, 2000). One simple way of understanding the origins of these concerns, is that DMCA takedown notices—in alleging a violation of copyrights and copyright law—essentially amount to a form of legal threat both to OSPs as well as to users (who must receive notice if the OSP has received a DMCA takedown notice). The threat is the potential for a lawsuit that could lead to court-imposed civil or criminal penalties under the Copyright Act, but due to the DMCA's vague scheme, whether such litigation could be successfully opposed is quite uncertain. The threat may also be the subpoena powers given to copyright holders in the DMCA, which allows them to potentially unmask anonymous activities online (Katyal, 2003). So such communicated legal claims or threats in DMCA takedown notices are analogous to libel and defamation claims that have, in more traditional media settings, been shown to “chill” or deter certain media practices, publishing, or content coverage (see e.g., Barendt et al., 1997; Renas et al., 1989; Dent and Kenyon, 2004; Kenyon, 2010; Stanig, 2011). These works, combined with Hansen and Moore (1989) and Massing (1985) who found some evidence that chilling effects created by threats of libel lawsuits had a greater impact on smaller media organizations with less resources, suggest individual Internet users who receive a DMCA takedown notice would be similarly impacted.

Moreover, the DMCA's notice and takedown scheme has broader effects than the more specific content or expression based chilling effects explored here. For example, scholars like Katyal (2003; 2004; 2008) and Bridy (2010) have raised concerns over the impact that DMCA

incentivized copyright enforcement online—bots and programs monitoring users online for copyright infringement—has on people’s rights, including a “gradual chilling” of creative behavior (Katyla, 2003: 366). Katyal (2003) explores what she calls “piracy surveillance” an entirely “new” and different form of surveillance that “comprises extrajudicial methods of copyright enforcement that detect, deter, and control acts of consumer infringement” (2003: 300).

6.3 Theory and Method: A Brief Note

6.3.1 Operationalizing Chilling Effects Theory

Notwithstanding the earlier noted concerns and wide-ranging criticisms of the DMCA, it is surprising, as Seng (2014) notes, there have been so few empirical studies. There are only three such systematic studies on the DMCA itself: Urban and Quilter (2005), Heins and Beckles (2005), and more recently Seng (2014). None of these empirical studies investigate chilling effect per se, though they do touch on related issues. Indeed, as noted previously, more empirical work needs to be done to substantiate key aspects of chilling effects theory (Kendrick, 2013; Richards, 2013) and the DMCA is no exception to this observation. One key reason there is such a “paucity” (Seng, 2014) of research is due to methodological and research design challenges: regulatory chilling effects—which involve forms of self-censorship—are highly difficult to measure and prove (Czepek, 2009: 40; Strandburg, 2008: 813; Klang and Murray, 2005; Barendt et al., 1997; Hall, 1993-1994).

The case study in this Chapter also attempts the difficult task of measuring regulatory chilling effects in context, by investigating any chilling effects that the DMCA notice and

takedown regulatory scheme might have on both Google Blogger and Twitter users. Schauer (1978) and Solove (2006; 2007a) on chilling effects theory provide the general theoretical framework for this case study of the DMCA. However, the legal and theoretical work of Seltzer (2010) and past empirical work on DMCA notices by Quilter (2005) and Heins and Beckles (2005) are essential to translate the chilling effects theory in the complicated context of the DMCA notice and takedown scheme. Seltzer (2010), in particular, builds on Schauer and Solove's work in the context of the DMCA to provide a helpful theoretical account for understanding how regulatory chilling effects might work under the DMCA notice and takedown system. Seltzer shows that fear or risk is not necessarily required for regulatory chilling effects; rather, certain legal and technical "architectures" can impose costs (or even implicit "taxes") on free expression or other legal activities, that impose burdens on speech, or acts of expression, that promote chilling effects. For Seltzer, the DMCA notice and takedown system—even if a user may not fear legal retribution in every given case—promotes an online "speech environment" that encourages people to self-censor (2010: 187). In other words, not all regulatory chilling effects are the result of law with harsh punishments or invasive forms of surveillance; they can be the benign operation a law's architecture, and the costs it imposes on speech and other online activities.

Based on Seltzer (2010), Schauer (1978), and Solove (2006; 2007a), the DMCA notice and takedown system constitutes a potential "chilling effects" regulatory scheme. First, the scheme is individually focused—in that individual Internet users (like bloggers or twitter users) are targeted by DMCA takedown notices as most blogs and microblogs are "personal" and

owned by a single person.⁶¹ Second, the DMCA’s notice and takedown system aims to deter and, certainly, could result in legal activities being deterred or chilled. Though regulatory deterrence should not be expected to operate with perfect precision, where a not insignificant amount of legal activities are “chilled” then the regulatory action in question becomes a problem. Third, the DMCA notice and takedown system, as discussed, includes many vague and uncertain components—from the difficulties of interpreting the DMCA’s complex procedure to the lack of clear guidance as to the role of fair use—a fundamental doctrine to the balance between copyright law and freedom of expression. Moreover, forcing users to re-assert the lawfulness of their speech through re-posting or counter-filing, all create an implicit “tax” on online speech and other legal activities that encourage self-censorship (Seltzer, 2010).

6.3.2 Data Collection

This case study examines 500 Google Blogger accounts and 500 Twitter accounts that had received DMCA takedown notices for content posted online were analyzed (along with the corresponding notices themselves). The Google Blogger accounts were located by drawing a random sample of 500 DMCA takedown notices from all DMCA takedown notices in the Lumen Database sent to Google Blogger accounts between January 1, 2012 and July 31, 2013.⁶² Similarly, the Twitter accounts were located by drawing a random sample of 500 DMCA takedown notices from all notices in the Chilling Effects repository sent to Twitter accounts

⁶¹ Often, there was not enough information to determine the “type” of Twitter account; this was different from Google Blogs, as clear blog type categories emerged from the data during the coding process.

⁶² The random sample was obtained in July 2013 from the Chilling Effects repository. This date was chosen to balance the need to begin coding and further analysis of the samples and the aim to sample from the most recent notices in the repository.

between January 1, 2012 and July 31, 2013.⁶³ All notices from which these samples were drawn were acted on by Google or Twitter⁶⁴—that is, these notices led Google and Twitter to remove or disable access to content in response to the notice—and therefore Bloggers and Twitter users in question would have been notified that these DMCA takedown notices were received and acted upon.⁶⁵ Thus, by studying the Blogs or Twitter accounts that were targeted by DMCA takedown notices, this case study aims to glean evidence as to their impact on those targeted users, including any regulatory chilling effects.

6.3.3 Method of Analysis and Research Predictions

The analysis proceeded iteratively. Theoretical and empirical observations and assumptions drawn on literature—in particular Seltzer (2010) and the three most prominent empirical DMCA studies Urban and Quilter (2005), Heins and Beckles (2005), and Seng (2015)—provided the foundation for coding and method. Guidance from Epstein and Martin

⁶³ For context, there were 507,150 total DMCA takedown notices in the Chilling Effects repository received in 2012. For January 2013 to July, 2013, there was a total of 283,840 received during that time period (2013 was on track to have more total DMCA takedown notices than 2012). There were 48,915 total DMCA takedown notices sent to Google Blogger in 2012 and 32,365 in 2013 (up to July). There were 3,334 total DMCA takedown notices sent to Twitter accounts in 2012 and 4,631 in 2013 (up to July). All of these numbers were obtained by MySQL database queries and confirmed, in writing, with Wendy Seltzer, founder of the Lumen Database, and Adam Holland, Director, at the Berkman Klein Center of Internet and Society, Harvard University: See email correspondence received by the author from Adam Holland and Wendy Seltzer, May 17, 2014.

⁶⁴ Google shares only those DMCA takedown notices it has acted on (removed or disabled content pursuant to) with the Chilling Effects Database. See Google's Transparency Report FAQ, stating Google will “share a copy of qualifying copyright removal requests with the public site Chilling Effects”: Google (2015). This is further supported by the DMCA policy linked to Google’s Blogger Terms of Service site, which states “We may also document notices of alleged infringement on which we act. We may forward the content in your notice to the nonprofit organization Chilling Effects, which publishes these notices after removing certain personal information” (Google, 2014). Twitter similarly states in their “Copyright and DMCA Policy” that “If we decide to remove or disable access to the material, we will notify the affected user(s) after removing or disabling access to the material, provide them with access to the reporter’s complaint along with instructions on how to file a counter-notice, and forward a copy of the complaint to Chilling Effects”: Twitter (2015).

⁶⁵ Google and Twitter, as required by the DMCA, each notifies their users of DMCA takedown notices so that their users or subscribers may file counter-notifications (Seltzer, 2010). See Google’s Transparency FAQ (Google, 2015) and Twitter’s Copyright and DMCA Policy (Twitter, 2015).

(2010), Webley (2010), and Wright and Hall (2008) for coding and data collection specific to empirical legal research was also observed, particularly sensitivity to the contextual nature of legal analysis and the need to systematize data collection to increase reliability. Thus, codes also evolved inductively in the process of data collection, analysis, and interpretation, with coding applied and used to categorize blogs and Twitter accounts (Robson, 2002). Each DMCA takedown notice and corresponding Blogger and Twitter account was viewed and coded for a wide range of relevant variables, including, among other things: whether the blog post, tweet, or content targeted by the DMCA takedown notice was offline or inaccessible;⁶⁶ the nature of the content targeted by the DMCA takedown notice; the type of the blog targeted (Blogger only);⁶⁷ the number of total followers (Twitter) or comments (Blogger) for the recipient of the DMCA takedown notice;⁶⁸ whether the user blogged or tweeted about receiving a DMCA notice or copyright more generally;⁶⁹ the apparent location of the recipient Blogger or Twitter user; and, whether there was a potential fair use (or related) defense to the copyright claim in the DMCA

⁶⁶ Each Blogger or Twitter account (and corresponding DMCA takedown notice each account) were coded for this variable on a range of 1 to 4. If the targeted blog post, tweet, or content was online and accessible, it was coded as “1”; if the targeted blog post, tweet, or content was offline or inaccessible but the blog or Twitter account in question was still online, it was coded as “2”; if the blog or Twitter account targeted by the DMCA takedown notice was deleted or removed by the user, it was coded as “3”; if the targeted blog or Twitter account was suspended (e.g., by Google or Twitter, as the case may be) it was coded as “4”. This coded variable was approached as ordinal, as a “suspended” Google Blog or Twitter account meant that the user could no longer tweet or blog indefinitely (this is different from user deleted blogs or Twitter accounts, wherein users could re-open their blog or Twitter account at a later point). See **Appendix 6.1** and **6.2** for additional information on how this variable was coded.

⁶⁷ Often, there was not enough information to determine the “type” of Twitter account; this was different from Google Blogs, as clear blog type categories emerged from the data during the coding process.

⁶⁸ Each Blogger or Twitter account (and corresponding DMCA takedown notice each account received) was coded for this variable on a range of 1 to 5. If the targeted blog or Twitter account had no comments or followers, it was coded as 1; if the targeted blog or Twitter account had comments or followers but less than 50, it was coded as 2; if the targeted blog or Twitter account had more than 50 comments or followers but 100 or less, it was coded as 3; if the targeted blog or Twitter account had more than 100 comments or followers but 1000 or less, it was coded as 4; if the targeted blog or Twitter account had 1000 or more comments or followers it was coded as 5. While followers are clearly stated on Twitter accounts, a simple script was used to scrape/compile the number of comments on Google Blogs in the sample.

⁶⁹ Here, the Blogger’s blog was searched, using Google search, for any mention of keywords “DMCA” or “copyright” and any responses or statements coded and logged. A similar process was completed for the Twitter accounts. Using Twitter’s advanced tweet search function, each Twitter user’s tweet stream was searched for the keywords “DMCA” or “copyright” and, if found, logged and coded.

takedown notice. To simplify this latter assessment, narrow and strict approach to “fair use” was employed, using only statutorily recognized fair use purposes and those forms of fair use that are settled and non-controversial.⁷⁰ Coding for this wide array of variables was to explore potential factors that impact and influence any chilling effects observed.

Seltzer (2010) theorizes the DMCA as a regulatory scheme that imposes costs and barriers that encourage chilling effects. Building on this approach, this case study uses the success that DMCA takedown notices may have in getting content they target removed or disabled online—that is, their offline or online status—as the main proxy for understanding how those DMCA takedown notices have a chilling effect on Internet users behind the targeted speech, expression, or content. Additionally, analysis of responses to receiving DMCA takedown notices in blog posts or tweets, or any related comments (e.g., statements on blogs or tweets about copyright law or the DMCA) also provide additional means of investigating any potential chilling effects. Finally, the statistical software Stata was used to perform cross tabulations and statistical measures of association (chi-squared and gamma) to analyze, test predictions, and explore relationships in the data.

⁷⁰ Here, each Blogger or Twitter account (and corresponding DMCA takedown notice received) was coded for this variable on a range of 1 to 3, based, generally, on the strength of any fair use or related legal defense to the copyright claim in each respective DMCA takedown notice. The fair use defense was the primary legal defense considered, though if there were other obvious problems with a DMCA takedown notice copyright claim (such as, no evidence of copyright ownership, improper or abusive use—notice did not concern copyright but ulterior objects and aims, or covered speech that was clearly not copyrighted) then this was taken into account as well. If a fair use defense (or related) legal defense was unlikely, 1 was assigned. If a fair use (or related) defense was possible but unclear, then 2 was assigned. If a fair use (or related) defense was likely then 3 was assigned. For this variable, fair use was applied fairly restrictively in that only cases of statutorily recognized fair use were used to identify likely or possible fair use defenses (e.g., criticism, comment, news reporting, teaching, scholarship, research or long recognized and non-controversial forms of fair use, like reasonable excerpts or non-commercial parody or criticism). For further guidance in shaping coding rules for this variable, Nathenson (2009) provided a helpful guide for understanding and determining fair use issues under the DMCA (153-157).

In theory, when users are notified that a DMCA takedown notice was received for content the user posted on his or her Blog or Twitter account, it will chill or deter the user from re-enabling or re-posting the content or filing a counter-notice. Whether deterred by fear of criminal or civil copyright penalties, the uncertainty of the legal process, or merely the additional “cost” of having to re-assert the legality of their online expression (Seltzer, 2010), individuals’ online activities are being chilled by the DMCA’s regulatory scheme. In some cases, the users may also be so fearful of legal claims that they will delete their own Blog or Twitter account; this, too, will mean the targeted content will remain offline, but also that any future expression by the user is also lost—a significant chilling effect. Thus, it is predicted that *due to regulatory chilling effects DMCA takedown notices will lead to the removal of targeted content on a majority of Blog and Twitter accounts (H1)*. This prediction is further supported by Das and Kramer (2013) who theorize that self-censorship is a form of boundary management and that most users will, in addition to fearing legal penalty, also self-censor to avoid conflict (legal or otherwise) or further social disapproval.

This research is also concerned with factors that influence the impact, permanence, and scope of chilling effects. This is mainly exploratory given the dearth of existing empirical research explaining such factors, however, some predictions can still be made. If the chilling effects caused by the DMCA takedown notices (and the vagueness and uncertainty associated with resolving legal claims through the DMCA) are significant enough, then there may not be any relationship between the strength of any potential fair use defense and whether or not the content targeted is removed or online; this is because the user will be deterred even where they have a possible or even strong fair use defense. However, assuming some level of rational

deliberation by targeted users (Schauer, 1978) and given the existence of copyright piracy, there still may be some relationship between Blogs or Twitter accounts removed or suspended for repeatedly receiving DMCA takedown notices for multiple instances of copyright infringement who, predictably, would have weak fair use or copyright defenses. Therefore, it is predicted that *if there is any relationship between the strength of any potential fair use defense and, whether the targeted content, Blog, or Twitter account is removed, that relationship will be weak (H2).*

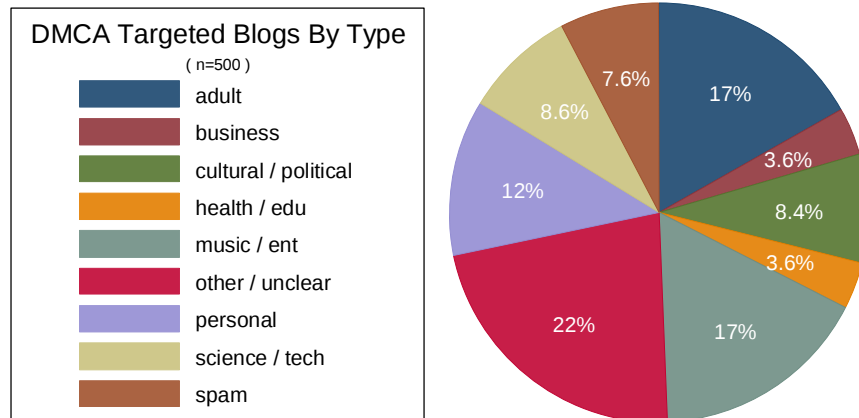
6.4 Preliminary Observations and Analysis

This case study offers an important contribution not only as an empirical study of chilling effects under the DMCA, but also provides some basic insights about the users being targeted by DMCA takedown notices. Seng (2014), for example, provides some higher level data in his work on this count by looking at notices, but this case study is the first to offer these observations at ground level, that is, by visiting and analyzing the Blogs and Twitter accounts targeted themselves. Those observations are set out in this section.

