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Article

*919 A SOCIAL NETWORKS THEORY OF PRIVACY

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What facts are public and what facts are private? It is the fundamental, first-principles question in privacy law, and a necessary element in the two most important privacy torts, public disclosure of private facts and intrusion upon seclusion. This paper argues that insights from the literature on social networks and information dissemination can help provide courts with a coherent and consistent methodology for determining whether an individual has a reasonable expectation of privacy in a particular fact that he has shared with one or more persons. The social networks literature has generated theoretical and empirical insights about the probability that information disclosed to one member of a community will ultimately become known by a large segment of the community. Using these insights, courts can gauge whether the plaintiff's previously private information would have been widely disseminated regardless of the defendant's actions in a particular case. If so, the information in question was public, and if not, the tort law ought to deem the information private. This Article argues that such an approach, which treats the privacy question as an empirical one, is more attractive than any other method of establishing whether the plaintiff had a reasonable expectation of privacy in the information at issue.

Imagine your deepest, darkest secret--a true, but deeply embarrassing, fact about yourself. Now suppose that you awake one morning to find this secret suddenly revealed to everyone you know, as well as dozens of strangers. Most of us would regard such a turn of events as a personal catastrophe. Given the unappealing nature of this scenario, and the ease with which juicy secrets can spread among people, one might expect that we would play our cards close to our vests, refusing to reveal these embarrassing details to anyone. Yet it is likely that most of us have shared our most embarrassing details with other people: spouses, siblings, parents, best friends, clergy, psychiatrists, coworkers, or perhaps even strangers on transatlantic flights. Indeed, millions of Americans have shared their most intimate personal details with dozens of strangers, for example, by participating in a twelve-step group or seeking advice in an online chat room. By common parlance, we still consider these facts to be "secrets" even after we have revealed them to a handful of people.

***920** But do they remain secrets for the purposes of U.S. privacy law, such that a plaintiff

can recover in tort against someone who discovers them through improper means or publishes them in a newspaper without her consent? If so, at what point does a fact "cross over" from being a "private matter" to a "public matter" whose widespread disclosure does not provide the plaintiff with a cause of action? Can something still be "private" if two people know about it? Five people? A hundred people? When John Kerry and John Edwards were criticized after the recent presidential and vice-presidential debates for violating Mary Cheney's "privacy" by mentioning her sexual orientation--an orientation that thousands of Americans already knew about--were the critics making a coherent claim? [FN1] Where, in short, is the legal boundary between public and private?

This is the fundamental, first-principles question in privacy law, and a necessary element in the two most important privacy torts, public disclosure of private facts and intrusion upon seclusion. [FN2] Although I will focus on the privacy torts in this paper, the question about what information is deemed "private" or "secret" cuts across many areas of American law, including the Fourth Amendment, trade secrets, patents, evidence, the constitutional right of information privacy, and the Freedom of Information Act. [FN3]

Despite the centrality of this issue, the American courts lack a coherent, consistent methodology for determining whether an individual ***921** has a reasonable expectation of privacy in a particular fact that has been shared with one or more persons. Indeed, jurisdictions cannot agree on a framework for resolving these kinds of cases. Hence, Georgia law holds that disclosing sensitive information to dozens of people, and perhaps even tens of thousands of strangers, does not necessarily render information "public" for the purposes of the public disclosure of private facts tort, [FN4] but Ohio law governing the same tort holds that a plaintiff's decision to share sensitive information with four coworkers eviscerates her expectation of privacy in that information. [FN5]

This Article argues that insights from the emerging literature on information transmission through social networks can help courts develop a more rigorous and objective notion of "privacy" for the purposes of the privacy torts. It argues that privacy tort law should not focus on the abstract, circular, and highly indeterminate question of whether a plaintiff reasonably expected that information about himself would remain "private" after he shared it with one or more persons. Instead, the law should focus on the more objective and satisfying question of what extent of dissemination the plaintiff should have expected to follow his disclosure of that information to others. The goal here is to solidify the "privacy" inquiry as an empirical question, rather than a highly contested normative matter. Most courts appear to be treating the question as an empirical one presently, but they are tackling the empirical issue in a casual, careless, and confused manner.

The literature that I introduce herein explores the ways that information flows through society. Studying rumor transmission has long been a subject of some interest among sociologists and economists, and a few more recent studies have focused on the dissemination of information about HIV status and other sensitive forms of personal information through an individual's social circle. Taken as a whole, this literature provides an informative, albeit incomplete, picture of how likely particular information is to spread through any given social

network. I will review this literature, discuss some of its implications for privacy law, and then compare these implications to the analysis ***922** that courts have conducted in privacy tort cases. I will argue that social networks analysis is an indispensable tool for resolving disputes where the parties to a communication disagree about whether the recipient was entitled to share it with others.

