

The Evolution of Privacy Norms: Mapping 35 Years of Technology-Related Privacy Discourse, 1980-2014

Research-in-Progress

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Abstract

Today, information disclosure decisions are characterized by their growing ubiquity and complexity. Endowed with limited cognitive resources, individuals therefore rely ever more on heuristic rather than deliberate decision-making. This paper argues that collective privacy norms serve as such a heuristic that guides individuals in their disclosure decisions and gradually replaces the individual privacy calculus. It is hence crucial to shed light on the evolution, efficiency, and behavioral implications of privacy norms as they unfold over time. To gain insights into the interplay of privacy norms and technological innovation, we explore 35 years of technology-related privacy discourse in *The New York Times*. When unpacking the dynamics of privacy norms and their salience for disclosure decision-making in such a way, privacy norms emerge as fragile social constructions that are increasingly vulnerable to collective myopia and purposive manipulation.

Keywords: Information privacy, privacy calculus, social norms, heuristic decision-making

Introduction

This paper seeks to explain the role of social norms around privacy (i.e. privacy norms) in shaping privacy-related behavior and provides insights into how information technology shapes their evolution over time. Individuals' decisions about revealing or concealing personal information have been conceptualized predominantly as resulting from a rational cost-benefit assessment, known as the privacy calculus (Culnan and Armstrong 1999; Dinev and Hart 2006). According to this conceptual lens on disclosure decision-making, individuals trade off their privacy in various offline and online situations against other benefits such as relationship building, financial rewards, or personalization benefits (see Smith et al. 2011).

The underpinning assumption that individuals can foresee all future consequences and risks of their disclosure decisions appropriately, however, appears to be no longer valid in light of current technological advancements. It is therefore timely to challenge the prevailing notion of rational choice and perfect information in individuals' disclosure decision-making (Acquisti et al. 2015; Kehr et al. in press; Keith et al. 2012). In our increasingly digitized and connected reality (Landwehr et al. 2012; Tene and Polonetsky 2012), disclosure decisions are characterized first and foremost by their ubiquity and complexity, which often overwhelm individuals' limited cognitive resources (Acquisti et al. 2015). We communicate through social media and instant messengers, browse shops online, navigate through street maps with our smartphones, seek medical advice using online search engines, and track our sleep and fitness with wearable technology – mostly unaware of the digital trails we leave and the near-complete picture of our interests, habits and beliefs we paint. Considered as the „new oil“ in the digital economy (Wired.com, 2014), such personal data become especially valuable in combination with advanced analytics and data from other sources and points in time (Landau 2015). The complexity of disclosure decisions hence arises from the need to evaluate simultaneously (i) the sensitivity of the interconnected pieces of information we expose (e.g., what do our online search queries and the products we examine in online stores reveal about us once combined?), (ii) the actors we expect to access this information (e.g., can only the initially requesting actor or also third parties and governments use this information?), as well as (iii) the intended usage of our data as declared to us more or less transparently (e.g., will the information be used to personalize online advertisement for us, assess our creditworthiness, or screen our political stance?).

Given the ubiquity and complexity of disclosure decisions, we argue that individuals seek to economize on their cognitive resources by drawing on a simple but powerful heuristic – they imitate the behavior of others. This strategy is deeply rooted in human nature (Bandura 1977) and can be observed frequently in daily life. Among others, individuals choose the restaurant in which they spot other customers (Bikhchandani et al. 1998) and tend to buy books that appear on bestseller lists (Chen 2008; Chen et al. 2011). More interestingly for the purposes of this study, a strong social influence on individual behavior has also been observed in disclosure decision-making. The belief that others reveal similar personal information, for example, was found to increase own information disclosure (Acquisti et al. 2012), even if this required overriding previously stated intentions (Norberg and Horne 2007). Similarly, teenagers indicated to follow the behavior of their friends in social online networks (McLaughlin and Vitak 2012). Consistent with this finding, server-level data revealed similar information sharing habits on Facebook among friend groups (Burke et al. 2009).