6.4.1 Blogs Targeted

It should be noted, at this point, that the Google Blogs sample totaled 500 (n=500) though one blog returned a malware warning (and was thus not visited) so in some coded variables observations will total 499 (n=499). The total number of cases for the Twitter sample was also 500 (n=500). The nature or types of the blogs targeted by DMCA takedown notices in the Blogger sample were actually quite wide ranging (**Figure 6.1**):

Figure 6.1: Google Blogger Blog Types

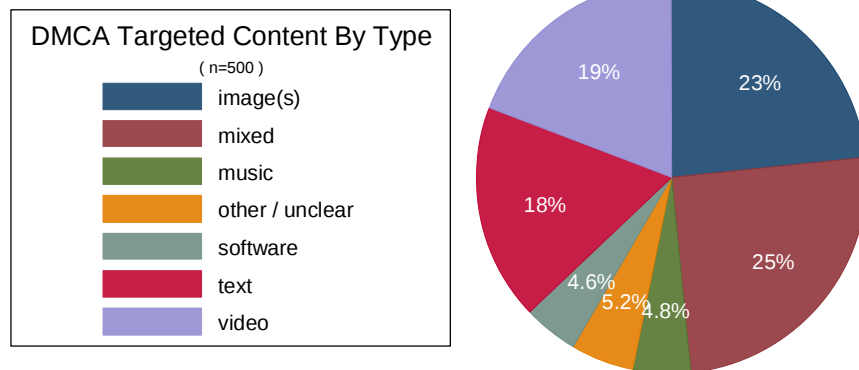


While the largest percentage of blogs were not clearly definable (“other / unclear” – 22%)—there was no obvious or apparent “category” for these blogs—blogs that concerned music, entertainment, and sports (“music / ent”) and adult content (“adult”) were the second largest groups (17% each). Notably, blogs that were clearly spam accounts constituted only 7.6% of the sample. Personal (12%), social, cultural, and political (8.4%), and science and technology blogs (8.6%) all constituted a notable share of the Blogger sample.

6.4.2 Content Targeted

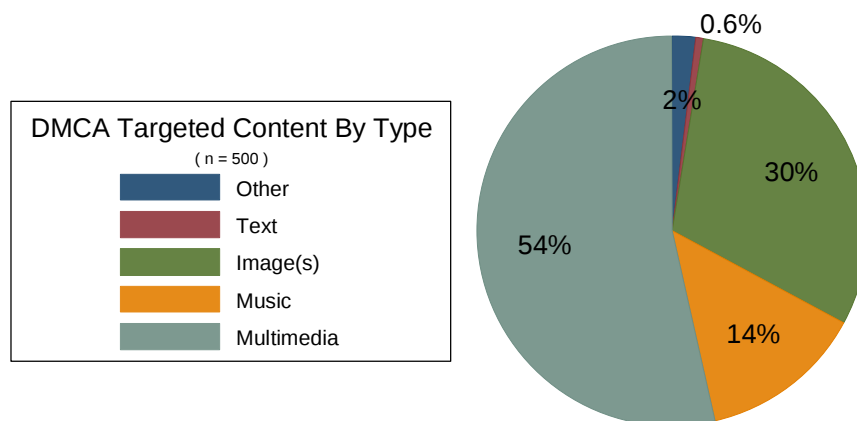
The content targeted by the DMCA takedown notices in each sample were also wide ranging. For the content targeted in the Blogger sample (**Figure 6.2**), the largest percentage of content targeted by DMCA takedown notices was mixed media (25%), that is, content involved more than one media type (e.g., images and video or text and images).

Figure 6.2: Blogger Sample



Images (23%) and video (19%) also constituted large percentages of content targeted, with text based content also constituting a notable share of content targeted (18%). Software and “other” categories of content all took smaller shares. In the Twitter sample (**Figure 6.3**), the largest percentage of content targeted by DMCA takedown notices was multimedia (54%) (which included video, software, and anime).

Figure 6.3: Twitter Sample



Images were the next largest type of content targeted (30%) followed by music, which constituted 14% of the content targeted. Much smaller percentages were text-based content (0.6%) and miscellaneous content that did not fall into other main categories (“other” – 2%).

Though music content was targeted somewhat more in the Twitter sample (14%) compared to the Blogger sample (4.8%) this is still much lower than what was expected. Seng (2014)’s study analyzing DMCA takedown notices up to 2012 from the “top 50” content providers (in terms of the total number DMCA takedown notices they send) wherein music content was targeted by 58.6% of DMCA takedown notices in his sample. Though there were likely *some* changes in content targeted by DMCA takedown notices sent in 2013 (which form part of our case study’s sample, but not Seng’s), the contrast is better explained on the basis of methodological choices in this case study.

Most of these corporate copyright holders concerned with music (such as BPI Music), IFPI (International Federation of the Phonographic Industry) or the Recording Industry Association of America (RIAA)—which each sent 191,092, 11,442, and 3,436 total notices as of 2012, respectively—tend to use “multiple URL” DMCA takedown notices. That is, rather than sending a single DMCA takedown notice that includes a single copyright claim (with a single URL for the location of the alleged infringing work online), the notices these corporate content providers send sometimes contain hundreds of individual URLs removal requests. This is not uncontroversial and viewed by some as an abuse of the DMCA notice and takedown system, leading some OSPs to place limits on the number of URLs that can be included in notices (Google has placed “daily caps” on the number of removal requests that can be made)(Seng,

2014: 38). To ensure a richer, diverse, and, arguably, more representative sample in this case study (as noted in Chapter 3) only one URL per DMCA takedown notice was analyzed here (the first URL in each sample pertaining to Google Blogger). Had all URLs requested for takedown or removal in each DMCA takedown notice, then the sample may have been heavily skewed toward either music or adult content, which would limited this thesis' research insight into other kinds of content (Seng, 2014). Still, it should also be noted that only 17.7% of the DMCA takedown notices in the Google Blogger sample (n=88) and 29.7% of the Twitter sample (n=148) had 10 or more URLs in each notice. Meanwhile, 64.5% of the Google DMCA takedown notices (n=322) and 54% of the Twitter notices (n=270) had a single URL to be removed. So multiple-URL DMCA's were not the predominant form of takedown notice in either sample.

6.5 Analysis

This section explores and analyzes any evidence of regulatory chilling effects in the data collected, assessing whether there is any foundation or substance to concerns that the DMCA notice and takedown system has a chilling effect on legal activities and expression online. However, a few preliminary points are required to frame this investigation.

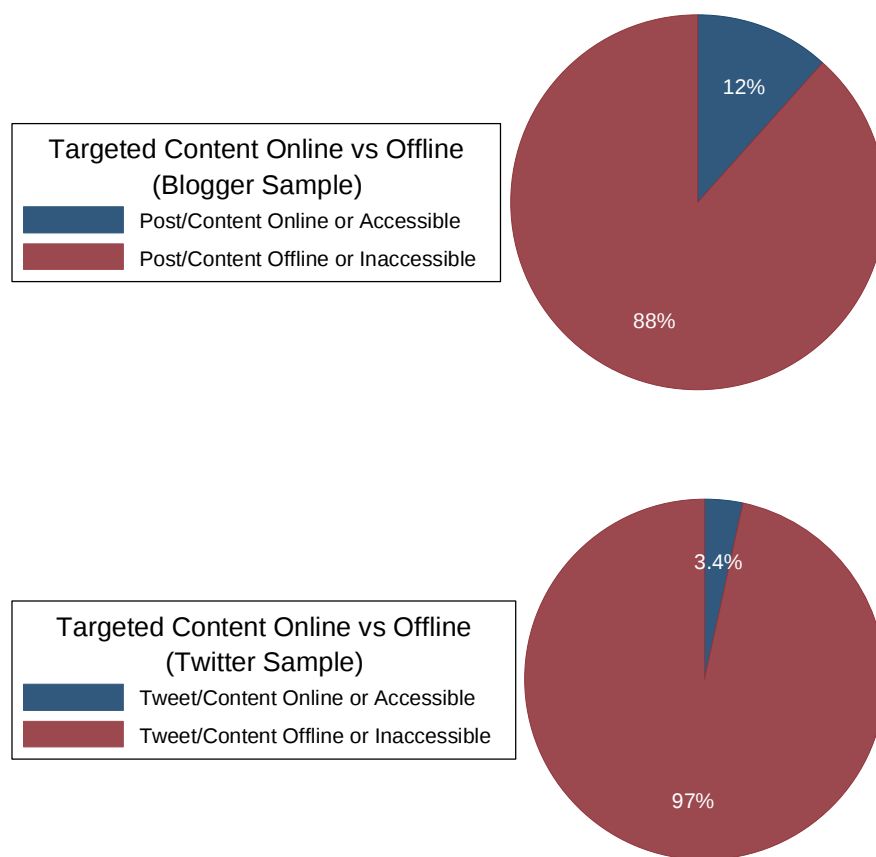
6.5.1 DMCA Chilling Effects

i. The Impact of DMCA Takedown Notices

Perhaps some of the most convincing (and surprising) evidence of the DMCA's chilling effects in this case study is how very effective DMCA takedown notices are in having the blog

posts, tweets, or other content they target removed or rendered offline and inaccessible (usually permanently)—suggesting an important effect not only on content, but also on the Internet users behind the content. In the Blogger sample, 499 of 500 total blogs (and DMCA takedown notices) were analyzed, while all 500 Twitter accounts were visited and analyzed in its sample. See **Figure 6.4** for the results on this count:

Figure 6.4: DMCA Takedown Notice Impact

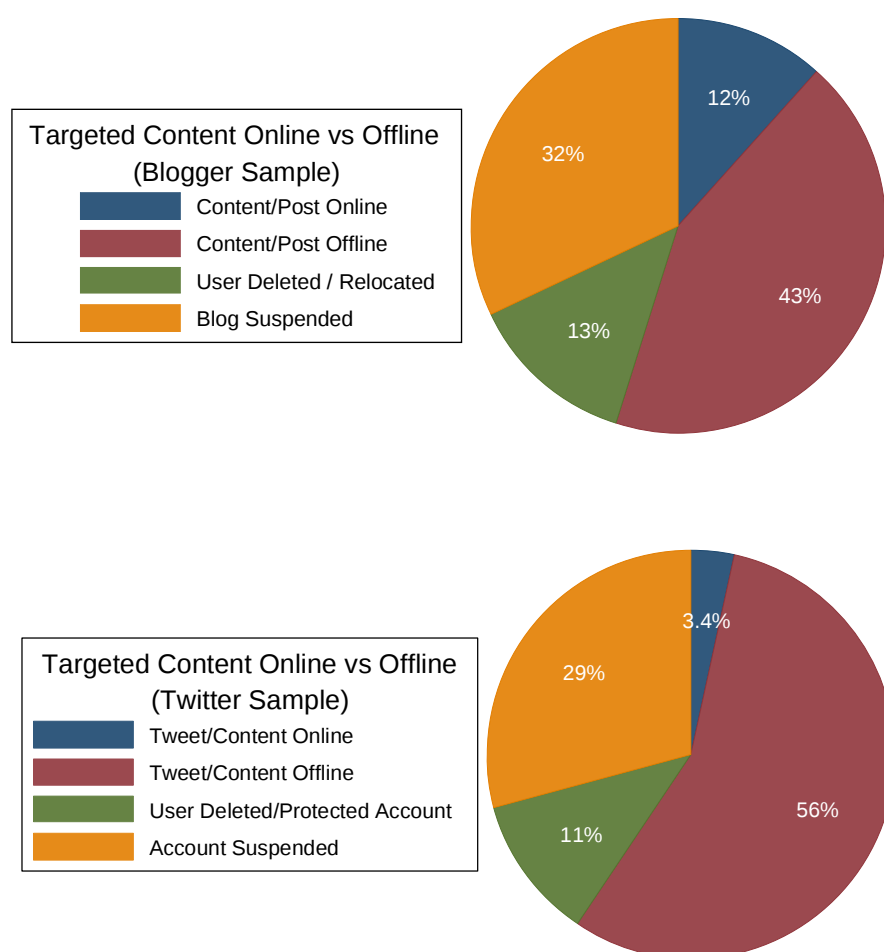


In the Blogger sample, 88% (n=441) of blog posts or content targeted by the DMCA takedown notices were found to be offline, removed, disabled, or inaccessible. Only 12% (n=58) were online and accessible. In the Twitter sample, the percentage of tweets or tweeted content

withheld, removed, disabled, or inaccessible, was even higher: 97% (n=483). Also, only 3.4% of content targeted was currently online and accessible.

These numbers suggest (roughly) 90% of the Bloggers and 97% of the Twitter users failed to take steps, legal or otherwise, to get their content back online, at least directly. But this data can be broken down further, to provide a clearer picture as to the impact of DMCA takedown notices and *why* the specific content is online or offline (see **Figure 6.5**):

Figure 6.5: DMCA Takedown Notice Impact – Further Breakdown



These figures provide some additional context. For the Blogger sample, the 88% of offline and inaccessible content can be broken down three ways: 43% involved cases where the targeted content or blog post was offline and inaccessible but the blog itself was still online; for 32% the blog was offline—suspended by Google; and 13% offline line due to being closed or deleted by the user (or potentially relocated). In the Twitter sample, 56% of cases where content was offline or inaccessible involved cases where tweets or tweet content was removed, offline or inaccessible but the Twitter account itself was still online; in 29% of cases, the Twitter account was suspended; and in 11% of cases the Twitter account closed or deleted by users.

A few observations can be made here. First, it is quite striking how closely these percentages match between the two samples. There appears to be very little variation in terms of the impact of DMCA takedown notices as between these two comparable but quite distinct social web platforms. This might be interpreted a few ways. The similarities could be understood to contradict some findings in CMC research—particularly SIP and hyper-personal theories—suggest time constraints in more synchronous communications potentially promote greater levels of “uninhibited” communications (Tremayne et al., 2008; Walther, 2007). Though Twitter is often called a form of “microblogging”, it often involves rapid tweeting to keep up with tweet stream in “real time”, and thus could be said to constitute more synchronous CMC than a typical Google blog. Arguably, this may facilitate more uninhibited online communications and expression based on these time constraints; presumably the kind of communications that may attract more problems, including copyright disputes represented by DMCA takedown notices. However, that does not seem to be the case here; the Google and Blogger samples track each other, at least percentage wise, quite closely. Interestingly, the single percentage category that

does not match up as closely is the percentage of content online, with 12% for Blogger but only 3.4% for Twitter. This may reflect an important difference in how each service responds to DMCA takedown notices. Twitter deletes or “withholds” a targeted tweet, leaving users with the explicit option of filing a counter-notice to have the withheld tweet put back online option. A Twitter user could also re-tweet the targeted content again, a dubious undertaking for a user that has just received a legal threat for the content in the form of a DMCA takedown notice. Google, on the other hand, gives Bloggers the option, beyond mere counter-notices, to simply edit and re-post targeted blog posts, providing a faster and more nuanced means of responding to a DMCA takedown notice.⁷¹ This platform difference may be reflected in those percentages.

Most importantly, however, these numbers are important when understood in the context of the DMCA’s scheme and, on their own, suggest potentially significant regulatory chilling effects. The key to understanding this point is to approach the status of content targeted by a DMCA takedown notice as a measure of the notice’s chilling effect on the user who posted the content and received the notice. First, if content targeted by a DMCA takedown notice remains offline or inaccessible, it suggests users have been chilled or deterred from filing counter-notices to have the content replaced or re-enabled. The counter-notice procedure is the clearest and most simple way to get posts, content, tweets, and other expression put back online within a matter of

⁷¹ More specifically, when Google receives a DMCA takedown notice for a specific Blogger post, Google typically does not delete the post, but merely places it on “draft” mode, so it is no longer publicly accessible. This allows the blogger to edit the original post and presumably remove any problematic content. However, it also gives bloggers an opportunity to merely re-post the content in defiance of the DMCA takedown notice. For Twitter, users have no option to “edit” a removed tweet. To defy a DMCA takedown notice, they would have to file a counter-notice or re-tweet the content. One of the limits of this study is the possibility that, in theory, Twitter or Blogger users may have re-posted the content on an entirely different space or service online. However, this is not necessarily likely. Research on SNS like Twitter and Blogger suggest that a key element and attraction of SNS—like Twitter or Blogger—are unique user profiles and the connections they have acquired in their user accounts or profiles (through connections, links, followers, commentators, etc.) (Ellison and boyd, 2013). In other words, users are unlikely to switch accounts or post content elsewhere without very good reason.

days (10-14) after being taken down pursuant to a DMCA takedown notice. As noted earlier, all notices in each sample were acted on by Google or Twitter and therefore Bloggers and Twitter users in question would have been notified of these DMCA takedown notices and their right to file counter-notices; they also have the option to re-post (or re-tweet) content.⁷² Failing to take any of these steps suggests the Blogger and Twitter users were chilled from doing so. This point stands whether only the specific targeted blog post or tweet only remains offline or, in the more serious case (which is actually quite common based **Figure 6.5**), the Blog or Twitter account itself has been deleted, removed, or suspended. In all of these cases, if the content remains offline, it is because a counter-notice has not been filed. This is a kind of self-censorship as the original content or material was online *expression* and *activity*, that user had chosen to engage in and are now forgoing very like due to receiving a DMCA takedown notice. Here, the structure or “architecture” of the DMCA notice and takedown system, combined with the individualized threats posed by the DMCA takedown notices imposes implicit regulatory barriers on speech, expression, and activities online that can, as Seltzer (2010) suggests, promote chilling effects.

Second, if the Blogger or Twitter accounts are deleted or removed in response to a DMCA takedown notice, then the notice has had a *significant* regulatory chilling effect as it means the Blogger or Twitter user has been deterred from all future expression and activities, at least through their existing Twitter or Blogger profile. This chill is even more onerous if the account has been deleted or removed by the user themselves as it is a self-imposed censorship. As **Figure 6.5** showed, 13% of Google Blogs and 11% of Twitter accounts targeted by DMCA takedown notices were deleted by the user. There may be other reasons why these Blogs and

⁷² Re-posting, as earlier noted, is arguably much easier with Google than Twitter.

Twitter accounts were closed, but those are significant percentages and total cases (13%, n=65; 11%, n=57), suggesting at least some of these accounts were closed by users in response to receiving a DMCA takedown notice.

