Relational Privacy: Surveillance, Common Knowledge and Coordination

Robert H. Sloan

Richard Warner

Follow this and additional works at: http://ir.stthomas.edu/ustjlpp

Part of the Privacy Law Commons

RELATIONAL PRIVACY:
SURVEILLANCE, COMMON KNOWLEDGE, AND COORDINATION

ROBERT H. SLOAN[*] AND RICHARD WARNER[**]

Contemporary surveillance is constant, pervasive, and invasive.[1] Indeed, "if you figure that your life is so disorganized, private, and fragmented that no biographer would or could keep track of it, think again—your biography is being written as you read these pages."[2] Commentators warn of diminished possibilities for self-realization. "Psychologists, sociologists, philosophers, novelists, and technologists have all written about the effects of constant surveillance, or even just the perception of constant surveillance . . . Surveillance strips us of our dignity. It threatens our very selves as individuals."[3] Commentators identify two threats: one to social subgroups; the other, to society as a whole. We agree with both claims, but our concern is primarily with the second.

There are two versions of that claim: a claim about a *future* loss of self-realization, and a claim about a *current* loss. The "future loss" claim extrapolates from the numerous examples of the destructive effect surveillance currently has on a variety of social *subgroups*. You can predict a future society-wide loss if you add the following claim: history demonstrates that "the tendency of surveillance systems to . . . expand—to cover more people and more of the lives of the people they cover."[4] This provides ample reason to worry about a future loss of self-realization. Historical analogies lead to the same conclusion. There are compelling cases in which society-wide surveillance has led to a significant society-wide reduction in self-realization.[5] Society-wide surveillance in the United States is not now as repressive as it was in the historical examples, but add that surveillance tends to become increasingly repressive,[6] and there is

---

[1] The literature is vast. *See, e.g*., David Lyon, Surveillance After Snowden (2015). and Julia Angwin, Dragnet nation: a quest for privacy, security, and freedom in a world of relentless surveillance (2014). We review various aspects of the literature in Robert H. Sloan & Richard Warner, *The Self, the Stasi, and the NSA: Privacy, Knowledge, and Complicity in the Surveillance State*, 17 Minn. J. Law Sci. Technol. 347 (2016), and Richard Warner & Robert H. Sloan, *I'll See: How Surveillance Undermines Privacy by Eroding Trust*, 32 Santa Clara Comput. High Technol. Law J. 221 (2016).

[2] John Gilliom & Torin Monahan, SuperVision: An Introduction to the Surveillance Society 43 (2012).

[3] Bruce Schneier, Data and Goliath: The Hidden Battles to Collect Your Data and Control Your World 127 (2015).

[4] James B. Rule, Privacy in Peril: How We Are Sacrificing a Fundamental Right in Exchange for Security and Convenience 151 (2007).

[5] *See infra* text accompanying notes 13–16.

[6] Christian Parenti, The Soft Cage: Surveillance in America From Slavery to the War on Terror (2004).

again reason to worry about the future.

Is there also reason to worry that surveillance is *currently* causing a serious *society-wide* loss of self-realization? Many commentators think so. They contend that the self withers in the searing light of surveillance,[7] or that what survives is not the true self but a fabricated one,[8] or that the self transforms into something else entirely—"mere algorithm fodder,"[9] "nodes of information production,"[10] a puppet manipulated through "invisible threads,"[11] or something less than human.[12] These are not claims about the

---

[7] Jeffrey Rosen, The Naked Crowd: Reclaiming Security and Freedom in an Anxious Age (2005).

[8] The seminal source of this claim is Michel Foucault, Discipline & Punish: The Birth of the Prison 217 (Alan Sheridan tran., 1995) (explaining that it is "not that the beautiful totality of the individual is amputated, repressed, altered by our social order, it is rather that the individual is carefully fabricated in it, according to a whole technique of forces and bodies"). Many have taken up Foucault's claim. *See, e.g.*, David Lyon: surveillance "'makes up' the data double, our online persona, and that entity then acts back on those with whom the data are associated, informing us who we are, what we should desire or hope for, including whom we should become." Lyon, *supra* note 1.

[9] Frank Pasquale, The Black Box Society: The Secret Algorithms That Control Money and Information 198 (2015).

[10] Ronald J. Deibert, Black Code: inside the battle for cyberspace 63 (2011) (noting that "we no longer move about our lives as self-contained beings, but as nodes of information production in a dense network of digital relations involving other nodes of information production").

[11] Aleksandr Solzhenitsyn, Cancer Ward 208 (2003). The full quote is:

As every man goes through life he fills in a number of forms for the record, each containing a number of questions . . . There are thus hundreds of little threads radiating from every man, millions of threads in all . . . They are not visible . . . but every man is constantly aware of their existence . . . Each man, permanently aware of his own invisible threads, naturally develops a respect for the people who manipulate the threads.

Bruce Schneier applied the passage to contemporary surveillance. BRUCE SCHNEIER: THE VALUE OF PRIVACY THE WASHINGTON NOTE BY STEVEN CLEMONS THE WASHINGTON NOTE (2006), http://washingtonnote.com/bruce_schneier_1/.

[12] Thus, Jean Baudrillard presciently in 1983:

We are constantly confronted with the anticipated statistical verification of our behavior, and absorbed by this permanent refraction of our least movements, we are no longer confronted with our own will. We are no longer even alienated . . . Each individual is forced despite himself or

effect of surveillance on particular subgroups. They are claims about the current effect of surveillance on the self in *any* social setting.

In support, commentators offer detailed and insightful pictures of the point with which we began: contemporary surveillance is constant, pervasive, and invasive. But that is all they offer. They do not explain *why* constant, pervasive, and invasive surveillance has the current, society-wide effect they claim. Their evidence typically consists primarily of examples of subgroups currently suffering a surveillance-induced loss of self-realization. They may also cite historical examples of highly repressive, society-wide surveillance. But, as we noted earlier, the most this evidence suggests is that surveillance may pose a threat of a *future* society-wide loss of self-realization. In addition, there are many examples that support the claim that surveillance, far from threatening the self, is *essential* to adequate self-realization. Public health is a good example. Ensuring adequate public health promotes healthy individuals, and being healthy typically facilitates self-realization. Surveillance is an essential means to these ends. Public health officials record details of disease and treatment, often in ways that allow personal identification. The information

has provided the foundation for planning, intervention, and disease prevention and has been critical for epidemiological research into patterns of morbidity and mortality for a wide variety of diseases and conditions. Registries have been essential for tracking individuals and their conditions over time. Surveillance has also served to trigger the imposition of public health control measures, such as contact tracing, mandatory treatment, and quarantine.[13]

Commentators debate both the appropriate type and acceptable extent of public health surveillance,[14] but few would deny that *some* appropriately constrained surveillance is justified to promote health. So it is difficult to

---

herself into the undivided coherency of statistics. There is in this a positive absorption into the transparency of computers, which is something worse than alienation.