The human tendency to do what others are doing is of fundamental importance for the emergence and salience of social norms (Cialdini and Trost 1998). We argue that such social norms have a strong influence also on how individuals manage their privacy. Indeed, we believe that the influence of privacy norms (i.e. social standards of how individuals tend to handle their own as well as others' informational boundaries) on disclosure behavior is far greater than the attention dedicated to this topic by privacy researchers thus far would suggest. However, little is known about the evolution, determinants, and consequences of privacy norms as they unfold over time.

It is hence crucial to unpack the dynamics of social norms and appreciate more fully their role for disclosure decision-making in the digital era. We address this research gap and trace the interplay between technology and privacy by mapping 35 years of (information) technology-related public discourse on privacy. According to Westin (2003), information technology changed the way we view privacy. As a case in point, mass self-disclosures on social networks are interpreted as if privacy is “no

longer a social norm” (Zuckerberg, 2010). Instead privacy might have become an artifact without meaning for the generation of digital natives, who grew up with information technology (Lanier and Saini 2008).

This work-in-progress manuscript presents our preliminary descriptive findings on the dynamics of privacy norms as reflected in technology-related privacy discourse in the New York Times, 1980-2014. Our argument proceeds as follows. We first draw on work from social psychology and the social sciences more generally to introduce the concept of social norms. Building on these insights, we present evidence for the salience of social norms around privacy and theorize on the evolution of such privacy norms and their dynamic interplay with information technology. To identify those evolutionary forces that have shaped privacy norms over time, we present initial findings from our exploration of 35 years of technology-related privacy discourse and briefly sketch how we wish to continue in this undertaking. We conclude with a discussion of our expected contribution to privacy research and policy.

Theoretical Background

Social norms and human decision-making

Social norms refer to patterns of behavior, beliefs, and values that serve as agreed upon standards for a social group (Cialdini and Trost 1998). Although such norms tend to be implicit and are rarely codified or discussed openly, they exert a powerful and consistent influence on group members' behavior (Burnett and Bonnici 2003; Hackman 1976). For this reason, research has long incorporated the concept of social norms into behavioral models (e.g. Fishbein and Ajzen 1975; Schwartz and Tessler 1972; Triandis 1980; Zuckerman and Reis 1978), for example to predict technology acceptance and use (Venkatesh and Davis 2000; Venkatesh et al. 2003). Research on social norms revealed that individuals tend to imitate the behavior of those around them (Asch 1955, 1958; Banerjee 1992; Cialdini and Trost 1998; Sherif 1966). This helps individuals not only to be accepted in their social groups (Bettenhausen and Murnighan 1985; Boyd and Richerson 1985; Feldman 1984), but also to make superior decisions. In this regard, social norms serve as efficient decision-making heuristics (Hayakawa 2000).

Keynes (1930) viewed the individual tendency to imitate and follow the crowd as a response to a world of uncertainty. Perceiving others as being better informed than oneself, individuals reduce cognitive effort in complex decision situations by conforming to normative behavior (Bikhchandani et al. 1998; Keynes 1930; Nolan et al. 2008). Indeed, research uncovered individuals' tendency to observe and adopt the behavior of others to increase with the level of uncertainty and novelty of a situation (Bettenhausen and Murnighan 1985; Feldman 1984; Griskevicius et al. 2006; Hochbaum 1954). When conceived as shared representations of knowledge, social norms can act as a heuristic that increases both, decision-making efficiency and outcomes (Kahneman and Miller 1986).

Social norms evolve gradually (Axelrod 1986; O’Gorman et al. 2008; Opp 1982) and are highly adaptive to their respective environment (Ostrom 2000). As a result of social learning (Bandura 1977), successful behaviors become widespread (Boergers and Sarin 1997; Boyd and Richerson 1985; Richerson and Boyd 2005). Once prevalent in a particular group, they turn into an established social norm. Perhaps counter-intuitively, the imitation of others is not always beneficial for individuals or society. Commonly referred to as herd behavior (Banerjee 1992), normative influences also lead individuals to voice opinions that contradict their own judgment (Asch 1956) or to fail to respond to imminent threats (Latané and Darley 1970). On a societal level, undesirable consequences of convergent behavior become visible in stock market bubbles (Hirshleifer and Teoh 2003) and bank runs (Gu 2011) as well as in mass hysteria (Raafat et al. 2009) and mob violence (Kumar 2007; Russel 2004). Importantly, ill-judged behavior can spread within a group and become normative, when individuals are not able to assess its legitimacy, i.e. the extent to which it can be considered as desirable (Warren and Campbell 2014).