It is also possible that some of these blogs may have been relocated elsewhere on Blogger or on some other unknown site on the Internet. If so, such relocation could be understood as an act of resistance, if the blogger continues the activities targeted by the DMCA notice elsewhere online. However, relocation can also suggest a noteworthy chilling effect—as removing a blog and re-locating elsewhere severs the blog (and blogger) from all existing online and social media networks, links, audiences, and communities in which the user and his or her blog is presently situated. To take that sort of action, in response to a threat, illustrates the strength of the chilling effect of the notice. In this sense, deleting or relocating a blog is similar to the “blog scrubbing” practices observed by Child et al. (2011) where bloggers deleted/removed content due to privacy concerns and the Twitter account locking/tweet protecting practices observed by Liu et al. (2014) and Almuhiemedi et al. (2013), also due to privacy concerns. The main difference is that here the DMCA notice is the “privacy trigger” leading the user to engage in “deletion” practices to re-assert control over their identity and privacy in the face of a legal threat or as found by Das and Kramer (2013) and Sleeper et al. (2013) to avoid conflict with an “imagined” audience. User blog deletion, relocation, or in the case of Twitter “protection” (making tweets private) all suggest different forms of chilling effects and self-censorship.

ii. *Chilling Effects on Legal Activities*

So far, only the regulatory effects of DMCA takedown notices have been discussed. But as Schauer (1978) emphasized, chilling effects theory primarily concerns the deterrence or chilling of *legal* activities. So this also needs to be considered in the data. Before moving to cross tabulations, it would be helpful to understand the strength of fair use (or related) defenses to DMCA takedown notice claims in the data overall. In the Blogger sample analyzed, approximately 13% of blogs involved cases where a fair use or (related legal defense) was likely and in an additional 13.8% of cases, there was a possible fair use (or other related legal defense), though unclear. Comparably, the Twitter sample included likely fair use defenses in 16% of cases and a possible defense in another 18% of cases. The results in either sample are comparable with findings in Urban and Quilter (2005) and Heins and Beckles (2005) in their analyses of DMCA takedown notices. Urban and Quilter (2005) examined all 876 DMCA takedown notices in the Lumen Database's repository as of August, 2005 and found that 30% "presented an obvious question for a court", most often, a "clear" fair use argument or a complaint over "uncopyrightable" materials (2005: 666). Similarly, Heins and Beckles (2005) found 20% of notices targeted material for removal that had either a "strong" or "reasonable" fair use or other copyright defense, while another 27% had a "possible" fair use or other copyright defense (2005: 54). Neither of these works investigate chilling effects issues. However, their work *does* suggest that DMCA takedown notices may be targeting legal activities (e.g., use of copyrighted material permissible under fair use). Interestingly, approximately 10 years on there is still significant fair use or legal activities being targeted by DMCA takedown notices.

However, this does not end the analysis. The further question is whether those legal activities are actually being deterred or “chilled”. To answer that question, fair use must be understood in relation to the content targeted, and whether it is offline (potentially chilled). **Figure 6.6** maps the status of targeted Blogger content with the strength of any fair use (or related legal defenses) to copyright claims in the DMCA takedown notices. And **Figure 6.7** does the same for the Twitter sample further below.

Figure 6.6: Targeted Blogger Content Mapped by Fair Use (and Related) Defense

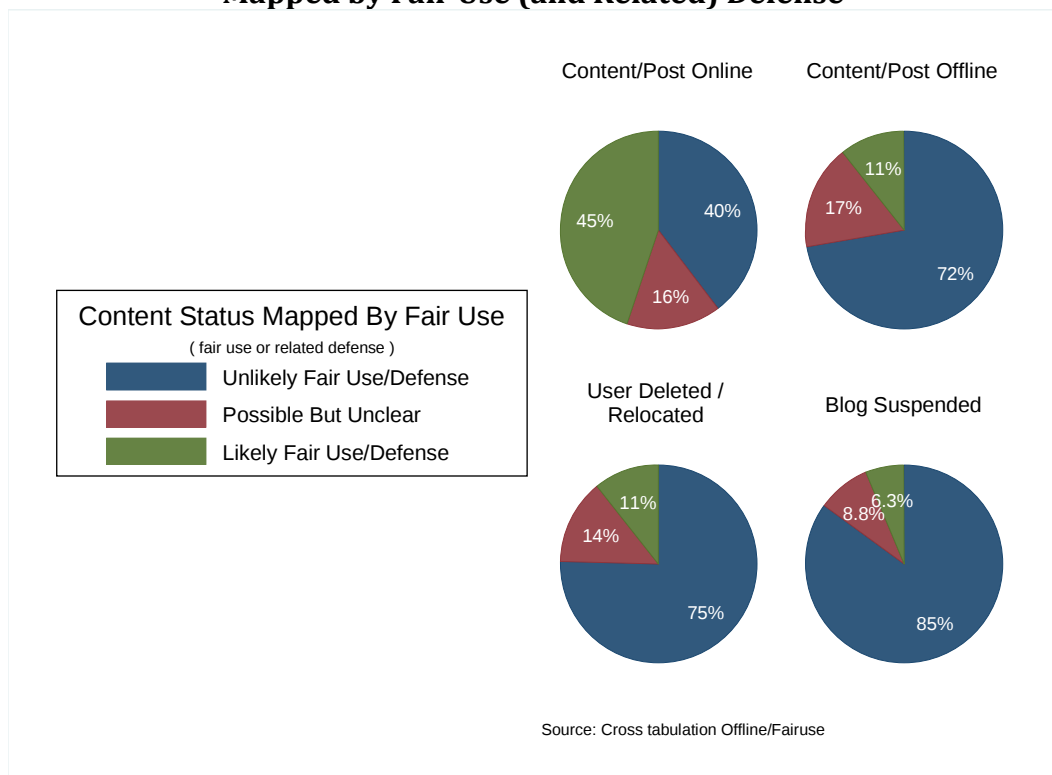
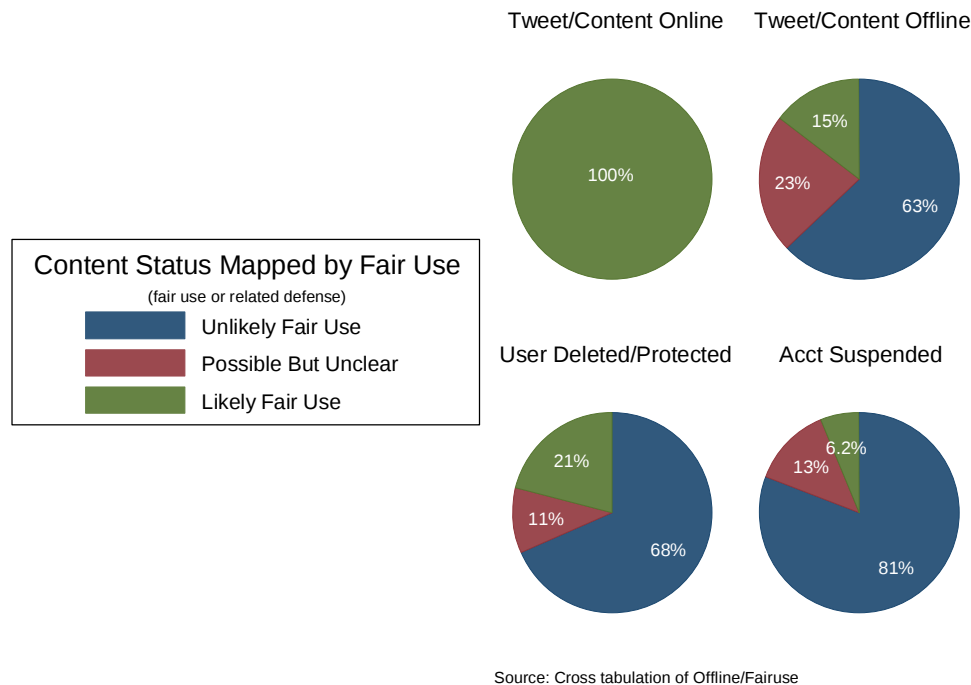


Figure 6.7: Targeted Twitter Content Mapped by Fair Use (and Related) Defense



Building on our earlier analysis that approached content being offline as a proxy for regulatory chilling effects under the DMCA (e.g., content remains offline if users, based on fear of lawsuit, uncertainty, costs, or timing, or other risks, decide not to file counter-notices or repost targeted content), then this data suggests a *substantial amount of legal activities are targeted and chilled*. First, in cases where targeted content was offline but the Blog or Twitter account remained online (top right quadrants), the percentages of likely and possible fair use (and related) defenses in both the Blogger and Twitter samples are comparable, with notable instances of legal copyright use being targeted and kept offline (thus, the user is chilled). For Blogger, 11% of cases “likely” had fair use (or related) defenses and 17% had a possible defense. For Twitter, it is 15% (likely) and 23% (possible) fair use (or related) defenses. Put another way,

nearly 30% of cases in this aspect of the Blogger sample, and 38% in Twitter, involved legal activities that were targeted and subsequently chilled (e.g., left offline).

A similar point can be made with respect to cases, in both samples, where users who received DMCA takedown notices were found to have deleted/relocated their Blogs or deleted or protected (e.g., locked from viewing) their Twitter accounts (bottom left quadrants in **Figures 6.6** and **6.7**). Here, 25% of cases in the Blogger sample involved likely or possible fair use (or related) legal defenses, and 32% in the Twitter sample. Notably, 21% of Twitter users who were found to have deleted or protected their accounts had likely fair use (or related) defenses. Again, this suggests that DMCA takedown notices targeted substantial percentage of users involved in legal activities that likely resulted not only in the content being inaccessible, but an even more significant chilling effect on any possible future activities, free expression or otherwise: deletion of their Blog or Twitter account in its entirety. Moreover, the data also provides an answer to critics who might argue each of these users were not “chilled” but simply closed their accounts in order to “pirate” or infringe copyright elsewhere. This suggestion is weakened by the relatively large percentage of likely or possible fair use (or related) defenses in these cases; this suggests that users really are, at least in these substantial percentage of instances, deleting their Blogs or Twitter accounts due to fear or risk of copyright law suits, rather than to “hide” from copyright holders. If these users were merely seeking to infringe copyright and avoid detection, fair uses defenses are expected to be weaker here. And if these users are chilled to this extent, then it is also unlikely that they would simply open a new account elsewhere and start blogging or tweeting like nothing happened. Of course, it must be noted a significant percentage of cases

here, in both samples, involve Blogs (75%) and Twitter accounts (68%) closed wherein a fair use (or related) defense was unlikely.

The fourth category involves cases where the Blogs or Twitter accounts were found to be suspended (bottom right quadrants). One point here is that given the weakness of the fair use claims for these cases, it might be surmised that this cross-tabulated group represent “pirates” in the data; that is, repeat copyright infringers or offenders. Under the DMCA, OSPs must have a policy for “repeat infringers” (Seltzer, 2010: 202, n149); Google and Twitter both will “suspend” accounts based on “multiple” strikes (e.g. receiving multiple DMCA takedown notices). These Blogger and Twitter users, with fair use (and related) defenses few and far between, may thus be understood as repeat infringers with these DMCA takedown notices leading, ultimately, to their accounts being closed for repeated terms of service violations.

Taken together, it is quite clear that the DMCA takedown notices have targeted a substantial portion of potentially legal uses of copyrighted material in both samples. The fact these tweets, postings, and other content remain offline is consistent with the suggestion that the DMCA has this very insidious chilling effect on those Blogger and Twitter users who would otherwise re-assert and defend their online activities. Consistent with Seltzer (2010), these notices, and broader DMCA scheme, have erected subtle regulatory structures and burdens—like forcing speakers to re-assert speech against certain legally created barriers—that appear to encourage an online environment of self-censorship. This analysis, it should be noted, does not capture any broader changes in the recipients general posting behavior though *some* observations on this count are discussed further below in this chapter.

iii. Impact of the Regulatory Chilling Effects

One way to understand the significance or impact of any regulatory chilling effects observed here, is to explore how much of a factor legality (as measured by fair use or related defenses) may have been in the decisions of Blogger or Twitter users as to how to respond to DMCA takedown notices (e.g., to re-post or send counter-notice to have speech or content placed back online). This can be analyzed by examining the association between fair use (or legality) and whether content is online or not.

A preliminary analysis suggests that the targeted content with the strongest fair use claims end up being online and accessible. Indeed, 100% of the Twitter content online and 45% of the Blogger content online involved like fair use defenses. Beyond the online content, “likely” fair use defenses drop off (significantly so in the Twitter sample) but still remain noteworthy, and comparable. And, in fact, at least on first analysis, chi-square tests find a statistically significant relationship between the strength of fair use defenses and whether or not content was found to be online or off in the data. The contingency table (at **Appendix 6.3**) is a cross tabulation of content status with fair use (and related) defenses in the Blogger sample, and indicates a statistically significant relationship ($\gamma = -0.4347$; $\chi^2 = 67.93$; $df = 6$; $p < 0.05$). The gamma value ($\gamma = -0.4347$) provides a direction for this association: there is a modest inverse association between the strength of fair use defenses and whether content is offline (“offline” is coded and approached as an ordinal variable, with the highest value (4) assigned to account suspension). The Twitter sample shows a very similar statistically significant inverse association ($\gamma = -0.4354$; $\chi^2 = 112.64$; $df = 6$; $p < 0.05$). Put another way, the data suggests that the stronger a

users' fair use (or related) legal defense, the more likely their content was online when observed in this case study.

This finding suggests a few things. First, on one level, it might be argued that the DMCA notice and takedown system is “working”, at least on a certain angle of view. That is, the data, overall, suggests that targeted content with weaker claims to legality tends to end up offline, while content with stronger claims to legality tended to end up online; both Twitter and Google assess claims in DMCA takedown notices before deciding whether to act on them (e.g., remove content in response), and these findings likely reflect those efforts, leading to at least a modest association between fair use and content removed in the data. There is not a lot of information available about the means by which Google and Twitter scrutinize and assess the validity of DMCA takedown notices they receive. Google’s FAQ suggests that they conduct such an assessment, but provide no details as to the process (Google, 2015). Similarly, Twitter’s “Copyright and DMCA Policy” also suggests a review process, but provide very few details (Twitter, 2015). Both companies, at the very least, do not “blindly” comply with DMCA takedown notices they receive; and these results support that conclusion and that the process is working.

On the other hand, this view neglects the substantial amount of potentially legal activities and expression being chilled by the DMCA notice and takedown scheme. It also seems problematic to say the scheme is “working” given that it appears to operate by forcing those users engaged in entirely legal online activities to take steps to assert the legality of their activities, expression, postings, blogging, tweeting, through the counter-notice or re-posting

process; a process that, as Seltzer (2010) has persuasively argued, constitutes a “tax”, burden, or additional cost that likely leads to the chilling effects on legal activities explored further above. Again, this assessment that the scheme is “working” neglects the large percentage of cases, in both samples, wherein fair use (or related) defenses were possible or likely, but were nevertheless targeted, disabled, and remained so.

Returning to the question regulatory chilling effects, once digging deeper into the data the association between fair use and the content being online or offline breaks down. This case study is concerned with regulatory chilling effects so, as discussed earlier, the focus should be content that is offline, likely due to being deterred or chilled (which includes a substantial percentage of legal activities). Indeed, once cases where content was found to be online are removed from the statistical analysis, the above noted relationships break down in both samples (see **Appendix 6.3**), with no statistically significant association between the two variables ($p > 0.05$). This can be interpreted as supporting the conclusion that there are regulatory chilling effects on legal activities within the data set. That is, once you remove content found to be “online” from the analysis, then the strength of any fair use (or related) defense no longer helps to predict the status of the offline content (offline but blog left online; blog deleted by the user; or blog suspended). This is precisely the result one would expect if there are regulatory chilling effects and, in addition, those chilling effects are having an important impact on users decisions: if users are being chilled or deterred from engaging in legal activities or defending their expression, posting, or tweeting, then the legality of expression or activities may, in the end, bear little on a user’s decisions to engage or not in these activities. This also speaks to the magnitude or strength of the chilling effects.

This point can be demonstrated further by excluding cases involving suspended accounts from the analysis, as the focus of this study is the regulatory chilling effects on the legal activities of users. If the suspended accounts relate to repeat offenders, then, generally speaking, these are not regular users; they are repeat copyright infringers that are unlikely to be chilled by the DMCA takedown notices—as they have received them before, and will do so again. When these users are excluded from the analysis, not surprisingly, the p value is even weaker ($p=0.819$), indicating no association between fair use and whether or not targeted content was either left offline or the blog itself was found to be deleted by the user in response to a DMCA takedown notice. Similarly, the Twitter sample measure of association disappears when cases involving online content and suspended Twitter accounts are excluded ($p=0.091$). From this analysis, it might be concluded that the DMCA seems to be successful at targeting pirates and repeat infringers (and having their accounts suspended) but also chills the legal activities of regular users.