This framework has significant implications for privacy law. In order to determine whether a particular fact known by some people will become widely publicized, one needs to know much more than how many people are currently aware of the fact. Rather, one needs to know where, within a social network, this information exists; what types of people have access to it; what the incentives are for subsequent dissemination; whether the information must be aggregated with other forms of information in order to become pertinent; and what kinds of social norms facilitate or constrain subsequent dissemination of the information. Information known by one hundred people might never be disseminated further, but the widespread dissemination of other information known to only two people might be inevitable. The literature on social networks allows us to identify useful generalizations about the ways in which information flows through society. Because information spreads in rather predictable ways, and patterns emerge in particular kinds of networks, courts can use these regularities to analyze the ex ante likelihood that previously private information will become widely known. Once courts understand how to do that, it becomes relatively simple for them to evaluate whether a particular fact about a plaintiff eventually would have become public if the defendant had not intervened. This is precisely the inquiry that privacy tort law demands.

Part I briefly explores the theoretical underpinnings of privacy tort law protection and establishes a framework for the discussion that follows. Part II describes the common law's treatment of the question of when information that has been disclosed to one or more people might remain private for the purposes of these torts. Part III delves into the literature on social networks analysis. It pays particularly close attention to the ways in which network structure and cultural variables can affect the probability that information disclosed to a few people will ultimately become known by the larger community. Part IV uses the insights from this literature to evaluate the accuracy of judicial efforts to assess whether litigants should have expected that information disclosed to a group of people eventually would be disseminated much more widely. As a general matter, courts do a reasonably good job of making these assessments, but there are a few areas in which their intuitions lead them astray. The Article suggests that using insights from social networks theory can help courts evaluate privacy in a more accurate and transparent manner.

***923** I. Why Protect Privacy?

The types of privacy issues that this Article seeks to resolve are those involving a plaintiff's disclosure of information about himself to a limited number of people. Under one notion of information privacy, information ceases to be private the moment it is shared with a second person. Yet, as the Supreme Court has recognized, such an unsophisticated conception of "privacy" is much too cramped for a society of social beings. [FN6] No one's closet is devoid of skeletons. When asked to imagine the most private facts about ourselves, we will typically think of sexual encounters and bodily functions, sensitive medical information, shameful past

misdeeds, unfavorable opinions about peers, and knowledge of our fundamental weaknesses and fears. As I suggested at the outset, most of us would regard the disclosure of these details to our entire circle of acquaintances, let alone the public at large, as a personal disaster.

At the same time, no one among us has guarded that embarrassing information with maximum diligence. Certain presumptively "private" acts, such as sexual intercourse, necessarily take place in the presence of at least one other person. Other facts might be created in solitude, but remain, by common parlance, "private" even when shared to some extent. We all tell some people about our medical ailments. Virtually everyone feels the need to unburden himself by confessing embarrassing acts to another. Indeed, sharing our most intimate information with those who we expect to keep it secret promotes further friendship and intimacy. [FN7] We tend to like people who confide in ***924** us, even if we have only met them recently. [FN8] One respected privacy theorist has gone so far as to suggest that "intimate relationships simply could not exist if we did not continue to insist on privacy for them." [FN9] It should not be necessary to highlight the importance of intimacy in human society. Indeed, describing the benefits of intimacy in economic terms, by referring to its enormous positive externalities, in some ways understates its importance. A man or woman without intimates is a shell of a person.

For the individual, sharing information about herself can be helpful even when intimacy is not involved. Although concerns about intimacy provide the strongest justifications for protecting privacy, there are other reasons why society might value privacy as well. [FN10] Millions of Americans participate in twelve-step programs and support groups, where it has become completely normal to disclose to a score of strangers one's status as an alcoholic, bulimic, child abuse victim, heroin ***925** addict, AIDS sufferer, or gambler. [FN11] Sharing information within these groups can bring the discloser helpful advice, as well as the sometimes substantial psychological relief associated with revealing certain secrets to people the discloser expects to never encounter again. [FN12] We are, in short, constantly disclosing embarrassing information about ourselves to third parties, yet we often harbor strong subjective expectations of privacy when doing so. By creating causes of action for invasion of privacy, most jurisdictions have determined that the benefits associated with fostering this intimacy justify the costs of constraining communication. In this paper, I assume the correctness of that judgment, notwithstanding the criticisms that have been lodged against privacy tort liability. [FN13]