Privacy Norms

There are a number of meaningful arguments for the existence of influential social norms around information privacy. Inspired by Nissenbaum (2010), we view such privacy norms as socially constructed standards that shape the flow of personal information, i.e. how personal information is handled by their originators and third parties including other individuals, organizations, or governments. There are many

privacy norms observable in daily life, like not to sneak on somebody's smartphone, even if you could, or not to disseminate sensitive information about others without their permission.

Consistent with the idea of privacy norms, scholars tend to attribute cross-cultural differences in privacy perception and behavior (e.g. Bellman et al. 2004; Dinev et al. 2006; Milberg et al. 2000) to varying norms around privacy (Smith et al. 2011; Ur and Wang 2013). As those are transmitted through language and traditions (Laufer and Wolfe 1977), it is not surprising that pronounced disparities in privacy-related behavior have been detected between culturally diverse countries, like the US and Italy (Dinev et al. 2006), or the US and China (Lowry et al. 2011). However, prior research did not yield a consistent picture of how cultures differ in regard to privacy conceptions nor how cultural factors shape norms around privacy (Belanger and Crossler 2011).

The legal and social scholars that significantly contributed to our understanding of privacy (Altman 1975, 1977; Margulis 1977, 2003; Solove 2006; Westin 1967) agree that privacy is a highly context-sensitive concept, and so must be the social norms around it. A rich body of empirical evidence identified privacy-related behavior as varying strongly between contexts. This holds not least with regards to the type of information (e.g. health data or location data), the purpose of information use (e.g. personalization or market research), the political context (e.g. law enforcement), and the technological artifact (e.g. smartphone or computer) as selected contextual factors uncovered in prior privacy research (Smith et al. 2011). To study how social norms shape privacy-related behavior, Nissenbaum (2010) promoted an even more holistic view of context, which also includes social characteristics such as the roles and relationships of the actors involved. In her view, the only way to understand the emergence of such subtle, situation-specific privacy norms is to consider them as a result of the interplay of all contextual factors. Privacy norms then shape expectations about the appropriate flow of information in a specific context. Any deviation from the expectations that privacy norms dictate is perceived as privacy threat or privacy violation per se (Nissenbaum 2010; Petronio 2002). As such, it can result in public outcry, protest, and negative media coverage (Nissenbaum 2010; Tene and Polonetsky 2012). A violation of privacy norms draws attention (Burgoon and Hale 1988) and triggers efforts to (re-) evaluate the legitimacy of the respective norm (Warren and Campbell 2014), which can result in its stabilization, adjustment or rejection.

This provides crucial hints to understand (i) why privacy discourse is oftentimes technology-related and (ii) the dynamics between privacy norms and technological innovation. Information technology's steady advancements in the ability to collect, extract, and exploit personal information continually disrupt the expected flow of such information (Acquisti et al. 2015; Nissenbaum 2010). Repeated violations of privacy norms prompt an evolutionary dynamic – privacy norms adjust or become rejected, if the newly introduced practice, the changed flow of personal information, appears legitimate to a majority. Despite the rich theoretical arguments on the role of social norms in shaping how individuals view and manage their privacy, surprisingly little is known about the manifestation and evolution of privacy norms. It is to this important research question that we now turn.

Method

We trace privacy-related media discourse over a 35-year period to explore the dynamic interplay between privacy norms and technological innovation between 1980 and 2014. Communication research suggests that the media serve as a representation of public knowledge, opinion and evaluation (Ader 1995; Gamson et al. 1992; McCombs et al. 1997). Through the selection of events and issues and the way they are presented and emphasized, media coverage also expresses public approval and disapproval (Elsbach 1994; Lamertz and Baum 1998). Interestingly, especially negative violations of social expectations, like wrongdoings of companies, attract media attention (Desai 2011; Zavyalova et al. 2012). In this sense, the media can be considered to act as a „watchdog“ (Roznowski 2003). Consequently, we expect violations of privacy norms, i.e. deviations from the expected information flow, to receive particularly intensive media coverage (termed as “threats to privacy” or “privacy violations”). There is some initial theoretical (Nissenbaum 2010; Petronio 2002) and empirical support (Phelps et al. 1994; Roznowski 2003) for this conception of the media as a barometer of privacy violations. Hence, studying privacy-related media discourse opens up the promising opportunity to trace the violations of entrenched privacy norms as evolutionary forces that shape the emergence and redefinition of privacy norms over time.