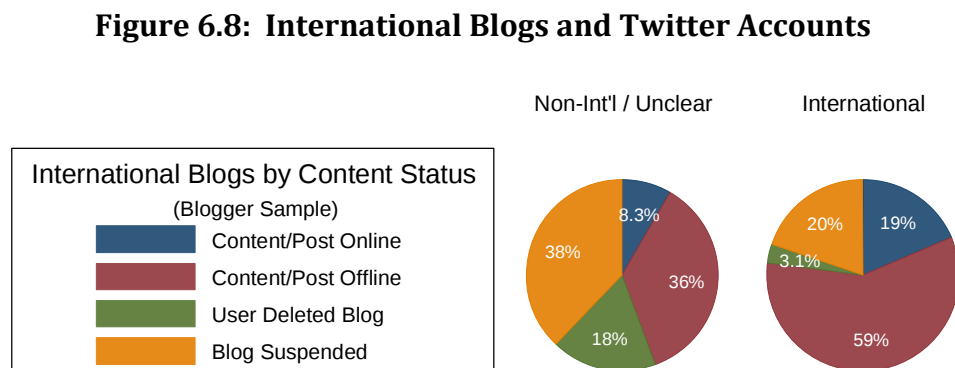
iv. Other Evidence of Chilling Effects

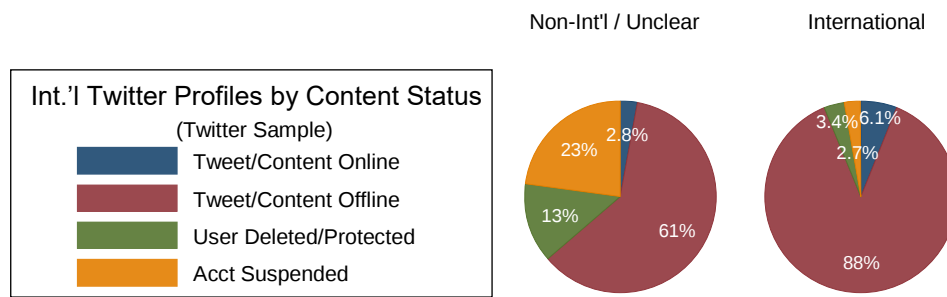
Another point illustrated by the data—in terms of the significance of the chilling effects caused by the DMCA takedown notices—is the scarce few instances where Bloggers or Twitter users explicitly *said* or posted anything about receiving a DMCA takedown notice. In the Blogger sample, there were only 15 instances where a Blogger posted something about the DMCA or copyright. Sometimes these posts are clearly made in response to receiving a DMCA takedown notice, but in others, the posts were simply about the DMCA or copyright more generally. There were a few users that posted strong critiques of the DMCA and copyright law,

but many of these responses were more neutral, even arguably *positive* in some cases, in that they involved users recognizing the legitimacy of the DMCA (e.g., posting “DMCA policies”) or incorporating aspects of the DMCA scheme into their blogs (e.g., disclaimers about responsibility for content posted on the blog) or in other cases, users even claimed DMCA “protection” for content they were posting. Similarly, in the Twitter sample there were only 13 cases of tweets about the DMCA or copyright, most of which also were neutral on copyright and the DMCA, with one user even tweeting approval of Google using DMCA takedown notices as a “penalty” for ranking in Google search.

6.5.2 International Impact

There was an international dimension to both samples in this case study. Overall, 32.4% of blogs in the Google Blogger sample (n=162) while 37.4% of Twitter accounts (n=147) were international. These numbers are comparable to Urban and Quilter (2005)’s original DMCA study, wherein they found 34% of notices analyzed international. **Figure 6.8** illustrates this impact:





Graphs by RECODE of location by content status

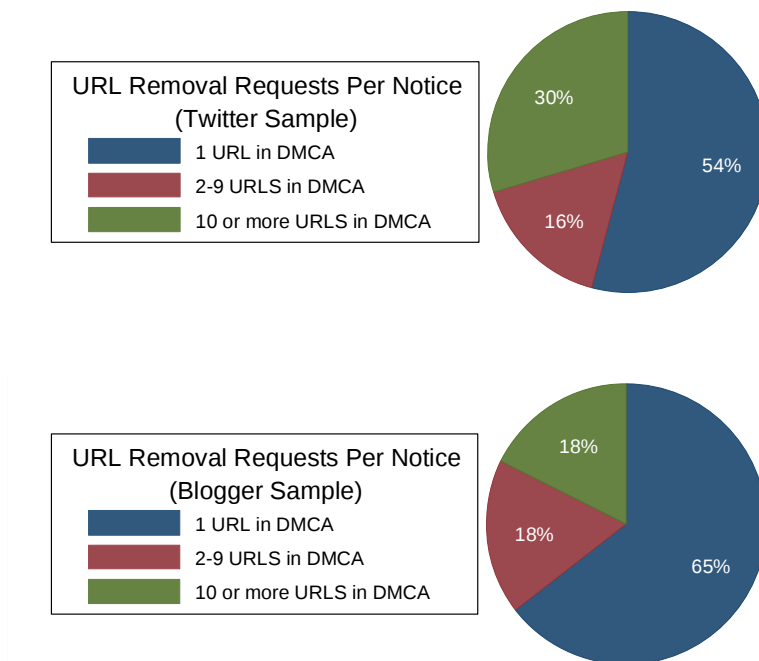
To be clear, there are significant limitations to this data; given that a number of blogs were “deleted/relocated” or “suspended”, it was difficult to determine the origins of all Blogs and Twitter accounts; as such, there may have been many more international accounts in the samples, but it was too difficult to determine.

6.5.3 Automation and Robotization: Multi-URL DMCA takedown Notices

Some legal scholarship has raised concerns about chilling effects caused by “robots” and copyright enforcement, that is, the use of automated “bots” to implement copyright protections or enforce intellectual property claims online (such as sending DMCA copyright notices rapidly and widely without regard for context) (Raymond, 2013; Depoorter and Walker, 2013; DiLorenzo and Werner, 2013; Sundin, 2013). As noted earlier, these copyright bots or programs are most often used by corporate content providers and copyright holders like BPI Music or the RIAA who typically send “multiple URL” DMCA takedown notices. That is, rather than sending a single DMCA takedown notice that includes a single copyright claim (with a single URL for the location of the alleged infringing work online), the notices these corporate content providers

send sometimes contain hundreds of individual URLs removal requests. The data suggests that this case study *did* include copyright ‘bots’. This is evidenced by the number of DMCA takedown notices in either sample that included multiple URL DMCA takedown notices (more than 10) that are used by corporate content providers and use copyright bots and other automated programs to create and send them (Seng, 2014) (See **Figure 6.9**):

Figure 6.9: Multi-URL DMCA Takedown Notices



So while multiple-URL DMCA takedown notices were not the predominant form of notice in either sample, they still constituted a significant percentage of notices analyzed. This included 30% of the Twitter notices and 18% of the Blogger.

6.6 Conclusion and Limitations

6.6.1 Evidence of Chilling Effects

This case study drew on Seltzer (2010) to use the offline status of content targeted by DMCA takedown notices as a proxy for regulatory chilling effects—users, based on fear of legal repercussions, costs, or other risks, do not file counter-notices or fail to repost. As the analysis illustrated, results in both the Blogger and Twitter samples suggests a substantial amount of legal activities are being chilled; nearly 30% of cases in the Blogger sample, and 38% in the Twitter sample, involved legal activities targeted and chilled (e.g., left offline). These results are consistent with Seltzer (2010) who explains how subtle legal structures and burdens—like forcing speakers to re-assert speech against legal or technological barriers can have profound and insidious chilling effects. Additional results suggesting chilling effects include Bloggers or Twitter accounts that received DMCA takedown notices and were found to have deleted or relocated their Blogs, or deleted, protected, or locked their Twitter accounts; this suggests the legal threat led to a significant chilling effect, where the recipient is completely silenced from any kind of online speech and other legal activities or, in the case of relocation, has severed the blog from all existing online links, networks, and communities in which the blog is situated. A third aspect of the results suggesting chilling effects is the unexpectedly few instances where Bloggers or Twitter users explicitly *said* or posted anything online about the DMCA takedown notice they had received, with only 15 instances in the entire Blogger sample, some involving critiques of the DMCA or copyright law more generally, but many were neutral or even arguably *positive* in some cases, in that they involved users recognizing the legitimacy of the DMCA (e.g., posting “DMCA policies”) or incorporating aspects of the DMCA scheme into their blogs. Similarly, in there were only 13 cases in the Twitter sample of tweets about the DMCA or

copyright, which included some negative reactions but also, again, more neutral or even positive statements about the DMCA or copyright law more generally. Though the numbers are too small to draw broad or generalized conclusions, these cases suggest some evidence that bloggers and Twitter users accommodate and internalize the legal norms represented by the DMCA takedown notice they have received and the basis for its threat.

Putting these threads of evidence together, there is compelling evidence of a substantial chilling effect on bloggers and Twitter users caused by the DMCA and its takedown notices.

6.6.2 Factors Impacting Chilling Effects and its Scope

i. Automation

This case study has arguably shown that the DMCA notice and takedown system catches a lot of entirely legal activities, creating regulatory chilling effects not only for speech, expression, and other activities online but also to *defend* or preserve those activities against legal claims. Notwithstanding this, the content industry and other copyright holders have long embraced the DMCA's notice and takedown system, with the magnitude of use likely evolving beyond what was originally expected or contemplated. Content industries and other copyright holders have "aggressively" used the DMCA's notice and takedown regime implementing "automated detection tools"—copyright surveillance programs and robots—to "comb" and monitor the Internet for "unprotected content" and generate and send "large numbers of takedown notices" (Cohen, 2012: 6). As discussed earlier, copyright bots and automated programs likely played a role in sending out DMCA takedown notices captured in both samples, with 18% of the DMCA takedown notices in the Google Blogger sample and 30% of the Twitter

including 10 or more URLs in each notice. This automation and “robotization” of copyright enforcement has important implications and will be discussed in Chapter 7.

ii. Internationalization

This explosive growth and automation has further implications for global impact. Indeed, Park (2013) has argued that the automation of the DMCA notice and takedowns on certain online services has had the “effect of chilling important political speech, especially in a rapid campaign cycle”. And these problems may not only be U.S. based, given the international impact of the DMCA found in this study. There was, as discussed, an international dimension to both samples in this case study, with roughly 32% of the Google Blogs sample international and 37% of the Twitter accounts. And there may have been more in the sample, but for some limitations and difficulties in determining what blogs are international or not. If the DMCA is exporting DMCA takedown notices on an exponential scale, then it is likely internationalizing its own expansive regulatory norms, limited role for fair use, and, significantly, its resulting regulatory chilling effects. Of course, a more extensive focus on this international angle of the DMCA is required to pursue this issue further. At the very least, this case study shows this concern is very real.

iii. Platforms

Based on CMC theory and research, it was possible to expect some differences—perhaps even significant—as to the magnitude or impact of regulatory chilling effects between the two samples—Google and Twitter. This was based on the different elements of each platform. SIP and hyper-personal theories in traditional CMC studies suggest that time constraints or other technological limitations in computer mediated communications may promote more uninhibited

and deregulated communications than platforms that are more asynchronous, that is, allow for more time to deliberate about communications and responses. Although Twitter can be an asynchronous platform, in practice, Twitter communications are short (140 characters) and interactions often rapid in the constant movement of the “tweet stream”; this is in contrast with the more deliberative nature of blogging (boyd, 2006). If users have more time to deliberate about posting, then they may think twice about posting something that has legal implications, like copyright infringement. As such, it was possible to predict that there would be a lower rate of fair use (or related) legal defenses in the Twitter sample as compared to the Blogger sample; this would reflect the fact that Twitter communications, in practice, has greater time constraints on reflecting on such (legal) concerns before “tweeting” content that potentially infringes legal rules or norms like copyright law. Yet, the findings did not bear this distinction out, with percentage of fair use being comparable as between the Blogger and Twitter sample. This does not necessarily mean SIP and hyper-personal theories are wrong—these studies did not consider legal issues or factors—it just may mean that users behave differently when potential legal risks are at stake, taking more time to reflect, both before and after posting; or that Twitter should not be characterized as a platform involving less careful deliberation.

6.6.3 Limitations

Notwithstanding these contributions, this research had a number of limitations. First, as a case study—of Blogger and Twitter in relation to the DMCA—the results should not be taken as generally representative of chilling effects caused by other laws or regulatory schemes; nor assumed to predict the impact of other such regulatory schemes. The case study involved 500 blogs on Blogger and 500 Twitter accounts—randomly selected from DMCA takedown notices

from the Chilling Effects database—but these still only constitute a fraction of total blogs or Twitter accounts sent or received in any given month or year. Such limits are inherent to this sort of research design, but the case study nevertheless offers important evidence for regulatory chilling effects and how it operates in a regulatory context online, as well as laying a foundation for further research, and inferences about “chilling effects” due to similar schemes.

There were also important limitations in the coding process. First, as noted, this case study followed the methodological recommendations of Epstein and Martin (2010), Webley (2010), and Hall and Wright (2008) for coding, content analysis, and other procedure in empirical legal research like this, nevertheless, legal analysis—used primarily here for coding potential fair use and related legal defenses/issues—remains inherently contextual and requires significant training and expertise to carry out. This is one of the enduring “epistemological” challenges for empirical legal research (as compared to other more traditional forms of empirical research or social science) (Hall and Wright, 2008:111), and there is no simple answer to resolve it. Hall and Wright (2008) suggest researchers make well informed decisions about the method and technique that best suits their needs, while maintaining clarity so that other researches can assess results (112). All of these recommendations were employed here, but again, the assessments and coding concerning the legality of content (e.g., coded as the fair use (or related legal defenses) retain this important qualification.

Finally, each blog and Twitter account was visited and the status of the content targeted (online or offline) as well as the blog or Twitter account itself (sometimes deleted or suspended), but it was impossible to know, locate, or track down, instances where Bloggers may

have relocated their blogs (if deleted) or if they reposted the targeted content online in some other unknown location or site online. Nor does this coding and quantitative approach provide in depth reasons for why bloggers or Twitter users left content online or offline or removed their blogs, for example. Ideally, each blogger or Twitter user that received a DMCA takedown notice is contacted and interviewed to understand any other actions taken, and the reasons for it. This sort of inquiry was not employed here in order to provide a broader sample, and thus cross section, of Twitter accounts and blogs (1000 total). However, additional qualitative research and similar investigations would offer invaluable information and could form the basis of future projects.

These limitations aside, this case study was a first-of-its-kind empirical study of chilling effects under the DMCA that also, for the first time, offered a more systematic analysis of Internet users targeted by DMCA takedown notices and how they were affected. It also provides novel insights specifically about blogs and Twitter accounts, also not frequently studied in relation to the impact of laws or regulations. These are all important contributions to the literature and research. In ways, the DMCA's notice and takedown system is the prototypical "next generation" regulatory method Deibert and Rohozinski (2010: 6). Enacted to tackle a legal and technological problem via a statute with global regulatory reach, the DMCA offers the perfect mix of state authority, intermediary liability, third party policing and, finally, surveillance of user activities online (Deibert and Rohozinski, 2010; Deibert et al., 2012; Brown and Marsden, 2013). The DMCA, like other next generation regulatory methods, was built to "inculcate an environment of self-censorship" (Deibert & Rohozinski, 2010: 17). Evidence in this case study suggests this is an accurate description.

Chapter 7

Synthesis and Conclusion

7.1 Introduction

The previous three Chapters set out in detail the (embedded) case studies on relation regulatory chilling effects in online contexts that constitute the core of this thesis, including findings, analysis, and related insights. This Chapter synthesizes these findings in a discussion that: first, demonstrates how this thesis, via the three case studies, has addressed the two central research questions set out in Chapter 2; second, outlines the central contributions and innovations of the thesis, including a wholly new and original general theory of regulatory chilling effects online; and third, sets out additional implications, limitations, and future research directions.

7.2 Research Questions: Key Findings

7.2.1 Research Question 1: Empirical / Theoretical Foundations

The first research question for this thesis was concerned with establishing empirical and theoretical foundations for regulatory chilling effects and was set out in Chapter 2:

Do the following regulatory acts:

- (i) Internet related laws that threaten individual sanction or punishment for engaging in certain online activities; and*
- (ii) surveillance by state or non-state actors of online activities of Internet users;*

...deter, suppress, or reduce the frequency or scope of, in a non-trivial way (e.g. a non-trivial chilling effect), legal activities of Internet users in online contexts?

All three case studies have findings and insights on this question. With respect to “Internet related laws” that “deter, suppress, or reduce the frequency or scope” of legal activities of Internet users (**RQ1(i)**), the survey-based case study discussed in Chapter 4 provided several important findings. First, responses to the first hypothetical scenario in the survey involving the vague “anti-cyberbullying” statute (with harsh penalties attached) suggested that such an “Internet-related law” would have a chilling effect on a range of legal activities of Internet users, including online discussion, discussion, sharing, and contribution to social network sites. For example, 39% of respondents indicated that due to the anti-cyberbullying statute, they would be either “much less likely” or “somewhat less likely” to “speak or write” about certain topics online. Respondents were also “chilled” in more subtle ways, with 69% either “strongly” (29%) or “somewhat” agreeing (40%) that the anti-cyberbullying statute would make them “more careful” about what they say or discuss online. The statute would also chill online search—something presumably unrelated to the scope of the anti-cyberbullying statute—with 42% indicating they either “strongly agree” or “somewhat agree” that they would “be more careful” about what they search for online in response. These are all substantial percentages of respondents suggesting a clear and non-trivial chilling effect.

These findings are corroborated by the DMCA case study, another Internet-related law, where 43% of posts or content targeted by DMCA takedown notices in the Blogger sample were found to be offline and inaccessible and a further 45% of cases the blog itself was offline, either suspended or removed. In the Twitter sample, 56% of content targeted was found to be offline

or inaccessible, with 11% of accounts found to be protected or locked and another 29% the Twitter account was deleted or removed. The failure of Blogger and Twitter users to re-post their content or file counter-notices and in many cases delete their own blogs or lock their own Twitter accounts, all suggest significant forms of chilling effects. Moreover, as **Figure 6.6** and **6.7** show, such offline content likely included a large deal of legal activities. Though the DMCA has a different enforcement mechanism (via individualized legal notices that threaten sanction and are received personally), it is clearly an “Internet-related law” that, through its regulatory scheme, has “deterred”, “suppressed”, or “reduced the frequency or scope of” the activities of these Internet users.

With respect to online surveillance (**RQ1(ii)**), the Wikipedia case study discussed in Chapter 5 provides the most clear and compelling evidence of chilling effects. The large, statistically significant, and immediate drop in total views for the Wikipedia articles after June 2013 imply a clear and immediate chilling effect due to revelations in June 2013 about NSA/PRISM online surveillance. Furthermore, the large, statistically significant shift in the trend in the data suggests that any chilling effects observed may be substantial and long term, not weak, temporary, or ephemeral. This is most apparent in the second set of results (excluding outlier data) but was also apparent (just less so) in the first. In the language of **RQ1**, the evidence suggests a chilling effect that is clearly “non-trivial” and concerns legal activities (accessing information on Wikipedia).