A. Norms and Law

In the vast majority of these situations, the law does not matter much to people who disclose private information about themselves. When we disclose sensitive information to friends, the law generally has little effect on our expectations that these friends will keep the information secret. Rather, we are relying on our friends' good will, an explicit promise of confidentiality, or perhaps on an implicit threat of retribution if the information is disclosed. Where confidentiality is breached, we might retaliate by refusing to share information with that person in the future, cutting off friendship ties, or disclosing to third parties sensitive information that the loudmouth previously shared with us. A different dynamic arises when we disclose information to strangers. Here, we are relying on obscurity--our own anonymity ***926** or the removal of the stranger from our ordinary social circle--to protect the confidentiality of the information. In both settings,

however, tort law probably does little to shape people's actual expectations of privacy.

There is, however, a category of sensitive information disclosure that is harmful enough to warrant the imposition of legal liability. These instances generally involve cases of substantial damage to the plaintiff and very widespread publicity. [FN14] They also tend to involve non-repeat-player relationships between the litigants, perhaps characterized by substantial power disparities, such that reputational sanctions often will not deter the conduct in question, and the plaintiff has no effective way of engaging in self-help. Indeed, the typical invasion of privacy case involves a media defendant. [FN15] Unlike the people who disclose information about themselves to each other, these would-be defendants are paying close attention to the law.

It is through the regulation of these legally sophisticated parties that tort law may have a strong, albeit indirect, effect on ordinary people's expectations of privacy. Ordinary people will expect little privacy in a world where sensitive information about private figures that does not appear to have been extracted and disseminated with the subjects' consent regularly appears on television and in newspapers. Because people understand that there is often an intermediate actor between the subject of the report and the reporter, they will become more reluctant to share information about themselves as information about others, similarly situated, appears with increasing regularity in the mass media. [FN16] The more ordinary love letters wind up in The New York Times, the more guarded private figures composing such letters will become in writing and sending them. All of this poses a real threat to human intimacy, especially for people who overreact ***927** to very low probability, but high visibility, reputational harms. [FN17] A society interested in fostering intimacy should help people disregard these very low probability events.

Tort law can thus function as a form of social insurance: protecting those people who engaged in socially desirable sharing of personal information, but who had the misfortune to see those personal details disseminated to the general public without their consent. [FN18] Where a large group of similarly situated people share information about themselves, but the news media publicizes only a small percentage of that information, it can be efficient and just for disseminators to compensate the unlucky few.

B. The Goals of the Law

Tort liability for public disclosure of private facts attempts to strike a difficult balance by regulating interpersonal communication in a manner that enhances social welfare. On one hand, the law seeks to encourage the expressive and psychological benefits that people derive from disclosing sensitive information about themselves to others. It fosters the kinds of disclosures that lead to intimate relationships, often benefiting both parties to a sensitive communication.

On the other hand, the law seeks to regulate the further dissemination of this information. My subsequent dissemination of secrets that someone has confided in me can be beneficial. Most importantly, it promotes the development of a relationship between me and the person with whom I am sharing the information. [FN19] Note, however, that sharing private information about someone else seems unlikely to foster as much intimacy as sharing private information

about one's self. [FN20]

***928** Subsequent dissemination can also help the public understand existing social norms. [FN21] Indeed, gossip is often central in theories of social norm enforcement and change. [FN22] Of course, there will be cases where third parties who are kept in the dark stand to gain substantially from learning information that someone else wants to guard. For example, it may make society better off if a third party tells the faithful husband of an adulterous wife about her dalliances. For these reasons, spreading private information about others sometimes benefits society. The tort for public disclosure of private facts therefore limits liability to defendants who (1) publicize information that is (2) private, (3) not of legitimate concern to the public, and (4) disseminated in a highly offensive manner. [FN23] The first limitation helps keep instances of minor disclosure out of court, by requiring that the defendant spread the information to a large number of people or, in some states, a smaller number of people who have a special relationship with the subject of that disclosure. The third limitation protects First Amendment interests and immunizes those who spread information that has substantial social value. [FN24] The fourth limitation helps ensure that run-of-the-mill ***929** information dissemination is not penalized and that relatively unobjectionable breaches of confidentiality do not clog the courts. But what purpose does the second limitation serve?