JEAN BAUDRILLARD, JEAN BAUDRILLARD: SELECTED WRITINGS 210 (Mark Poster ed., Jacques Mourrain tran., 2nd ed. 2002).

[13] AMY L. FAIRCHILD ET AL., SEARCHING EYES: PRIVACY, THE STATE, AND DISEASE SURVEILLANCE IN AMERICA 204 (2007). For concern about the sharing of health information, *see, e.g.,* Lori Andrews et al., *Privacy Policies of Android Diabetes Apps and Sharing of Health Information*, 315 JAMA: THE J. OF THE AM. MEDICAL ASS'N 1051 (2016), and Lori Andrews, *Ethical, Legal, and Social Issues in Genetic Testing for Complex Genetic Diseases*, VAL. U. L. REV. 793 (2003).

[14] *See generally* FAIRCHILD ET AL., *supra* note 13.

see how appropriately constrained surveillance poses a threat to the self.[15]

In general, appropriately constrained surveillance often arguably *facilitates* self-realization. Analysis of large data sets, for example, can reveal patterns that would otherwise go unnoticed, and this has already yielded an astonishing array of benefits ranging from detecting drug interactions to improving access to social services in India by creating digital IDs for citizens. [16] It is difficult to see in such cases why appropriately constrained surveillance would not promote self-realization.

So are the commentators wrong to see surveillance as currently reducing opportunities for self-realization? We think not. Surveillance does create a present, society-wide threat. It does so by undermining a form of privacy we will call *relational privacy*. Relational privacy consists of people voluntarily limiting their knowledge of each other as they interact in a wide variety of social and commercial roles.[17] The group coordination ensures group—and hence "relational"—control over the selective flow of information. [18] Adequate self-realization requires an adequate degree of coordination-enabled control. Surveillance undermines that control. The key to seeing how this happens across society as a whole lies in seeing how group coordination depends on a special form of knowledge—*common knowledge*, "the recursive belief state in which A knows X, B knows X, A knows that B knows X, B knows that A knows X, ad infinitum."[19] People

---

[15] *Id.*

[16] *See* RICK SMOLAN & JENNIFER ERWITT, THE HUMAN FACE OF BIG DATA 72 (2012).

[17] The nineteenth century sociologist Georg Simmel was among the first to call attention to relational privacy. He observed that people voluntarily limit their knowledge of each other as they interact in a wide variety of social and commercial roles. Georg Simmel, *The Sociology of Secrecy and Secret Societies*, 11 AM. J. SOCIOL. 441, 468 (1906).

[18] The connection between privacy and the self is a standard theme in the privacy literature. *See, e.g.*, DANIEL J. SOLOVE, UNDERSTANDING PRIVACY 112 (2008) ("Theorists have proclaimed the value of privacy to be protecting intimacy, friendship, individuality, human relationships, autonomy, freedom, self-development, creativity, independence, imagination, counterculture, eccentricity, thought, democracy, reputation, and psychological well-being").

[19] Kyle A. Thomas et al., *The Psychology of Coordination and Common Knowledge*, 107 J. PERS. SOC. PSYCHOL. 657, 657 (2014). They note that "Coordination may be achieved with the weaker notion of *common belief*, in which two agents each believe that a proposition is likely to be true with probability at least p, each believes that the other believes it with probability at least p, and so on . . . In the rest of this article, we will use the term *common knowledge* broadly, to

succeed in coordinating their efforts at voluntary restraint because they know they will coordinate appropriately, they know they know, know they know they know, and so on. When surveillance undermines such knowledge it strikes at relational privacy's foundation and thereby threatens self-realization.

Our appeal to common knowledge is hardly surprising. As Thomas Kyle *et al*. observe in their groundbreaking study, *The Psychology of Common Knowledge*, "much of social life is affected by common-knowledge generators,"[20] and they note, with regard to coordination in particular, "[a]ctors coordinate when they have evidence for common knowledge, and refrain from coordinating when they do not."[21] However, while our appeal to common knowledge may not be surprising, it is certainly unusual. Indeed, in the privacy literature appeals to common knowledge are, as far we have been able to determine, virtually nonexistent. The lack of attention to common knowledge in the privacy literature is of a piece with a general tendency to overlook common knowledge. [22] As Thomas *et al*. note, given the importance of common knowledge, it is "surprising that the psychology of common knowledge has apparently had so little visibility either in psychology or in everyday life."[23] They urge that "an acknowledgement of the role of common knowledge in enabling coordination can unify and explain a variety of seemingly unrelated and puzzling phenomena."[24] Our discussion of the role of common knowledge in relational privacy contributes to the broader task of adequately acknowledging the place of common knowledge in coordination generally.

Section I characterizes relational privacy and explains its role in self-realization. The group coordination that creates relational privacy depends on conformity to informational norms. Section II introduces informational norms and explains their role in coordination and in particular how coordination depends on common knowledge. While it is clear that common knowledge exists, it is far less clear how it arises. Section III shows how it arises and then explains how surveillance can undermine the processes that create and maintain common knowledge. Surveillance may but need not cause common knowledge to collapse, and that collapse may, but need not lead people to abandon coordination under informational

---

include 'sufficiently high common *p*-belief'." *Id.* at 658. We adopt the same usage.

[20] Thomas et al., *supra* note 19 at 671.

[21] *Id.* at 671.

[22] *Id.* at 659 (noting that "despite the fact that common knowledge is fundamentally a psychological phenomenon, little is known about the psychology of common knowledge").

[23] *Id.* at 671.

[24] *Id.*

norms. Section IV briefly considers the three possibilities: common knowledge and coordination persist; common knowledge collapses but coordination continues; and, common knowledge and coordination collapse. Section V concludes with a plea for further study of the role of common knowledge in relational privacy.

I.   RELATIONAL PRIVACY

Relational privacy is a variety of informational privacy. Informational privacy is the ability to determine for yourself when others may collect and how they may use your information.[25] Informational privacy is *relational* when control over the flow of information is exercised collectively by a group, not unilaterally by individuals. The family holiday dinner is a good example. The family members have the goal of a harmonious dinner and long run harmonious relations, and they realize that that requires the selective disclosure of information. They know, for example, that there are things you can say to Aunt Jane that you cannot say to Uncle John and vice versa. No family member can unilaterally realize the goal of harmonious family relations. That requires group control. All members must observe the relevant strictures on the flow of information. Similar remarks hold for a wide range of examples. Pharmacists, restaurant customers and waiters, and students and teachers in large universities, for instance, typically share the goal of maintaining appropriately impersonal relationships, and to realize that goal, they typically exchange only the information necessary to their interaction in those roles and voluntarily refrain from requesting, disclosing, or otherwise discovering more.[26] Waiters do not try to find out if you are married to your dinner partner, nor, if they know, announce that your dinner partner is not your spouse. Your pharmacist does not ask if you are happy in your marriage when you pick up your Xanax, although your internist may before prescribing it.