Data

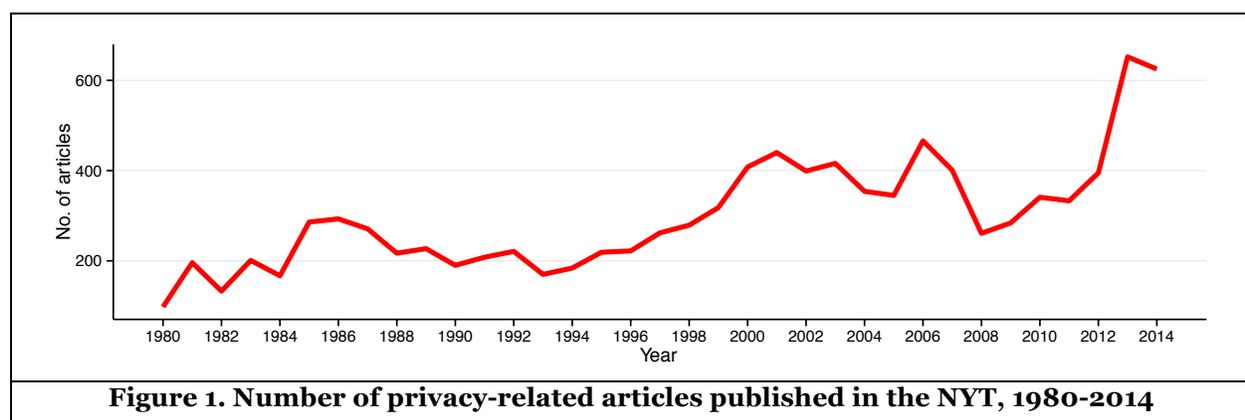
We accessed technology-related privacy discourse through the archives of The New York Times (NYT), which we find to be the most suitable media source for the purposes of our inquiry. The NYT is a nationally and internationally influential daily newspaper, which covers a broad range of topics and is widely regarded as opinion leader in various fields (Clark and Illman 2003), including the practices and implications of emerging technologies (Nelkin 1995). Its reputation and high circulation (Golan 2006; NYT 2015) make it the most cited newspaper in scientific publications, oftentimes to demonstrate public interest in a certain topic (Hicks and Wang 2013).

The archives of the NYT therefore offer unique insights into the evolution of public attention, opinion, and knowledge across decades and technology generations. We accessed the NYT newspaper articles published between 1980 and 2014 via LexisNexis. Setting our timeframe considerably before the emergence of the World Wide Web in the early nineties (CERN, 2001), enabled us to examine how this technological milestone and indeed the digitalization of our world more generally was mirrored in public privacy discourse.

To identify privacy-related articles, we drew on keywords (e.g. Information Security & Privacy, Privacy Rights, etc.),¹ which LexisNexis assigns to each article using its SmartIndex technology (LexisNexis, 2015). This is a rule-based automated classification system that analyzes and tags text documents. Even though the taxonomies are constantly changing (mostly through the addition of new terms), all documents in the database receive the latest indexing updates. Hence, the text material we extracted is unlikely to be affected by possible biases from time-inconsistent keyword assignment. The final sample of privacy-related discourse consisted of 10,482 articles (words per article: mean = 913, sd = 595.14).