In my view, tort law's public-private distinction furthers three primary purposes. First, it grants the parties latitude to structure the disclosure of information in a manner that furthers both parties' perceived interests. If people really want to share the most intimate details about their sex lives on The Jerry Springer Show, the law lets them do so. [FN25] This is why there is no such thing as inherently private information: in a nation where reality television and blogging are all the rage, it is impossible to find a type of personal fact that no one has shared with thousands of strangers. The law sensibly avoids paternalism and defers to an individual's explicitly articulated decisions to publicize information about himself, reasoning that he is in a better position than the government to weigh the private benefits and costs of this information dissemination and that the costs associated with government intervention here usually exceed the associated social benefits. [FN26] Deciding whether a disclosure was consensual thus plays a pivotal role in determinations of whether particular facts are private. [FN27] ***930** For this reason, information disclosed to another person under false pretenses that reasonably suggest confidentiality usually retains its status as private information.

Second, the privacy element of the tort seeks to differentiate between those facts whose disclosure promotes intimacy and those whose disclosure does not. If I share information with you that is widely known and readily discoverable, that disclosure is unlikely to promote intimacy between us. The law of privacy therefore does not bother to offer these kinds of disclosures legal protection. Rather, the law protects only information that is secret enough so that its disclosure might foster the development of meaningful social bonds.

That said, secrecy is not a sufficient condition for promoting intimacy. Hardly anyone knows my shoe size. But my informing you that I typically wear a 9 1/2 does nothing to bring us closer. Intimacy depends on not only secrecy or obscurity, but also on content. That is where the "privacy" element and the "highly offensive to a reasonable person" element of the privacy torts

work together. Because of the privacy element of the tort, outing a closeted homosexual may be tortious, [FN28] but outing Mary Cheney is not. Because of the "highly offensive" element of the tort, publishing the closeted homosexual's shoe size is not tortious, but revealing his sexual orientation may be. Where both elements are satisfied, we can be reasonably certain that the plaintiff's initial disclosure of the information had the potential to promote intimacy. By trusting someone else enough to share information with him ***931** that is both obscure and sensitive, an individual attempts to enhance the intimacy associated with the relationship.

Third, the privacy element helps courts evaluate causation in the torts context. In order to discern whether the defendant has caused the plaintiff's injury, we need to know whether the plaintiff would have been injured in the absence of the defendant's intervention. [FN29] This causal question is contained within the doctrinal inquiry of whether the plaintiff has a reasonable expectation that the information at issue would not be disseminated widely. To say that such an expectation of privacy would have been unreasonable is to say that there was a high risk of widespread dissemination regardless of what any particular individual did with the information.

C. Privacy Can Be Objective and Descriptive

Given the functions of privacy law, one can imagine several paths that courts might take to demarcate the boundaries between public and private. The first fork in the road raises the question of whether courts should define privacy on the basis of a normative inquiry or a descriptive inquiry. Judges taking a normative tack might regard information about medical conditions, sexual orientations, and political affiliations as inherently private, and information about child-rearing attitudes, movie rentals, and internet chat room activities as inherently public. But such a normative approach immediately encounters serious difficulties. First, individuals and communities will disagree substantially about what information is more private and what is more public. Some homosexuals are closeted and hope to remain so, but are happy to share information about what movies they've rented. Some people are quite open about their sexual preferences, but zealously avoid discussing their political or religious beliefs with others. Judges represent an elite segment of society, and there is a real danger that the standards of propriety that they introduce into the law will clash with attitudes that reflect changing cultural beliefs and varied preferences among the citizenry. [FN30] Second, normative disagreements about ***932** what is or is not private may be impossible to resolve. People starting with different cultural priors, based on age, race, religion, or economic class, will reach very different conclusions about the morality of collecting or publishing information about activities that a plaintiff would prefer to keep private. Was it morally permissible for Senator John Kerry to mention the sexual orientation of Vice President Richard Cheney's daughter during the final 2004 presidential debate? There is no objectively correct answer to this question, [FN31] and any effort to ground an answer in neutral principles, other than popular beliefs or behaviors, is doomed. [FN32] Perhaps because normative analysis leads to dead ends with respect to whether information is appropriately characterized as private or public, most courts view the "privacy" determination in tort law as a descriptive question. [FN33]

***933** None of this suggests that there is no role for normative analysis in privacy law. I actually want to make a narrower claim than that. Two of the elements of the public disclosure

tort are inherently normative-- elements three (not of legitimate public concern) and four (highly offensive to a reasonable person)--but the other two, elements one (publicity) and two (privacy), are properly understood in purely descriptive terms. For the intrusion tort, element three (highly offensive to a reasonable person) is normative, but elements one (intentional intrusion) and two (private affairs or concerns) are descriptive. So when I say that privacy the "element" should be understood purely descriptively, I do not mean that privacy the "concept" should involve a purely descriptive inquiry. The concept demands both normative and descriptive inquiries.