As the examples illustrate, the specific patterns of informational restraint depend on the social roles in which people interact. There are many similar examples. Our concern here, however, is not with specific instances but with the general pattern that the instances all instantiate. A clear view of the general pattern is necessary to see how surveillance threatens the self.

[25] Alan Westin, Privacy and Freedom 7 (1967) *See also* James B. Rule, Privacy in Peril: How We Are Sacrificing a Fundamental Right in Exchange for Security and Convenience 3 (2007) (defining privacy "as the exercise of an authentic option to withhold information on oneself").

[26] Helen Nissenbaum, *Privacy as Contextual Integrity*, 79 Wash. Law Rev. 119, 120–121 (2004) *See also*; Helen Nissenbaum, Privacy in Context: Technology, Policy, and the Integrity of Social Life (2010); Helen Nissenbaum, *A Contextual Approach to Privacy Online*, 140 Dedalus 32 (2011); Helen Nissenbaum, *Toward an Approach to Privacy in Public: Challenges of Information Technology*, 7 Ethics Behav. 207 (1997).

A. The Characteristic Pattern

There are four parts to the pattern. Students and teachers in large universities are a good example.

(1) *Shared goal*. University students and teachers share a goal: teachers should assign grades only on the basis of relevant academic work. [27] Accepting this goal and seeking to realize it is part of what constitutes properly realizing both the teacher and the student roles.

(2) *Need to control appearance.* To achieve the goal, teachers must minimize bias, and that requires that students appear to teachers primarily in light of their relevant academic achievements, not in light of extracurricular aspects of their personalities, past academic records, honors, or punishments.[28]

(3) *Need for cooperation*. How you appear to someone depends on what they think about you. You cannot, for example, appear to be a diligent student to someone who thinks you are lazy. The individual efforts at selective disclosure of a single teacher or student will not be sufficient to ensure that students appear appropriately to that teacher. Teachers—*enough* of them—must limit what they tell other teachers and the university about the students they know, and students—*enough* of them—must limit what they reveal about themselves and about other students.

(4) *Cooperation is routine*. Students and teachers do cooperate—routinely so. They do so even though often all the interacting parties know about each other is that one presents himself or herself in the role of a teacher, and the other in the role of a student.

The role-based interactions that give rise to relational privacy exhibit this four-part pattern.[29] To summarize: There is (1) a goal whose realization requires (2) controlling appearance in (3) ways that no one act can unilaterally achieve and (4) the requisite control comes from others cooperating to selectively limit the disclosure, use, and distribution of information. The result is an intricate web of interaction in social roles that facilitates self-realization.

---

[27] Our evidence is mostly anecdotal. Students and teachers we have asked acknowledge the norm. *See* Yan Shvartzshnaider et al., *Learning Privacy Expectations by Crowdsourcing Contextual Informational Norms*, THE FOURTH AAAI CONFERENCE ON HUMAN COMPUTATION AND CROWDSOURCING (HCOMP 2016) (2016), http://yansh.github.io/papers/HCOMP/ (last visited Oct. 30, 2016).

[28] Richard Warner & Robert H. Sloan, *Self, Privacy, and Power: Is It All Over?*, 17 TUL. J. TECHNOL. INTELLECT. PROP. 61 (2014). Sloan and Warner, *supra* note 1.

[29] We analyze a number of examples in ROBERT H. SLOAN & RICHARD WARNER, UNAUTHORIZED ACCESS: THE CRISIS IN ONLINE PRIVACY AND INFORMATION SECURITY (2013). Warner and Sloan, *supra* note 28. Sloan and Warner, *supra* note 1.

B. The Self

        We assume the following, widely shared ideal of self-realization: Each person should "work out for herself, in the light of her own experience, a specific picture of the best and most praiseworthy way of life which is accessible to her and which, more than any other, engages her imagination and her emotions."[30] Realizing this ideal requires privacy. One reason is, as the philosopher Thomas Nagel puts it, "the importance of concealment as a condition of civilization."[31] He explains that
Concealment includes not only secrecy and deception but also reticence and non-acknowledgment. There is much more going on inside us all the time than we are willing to express, and civilization would be impossible if we could all read each other's minds. Apart from everything else there is the sheer chaotic, tropical luxuriance of the inner life. To quote Simmel: "All we communicate to another individual by means of words or perhaps in another fashion—even the most subjective, impulsive, intimate matters—is a selection from that psychological-real whole whose absolutely exact report (absolutely exact in terms of content and sequence) would drive everybody into the insane asylum." As children we have to learn gradually not only to express what we feel but also to keep many thoughts and feelings to ourselves in order to maintain relations with other people on an even keel. We also have to learn, especially in adolescence, not to be overwhelmed by a consciousness of other people's awareness of and reaction to ourselves—so that our inner lives can be carried on under the protection of an exposed public self over which we have enough control to be able to identify with it, at least in part.[32]

As Nagel rightly emphasizes, inner lives need the "protection of an exposed public self."[33]
        The need for that protection is, however, just one side of the privacy coin. The flip side is the role of the "exposed public self" in facilitating self-realization. As the sociologist Nippert-Eng emphasizes:
At its core, managing privacy is about managing relationships between the self and others . . . privacy . . . [is] a "boundary regulatory process by which a person (or group) makes himself more or less accessible and open to

---

[30] STUART HAMPSHIRE, INNOCENCE AND EXPERIENCE (Reprint ed. 1991). The ideal is part of classical liberal political philosophy. Noam Chomsky, who endorses the ideal, locates himself in this regard in the classical liberal tradition of John Stuart Mill. He notes that Mill, in his epigraph to *On Liberty*, states "the grand, leading principle, towards which every argument unfolded in these pages directly converges: the absolute and essential importance of human development in its richest diversity." NOAM CHOMSKY, WHAT KIND OF CREATURES ARE WE? 60 (2015).
[31] THOMAS NAGEL, CONCEALMENT AND EXPOSURE: AND OTHER ESSAYS 4 (2002).
[32] *Id.* at 4 (quoting Simmel from KURT H. WOLFF, ED. THE SOCIOLOGY OF GEORG SIMMEL (1950), pp. 311-12; translated from GEORG SIMMEL, SOZIOLOGIE (1908)).
[33] *Id.*

others." When we regulate our accessibility to others . . . we simultaneously regulate our relationships with them.[34]

The public self manages the "boundary regulatory process," not only to protect the inner life, but also to facilitate a variety of different types of relationships. Self-realization comes not just from the flourishing of the enclosed garden of the inner self, but from the pursuits of the public self as it interacts with others in a variety of social roles.[35] You realize yourself as much through being a lawyer, doctor, racecar driver, chess player, birdwatcher, and so on, as you do through your soliloquies and intimate conversations.