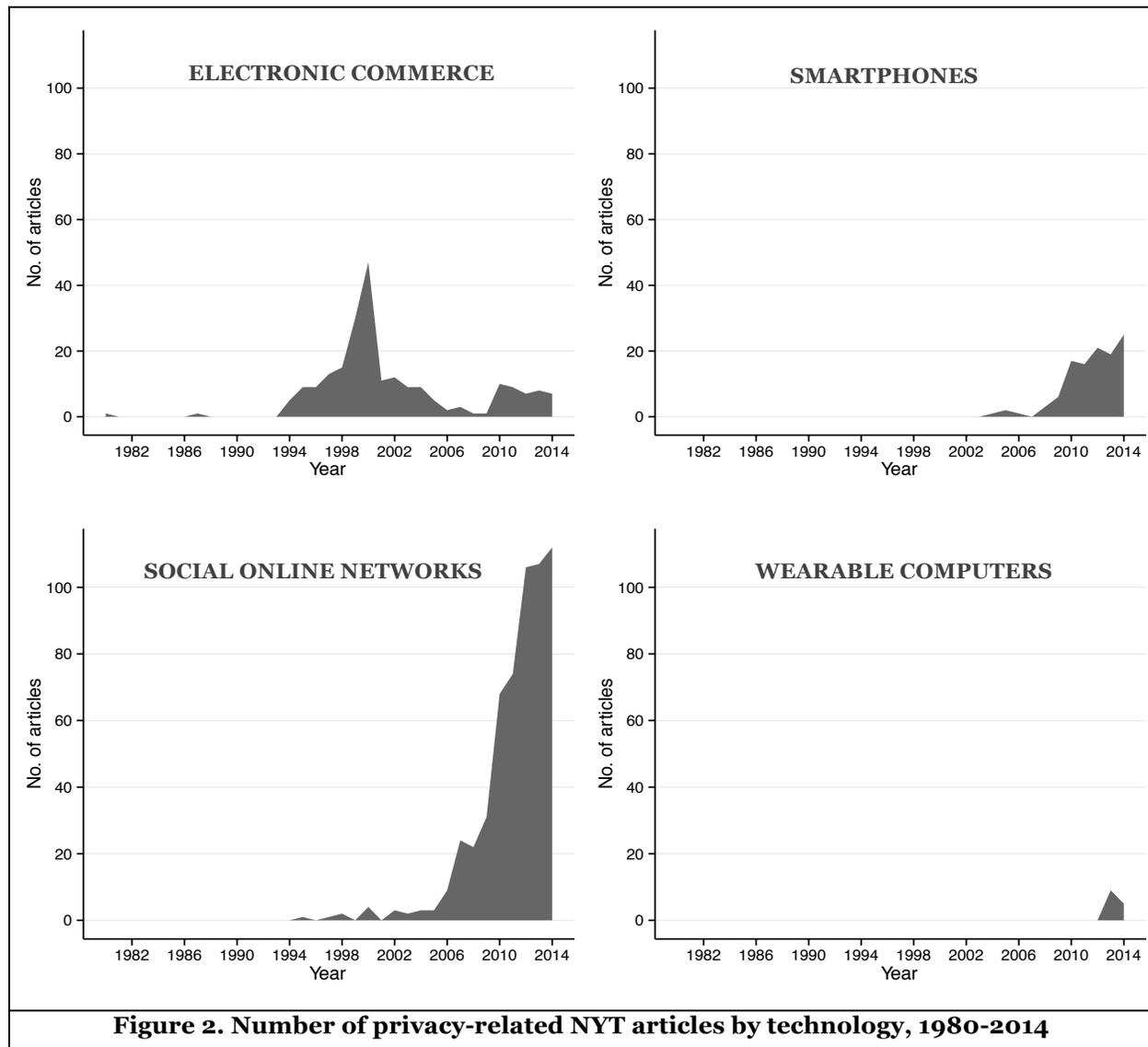
Initial Descriptive Results

Figure 1 displays the number of privacy-related articles published in the NYT each year since 1980. The evolution of privacy discourse over time indicates that privacy is by no means a recent phenomenon, but has been discussed in the media for at least the past 35 years. Since 2000, however, the topic has become considerably more prevalent as indicated by the yearly number of privacy-related articles. Privacy discourse in the NYT peaked in 2013 (> 600 articles), which is most likely due to Edward Snowden's revelations on the surveillance programs of the National Security Agency (NSA). Insights into the US surveillance of phone and Internet communications triggered substantial public concerns and brought the issue of privacy into focus. In contrast, the global financial crisis seems to have suppressed privacy discourse in the NYT in 2008 and following years.