These findings are corroborated by the survey study. There, for example, responses to the second hypothetical scenario, involving online surveillance by the government, suggested

those state regulatory actions would have a chilling effect on a range of legal activities of Internet users, again, including online discussion, discussion, sharing, and contribution to social network sites. To begin with, 62% of respondents indicating they would, if aware of such surveillance, be either “much less likely” or “somewhat less likely” to “speak or write” about certain topics online. A remarkable 78% of respondents also agreed that the surveillance would make them “more careful” about what they say or discuss online (38% “strongly” agreeing, with that idea and a further 40% “somewhat” agreeing). The surveillance would also, to take a further example of a related finding, chill sharing of content that the respondent personally created, including 22% “much less likely” and 38% “somewhat less likely” to engage in such sharing as result. Surveillance conducted by a “non-state actor” would also have a chilling effect, with 65% either “strongly” or “somewhat” agreeing that corporate surveillance would make them “more careful” about what they searched for online.

These two case studies’ findings are also further corroborated by some findings in the DMCA case study. In that case study, which involved 500 blogs and 500 Twitter accounts that had received DMCA takedown notices, there were very few examples of cases where Bloggers or Twitter users said or posted anything online about the DMCA takedown notice they received, or copyright law more generally, with only 15 examples in the entire Blogger sample and 13 cases in the Twitter sample. Though it may be possible that these Internet users were vocal about receiving these legal notices elsewhere online or offline (and thus not picked up by the study), the lack of responses might also reflect a subtle kind of chilling effect where bloggers or Twitter users, after receiving a DMCA takedown notice, do not respond for fear of being watched or monitored. On the one hand, these findings appear to contradict certain studies of

“self-censorship” in more authoritarian state contexts. Roberts (2015), for example, found that after being targeted personally by state censors (for example, having a blog post on a sensitive topic deleted) Chinese bloggers not only were not chilled, but tended to write even more on the targeted topic, sometimes with greater levels of sensitive detail. That did not appear to happen in the DMCA case study, although the survey-based case study had some findings consistent with Roberts (2015); regulatory actions in each scenario appeared to encourage a small percentage of respondents to re-post and circulate more widely the content targeted. But again, this was only a small minority response unlike the majority of Chinese bloggers in the Roberts study.

Perhaps the difference is cultural—the online surveillance and censorship regime employed by the Chinese state is so pervasive and censorship so common that isolated acts of censorship, even if targeted, do not generate the same risks or concerns for citizens, and thus less chilling effects. On the other hand, the findings *are* consistent with the work of privacy theorists like Katyal (2003; 2004; 2008) and Bridy (2010), who have written about the chilling effects on U.S.-based Internet users (the population of interest in this thesis) caused by private sector surveillance, often aimed at policing and monitoring copyright online. The bloggers and Twitter users’ muted response might be explained by this kind of chilling effect—an internalization of the norms being enforced against them. These examples, and several others elsewhere discussed in this thesis, provide compelling evidence to answer this research question—that both Internet-related laws that threaten legal activities, as well as online surveillance by government (and non-state actors) has a non-trivial chilling effect on the legal activities of Internet users.

7.2.2 Research Question 2: Empirical / Theoretical Elaboration

This second research question, as noted in Chapter 2, was more exploratory, involving an investigation into factors that impact regulatory chilling effects online, including why it might affect some users more than others. The first survey-based case study has findings relevant to all aspects of this research question.

Do any of the following factors...

(i) the form or type of regulatory action (e.g. Internet-related law or online surveillance);

(ii) the means by which regulatory actions (and any regulatory threats) are communicated to Internet users (e.g. widespread media coverage or individualized legal notice like a DMCA takedown notice or automated);

(iii) the online platform being used by the Internet user (e.g. social media site or basic website);

(iv) the age, gender, education, level of Internet use, level of social media use, and other characteristics of the individual Internet user;

....increase, reduce, or influence the impact, permanence, and scope, of any chilling effects observed?

Concerning the impact of the “form or type of regulatory action” on regulatory chilling effects observed in the case studies (**RQ2(i)**), the survey case study was, among other things, designed to examine chilling effects *comparatively* to provide insights into what sort of regulatory actions may lead to more (or less) significant online chilling effects, with each scenario involving a different regulatory action. Examining the results of the survey comparatively, responses to scenario three—which involved individualized legal enforcement

via personally delivered legal notice—consistently suggested some of the most significant levels of potential chilling effects among all regulatory actions (and scenarios) examined.

For example, with respect to online speech (**Figure 4.6**), the survey results showed personally receiving an individualized legal notice would have the greatest chilling effect with 75% of respondents being “much less likely” (40%) or “somewhat less likely” (35%) to “speak or write about certain topics online” in response. Government surveillance (scenario two) had next greatest apparent chilling effect with 62% of respondents “much less likely” (22%) or “somewhat less likely” (40%) “speak or write about certain topics online” due to such online monitoring. Responses to scenario one (the anti-cyberbullying statute) also suggested some chilling effects but not as significant as the other two forms of regulatory actions. This same trend was consistent across other questions including speech (**Figure 4.7**), online sharing (**Figure 4.10**), and contributions to social network sites (**Figure 4.11**). The only form of online activity that this “individualized” legal notice did not have the greatest impact was online search—here, government surveillance had a slightly greater impact with a full 78% of respondents agreeing with the statement that knowing that the government was monitoring online activities they would be “more careful” about what they search for online. Though the individualized legal notice still had a comparable impact, with 77% agreeing they would be “more careful” (**Figure 4.8**).

These findings that individualized and personally received legal notices (that include legal threats of sanction) have a significant chilling effect is partially corroborated by findings in the DMCA case study. As was noted in Chapter 6, 88% of content on blogs targeted by a

DMCA takedown notice was found to be offline and 97% of content targeted on the Twitter accounts (**Figure 6.4**). These numbers include 13% of the blogs that received DMCA takedown notices were found to have been deleted or relocated by the users and 11% of the Twitter accounts locked or protected. These findings suggest that the “form” of regulatory actions *does* matter and can influence the level of resulting chilling effects. The DMCA case study, by virtue of its design focused on the impact of DMCA notices, did not allow for accurate or reliable comparisons to other forms of regulatory action on this count. Still, these findings at least support the findings in the survey-case study about the strong impact that personally delivered legal notices have on recipients.

All of these findings about regulatory actions similarly concern how those actions “are communicated to Internet users”, as a factor that influences chilling effects (**RQ2(ii)**). This is because each regulatory action usually involves a different mode of communication with the Internet user. The third hypothetical scenario in the survey case study and the DMCA takedown notices in the third case study, for example, all involved personally delivered legal notice and the evidence suggests a significant chilling effect on recipient. The means by which other regulatory actions are communicated would most likely be through media. Either the media reports on a new law enacted (the anti-cyberbullying statute in the survey) or report on government surveillance and related programs to track illegality. Evidence from this thesis also suggests media reports can lead to a significant chilling effect. The Wikipedia case study, which offers compelling evidence of surveillance-related chilling effects, was designed around the “exogenous event” of widespread media coverage concerning NSA/PRISM surveillance revelations in June 2013.

Unfortunately, within the confines of this thesis, there was no way to properly compare whether the chilling effects in the Wikipedia case study may be said to be more profound than those suggested by evidence or findings in other case studies. This might be one direction for future research. One more relevant finding on this point, concerns the notion of secondary or “networked” chilling effects from the survey-based case study. This was the hypothetical scenario where the potentially “chilling” regulatory action is communicated via a friend’s Facebook posting (the friend says he or she has received a personal legal notice warning them about potentially illegal online activities). Concerning online search (**Figure 4.8**), this scenario had the *second* most substantial impact after government surveillance. One possible explanation is that this sort of regulatory action, and method of communication, is most comparable to a personally delivered legal notice or threat in the survey or the DMCA takedown notices. A “friend” being targeted by such a notice suggests a level of personalization (someone within the person’s peer or social group) leading to a greater level of chill as a result, than if a stranger had been targeted or merely a vague law was passed (like the anti-cyberbullying statute).

With respect to (**RQ2(iii)**) and the impact of the “online platforms”, findings on this in the thesis did not necessarily conform with predictions based on prior theories and research. Certain CMC theories suggested there may be differences as to the scope or level of regulatory chilling effects between the two samples in the DMCA case study due to differences in the platforms included—Google and Twitter. Time and other architectural constraints build into a platform like Twitter, where users must follow a constant unfolding tweet stream and often “tweet” or post on the fly, may in theory (based on CMC and SIP research) promote more

uninhibited communications (and potentially lead to more tweets or posts attracting the attention of DMCA takedown notices), in contrast to the more deliberative nature of blogging (boyd, 2006). But the findings in the case study did not support this distinction, with the percentages of tweets and blog posts left offline, or blogs and Twitter accounts suspended, deleted or locked, very comparable. Also, the different platform in the Wikipedia case study, where users accessing content are engaging in entirely legal activities (accessing basic knowledge or information), did not necessarily mean they would not be chilled by revelations about online surveillance. And in the survey case study, the level of engagement with social network sites (how often they contribute to SNS) was more or less a non-factor in how much respondents were likely chilled by the different hypothetical regulatory scenarios.

As stated in Chapter 6, none of these findings suggest CMC or SIP theories are necessarily wrong, just that they may not hold true in contexts where laws, regulations, are involved—in fact, the finding may be best interpreted as a reflection of the magnitude or strength of regulatory chilling effects. This point can also be made through the lens of both CMC and SNS research. Ellison and boyd (2013)’s definition of social network sites (SNS), as discussed in Chapter 2, is flexible enough to include both Twitter and Google blogger. Users for both social web platforms have unique and identifiable profiles attached to their content “blogged” or “tweeted”, can articulate their connections elsewhere (via “blog roll” links or links in “tweets”) and can each engage with content posted by other users, through blog search or links or, in the case of Twitter, tweets of other users being followed. Moreover, they are certainly what boyd (2007; 2008; 2014) calls “networked publics”, with persistence of expression, visibility to diverse audiences, as well as spreadability and searchability of content.

SNS are strongly oriented toward broader communications and information sharing (Zhang and Kizilcec, 2014) with both intimate and broader self-disclosure both “common” and, all told, the “default” (Trepte and Reinecke, 2012: 1; Joinson et al., 2011; Ledbetter et al., 2011; Nguyen et al., 2012). SNS users communicate openly and self-disclose to “enhance reputation and popularity” among their “audience” (Lee and Ma, 2012). This is also likely because SNS communications lack most non-verbal cues of traditional FtF interactions, and so users offer greater disclosure and intimate communications to promote understanding (Christofides, Muise, and Desmarais, 2009; Gibbs, Ellison, and Lai, 2011; Trepte and Reinecke, 2012). This research arguably highlights the significance of the apparent chilling effects observed in this case study, on Google Blogger and Twitter. SNS studies suggests a countervailing factor to chilling effects, if SNS are deeply oriented toward open communications and information sharing, this may ameliorate some elements of chilling effects online. If there is evidence of chilling effects on users—presumably they would be significant enough to overcome this orientation toward greater communication, expression, and disclosure. In short, these findings suggest that in the face of a regulatory action or threat of legal sanction, architectural or platform constraints or features may no longer be a strong behavioral factor for Internet users. That, too, is a noteworthy finding and insight.

And concerning **RQ2(iv)** there were also noteworthy findings, primarily from the survey-based case study in Chapter 4, on the role of “age, gender, education, level of Internet use, level of social media use, and other characteristics of Internet users”. Here, it was noteworthy that such background or demographic factors had little, if any, impact or association on different

forms of regulatory chilling effects in most cases. Education and income levels had a statistically significant (negative) association with chilling effects in a few instances but most often they were not significant or noteworthy factors. The same could be said with most other demographic and related personal data or characteristics such as amount of time spent online, level of personal sharing, level of regular contributions to social network sites.

But there were interesting relationships nevertheless found. Age had a statistically significant negative association for the three central forms of regulatory chilling effects in the anti-cyberbullying statute scenario, that is, older respondents were less vulnerable to chilling effects. It also had a statistically significant negative association with all three forms of chilling effects for government surveillance in the survey though the pattern breaks with the third hypothetical scenario three (personally received legal notice). This might be explained, again, by a sense of personalization in relation to the regulatory action. As discussed in Chapter 4, with the first two hypothetical scenarios, which involve the anti-cyberbullying statute and government surveillance, respondents are not personally targeted and so must make a judgment as to whether they think they might be targeted, and this would have an impact on their searching, speaking, and sharing online. And here, it seems youth may be more impacted or cautious in their activities, assuming they are more likely to be targeted as compared to older respondents, who are less concerned. In the third scenario, this pattern breaks down because now the recipient is personally targeted and thus the chilling effect is significant, regardless of age. The mild negative association between age and willingness to legally challenge and personally received legal notice (from the survey) might also reflect a similar example of youthful caution—less

experience (and probably less wealth) will lead a young respondent to fear punishment or costly legal proceedings more than an older correspondent.

The possibility of greater caution (and, in some cases, more chilling effects) for younger Internet users is consistent with research by boyd (2014) and Palfrey, Gasser, and boyd (2010) objecting to assertions in privacy research that youth care little for privacy, but rather researchers have failed to measure or identify the different privacy-related strategies youth adopt. The possibility of a greater chilling effect, suggested by findings in this thesis, might suggest greater privacy concern among those younger users. More work would have to be done to explore this possibility further, but the insight is consistent with boyd (2014)'s central arguments.

Survey responses, and statistical analysis, also suggested females would be more vulnerable to chilling effects on receiving the personal legal notice in the third hypothetical scenario. There was also a mild association between being female and respondents being less willing to challenge a legal notice they received. It is unclear why this might be the case, but these are noteworthy findings nevertheless. And, predictably, there was a statistically significant positive measure of association between level of awareness of NSA surveillance revelations and the potential chilling effects stemming from the hypothetical scenario involving government surveillance. In short, more information about online surveillance may lead you to take greater steps to protect your privacy, thus avoiding activities that may flag government interest. The findings suggest more knowledge may mean more chilling effects. This, too, is corroborated by findings from the Wikipedia case study, where the data suggested widespread and intense media coverage of surveillance revelations led to large scale chilling effects on Wikipedia users.

The research questions for this thesis were shaped by existing chilling effects and related theory and literature. However, another key finding that goes beyond the research questions but is closely related, concerns how other dramatic external events (earlier described as “exogenous shocks”) can influence the scope and impact of chilling effects. This finding came from the Wikipedia case study in Chapter 5 and was not one necessarily predicted by existing chilling effects research, but nevertheless an important finding that, at least in part, is a product of the exploratory investigation of factors impacting regulatory chilling effects reflected in **RQ2**, and the overall design of this thesis.

The Wikipedia case study offered compelling evidence of a substantial chilling effect on Wikipedia users due to June 2013 government surveillance revelations, with not only a drop off in view counts of the articles in the study after that month, but also, in the second set of results, a clear shift in the overall trend in the data. However, the results also suggested that these substantial chilling effects can be affected or impacted by other dramatic intervening events or “shocks”, like armed conflict, that receive widespread media attention (much like the Snowden-related NSA/PRISM surveillance disclosures). The Gaza conflicts between Israel and Hamas led to a dramatic increase in views for Wikipedia articles in the months of those conflicts that, but for those months, were trending similarly to other articles in the case study.

One interpretation, as noted in Chapter 5, is that the “shock” or intervention of widespread media coverage for the conflicts essentially overrode secular trends in the article view count data, whether it was the gradual upward trend before June 2013 or the decline

thereafter. Another interpretation is that the Gaza conflicts and accompanying media attention simply attracted an atypical subpopulation of Wikipedia users to the platform, seeking out information about the conflict. This may be the better one, as it is consistent with research by Zeitzoff, Kelly, and Lotan (2015) that found 2012 Gaza conflict similarly attracted atypical “ephemeral” users to social media, that is, people who were interested in engaging via social media only on this particular issue or conflict (Zeitzoff, 2012; Zeitzoff, Kelly, and Lotan, 2015). Both of these explanations are probably true in part, given how dramatic the increase in view counts for the relevant “outlier” articles were for the months of the conflict (November, 2012 and July, 2014) likely account for some new Wikipedia users and genuine interest in the armed conflict that may have outweighed any marginal concerns about potential government surveillance or monitoring of online activities. Additional research, focusing on this aspect of this case study, could offer further insights on this dimension of the results.

7.5 A General Theory of Chilling Effects Online: Foundations

This thesis’ central findings offer sound and compelling empirical evidence that regulatory chilling effects *do* arise in online contexts in response to a range of different regulatory actions and that those chilling effects are not necessarily temporary, trivial, or ephemeral. Rather, evidence from all three case studies illustrate a substantial impact on a range of online activities. However, the thesis’ findings also provide the foundations on which to construct a more general theory of regulatory chilling effects in online contexts. This section lays out those theoretical foundations.

7.5.1 Reconciling Schauer and Solove

Schauer (1978) and Solove (2006; 2007a) taken together have provided the overarching theoretical framework for chilling effects pursued in this thesis. But the two theories, though largely complementary, also approached the phenomena of regulatory chilling effects somewhat differently. Schauer (1978), among other things, focuses on fear, risk, and uncertainty in the legal process as essential to understanding regulatory chilling effects. Out of fear of penalty or punishment or lack of certainty of success through legal processes, people are deterred or chilled from free expression and other legal activities. Put another way, people act or speak on the basis of an implicit cost-benefit judgment; if the costs or risks are too great, then they are deterred or chilled (this, too, is consistent with CPM theory, which likewise theorizes a cost-benefit analysis in relation to privacy-related decisions online: Petronio, 2010). Solove broadened chilling effects theory's outlook, by focusing his efforts on surveillance and "executive information gathering"; here, people are "chilled" not necessarily by specific fears of individual sanction (as Schauer would have held) but a broader regulatory environment that encourages chilling effects and self-censorship—a kind of "environmental pollution"—caused by concerns for privacy, social conformity, and social stigmas attached to being labeled (Solove, 2006: 494-499). This atmosphere, Solove asserted, encourages risk-based chilling effects and self-censorship and leads to something he calls "decisional interference", that is, interference with an individual's choices or decisions about their lives, including what legal activities they may engage in (2006: 491).