An Obvious Threat?

The threat to the self may now seem obvious. Contemporary surveillance is constant, pervasive, and invasive, and neither individuals nor groups have much power to prevent or constrain it. Surely that has to undermine the group control that is the hallmark of relational privacy? We think it does, but that is far from obvious. At first sight, reflection on examples suggests the opposite is true.

Consider the family dinner. The relational privacy goal is familial harmony, and the family members achieve that goal though their coordinated adherence to patterns of selective disclosure. Surveillance need not change that. It is possible for everyone to adhere to the same patterns of selective disclosure that they would in the absence of surveillance. The following contrast makes that clear. Suppose surveillance does disrupt familial harmony. Suppose Aunt Jane and Uncle John recently separated after years of marriage. Everyone, including Jane, knows John now has a much younger girlfriend, but everyone carefully avoids mentioning it. During dinner, however, thirteen-year-old, mischievous Tom posts a picture of the girlfriend on Facebook with the comment, "At least he didn't bring her." When Jane's phone notifies her of Tom's post, she shows the picture to everyone at dinner. The family members take sides, and the quarrels begin. Tom violated the recently instituted "Don't mention John's girlfriend" norm. To avoid such disruptions, the family members simply have to adhere to the family's informational norms in their online activities. Surveillance may still intrude—if, for example, the FBI arrives to arrest Uncle John for the money laundering they detected from surveillance of his bank accounts, but putting such eventualities aside, it is difficult to see how surveillance disrupts relational privacy in a family.

---

[34] Christena E. Nippert-Eng, Islands of Privacy 22 (2010).

[35] *See, e.g.,* Joseph Raz, The morality of freedom (1986); Richard Sennett, The Fall of Public Man (Reissue ed. 1992); David Rosen & Aaron Santesso, The Watchman in Pieces: Surveillance, Literature, and Liberal Personhood (2013); Lionel Trilling, Sincerity and Authenticity (1972).

A similar point holds for surveillance in education. Schools can be more or less restrained in their use of surveillance. They need not monitor student/teacher interactions aggressively or at all. Jenzabar, for example, offers to help schools "[e]xtract institutional data, analyze it, and view your business performance with an unprecedented array of reporting options."[36] What data a school extracts and how it uses it is up to the school. Sufficiently invasive surveillance will undermine student/teacher relational privacy, but it is hard to see why *appropriately constrained* surveillance would do so—both in the school case and in general. Or does this overlook some hidden threat present even in appropriately constrained surveillance? We think it does.

To see why, we need a deeper look at relational privacy. The key is to see that relational privacy arises from conformity to informational norms. Informational norms are social norms that constrain the collection, use, and distribution of information.

II. INFORMATIONAL NORMS

Informational norms constrain the collection, use, and distribution of information. As Helen Nissenbaum notes,

[Informational] norms circumscribe the type or nature of information about various individuals that, within a given context, is allowable, expected, or even demanded to be revealed. In medical contexts, it is appropriate to share details of our physical condition or, more specifically, the patient shares information about his or her physical condition with the physician but not vice versa; among friends we may pour over romantic entanglements (our own and those of others); to the bank or our creditors, we reveal financial information; with our professors, we discuss our own grades; at work, it is appropriate to discuss work-related goals and the details and quality of performance.[37]

Take teachers and students, for example. The behavioral pattern we noted earlier is the norm: teachers and students voluntarily refrain from sharing information in ways that ensure that students are evaluated primarily in the light of relevant academic achievements.

A. Coordination Norms

How do norms explain the coordination that creates relational

---

[36] *Cognos Analytics for Jenzabar JX*, JENZABAR, https://www.jenzabar.com/cognos-analytics-for-jenzabar-jx/ (last visited Oct 22, 2016).

[37] Helen Nissenbaum, *Privacy as Contextual Integrity*, 79 WASH. LAW REV. 119, 137–38 (2004).

privacy? In the same way that a norm explains driving on the right. Everyone wants to drive on the same side of the road as everyone else. Safety and convenience dictate that. In the United States and other "right side" countries, everyone knows that everyone drives on the right. So everyone drives on the right. How do people know that everyone drives on the right? Because the norm is to conform.[38] Driving on the right is a classic example of a *coordination norm*. The example illustrates key features of such norms. (1) There is a shared goal—in this case driving on the same side. (2) No one can unilaterally achieve that goal; it requires the others' cooperation. (3) To achieve the goal, everyone conforms to the norm—*because, but only as long as*, everyone else does. If you expected everyone to drive on the left, you would too. In general, a coordination norm is a behavioral regularity in a group, where the regularity exists at least in part because (almost) everyone thinks that, in order to realize a shared interest, she ought to conform to the regularity, as long as everyone else does.[39]

Informational norms are (often but not always[40]) coordination norms. The student/teacher norm is a good example. The shared goal is that teachers should evaluate students primarily on the basis of their relevant academic performances. Realizing this goal requires the across the board cooperation of students and teachers, so teachers and students conform to the norm—because, but only as long as, everyone else does.

There are many similar examples.[41] People routinely coordinate with each other to ensure the selective disclosure of information. Indeed, they often do so with complete strangers. How does that happen? There are two parts to the explanation. The first is that parties know they will conform. Call this *first-level* knowledge. The second part of the explanation is that the parties also have higher levels of knowledge. They have the *common knowledge* that they will conform. People have common knowledge that they will conform if they know they will conform, know they know it, know they know they know it, and so on. We explain the contribution to coordination of first-level knowledge and common

---

[38] Some will object that since it is the law that one drive on the right there is no need to appeal a norm. But that overlooks the cost of enforcement. As Elinor Ostrom notes, "If individuals voluntarily participate in a situation, they must share some general sense that most of the rules governing the situation are appropriate. Otherwise, the cost of enforcement within voluntary activities becomes high enough that it is difficult, if not impossible, to maintain predictability in an ongoing voluntary activity." ELINOR OSTROM, UNDERSTANDING INSTITUTIONAL DIVERSITY 21 (2005). We note also that there are driving norms that are inconsistent with laws—e.g., driving 3-10 mph over the speed limit on US Interstates.