¹ The privacy keywords were carefully selected based on a sample of NYT privacy-related articles and are available from the authors upon request.

To shed light on our research questions, we examined the link between privacy discourse and selected information technologies. For this purpose, we identified technological contexts that are highly present in privacy research and policy-making (Smith et al. 2011; Tene and Polonetsky 2012) and mapped their association with privacy issues over time. Figure 2 displays the yearly number of privacy-related articles that make reference to the respective technology and were published in the NYT between 1980 and 2014.²



The discursive trends that emerge seem to be naturally linked to the diffusion of the technology itself. The more prevalent a technology becomes, the greater the societal relevance of the privacy threats that it poses and the privacy-related media coverage it receives. The more abrupt movements in privacy discourse, however, seem to co-occur with technological changes that suddenly altered the flow of personal information, thereby challenging the privacy norms prevailing at the time. Three technologies exhibit remarkable trajectories in this regard.

² Again, we relied on SmartIndex terms to identify the selected technologies in the articles to avoid bias from time-variant tagging by the publisher (here NYT).

E-Commerce. Privacy-related media coverage on e-commerce emerged as early as 1993, when first online stores required customers to disclose personal information such as their shipping address. It peaked in 2000, when Internet companies started to personalize their services and exploit personal data such as customers' purchase or browser histories – a move that assumingly had challenged extant privacy norms.

Smartphones. In their early days, smartphones were used primarily for e-mails and light web browsing in professional contexts. It was only with the release of the first Apple iPhone in 2007 and Google's mobile operating system Android in 2008 that apps enhanced the functionality of smartphones and triggered their mass adoption. Privacy-related media coverage increased notably during this period, not least because some of these third-party programs introduced notable changes to the flow of personal information as they accessed phone data (e.g. contacts) and processed users' location captured via GPS.

Social Online Networks. The most popular social online network today, Facebook, started to expand beyond its initial target group of students at selected US universities in 2006 (Facebook, 2015). Since then, privacy issues triggered by a stream of changes in privacy settings have become a central constitutive element of Facebook's history and reputation. However, the sharp increases in privacy-related media coverage in 2007 and 2010 mark major milestones in opening up the platform to third-party software developers, which were enabled to offer apps that could also utilize user data (Wang et al. 2011).

Our initial analyses of the NYT privacy discourse highlight that (i) privacy discourse is significantly associated with information technology and that (ii) changes in personal information flows induced by technological innovations intensified media coverage and public awareness of such perceived privacy threats. As we further develop this study, we will attempt to examine more deeply how technology-induced changes in information flows relate to entrenched privacy norms. Our analytical strategy beyond the initial descriptive results is to combine manual content analysis with automated sentiment analysis, an established and objective method to detect emotions in textual data (Pang and Lee 2008). While the qualitative methods will allow us to unveil how information flows in the selected technological contexts have changed over time, the systematic study of emotions in the articles will provide initial insights into the severity of privacy norm violations. Research suggests that the deviation from social expectations is likely to affect the tenor of media coverage (Zavyalova 2012), as it represents public opinion (Ader 1995; Gamson et al. 1992; McCombs et al. 1997) and expresses public support or disapproval (Elsbach 1994; Lamertz and Baum 1998). We will therefore use the text analysis software LIWC (Language Inquiry Word Count)³ to study the valence of each article, i.e., the extent to which an article is positively or negatively connoted, and specific emotions like anxiety and anger. A large-scale study on the virality of media articles by Berger and Milkman (2012) impressively demonstrated how LIWC's predefined dictionaries can be used to detect emotions in NYT articles. We believe that the patterns of public reaction to changes in personal information flows will provide fascinating insights into the evolution of privacy norms once analyzed over time. Hence, our further exploration of the NYT privacy discourse will aim to answer questions like the following:

- What changes in personal information flows gave rise to strongly negative media coverage? This could be for instance the result of altering established information flows by exploiting a particular type of personal data, of introducing a novel data transmission principle, or of involving a new actor.
- How did NYT journalists accompany newly introduced practices that have changed information flows in a specific technological context over time? E.g. with initially negative coverage that might turn into neutral or even positive over time.