This thesis' findings provide support for both theories and, through some extrapolation, a potential means to reconcile these subtle differences, at least with respect to how chilling effects theory operates online. First, as discussed earlier in this Chapter, the *comparative* insights of the

survey-based case study suggested certain forms and regulatory actions, or means of regulatory enforcement, would lead to greater chilling effects than other forms of regulatory action. The survey, corroborated by findings in the DMCA case study, showed that individualized and personally delivered (or received) legal notices (with threats of legal sanction therein), much like a DMCA takedown notice, had the greatest “chill” on Internet users. Here, Schauer’s theory based on fear of sanction, penalty, and punishment, appears to be the best explanation for this strong impact. Internet users receive a personal legal threat, specifically targeting them, and this, coupled with uncertainty about legal processes, leads to a strong chilling effect.

At the same time, the Wikipedia case study discussed in Chapter 5 provides some support for Solove’s theory. There, independent evaluators (a total of 415 recruited via MTurk) were used to “rate” or evaluate the privacy value of the 48 Wikipedia articles. Their evaluations of the topics suggested they were not overly concerned with actual government prosecution (see **Table 5.1**). As earlier noted, the 1.95 overall mean “government trouble” score (how “likely” they would be in trouble on a scale of 1 to 5, with 1 meaning very unlikely and 5 being very likely) indicated respondents were not overly fearful that accessing online information on the topics in the study would lead to trouble with the U.S. government. Yet, responses also demonstrated a more acute concern about accessing online information on the topic when respondents *knew* the government was monitoring online activities more generally with a mean score of 2.62 (on a scale of 1 to 5, how “likely” they would avoid accessing information on the topic in question if they knew the government was monitoring online activities, with 1 meaning “very unlikely” and 5 being “very likely”). These responses, coupled with the actual results from the Wikipedia article traffic study, suggest that (privacy-related) concerns about being tracked by government,

rather than any belief in actual fear of government trouble, penalty, prosecution, or sanction, may have influenced behavior here.

There are clear methodological problems with taking those observations too far, as these are separate data sets collected at different times from different Internet users. However, the findings provide some intriguing threads to follow in future research, and an entirely new and original hypothesized theory to understand how chilling effects are operating in practice online—as the form of regulatory action (or means of regulatory enforcement) moves from more impersonal forms (a general anti-cyberbullying statute) to more personal forms (government surveillance of online activities, like Wikipedia access), and to the most personal form (individualized or specifically targeted legal threats received directly) the chilling effect also grows in strength. Underlying this “personalization” theory of chilling effects online, are insights from both Solove and Schauer. When the form of regulatory action remains more impersonal, any chilling effects are best understood in relation to Solove’s “environmental pollution” metaphor. That is, government surveillance or enactment of regulatory actions “chill” actions mostly due to Internet users being concerned about being watched or flagged for illegal, anti-social, or non-conforming behavior. However, once the regulatory action becomes personalized, Schauer’s theory takes over, and fear of penalty, sanction, or prosecution, is the best explanation of any observed chilling effect.

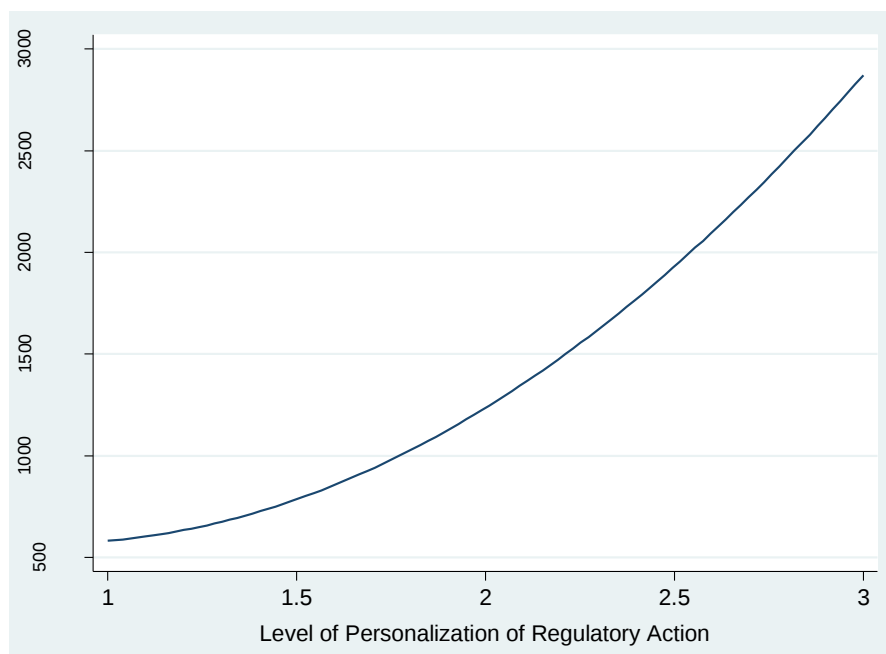
7.5.2 A “Personalization” Theory of Chilling Effects?

If this “personalization” theory of regulatory chilling effects online is correct, there would be a relationship between the level of personalization of the regulatory action and the

level of potential chilling effect. To provide at least a preliminary investigation of this theory, data from the survey case study were statistically analyzed for such a relationship. The test analyzed whether the total number of responses in the survey (for all three scenarios for each of the three regulatory actions) indicating they would be “much less likely” to engage in all activities explored in the survey (online speech, online search, online sharing [personal and more general]), and SNS contribution, could be predicted by the level of personalization for each of the three primary regulatory actions (“anti-cyberbullying state” coded as 1, online government surveillance coded as 2, and personally delivered legal notice coded as 3). **Figure 7.1** provides a visualization of this non-linear relationship using a quadratic plot:

Figure 7.1: The Chilling Effect Curve?

The y-axis represents the “Combined Chilling Effect Score”—a combined total number of respondents in the survey providing responses indicating the greatest level of chilling effect (“much less likely”) across all online activities explored—as predicted by levels of personalization of the three regulatory actions (1 = statute, 2 = surveillance, 3 = personally received legal notice).



The results are consistent with this hypothesis and suggest that a chilling effect largely increases with levels of personalization, with an even stronger increase in potential chilling effects as regulatory actions become individually targeted. Of course, this is only a very basic and preliminary exploration of the idea; much more research would have to be done to confirm the theory and expand our understanding of chilling effects online. And there are likely a number of confounding factors that will impact this relationship, from exogenous events, to the legal threat or sanction involved, to the platform or architecture in relation to which the regulatory action has been taken. Still, the “personalization” theory is intuitive, consistent with empirical and theoretical findings of this thesis, and informed by the established chilling effects theories of Schauer (1978) and Solove (2006; 2007a). And it is the very first attempt at a theory of regulatory chilling effects, specifically formulated for online contexts, in the literature.

7.6 Additional Insights / Implications

Beyond these core theoretical and empirical findings, there are a number of additional important insights and implications of this thesis.

7.6.1 The Scale of Chilling Effects

Both **RQ1** and **RQ2** concerned questions as to the scope and magnitude of chilling effects online, arising from regulatory actions. Findings from all three case studies provide some indication as to the broad, even international, scale of regulatory chilling effects online. To begin with, the survey based case-study, as discussed, responses indicated that all three primary forms of regulatory actions studies in this thesis—a broad and vague Internet-related law, online surveillance, and individualized forms of legal enforcement relating to online activities, can have

substantial chilling effects across a range of diverse online activities. Some regulatory actions led to more significant chill, but no regulatory action in the survey case study suggested no negative impact. These findings are corroborated by those in the DMCA case study. In the case study, it was found that automated programs were likely responsible for sending 18% of the DMCA takedown notices in the Google Blogger sample and 30% of the Twitter. Such automation is a result of certain non-state and corporate actors aiming to “aggressively” enforce their legal rights online via “automated detection tools” that can send “large numbers of takedown notices” (Cohen, 2012: 6).

This automation and “robotization” of copyright enforcement has important implications. Seng (2014) found that the numbers of DMCA takedown notices received by certain OSPs have “exploded” in recent years. Seng found that after receiving only a thousand takedown notices before 2009, Google received 67,571 DMCA takedown notices in 2011 and 441,370 in 2012; with year over year increases approximately 304% (2014: 10). Similarly, the takedown notices received by Twitter increased from 307 in 2010, to 4,138 in 2011 and 6,646 in 2012 an increase of 1,248% (2010-2011) and 61% (2011-2012) (Seng, 2014: 10-11). Notably, these increases come many years after contentious online content sharing services and technologies like peer-to-peer (P2P) file sharing emerged (Brown and Marsden, 2013). Seng (2014) has suggested that the failure of recent efforts to expand copyright enforcement online in the U.S. copyright holders and content industry stakeholders are now re-doubling their efforts through the DMCA notice and takedown system.

This exponential proliferation of DMCA takedown notices raises additional concerns over certainty and legality in the DMCA scheme (Raymond, 2013; Depoorter and Walker, 2013; DiLorenzo and Werner, 2013; Hicks and Liu, 2013; Sundin, 2013). The challenges posed by robots or “bots” online and their growing significance are not a wholly new subject (e.g., see Zittrain, 2008; Lessig, 2001). Yet, with copyright enforcement online via “bots” or programs—given the complexity of copyright law issues—this study’s results make it entirely legitimate to ask what impact this has on the role of fair use and other defenses in the DMCA’s notice and takedown system; will greater automation lead to greater and wider chilling effects? According to Nathenson (2009), lawyers “must consider fair and other non-infringing uses” before sending off a DMCA takedown notice and, when they do so certainly make mistakes (2009: 152). If, at this point, copyright bots are being designed to even consider such issues they are likely doing so quite poorly. Again, more work is required in this area, but having some empirical foundation to back up criticisms of the DMCA’s problems—as this case study does—might have some impact on future reforms to address these developments.

These concerns are compounded by the DMCA’s international impact as discussed in Chapter 6. There, roughly 32% of the Google Blogs sample was international and 37% of the Twitter accounts. That is, a substantial number of bloggers and Twitter users targeted by DMCA takedown notices were not necessarily even U.S. citizens (and subject to U.S. laws, including the DMCA). Commentators have long criticized the DMCA’s (potential) international impact as a kind of globalizing private ordering, that is, enforcement of copyright norms via the DMCA’s notice and takedown scheme far beyond America’s borders (See e.g., Benkler, 2000; Schwartz, 2002; Dinwoodie, 2004; Dinwoodie, 2006; Gervais, 2004; Seltzer, 2010).

These concerns are further supported by findings in the Wikipedia study, which suggested revelations concerning government surveillance had a broad chilling effect on a large and substantial population of Wikipedia users.⁷³ Given the exponential increase in the number of DMCA takedown notices being sent (Google now receives more DMCA takedown notices in a day than did for all of 2009 (Kelly, 2012), the international reach of those notices, and findings in this thesis suggesting individualized legal threats can have a significant chill on Internet users, the potentially broad scale and scope of regulatory chilling effects takes shape.

7.6.2 Surveillance, Wikipedia, and Democratic Society

The concerns just mentioned associated with the scale of regulatory chilling effects apply particularly so to Wikipedia, whose users were found to have been chilled in the case study set out in Chapter 5. Democratic theorists have long pointed to public deliberation as an essential “tool” to enhance collective understanding and decision-making, and Wikipedia has been found to be an important complement to this democratic process (Klemp and Forcehimes, 2007: 1). As noted in Chapter 3, Wikipedia is an incredibly popular online source of information, the “largest collaborative free knowledge resource in human history” that is visited, every month, by nearly “half a billion people” from almost “every country on earth” (Paulson and Brigham, 2015). As an essential resource for Internet users to quickly and efficiently inform themselves of about government policies, laws, and actions, and any other matters, Wikipedia informs citizens to

⁷³ As noted in Chapter 5, though precise numbers are not possible, articles in the Wikipedia case studies represented over 81 million total article page views over the course of the study, meaning the number of Internet users represented in the case study data was arguably in the tens of millions, and also included international users as well (the article traffic data set focused on English Wikipedia, but did not distinguish between U.S. and non-U.S. users or visits to articles).

"better equip them to enter into deliberations over political decisions" (Paulson and Brigham, 2015). Moreover, Wikipedia provides a collaborative model of knowledge production that strengthens democracy. Nathaniel Klemp and Andrew Forcehimes's study found Wikipedia and its "model" of citizens engagement and information exchange offers "enhances" democratic deliberation and collective decision-making (2007: 31-32).

The importance of Wikipedia as a source of online knowledge and information is arguably evidenced from data in this case, where people took to Wikipedia in dramatic numbers to inform themselves about "Hamas" during the Israeli and Hamas Gaza conflicts in 2012 and 2014. At the same time, however, the findings suggest darker, more troubling implications. Beyond these war-related outliers, the case study suggests government surveillance may have a long term chilling effect on Wikipedia use. If people are chilled from doing simple research online on matters of law, security, and public policy like "terrorism", then chilling effects also have serious implications for public policy and public deliberation on point—people will be less informed, and our broader processes of democratic deliberation weakened.

Furthermore, Wikipedia has proven valuable beyond merely being an online source of knowledge. As earlier noted, researchers have employed Wikipedia, and its article data, for a broad range of online and offline research interests, from peer-production, to mapping global and local knowledge production, to how geography and place is represented online (see e.g., Graham, Hogan, and Straumann, 2014; Graham, 2014; Graham et al., 2013; Graham and Zook, 2013; Algan et al., 2013; Graham, 2011; Zook et al., 2011; Graham, Hale, Stephens, 2011; Chen, 2011;

Benkler and Nissenbaum, 2006). All of these invaluable research and insight is put in doubt if people are “chilled” from using Wikipedia due to government surveillance.

7.6.3 Legal Standing and Constitutional Litigation

The results in this thesis, particularly the Wikipedia case study, should also provide important empirical support for present surveillance-related litigation. A significant challenge for recent lawsuits filed against the NSA and the U.S. government, especially those based on a chilling effects theory like the Wikimedia Foundation complaint, is the issue of standing. A key part of this challenge is the nature of government surveillance online—it is covert and secretive and so victims are most often unaware if they have been personally targeted (Richards, 2013: 1934; Slobogin, 2015: 6; Mulligan, 2014). This is compounded by how the Supreme Court has applied standing in cases involving covert surveillance. In *Clapper v Amnesty International*, a five judge majority dismissed as “too speculative” the plaintiffs’ assertion of standing based on a likelihood their activities would be subject to surveillance in the future.⁷⁴ The plaintiffs arguments for injury based on “chilling effects” were similarly dismissed, with the Court acknowledging that while prior cases found constitutional violations can arise from chilling effects, such violations could not arise “merely” from a person’s “knowledge” or “concomitant fear” about government activities, and costs incurred to avoid such activities.⁷⁵ Citing its 1973 decision in *Laird*, the Court noted that “[a]llegations of a subjective ‘chill’ are not an adequate substitute for a claim of specific present objective harm or a threat of specific future harm.”⁷⁶

⁷⁴ *Clapper v. Amnesty Int’l*, 568 U.S. ___, ___, 133 S. Ct. 1138, 1152 (2013) at 1934-1935.

⁷⁵ *Clapper Case* (2013): 1152.

⁷⁶ *Clapper Case* (2013): 1152., quoting its 1972 case *Laird v. Tatum*.

Of course, *Clapper* will not be the final word on the point. To begin with, it was decided in February of 2013, several months before the Snowden disclosures and the widespread publicity concerning the PRISM and other government surveillance programs, which have rendered such secretive surveillance more public and thus more subject to scrutiny and challenge (Slobogin, 2015: 4). Indeed, two recent lower federal court decisions have since granted standing for surveillance and “chilling effects” related constitutional claims,⁷⁷ with the court in *Klayman* explicitly referring to revelations concerning Snowden leaks in its decision.⁷⁸ Moreover, commentators like Neil Richards, Christopher Slobogin, and Luke Milligan, among others, have offered persuasive criticisms of the Supreme Courts’ approach to standing in *Clapper* (Richards, 2013: 1948; Slobogin, 2015; 2007: 98-101 Mulligan, 2014; Michelman, 2009).

Still, *Clapper* nevertheless presents a difficult standard to show injury (and standing) for “chilling effects” constitutional claims (Slobogin, 2015: 6). On this count, this case study’s empirical findings in will have important implications for present and future litigation. As noted, *Clapper* emphasized the need for evidence beyond mere “subjective” allegations or fears about chilling effects, to support standing.⁷⁹ This case study provides clear empirical support for surveillance-related chilling effects, beyond subjective allegations, “concomitant fears”, or speculation. And, as noted, those effects are not necessarily merely ephemeral, *de minimus*, or temporary; but substantial, sudden, and possibly even permanent. The plaintiffs in *Clapper*, whose claims about harms due to chilling effects were based on costs incurred to avoid

⁷⁷ *Klayman v. Obama*, 957 F. Supp. 2d 1, 37–42 (D.D.C. 2013) (finding the claimants would likely succeed on Fourth Amendment grounds against NSA’s bulk meta-data collection); *ACLU v. Clapper*, 959 F. Supp. 2d 724 (S.D.N.Y. 2013) (finding that the plaintiffs had standing, but that NSA meta-data collection did not violate the Fourth Amendment).

⁷⁸ *Klayman Case* (2013): 26.

⁷⁹ *Clapper Case* (2013): 1152.

government surveillance, argued such harms mostly in an empirical vacuum, leaving their claims vulnerable to *Laird* and its holding that subjective allegations could not create standing. By contrast, this case study provides a clear empirical basis for Wikimedia Foundation to assert harm or injury in its filed lawsuit against the NSA and Justice Department⁸⁰—a clear chilling effect and negative impact on Wikipedia and its users. Thus, their Op-Ed, Jimmy Wales and Lila Tretikov made the following claim:

The notion that the N.S.A. is monitoring Wikipedia’s users is not, unfortunately, a stretch of the imagination... The harm to Wikimedia and the hundreds of millions of people who visit our websites is clear: Pervasive surveillance has a chilling effect. It stifles freedom of expression and the free exchange of knowledge that Wikimedia was designed to enable (2015).