[39] *See* ROBERT H. SLOAN & RICHARD WARNER, UNAUTHORIZED ACCESS: THE CRISIS IN ONLINE PRIVACY AND INFORMATION SECURITY 56-59 (2013).

[40] "Make your comments relevant" is an informational norm but not a coordination norm. You would adhere to the relevant comment norm even if most others did not.

[41] We have analyzed a number of other examples elsewhere in SLOAN AND WARNER, *supra* note 11.

knowledge. In the next section, we explain how common knowledge arises.

B. Coordination and Knowledge

An example is helpful. Imagine a freshman student, Roger, walks into his professor's, Sarah's, office during her office hours. Roger would like to confess that, "I am anxious all the time and feel terrified in class, afraid you will call on me. I grew up in a very small town where I was the smartest kid around. Now there is so much competition." However, Roger is concerned about his privacy, and he will disclose how he feels only if he knows (1) that Sarah will conform to the student/teacher norm, *and* (2) that her conforming will be sufficient to ensure the norm-required selective disclosure of the information he reveals. Condition (2) is necessary because the point of coordination under relational privacy norms is to ensure the appropriate selective disclosure of information, so people will conform to those norms only if they know that others will conform *and thereby* ensure selective disclosure.

1. First-level knowledge

Coordination *requires* first-level knowledge. Two things must be true for Roger to disclose his feelings. He must know that (1) Sarah will conform to the norm, *and* (2) her conforming will ensure norm-consistent information processing. The same is true for Sarah in regard to Roger.

We first explain how they know that they will conform. They know that because of a process of education and acculturation they have both undergone. That process makes a person's presentation of themselves in the role of a student or teacher a basis for knowledge: education and acculturation result in everyone knowing that (typically) anyone who presents himself or herself conforms to the student/teacher norm. So when Roger and Sarah present themselves in their respective roles, each can infer that the other will conform. This is simply an instance of the general fact that, when people interact in social roles (not just the student/teacher roles), education and acculturation typically result in people who are potential performers of roles knowing that the others with whom they interact will conform to relevant informational norms. This in turn is an instance of the general fact about social roles that the sociologists Peter Berger and Thomas Luckmann emphasize in their foundational work, *The Social Construction of Reality*:

In the common stock of knowledge there are standards of role performance that are accessible to all members of a society, or at least to those who are potential performers of the roles in question. This general accessibility is itself part of the same stock of knowledge; not only are the standards of role

X generally known, but it is known that these standards are known. Consequently every putative actor of role X can be held responsible for abiding by the standards, which can be taught as part of the institutional tradition and used to verify the credentials of all performers and, by the same token, serve as controls.[42]

Now, how do Roger and Sarah infer that their conformity will ensure only norm-consistent information disclosure? To see how, consider that when parties interact under informational norms, third parties do not—surveillance aside—have access to the information unless the norm allows it, or one of the parties violates the norm. We consider the effect of surveillance in the next section. The point is that, surveillance aside; people interacting under informational norms have excellent reason to think that norm-consistent behavior ensures only norm-consistent information disclosures.

2. The Contribution of Common Knowledge

Coordination does *not* require common knowledge,[43] but common knowledge nonetheless is important because it greatly facilitates coordination. The way to see why is to consider two types of cases: those in which *first-level* knowledge is not sufficient to ensure coordination, and those in which higher order—but finite—knowledge is insufficient. In describing the latter especially, it helps to add subscripts to "know" to keep track of levels of knowledge. By "higher order but finite" we mean knowledge that falls short of common knowledge. Common knowledge is infinite: the parties $know_1$, $know_2$ they $know_1$, $know_3$ they $know_2$ they $know_1$, and so on *ad infinitum*. Finite higher order knowledge stops at some point. The parties only $know_1$, and they know all the iterations up to $know_n$, . . . $know_1$, and their knowledge stops there.

First-level knowledge without high order knowledge. Assume first-level knowledge exists. That is, Roger $knows_1$ that Sarah will conform, and that her conformity will ensure only norm-consistent information disclosures. The same is true for Sarah in regard to Roger. Focus first on Roger. Even though Roger $knows_1$ that Sarah will conform, he may not $know_2$ that Sarah $knows_1$ that he will conform. Imagine that, if someone were to ask Roger whether he knew that, he would reply, "I am not sure. I am a first-semester freshman from Adair, Illinois, population 210, and I look like it. So she may think I will not adhere to the norm because I do not $know_1$ it." Roger worries that Sarah will not follow the norm because she

---

[42] Peter L. Berger & Thomas Luckmann, The Social Construction of Reality: A Treatise in the Sociology of Knowledge 73 (1967).
[43] *See infra* section V, B.

thinks he will not, and, beset with doubts, Roger does not confess and so fails in that way to coordinate under the norm with Sarah.

It is easy to imagine the same for Sarah. Suppose, were she asked if Roger knew$_1$ she would conform to the norm, she would reply, "I am not sure. I was just making an impassioned plea in class last week for informational transparency. Given the questions Roger asked me in class, he may think I will rebel against the restrictions of the student/teacher norm." Sarah worries that Roger will not follow the norm because he thinks she will not, and, beset with doubts, Sarah does not disclose her own small town past.

So should we add a second-level knowledge requirement to the explanation of coordination? But then the same problem arises at the third-level of knowledge. Suppose that Roger knows$_2$ that Sarah knows$_1$ that Roger will conform, and suppose Sarah knows$_2$ the same about Roger. But suppose also that Roger does *not* know$_3$ that Sarah knows$_2$ that Roger knows$_1$ she will conform. Instead, he thinks, "I know$_2$ that Sarah knows$_1$ that I will conform, but she does not realize I know$_2$ that. She may think I think she is a devotee of informational transparency." So Roger hesitates to make his confession. Similarly for Sarah, she thinks, "I know$_2$ that Roger knows$_1$ that I will conform, but he does not realize I know$_2$ that. He may think I think he is a norm-ignorant freshman from a small town." In general, consider any knowledge-level *n* at which Sarah knows$_n$ that . . . knows$_1$ that Roger will conform, and Roger knows$_n$ that . . . knows$_1$ that Sarah will conform. With enough ingenuity one can construct examples in which coordination fails because one of them fails to know$_{n+1}$ . . . that the other knows$_1$ that he or she will conform.