As a result of these efforts, we will derive a timeline to illustrate (i) how flows of personal information have changed in the various technological contexts and (ii) how this was evaluated by the public. In a final step, we will complement the timeline of technology-induced changes to information flows and their public evaluation by (iii) the actual dissemination of the respective technology and their applications. This will shed light on a central mechanism that convey newly introduced flow of personal information into

³ A detailed description of LIWC can be found on the following website: <http://www.liwc.net/howliwcworks.php>.

established norms – their prevalence (Cialdini and Trost 1998). Hence, drawing the full picture on technology-induced changes to information flows, their prevalence and their public evaluation will provide fascinating insights into the evolution of context-specific privacy norms once analyzed over time. Alarming, however, this will also unveil that privacy norms might be purposefully manipulable in the digital era as discussed in the next chapter.

Discussion

In today's digital era, the evolutionary efficiency of privacy norms appears more fragile than ever. Indeed, consumers, journalists, politicians, and even technology experts are increasingly unable to anticipate and call others' attention to the risks that are associated with the disclosure of personal information. The inferences about individuals that can be drawn from the sheer scale and diversity of data that we emit as by-products of using information technology in daily life (George et al. 2014) remain inconceivable to most, as negative consequences often surface with considerable delay (Acquisti 2004). As a result of this myopia, individuals tend to reveal their personal data more often than not and accept its commercial exploitation by others even in the presence of considerable privacy threats. If misconstrued in such a way, privacy norms reflect collective failure rather than collective wisdom. These dysfunctional privacy norms obtain and maintain legitimacy nonetheless, provided that information asymmetries around privacy risks persist. This pictures privacy norms not only as potentially arbitrary, but also as alarmingly malleable and thus manipulable by commercial and governmental interests. As part of what organizational theorists might call "institutional work" (Lawrence et al. 2011), firms and governments can engage in purposive actions to influence collective attitudes and beliefs in an effort to legitimize changes in privacy norms with regards to e.g. controversial practices as the retention of personal data for crime prevention or the erosion of privacy protection in social online networks.

The fundamental question of whether a privacy norm is functional or dysfunctional from a societal viewpoint, however, is often difficult to answer. As a case in point, it is all but trivial to trade off the collective discomfort of being constantly monitored while strolling through cities like London against the feeling of security that tends to be enhanced by intensive surveillance (The Guardian 2011). This illustrates the more general point that disclosure decisions are shaped not only by privacy norms, but also by additional, sometimes conflicting social norms (Nissenbaum 2010) such as fairness, reciprocity, and altruism (Cialdini and Trost 1998). Consistent with this line of reasoning, privacy research provides implicit support for the idea of other social norms overriding privacy norms in case of a conflict. Studies for instance revealed that individuals are willing to disclose even sensitive personal information, when they consider the overall exchange relationship to be fair (Culnan and Armstrong 1999; Wirtz and Lwin 2009) and when they recognize a broader societal benefit (Anderson and Agarwal 2011; Cichy et al. 2014).

Conclusion and Implications

This research-in-progress introduces a novel perspective on how individuals manage their privacy. Given the ubiquity and complexity of information disclosure decisions, we assume that individuals endowed with limited cognitive resources increasingly rely on collective privacy norms rather than on their individual privacy calculus to set situation-specific information boundaries. Our exploration of privacy discourse in the NYT reveals how technology fuels the evolution of such privacy norms in a way that technological innovation constantly questions and pushes the boundaries of what information flows are deemed acceptable by the general public. The complexity that current technological advancements introduce into disclosure decision-making, however, severely limits the evolutionary efficiency of privacy norms. This makes privacy norms – and those that rely on them – increasingly vulnerable to collective myopia and purposive manipulation. Even though much more research is needed to embed the notion of privacy norms into a more holistic behavioral model, we believe that insights into the evolution, efficiency, and behavioral implications of privacy norms will transform the way we study and ought to protect privacy in the digital age.

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