The results of this case study would suggest it is not a “stretch of the imagination” at all. The June 2013 NSA/PRISM surveillance revelations appears to have had a salient and observable chilling effect on Wikipedia users accessing certain Wikipedia articles. Additionally, this case study provide a more general empirical foundation for companies, organizations, and other institutions, whose users may have been “chilled” by government surveillance, to assert constitutional harms (See Richards, 2013: 1948; Slobogin, 2015; 2007: 98-101 Mulligan, 2014; Michelman, 2009).

7.6.4 Platforms and Online Behavior

This thesis also has implications for SNS and CMC research and understanding online behavior more broadly. SNS users, research has found, are strategic in their online communications (Vitak and Kim, 2014; Zhang and Kizilcec, 2014; Ahern et al., 2007; Das and

⁸⁰ Complaint for Declaratory and Injunctive Relief, Wikimedia Foundation et al v. NSA, No. 1:15-cv-00662-RDB (2015).

Kramer, 2013; Brandtzaeg et al., 2010). With imagined audiences online being diverse and broad, certain SNS theories holds, users struggle to maintain control over self-presentation, leading to impression management, selective disclosure, and, most importantly for our purposes, self-censorship (Das & Kramer, 2013).

Since regulatory chilling effects involves a form of self-censorship—users choosing not to act or speak or defend certain acts or speech—factors affecting SNS self-censorship might also affect chilling effects. Here, self-censorship may be understood as “boundary management”, that is, maintaining strategic self-presentation against “context collapse” caused by dealing with multiple platforms, profiles, identities, perceived readers, audiences, and the different norms regulating each coupled with the complexities and challenges of networked publics (Das and Kramer, 2013; boyd and Marwick, 2010; boyd, 2014). Das and Kramer (2013)’s proposed theory of SNS self-censorship and Sleeper et al. (2013)’s work on Facebook all suggest users may self- to avoid conflict with their potential or “imagined” audience.

None of this research considered laws or regulation in relation to SNS self-censorship, which limits the lessons that could be extrapolated. However, one could still analogize. If a blogger or Twitter user received a DMCA takedown notice in relation to something they communicated or posted online, the user may perceive this as a form of strong social disapproval leading to self-censorship and thus chilling effects. Wang (2011) found users may self-censor if members of their imagined or perceived audience deemed content posting as inappropriate; similarly, Tufekci (2007) found users self-censored based on “privacy concerns” that arose when posted content was accessed by an unexpected audiences (Tufekci, 2007). Certainly, a

user that has received a DMCA takedown notice from a stranger might find the legal threat both surprising and unexpected, leading to self-censorship on similar or related content.

Of course, self-presentation concerns may become an entirely secondary consideration for users faced with serious civil and criminal legal threats posed in the form of a DMCA takedown notice. By comparison, the notice constitute a significant form of legal and societal disapproval and may cause a radically different kind of “context collapse”—where users struggle between not just collapsing social contexts, but also legal and regulatory (boyd, 2014: 31). So, caution should be taken before extending these theories too far into legal and regulatory contexts like the one studied here—the DMCA. Yet, as earlier noted, boyd (2014) has recently argued that “moral panics” and “responses to them” actually “reconfigure the lives of youth in restrictive ways” more than “any piece of legislation” (2014: 106). Rather, “fear” is the key regulating force for teens online, via parents and regulators, who intervene and interfere with teens’ participation in public spaces (boyd, 2014). Though the DMCA notice and takedown system has some moral elements (the interest of both creators as well as users), any chilling effects could be said to operate, at least in part, on fear and the desire to avoid penalty. In other words, it still may constitute a kind of legal barrier—a chilling effects to a public spaces for teens, though this public space is a networked one (boyd, 2014). At the very least, a DMCA takedown notice received by an SNS user engaged in strategic self-presentation challenges will have to decide where the law fits in an increasingly complex and diverse audience. Given the complexity of the DMCA, a strategic decision in such circumstances might very well be to avoid any legal conflict and acquiesce to any takedown notice received. Perhaps that, in some cases, is what happened in this case study.

This thesis therefore also has implications for privacy management in CMC research. Child et al. (2011), as was noted earlier in this thesis, explored “privacy triggers” for “blog scrubbing” wherein certain events prompted bloggers to remove content from their blogs based on privacy concerns, and consistent with CPM, re-assert control over their privacy interests. They found a range of motivations including “impression management”, “personal safety”, and “relational triggers”, as well as motivations for scrubbing based on “legal” or “disciplinary” ramifications of the posting (2011: 2022). However, they found legal and disciplinary concerns were less prevalent than they originally predicted. The findings of this thesis, particularly in the DMCA case study, may provide an additional layer of insight into this literature. Though legal and disciplinary matters may not be the most common concern for bloggers, the findings here suggest that when legal risks are considered (e.g., due to receiving a legal threat like a DMCA takedown notice), then their impact on behavior is rather significant, likely leading to both a “chill” and, consistent with CPM, a modification of behavior to avoid further legal risks.

7.7 Conclusion

7.7.1 Impact, Importance, and Contributions

The sheer immense scale, scope, and impact, of regulatory chilling effects has implications not only for individual rights and freedoms but also the health of democratic deliberation among citizens. Chilling effects, in deterring people from exercising their rights and freedoms, have clear implications for individual citizens (Schauer, 1978; Richards, 2013: 1950). However, it also has implications, as Solove (2006; 2007a) has persuasively insisted, for societal wide harms as well, with broad societal wide conformity, and lack of creativity and diversity, the

likely result of mass forms of online surveillance and other invasive regulatory actions by state and non-state actors alike. Such regulatory actions, particularly mass forms of surveillance, lead to an “extrinsic losses of freedom” (Nissenbaum, 2009). Chilling effects, as Bruce Schneier implores, are an insidious force for conformity and are thus corrosive to “political discourse” (2015: 95-99; Solove, 2007: 494-499; Deibert, 2013: 130-132)) and threaten what Richards calls “intellectual privacy”—the freedom to reading, think, and communicate privately, something essential to democracy and “self government” (2013: 1959, 1963).

Part of the wider puzzle in adequately addressing this profound public policy challenge is to establish compelling empirical evidence on the scope and scale of regulatory chilling effects to persuade lawmakers, media, courts, and other stakeholders to take action and curb the regulatory actions that give rise to them. This thesis offers a substantial step forward in this regard.

Given the general lack of empirical research and support for theoretical and empirical dimensions of regulatory chilling effects in online contexts (Kendrick, 2013; Richards, 2013; Kaminski and Witov, 2015), answering these straightforward but foundational empirical and theoretical research questions (addressed here as **RQ1** and **RQ2**) about the existence, scope, and factors influencing chilling effects (among other things), demonstrates why this thesis constitutes a substantial contribution to existing research and literature. As apparent from the preceding discussion, these contributions extend not only to chilling effects research, but also related areas of study such as privacy, CMC, SNS, and related research. The importance of these contributions is highlighted, as well, by the range of research and literature directly skeptical about the existence of chilling effects or its impact, permanence, and scope, or casting doubt on

such effects by implication, in demonstrating that privacy attitudes (like those relating to chilling effects concerns) among Internet users are weak, slack, unserious, or not reflected in actual behavior (e.g., Nickel, 2014 Trepte and Reinecke, 2011; Debatin, 2009; Bernescu, 2013; Lyon, 2006; Barnes, 2006; Berendt and Spiekermann, 2005; Acquisti, 2004; 2010; Acquisti et al., 2012; 2013; Acquisti and Gross, 2006; Consolvo et al., 2005; Lewis et al., 2006).

7.7.2 Theoretical and Methodological Innovations

Beyond those substantial contributions to the basic theoretical and empirical foundations of regulatory chilling effects, this thesis also offered a number of original and novel innovations. The innovative survey case study, for example, demonstrated that regulatory chilling effects exists along a spectrum—some regulatory acts or actions will likely have a greater chilling effect than others, with individually targeted (and received) legal notices having the greatest impact, with government surveillance consistently a close second in terms of chilling effects. Moreover, this case study also provided empirical foundations for novel idea of secondary or “networked” chilling effects, that is, where people who simply read about, or are made aware of, online regulatory actions against others in their social networks may themselves be chilled by such actions. This networked chill was consistently comparable to those caused by hypothetical scenarios involving other kinds of regulatory acts or actions and in one scenario, responses suggested “networked” chilling effects may have greater impact than both corporate surveillance or the enactment of a vague law that regulates online activities.

The Wikipedia and DMCA case studies both contributed a novel finding about the potentially immense *scale* and *long term impact* of regulatory chilling effects. The Wikipedia

study suggested a large-scale substantial chilling effect on millions of Wikipedia users that was both substantial, immediate, and potentially permanent in the long term. The DMCA case study likewise demonstrated how an online regulatory scheme, enforced through automated methods, could have global impact with strong chilling effects on targeted users. The finding that only a handful of bloggers or Twitter users targeted by DMCA takedown notices posted anything about receiving the notice—or even about the DMCA and copyright more generally—adds to this contribution, showing how users targeted by regulatory actions may be chilled into silence.

The DMCA case study also illustrated how the design of online platforms may influence regulatory chilling effects, particularly how those platforms operationalize or implement legal or regulatory enforcement schemes required by law. For example, the difference between Blogger and Twitter in terms of the overall percentage of content remaining online after targeted by a DMCA takedown notice (12% for Blogger but only 3.4% for Twitter) may, in part, be explained by differences in how each platform allows users to respond to such notices. Blogger allows users to simply edit and re-post immediately after receiving a DMCA takedown notice (presumably remove targeted content, but this may not always happen) while Twitter only provides users with the option to file a counter-notice to have the withheld tweet restored.

And all three case studies contributed to a the general “personalization” theory of regulatory chilling effects online, whereby chilling effects increases significantly as regulatory actions against users become more targeted and personalized, both in terms of the how specific the action is, and how it is delivered. This is an original and substantial contribution that no other research or literature has attempted, evidenced, or explored.

Finally, beyond these important research contributions, this thesis has also made substantial methodological contributions. As noted in Chapter 2, one of the reasons there is so little empirical research on chilling effects is likely methodological—it is difficult to design research that measures phenomena that involves proving, or examining, a negative; that is, self-censorship (Solove, 2007a: 155; Czepek, 2009: 40; Strandburg, 2008: 813; Klang and Murray, 2005; Barendt et al., 1997; Hall, 1993). All three empirical case studies in this thesis employed original and innovative designs that measure chilling effects in different online contexts. First, the survey-based case study involved a first-of-its kind survey that was designed to, for the first time, provide some comparative analysis and exploration of chilling effects arising in different online context and in relation to different regulatory actions. This same design can be used elsewhere, with different populations of interest or more representative participant sampling, for additional insights. Second, the Wikipedia case study drew on research methods from other fields like policy and health studies, to employ an innovative interrupted time series (ITS) design which—coupled with segmented regression analysis—offered an innovative and robust method to identify regulatory chilling effects and analyze their impact over time. This ITS design and method can similarly be used in other contexts, and in relation to other forms of regulatory actions, for similarly robust results. In particular, the use of time series data allows for compelling visualizations of the data and the evidence for chilling effects. Third, the DMCA case study also used an innovative design wherein random samples of DMCA notices were drawn from the Lumen Database to identify, and systematically study, blogs and Twitter accounts targeted by those notices to understand their impact (and potential evidence of chilling effects). This method, like the others, can be employed, replicated, or built upon in other

contexts, to pursue similar explorations and research building upon the substantial contribution of this thesis.

7.7.3 Limitations and Directions Forward

But there were also a number of limitations to this research. Those limitations have been previously discussed in each case study Chapter, but among those issues were a lack of a truly representative sample in the survey-based case study, which prevents more robust generalizations. Moreover, that case study, like all survey-based research, only investigated responses to hypothetical scenarios, rather than actual conduct or behavior in context. The Wikipedia case study, as well, could have benefited from a lengthier study period—the 32 month time series only went to August, 2014—so it is difficult to say whether the data trends, which implied a chilling effect, still maintained an effect more recently. And the DMCA case study’s findings must also be qualified by a range of limitations, including the fact that the sample of Google Blogs and Twitter accounts constitutes only a small fraction of sites targeted by DMCA takedown notices. So the case study provides helpful insight, but its findings should not be necessarily generalized to other platforms or sites.

These limitations, in fact, themselves provide some clear directions forward for future research, in addition to other suggestions made in other parts of this thesis. First, a survey that tackles regulatory chilling effects with a comparative analysis and, with improved sampling methods and coverage of other forms of regulatory chilling effects, could offer further invaluable insight. Second, it is also unknown whether the findings in the Wikipedia case study hold for other comparable forms of online information resources; or was Wikipedia, given its

prominence, unique in being impacted? In short, new studies of the impact of surveillance related chilling effects on other important online resources, beyond Wikipedia, with richer, deeper, and more extensive time series data, could extend the insights of this thesis to new and similarly important online contexts. And more research taking advantage of the ChillingEffects Clearinghouse database—which continues to be maintained and offers incredible resource for researchers on the DMCA and a growing array of online regulatory matters—is likewise needed. Finally, one aspect of regulatory chilling effects that thesis has not taken up, but remains relevant and important is research on the economic impact of chilling effects, like those observed here. As Tucker and Marthews observe in relation to their own study on “chill” of Google search results (2014: 23), the Wikipedia case study’s findings suggest that NSA/PRISM and other forms of government surveillance may have a detrimental impact on the bottom line for OSPs, ISPs, and other businesses. Since Wikipedia is a non-profit collaborative effort, this angle was not explored in depth here; but Wikipedia, like many OSPs, survives through user traffic and contributions, all of which may be chilled, permanently, by government surveillance.

Finally, it should be noted that this thesis has often investigated chilling effects by investigating a counter-factual phenomenon—chilling effects. In order to show some conduct *has been chilled* or *will be chilled in the future* requires providing evidence of something that has never occurred or will never occur. This is a fundamental challenge (and limitation) inherent in all regulatory chilling effects research. But it is also one that this thesis has overcome, in original and innovative ways, in each of its empirical case studies.

In *The Control Revolution*, Shapiro (1999) famously predicted two possible futures for contemporary technological society, one where new technologies—like the Internet—empower citizens and another where technologies increasingly control citizens and remove their autonomy, dignity, and freedom. Shapiro’s “controlled” future builds upon Foucault’s idea of a “panopticon society”, itself a powerful metaphor that has helped people understand the threats and challenges posed by technology and surveillance today. Yet, state surveillance and regulatory practices have influenced citizens and society far beyond the mere “disciplining” power that Foucault worried about, to also—in response to perceived threats like cyber-crime, terrorism, and war—effectively shape and evolve cultural, legal, and, social norms and promote increasing societal acceptance of surveillance and regulatory control (Lyon, 2006: 51).

A panopticon society shaped and expanded by Shapiro’s “control revolution” would arguably operate through a form of broad and pervasive societal-wide chilling effect—if people are always being watched, always being regulated, always under legal or regulatory threat, they will be deterred from acting freely, choosing conformity over creativity and compliance over dissent. This is a frightening and dark image but one echoed by the increasingly invasive and powerful cyber-policing, online surveillance, and regulatory powers that states enjoy today.

Fortunately, the work of Solove and Schauer has provided a powerful tool in chilling effects theory, which provides a framework to understand, analyze, and interrogate the impact of such tools of control like online surveillance and regulation that are growing in scope and sophistication. But the theory is not without flaws and requires additional theoretical exploration and empirical foundations. This thesis has addressed these flaws in important, innovative, and

significant ways and advanced our understanding of regulatory chilling effects online and the dangerous “extrinsic losses of freedom” they cause (Nissenbaum, 2009).

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Appendices

Appendix 3.1:

Online Survey Consent Form

Online Information Study (v2)

Survey Information and Consent

11%

STUDY INFORMATION AND CONFIDENTIALITY
This is an academic study exploring about how people access information online. The survey should take 10-15 minutes to complete. Participation is voluntary and you can withdraw at any time. However, you must complete the entire survey in order to be compensated. You will not be asked to reveal your personal identity and all responses will be kept entirely confidential. If you have previously completed this survey, please do not do so a second time (the survey software is also designed to prevent this as well).

TO ENSURE COMPENSATION
As previously indicated, you will be asked at the end of the survey to enter a completion code so you can be compensated. Be sure to make a note of the completion code you enter because you will have to enter it again back at the Amazon's Mechanical Turk site after you complete this survey.