Common knowledge eliminates these "higher order mismatch" possibilities. It makes the parties *transparent* to each other. Everything is out in the open, so there is no possibility of misunderstanding, misinterpretation, doubt, or deception at any knowledge level. As Thomas *et al*. note:

common knowledge has a privileged role to play in facilitating coordination, in part because it avoids a second-order coordination problem . . . people [do not need to] decide how many levels of shared knowledge is enough to attempt coordination: How can individuals be certain that everyone requires the same number of levels of shared knowledge to attempt risky coordination? . . . [C]ommon knowledge provides the most effective and reliable path to coordination.[44]

The benefit of common knowledge is clear, and it is also clear that people can have common knowledge. What is far less clear is how common

---

[44] Thomas et al., *supra* note 20, at 659.

knowledge arises. We turn to that issue in the next section.

Before we do so, it may seem we have overlooked a possibility. Can Roger fail to coordinate because he fails to know$_2$ that Sarah knows$_1$ that their conformity will ensure norm-consistent information disclosure? The answer is *no*—as long as you put aside surveillance. Roger knows$_1$ Sarah will conform, and Roger also knows$_1$ that in the absence of surveillance Sarah's conforming means third parties will not have access to the information. On reflection, he will realize that that is obvious to Sarah too, so he can conclude Sarah knows$_1$ that norm-conformity means only norm-consistent information disclosures.

III. How Common Knowledge Arises

We first characterize the type of situation that generates common knowledge, and then we use that characterization to show how surveillance can undermine common knowledge. We begin with an example. The game theorist Michal Chwe notes that, during a baseball game in 1996,

baseball fans at Cleveland's Jacobs Field [looked] up to see an airplane pulling a banner advertising anonymous HIV testing. Obviously the irony here is the airing of such a sensitive issue as AIDS publicly and even festively on a bright sunny day at the ballpark . . . [The underlying purpose is that] I would be more likely to get an HIV test if I knew that doing so was not unusual, but I wouldn't find this out through everyday conversation; at the ballpark, looking up at the plane, however, it is obvious to all that everyone is seeing the same thing.[45]

Thus, for everyone, seeing the sign was sufficient for knowing that anonymous HIV testing was available, *and*—because it was "obvious to all that everyone is seeing the same thing"—seeing the sign was sufficient for each person seeing it to know that everyone saw it, at least everyone who was paying minimal attention to what was happening above the stadium. These two features made it common knowledge among the "paying minimal attention" group that anonymous HIV testing was available.

The common knowledge arose from two factors: (1) Almost everyone knows that the banner is flying over the stadium, and (2) almost everyone knows that almost everyone knows that.[46] Of course, flying banners over

---

[45] Michael Suk-Young Chwe, Rational Ritual: Culture, Coordination, and Common Knowledge 41 (2013).

[46] Peter Vanderschraaf & Giacomo Sillari, *Common Knowledge*, The Stanford Encyclopedia of Philosophy (Edward N. Zalta ed., Spring 2014 ed. 2014), http://plato.stanford.edu/archives/spr2014/entries/common-knowledge/ (last visited Jul 1, 2015) ("[T]he basic idea . . . is that for a set of agents, if a proposition A is publicly known among them and each agent knows that everyone can draw the same conclusion *p* from A that she can, then *p* is common knowledge.") *See also* Stephen Schiffer, Meaning 32-35 (1973) (Schiffer calls

stadiums is not the only way to create situations in which "it is obvious to all that everyone is seeing [learning, apprehending] the same thing." Education and acculturation also routinely provide a basis for common knowledge in the same way.[47] In the United States, for example, a process of explicit and implicit instruction, discussion, and correction makes it obvious to everyone—at least those with a minimum of basic education—that everyone learns that George Washington was the first president of the United States. Thus, not only is it true that (1) almost everyone in the United States learns that George Washington was the first president; it is also true that (2) almost everyone knows that almost everyone learns that.

Social roles and associated informational norms generate common knowledge in this way. Consider the student/teacher norm. In the appropriate group (which includes at least students and teachers at large universities), education and acculturation result in everyone knowing that students and teachers conform to the student/teacher norm, and in everyone knowing that everyone knows that everyone is subject to that process of education and acculturation. So, not only do students and teachers know that students and teachers adhere to the student/teacher norm, they all know that they know that. The result is common knowledge of conformity to the norm. In general, the situations that generate common knowledge of X among group G meet two conditions: (1) there is a process which results in all members of G knowing X, and (2) the process ensures that all members of G know that all members of G undergo the process and as a result come to know X.

IV. HOW COMMON KNOWLEDGE CAN COLLAPSE

Surveillance can cause common knowledge to collapse. We emphasize that we are not claiming that surveillance inevitably leads to the collapse of common knowledge. Surveillance *can, but need not*, cause social roles to lose their ability to generate relevant common knowledge. Moreover, when it does cause common knowledge to collapse, it *can, but need not*, stop people from coordinating under informational norms. The next section examines each possibility: common knowledge and norm-enabled coordination persist; common knowledge collapses but norm-enabled coordination persists; and, common knowledge and coordination collapse. In this section we provide the background essential to considering these possibilities: the explanation of how surveillance can lead to the collapse of common knowledge. Our explanation assumes that people know that they are under surveillance and know relevant details about it. This may seem

---

common knowledge "mutual knowledge"). We give our explanation of how common knowledge arises from the situations described in the text in Warner and Sloan, *supra* note 1.

[47] Talcott Parsons, The Social System Ch. 6 (2012).

unwarranted. While knowledge of the general existence of surveillance may be widespread, knowledge of its current pervasiveness and invasiveness is not. We assume, plausibly we contend, that this lack of knowledge is temporary.[48]

It is convenient to continue with the educational surveillance example. Suppose that, as Roger and Sarah know, their university has recently adopted Jenzabar, a student information system. There are two cases to consider. In the first, Roger and Sarah fail (at some level) to know that the other will conform. In the second, they fail to know that their conformity ensures norm-consistent information processing.

A. *Lack of Knowledge of Each Other's Conformity*

In one example of the first case, Sarah participates in aggregating "each student's information from disparate academic and administrative systems across your campus to create . . . a 360 degree view of each student."[49] Among other things, she uses the online final grade submission process. For each student, the online form has an "Additional Comments" box. If Sarah chooses to do so when she thinks it is relevant, she could insert overall impressions of students such as "struggled with divorce and single parenting this semester," "smart but unmotivated," and so on. Now imagine that Roger visits Sarah in her office. He wonders if he should confess his feeling anxious and terrified. There are two scenarios to distinguish: first-level failures to know, and higher order failures to know.

    First level failures to know. Suppose that, if Roger discloses his anxiety, Sarah will convey that information to the administration. Suppose also that Roger realizes that, and that he regards her conveying information as a violation of the student/teacher norm. Will Roger confess? Almost certainly not. Common knowledge fails at the first level: Roger does not know$_1$ that Sarah will conform. Indeed, there is a failure before we reach any levels of common knowledge: Sarah will not, in fact, conform.

    Higher order failures. Consider a case in which Roger and Sarah both know$_1$ that the other will conform. Suppose also that, if Roger discloses his anxiety, Sarah will *not* convey that information to the

---

[48] Post-Snowden, knowledge of government surveillance is widespread. According to a 2013 PEW survey, "50% of Americans answered 'a lot' to 'How much, if anything, have you heard about the government collecting information about telephone calls, e-mails and other online communications as part of efforts to monitor terrorist activity?' Another 37% answered 'a little.' *See* PEW Research Center for the People & the Press July 2013 Political Survey, PEW RESEARCH CENTER FOR PEOPLE & THE PRESS (2013), http://www.people-press.org/files/legacy-questionnaires/7-26-13 NSA Topline for Release.pdf. Totaling the percentages yields 87% with some knowledge of government surveillance.

[49]   JENZABAR   RETENTION,   http://www.jenzabar.com/sites/default/files/resource-downloads/Jenzabar_Retention_Brochure_web_2.pdf.

administration. Like Roger, she regards conveying information as a violation of the student/teacher norm, and she adheres to the norm. Suppose Roger knows this. Unbeknownst to Sarah, he overheard her passionately objecting to Jenzabar in a conversation with another faculty member. He heard Sarah say, "If a student tells me about emotional struggles with school, there is no way I am recording that on Jenzabar!" So, Roger $knows_1$ that Sarah will conform to the norm. To see how Sarah can know the same about Roger, suppose she is an adviser to the student newspaper. The day before Roger's visit to her office, she reads his yet to be published op-ed piece inveighing against Jenzabar. The piece concludes, "Don't let Jenzabar change us! Join me in adhering to the student/teacher norm as if Jenzabar did not exist. Speak truth to power!" So, Sarah $knows_1$ that Roger will conform to the norm.

But, to focus first on Roger, he does not $know_2$ that Sarah $knows_1$ that he will conform. An earlier op-ed in the student newspaper claimed that the faculty thought that the students were "members of the Facebook generation" who "mindlessly" disclose information without a thought about privacy. The op-ed cited "extensive recent surveys" in support of this claim. The surveys were a fiction, but students, including Roger, were in general agreement with the op-ed's characterization of the faculty's attitude. So when Roger asks, "Do I $know_2$ that Sarah $knows_1$ that I will conform?", he answers "*no*". Now consider Sarah. She does not $know_2$ that Roger $knows_1$ that she will conform. Last week, in her Freshman Seminar, "Surveillance: Argus Panoptes For Us All?", Roger, his anxiety bursting out in rage, went on a tirade in which he characterized the faculty as "spineless cogs in the university surveillance machine." So, Sarah answers "*no*" to "Do I $know_2$ that Roger $knows_1$ that I will conform?"

Here common knowledge fails at the second level, because of the *potential* for one of the principals to participate in surveillance. With enough ingenuity, you can construct third level failures, and indeed, in principle, failures for any level *n*.

B. Lack of Knowledge of Norm-Consistent Information Disclosure

Suppose Sarah does not participate in surveillance by transferring personal information about Roger. Assume that Roger $knows_1$ that Sarah conforms to the norm, and likewise for what Sarah $knows_1$ about Roger.

Suppose that Sarah runs and participates in a class social media site, and that the university records and analyzes activity on such sites. There are first level and higher level cases of knowledge about whether norm conformity leads to norm-compliant information disclosure to distinguish.

First level failures to know. Suppose Roger is considering disclosing his anxiety on the social media site. He will do so only if he can answer *two*

questions affirmatively. First, "Do I know$_1$ that Sarah conforms to the student/teacher norm with regard to my social media postings?", *and* second, "Do I know$_1$ that her conformity ensures the appropriate selective disclosure of those postings?" Roger's answer to the second question depends on what he believes about the university's surveillance practices. Suppose he is convinced that the university collects and analyzes non-anonymized information about students' psychological attitudes, and suppose he regards their doing so as a violation of the student/teacher norm. So Roger answers *no* to the second question, and common knowledge fails at the first level.

Higher order failures. Suppose the university's information processing practices are a model of respect for relational privacy. The university anonymizes the information it collects, and it does its best to avoid collecting information that students or faculty might reasonably regard as sensitive. In particular, it does not collect psychological information students or faculty divulge on social media. Both Roger and Sarah know this, so they know$_1$ not only that they will conform to the norm, but also that their conformity will ensure norm-consistent information processing. But suppose each thinks that the other is misinformed about the university's practices and believes that the other thinks that the university collects non-anonymized psychological information. Then each fails to know$_2$ that the other knows$_1$ that their conformity will ensure norm-consistent processing. As before, with enough ingenuity, it is possible (at least in principle) to describe knowledge failures at any level *n*.

The collapse of common knowledge is possible. But to what extent will this happen? We consider the three scenarios we distinguished earlier: common knowledge and norm-enabled coordination persist; common knowledge collapses but norm-enabled coordination persists; and, common knowledge and coordination collapse. Each scenario involves a current, society-wide threat to self-realization.

V.   THREE SCENARIOS

We think some combination of these possibilities is most likely, but our goal here is simply to briefly sketch each possibility. We make several suggestions of people's likely responses in each of the three scenarios. The suggestions, while plausible, cry out for empirical confirmation. That is part of the point. There is a clear need for further empirical study of the role of common knowledge in coordination.

A. Common Knowledge and Coordination Persist

Surveillance and common knowledge are compatible. In the family

dinner example, for instance, imagine family members frequently post information about family activities on social networking sites and thus expose activities to surveillance. It could still be true that that: (1) family discussions and interactions ensure that family members know that only things that can be said to all at the family dinner are to be posted to Facebook; and (2) the family members know that all family members learn that. That is enough to maintain common knowledge of conformity to the family informational norms.