If you have questions or feedback about the study you may contact the principal investigator:

Jon Penney
Oxford Internet Institute
University of Oxford
jon.penney@oii.ox.ac.uk
<http://www.oii.ox.ac.uk/people/?id=196>
https://twitter.com/jon_penney

=====

1. INFORMED CONSENT AGREEMENT

By selecting the "CONSENT TO PARTICIPATE" option below, you are agreeing to participate in this academic study and acknowledge that:

- I have read the Study and Confidentiality Information above
- I am 18 years of age or older
- I understand written English

☐ CONSENT TO PARTICIPATE ☐ DECLINE TO PARTICIPATE

Next

Appendix 5.1:

Topic Keywords and Corresponding Wikipedia Article Topic

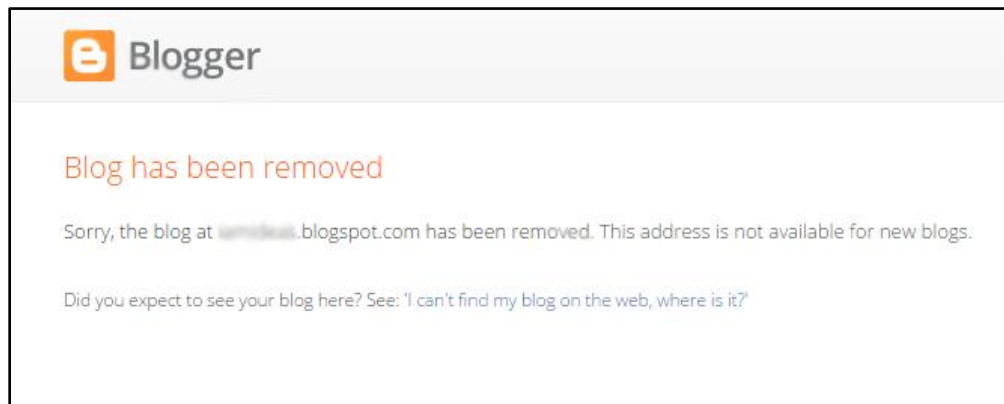
Topic Keyword	Wikipedia Articles	Government Trouble	Browser Delete	Privacy Sensitive	Avoidance
Al Qaeda	http://en.wikipedia.org/wiki/Al-Qaeda	2.20	2.11	2.21	2.84
terrorism	http://en.wikipedia.org/wiki/terrorism	2.19	2.05	2.16	2.79
terror	http://en.wikipedia.org/wiki/terror	1.98	1.96	2.01	2.64
attack	http://en.wikipedia.org/wiki/attack	1.92	1.91	1.92	2.56
Iraq	http://en.wikipedia.org/wiki/iraq	1.60	1.74	1.76	2.25
Afghanistan	http://en.wikipedia.org/wiki/afghanistan	1.61	1.71	1.75	2.23
Iran	http://en.wikipedia.org/wiki/iran	1.62	1.73	1.78	2.25
Pakistan	http://en.wikipedia.org/wiki/pakistan	1.59	1.71	1.75	2.22
agro	http://en.wikipedia.org/wiki/agro	1.51	1.80	1.76	2.29
Environmental terrorism	http://en.wikipedia.org/wiki/Environmental_terrorism	2.20	2.20	2.24	2.92
Eco terrorism	http://en.wikipedia.org/wiki/Eco-terrorism	2.22	2.20	2.22	2.92
Conventional weapon	http://en.wikipedia.org/wiki/Conventional_weapon	2.03	2.16	2.07	2.81
Weapons grade	http://en.wikipedia.org/wiki/Weapons-grade	2.18	2.22	2.17	2.99
dirty bomb	http://en.wikipedia.org/wiki/Dirty_bomb	2.72	2.55	2.50	3.45
Nuclear Enrichment	http://en.wikipedia.org/wiki/Nuclear_enrichment	2.22	2.21	2.21	2.92
Nuclear	http://en.wikipedia.org/wiki/nuclear	1.84	1.97	1.91	2.55
Chemical weapon	http://en.wikipedia.org/wiki/Chemical_weapon	2.43	2.36	2.39	3.16
Biological weapon	http://en.wikipedia.org/wiki/Biological_weapon	2.44	2.39	2.39	3.18
Ammonium nitrate	http://en.wikipedia.org/wiki/Ammonium_nitrate	2.49	2.44	2.26	3.24
Improvised explosive device	http://en.wikipedia.org/wiki/Improvised_explosive_device	2.82	2.64	2.53	3.46
Abu Sayyaf	http://en.wikipedia.org/wiki/Abu_Sayyaf	2.02	1.96	1.99	2.57
Hamas	http://en.wikipedia.org/wiki/hamas	1.90	1.93	1.97	2.49
FARC	http://en.wikipedia.org/wiki/FARC	1.83	1.88	1.90	2.46
Irish Republican Army	http://en.wikipedia.org/wiki/Irish_Republican_Army	1.62	1.77	1.83	2.24
Euskadi ta Askatasuna	http://en.wikipedia.org/w/Euskadi_ta_Askatasuna	1.86	1.88	1.88	2.43
Hezbollah	http://en.wikipedia.org/wiki/hezbollah	1.86	1.90	1.96	2.46
Tamil Tigers	http://en.wikipedia.org/wiki/Tamil_Tigers	1.76	1.86	1.87	2.39
PLO	http://en.wikipedia.org/wiki/Palestine_Liberation_Organization	1.77	1.87	1.91	2.42
Palestine Liberation Front	http://en.wikipedia.org/wiki/Palestine_Liberation_Front	1.81	1.89	1.95	2.47
Car bomb	http://en.wikipedia.org/wiki/Car_bomb	2.72	2.61	2.50	3.40
jiha d	http://en.wikipedia.org/wiki/jiha_d	2.15	2.19	2.17	2.89
Taliban	http://en.wikipedia.org/wiki/taliban	2.06	2.03	2.10	2.70
Suicide bomber	http://en.wikipedia.org/wiki/Suicide_bomber	2.25	2.31	2.24	2.97
Suicide attack	http://en.wikipedia.org/wiki/Suicide_attack	2.30	2.36	2.29	3.04
AL Qaeda in the Arabian Peninsula	http://en.wikipedia.org/wiki/Al-Qaeda_in_the_Arabian_Peninsula	2.01	1.98	2.06	2.63
Al Qaeda in the Islamic Maghreb	http://en.wikipedia.org/wiki/Al-Qaeda_in_the_Islamic_Maghreb	2.05	1.98	2.06	2.60
Tehrik-i-Taliban Pakistan	http://en.wikipedia.org/wiki/Tehrik-i-Taliban_Pakistan	1.96	1.96	1.97	2.59
Yemen	http://en.wikipedia.org/wiki/yemen	1.60	1.72	1.74	2.18
Pirates	http://en.wikipedia.org/wiki/pirates	1.44	1.67	1.67	2.10
Extremism	http://en.wikipedia.org/wiki/extremism	1.64	1.90	1.86	2.40
Somalia	http://en.wikipedia.org/wiki/somalia	1.50	1.68	1.67	2.12
Nigeria	http://en.wikipedia.org/wiki/nigeria	1.48	1.66	1.64	2.07
Political radicalism	http://en.wikipedia.org/wiki/Political_radicalism	1.75	1.91	1.97	2.48
Al-Shabaab	http://en.wikipedia.org/wiki/Al-Shabaab	1.84	1.89	1.89	2.48
nationalism	http://en.wikipedia.org/wiki/nationalism	1.48	1.71	1.73	2.20
Recruitment	http://en.wikipedia.org/wiki/recruitment	1.74	1.90	1.87	2.54
Fundamentalism	http://en.wikipedia.org/wiki/fundamentalism	1.60	1.79	1.80	2.32
Islamist	http://en.wikipedia.org/wiki/islamist	1.79	1.89	1.93	2.45
MEANS		1.95	2.00	2.01	2.62

Appendix 6.1:

Blogger Sample: Coding Online/Offline Content Status

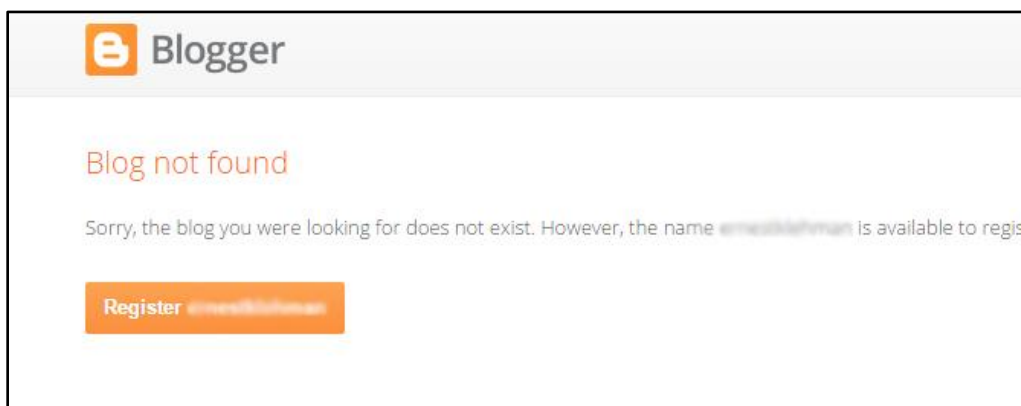
Blog has been suspended (Coded as 4 – Suspended)

This return indicates that Google has suspended or permanently locked the blog targeted by the DMCA takedown notice (e.g., for Terms of Service violation). It may also indicate the blog has been deleted by the user and Google has locked the blog (preventing anyone from re-registering), which is sometimes done on request of the blog owner or due to other Terms of Service concerns (e.g., Google locks the blog to prevent spammers from re-registering it). See Blogger Help (2015A; 2015B; 2015C); Croll (2013).



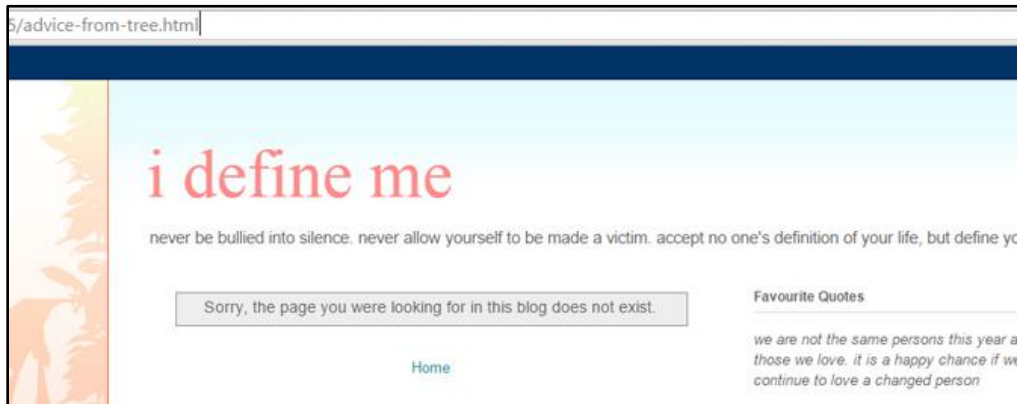
Blog has been deleted/relocated by user (Coded as 3 – User Deleted / Relocated)

This return indicates that the owner of the blog targeted by the DMCA takedown notice has taken the step to delete the blog and 90 days have passed since deletion (Google releases the name of user deleted blogs after 90 days). It is also possible that the blog has been relocated on Blogger (as Google also releases the name/URL of blogs on renaming/relocating). See Blogger Help (2012; 2015A); Google (2014).



Blog post or content is offline (Coded as 2 – Offline)

Example of a return coded as offline (code: 2). The blog post containing the content targeted by the DMCA takedown notice remains offline.

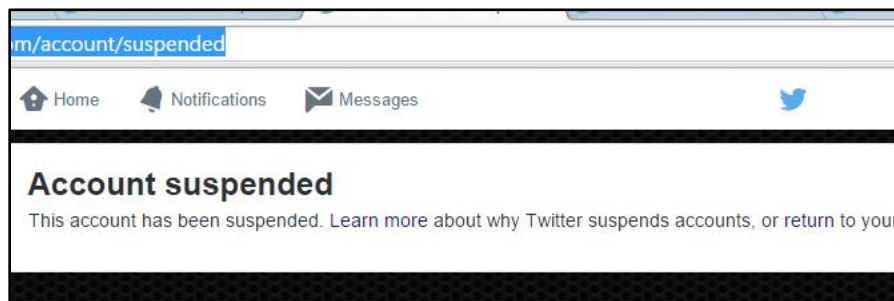


Appendix 6.2:

Twitter Sample: Coding Online/Offline Content Status

Twitter account been suspended (Coded as 4 – Suspended)

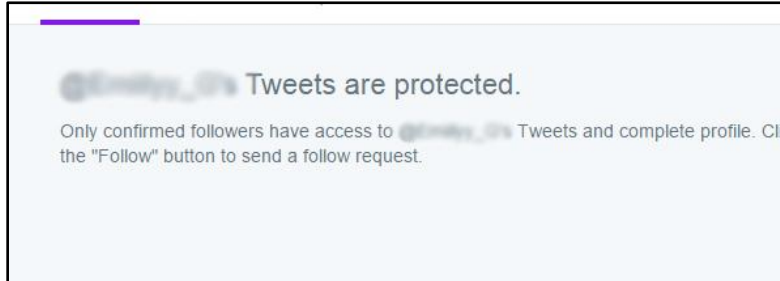
This return indicates that Twitter has suspended or locked the Twitter account targeted by the DMCA takedown notice (e.g., for Terms of Service violation). See Twitter (2015).



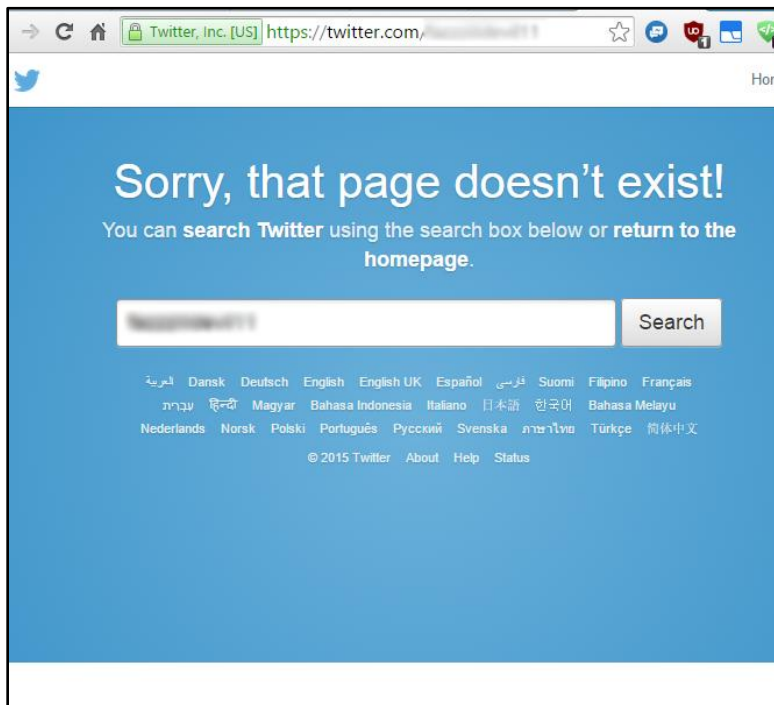
Twitter account has been deleted / protected by user (Coded as 3 – User Deleted)

This return indicates the owner of the Twitter account targeted by the DMCA takedown notice either protected their account (as in, made their tweets private and not publicly accessible) (#1) or deleted the account (the account no longer exists) (#2).

#1



#2



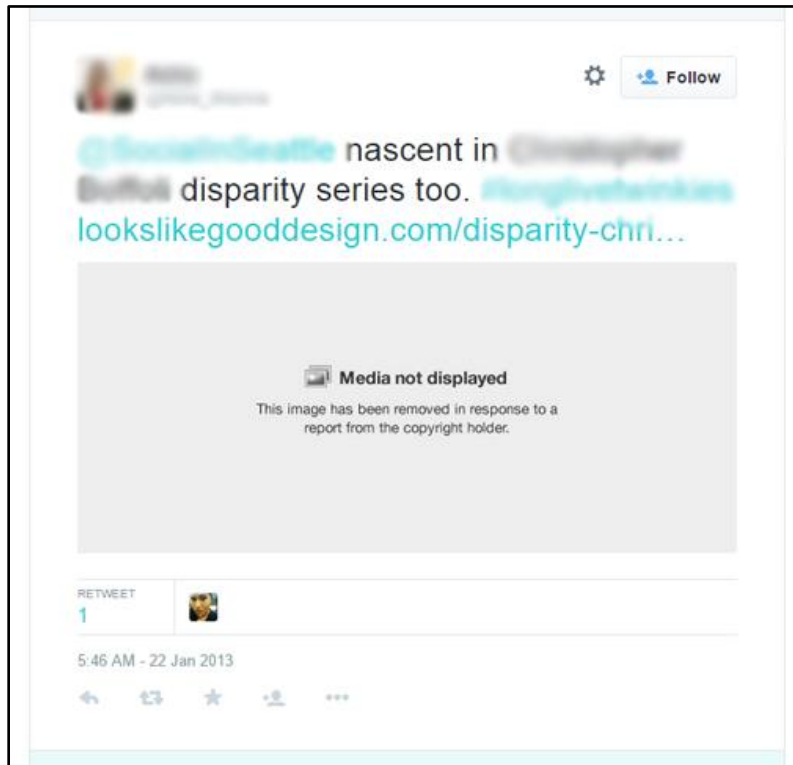
Targeted content is offline (Coded as 2 – Offline)

Examples of returns coded as offline (code: 2). The Tweet containing the content targeted by the DMCA takedown notice remains offline (#1) or the specific media targeted in a Tweet remains offline (#2). See also Twitter (2015).

#1



#2



Appendix 6.3:

Blogger Sample: Coding Online/Offline Content Status

Contingency Table: Offline and Fair Use – Measure of Association

This table is a cross tabulation of content status (offline or online) with fair use (and related) defenses in the Blogger sample. It sets out frequencies, percentages, measure of association (gamma value) and also indicates a statistically significant relationship ($\gamma = -0.4347$; $\chi^2 = 67.93$; $df = 6$; $p < 0.05$). As similar analysis was conducted with the Twitter sample.

Offline	Unlikely	Fair Use Possible	Likely Fa	Total
Content/Post Online	23 39.66	9 15.52	26 44.83	58 100.00
Content/Post Offline	156 72.22	37 17.13	23 10.65	216 100.00
User Deleted Blog	49 75.38	9 13.85	7 10.77	65 100.00
Blog Suspended	136 85.00	14 8.75	10 6.25	160 100.00
Total	364 72.95	69 13.83	66 13.23	499 100.00

Pearson $\chi^2(6) = 67.9353$ Pr = 0.000
gamma = -0.4347 ASE = 0.067

Contingency Table: Offline (Recoded) and Fair Use – No Association

This table offers the same cross-tabulation but recoded to exclude “online content”. This is to explore the relationship between the different forms of offline content and any fair use (and related) legal defenses. This statistical analysis demonstrates that there is no statistically significant association between the two variables ($p>0.05$). As similar analysis was conducted with the Twitter sample.

RECODE of offline (Offline)	Unlikely	Fair Use Possible	Likely Fa	Total
Post/Content Offline	156 72.22	37 17.13	23 10.65	216 100.00
User Deleted Blog	49 75.38	9 13.85	7 10.77	65 100.00
Blog Suspended	136 85.00	14 8.75	10 6.25	160 100.00
Total	341 77.32	60 13.61	40 9.07	441 100.00

Pearson $\chi^2(4) = 8.9277$ Pr = 0.063
gamma = -0.2617 ASE = 0.089