Even with such peaceful co-existence, surveillance still poses a threat to self-realization. To see why, return to educational surveillance. Suppose a school uses a student information system to "store each student's socio-economic status, demographic profile, academic history, and financial aid package."[50] The library uses technologies "to track material borrowing and capture what digital resources students access;"[51] and, where students use electronic textbooks, the school captures reading habits.[52] In addition, the school uses a single sign-on system "for campus applications and networks, [and so has] the capacity to store unique pieces of data, which are either input directly by the student or captured as students interact with a system."[53]

Assume students and faculty are uncertain about whether and to what extent these activities are inconsistent with the student/teacher norm.[54] That makes them uncertain about the answers to "Will others conform to the student/teacher norm?" and "Will any such conformity be sufficient to ensure norm-consistent information processing?" Without clear affirmative answers, students and teachers will fail to achieve common knowledge. Given the critical role of relational privacy in self-realization, and given the role of common knowledge in relational privacy, it is reasonable to assume that students and teachers will seek to eliminate the uncertainty about what counts as conforming to the student/teacher norm. One way to eliminate the uncertainty would be to eliminate the school surveillance that gave rise to it. Assume that is not within the power of the students and faculty. It is, however, in their power to alter their conception of what counts as conformity to the norm. Imagine a process of concern, followed by toleration, and then acceptance. At the end, students and teachers unhesitatingly answer affirmatively to "Will others conform to the student/teacher norm?" and "Will any such conformity be sufficient to ensure norm-consistent information processing?"

---

[50] Alan Rubel & Kyle M. L. Jones, Student Privacy in Learning Analytics: An Information Ethics Perspective, 32 INFO. SOC'Y 143, 144 (2016).

[51] Id.

[52] Id.

[53] Id.

[54] Indeterminacy in norms is common. We discuss several cases in Warner and Sloan, supra note 29.

It is certainly possible for such a process to lead to changes in informational norms that accommodate surveillance. The danger is that people will be too tolerant of surveillance and eventually embrace a world in which surveillance unduly restricts opportunities for self-realization. Twenty-first century society already takes surveillance practices in stride that would have been unthinkable in the mid-twentieth century. In his 1964 best seller, *The Naked Society*, Vance Packard expressed "his horror that 'cabled TV' will allow the "possibility of getting 'an instantaneous readout' home by home of what millions of people are [watching] in the entire country in about fifty seconds."[55] Now people hardly give that a second's thought. It would be interesting and important to know the extent to which people are likely to adjust their norms to accommodate surveillance.

B. Common Knowledge Collapses, Conformity Persists

What happens when common knowledge does collapse? Do people stop conforming to informational norms as a result? Not necessarily. To see why, focus first on interactions among strangers, people whose relevant knowledge of each other consists primarily in the fact that they are interacting in certain roles. Role-based common knowledge makes strangers transparent to each other for purposes of role-based coordination. They become opaque when it disappears, and the task is to predict how they will act in surveillance contexts based solely on the fact that they present themselves in a certain role. Different people will react differently. For people you know well, you may be able to assign some rough probability to a prediction of what they will do, but, in the case of strangers, you will not have enough information to do that. All you will know is that different people will react differently, and you will be unable to assign any even rough probability to whether they will conform or not. You will be *uncertain*.[56]

What people do when they are uncertain depends on how they value the relevant outcomes. [57] If they value conformity enough, they will still conform. Consider a non-norm example first. Suppose that Victor prefers to attend the opera if Victoria attends as well, and prefers to stay home alone if she does not. He is uncertain whether she will attend. Whether Victor will go to the opera depends on how much he values the options relative to each other. If he values going to the opera with Victoria highly enough, he will

---

[55] Vance Packard, The Naked Society 11 (Revised ed. 2014).

[56] This use of "uncertainty" is standard in economics. *See* KEN BINMORE, RATIONAL DECISIONS 35 (2011).

[57] We offer a game-theoretic model in support of this claim in Robert H Sloan & Richard Warner, *The Harm in Merely Knowing: Privacy, Complicity, Surveillance, and the Self*, 19 J. INTERNET LAW 3 (2015).

go even though he is uncertain whether she will. Conformity under informational norms is the same. A person will conform if the person values the positive consequences of conformity sufficiently more than the negative consequences of non-conformity. So, if enough people value conformity highly enough, people may continue to coordinate under informational norms. The observable behavior will look the same as it does when common knowledge leads parties to coordinate. What is going on, however, is very different. People are not acting on knowledge. They are gambling—placing bets on uncertain outcomes.

Assume, as before, that people will seek to eliminate the uncertainty, and assume a process that moves from concern through tolerance to acceptance of surveillance. As that process unfolds, people could modify existing informational norms or evolve new ones that embrace surveillance. Common knowledge would return as people were again able to answer affirmatively to the questions "Will others conform to norms?" and "Will such conformity be sufficient to ensure norm-consistent information processing?" The danger again is that revised and new norms greatly reduce relational privacy and hence reduce opportunities for self-realization.

C. Coordination Collapses

When common knowledge collapses, coordination will too, to the extent that people place a sufficiently large disvalue on surveillance. A sufficiently widespread collapse would be a disaster. Life under the East German Stasi is a plausible example. The "hidden, but for every citizen tangible omnipresence of the Stasi, damaged the very basic conditions for individual and societal creativity and development: Sense of one's self, Trust, Spontaneity."[58] A widespread collapse of coordination is obviously an outcome to avoid.

A plausible example of the collapse in the case of a single norm is the relationship between journalists investigating government wrongdoing and their confidential sources. The norm is that, exceptional circumstances aside, journalists protect the political independence of the press by not revealing their confidential sources. Widespread conformity to the norm matters because no single journalist can ensure a politically independent press. That takes a concerted effort of a critical mass of journalists. Conformity requires that journalists have common knowledge that they will conform and that their conformity will be sufficient to ensure an appropriately selective flow of information, a flow that protects the identity of their sources. Intensive and repressive surveillance of journalists under both the Bush and Obama administrations has greatly increased the risk

---

[58] Gary Bruce, The Firm: The Inside Story of the Stasi 12 (2012).

investigative journalists face. Protecting the identity of a source now often entails government harassment, a serious risk of imprisonment, and, in national security cases, the possible threat of prosecution under the Espionage Act.[59] As *New Yorker* reporter Jane Mayer observed, "It's a huge impediment to reporting, and so chilling isn't quite strong enough, it's more like freezing the whole process into a standstill."[60] So in this context, how will journalists answer these questions: "Will other journalist conform to the norm?" and "Will any such conformity be sufficient to ensure norm-consistent information processing?" To the extent that journalists fail to answer affirmatively, common knowledge collapses.

VI. CONCLUSION

The above discussion underscores the need for a better understanding how social roles generate common knowledge and how surveillance can undermine social roles' power to do so. An adequate understanding is essential to an adequate response to the threat that constant, pervasive, invasive surveillance poses to relational privacy.

---

[59] Rahul Sagar, Secrets and Leaks: The Dilemma of State Secrecy 105, 154 (2013).

[60] Molly Redden, *Is the "Chilling Effect" Real?*, The New Republic, 2013, http://www.newrepublic.com/article/113219/doj-seizure-ap-records-raises-question-chilling-effect-real (last visited Feb 1, 2015).