Once a court decides to treat the question of whether the privacy element is satisfied as a descriptive one, it reaches the second fork in the road, which implicates the subjective-objective distinction. The courts might ask what the parties actually expected when the plaintiff's initial disclosure occurred. Or they might examine what the parties reasonably should have expected at the time of the initial disclosure. For very good reasons, courts have focused on the latter inquiry. [FN34] It seems daft to render the defendant liable for breaching a plaintiff's unrealistic or foolhardy expectations of privacy. Moreover, evaluating the parties' subjective expectations of privacy requires the courts to try to get inside the parties' minds, and parties will often have strong incentives to lie or otherwise shade their recollections about what they expected. As explained below, many litigated privacy disputes will involve cases where the plaintiff apparently expected that the disclosed information would remain private, but the defendant believed that the plaintiff had no such expectation. [FN35] For that reason, tort opinions ***934** have eschewed a subjective inquiry into the parties' states of mind and focused exclusively on whether the parties should have expected dissemination or not.

This brings us to the final fork in the road. How might the courts decide whether the parties' privacy expectations (or lack thereof) were reasonable, particularly where those expectations differed substantially? Here again, there are at least two options in cases where the plaintiff and defendant differed about whether they expected subsequent dissemination to occur. The court can ask what most people would have believed, given the context of the initial disclosure. Or the court can ask about the probability that the information at issue would have become public anyway in the absence of the defendant's actions. As a theoretical matter, you could answer the first question by taking a public opinion poll and the second question by modeling the network of communicants to determine whether any dissemination that did occur was likely or a mere fluke. The ideal answer to the second inquiry would employ a sophisticated computer model that perfectly reflects social tendencies, and predicts the ex ante likelihood that information disclosed from A to B will ultimately become widely known in the relevant community. If dissemination was likely or inevitable, then the plaintiff's expectation of privacy at the time of the disclosure was unreasonable. If dissemination was highly unlikely, then it was reasonable for the plaintiff to expect privacy.

Courts resolving privacy cases have decided to pursue the "computer model" line of inquiry, ignoring the "public opinion" approach ***935** to privacy. Unfortunately, they have done so without the benefit of any obvious methodology, let alone the hypothetically perfect predictive computer model I described in the previous paragraph. Lacking both a computer model and an understanding of the science of social networks analysis, judges have relied on their intuitions to evaluate the likelihood of information dissemination in a counterfactual world. Judges seem to be

asking themselves, "Had the defendant not become involved, would I have expected this information to remain private were I in the plaintiff's shoes?" I have suggested that this is the right question to be asking. But the answers that courts have provided seem to rely on guesswork more than anything else. We can use sociology, in the form of social networks theory, to assess the accuracy of judges' guesses, and perhaps to help them make better-educated guesses. [FN36]

D. "Computer Model" versus "Public Opinion"

Before we do that, it makes sense to discuss why the "computer model" approach is preferable to the "public opinion" approach in the tort context. There is, perhaps, an easy explanation for why courts have not considered using a public opinion poll to resolve privacy tort disputes: no scholar has suggested that they do so. But Christopher Slobogin and Joseph Schumacher have argued, quite forcefully, that public opinion polls ought to be relevant to the courts as they decide whether the subject of a government search had a "reasonable expectation of privacy" that is protected by the Fourth Amendment. [FN37] It is not a large leap to apply Slobogin and Schumacher's Fourth Amendment arguments in the tort context.

That said, in the tort context, making poll data decisive on the privacy question might be ill-advised. Whatever the merits of Slobogin and Schumacher's proposal as applied to searches and seizures, it is not clear why it matters whether most people say they expect privacy ***936** in a particular setting. If large majorities of the American public tell pollsters that "what happens in Vegas stays in Vegas," this need not make the supposition a reasonable one. To the contrary, it seems that courts would want to base substantive privacy law protections not on what people say, but on what they do. Thus the courts may properly inquire whether it was appropriate for the defendant (and many other people like him) to believe that a particular disclosure would not be disseminated widely.

Imagine a plausible situation where poll results deviate substantially from actual, observed behavior. For example, assume that 80 percent of respondents say that if they found out about a friend's extramarital affair, they would tell that person's spouse. Now assume that only 20 percent of people who find out about such affairs actually do inform the affected spouses. [FN38] Such a conflict makes the choice of "computer model" versus "public opinion" matter, and whereas the poll probably reflects people's aspirations (about what they should do), the behavioral study reflects actual data about what is likely to happen. People are social beings. They spend their entire lives disclosing information about themselves and then seeing whether that information remains confidential or spreads through their circles of acquaintances. To the extent that intelligent individuals are gauging whether information they share with third parties will be shared further, they will focus on observed behavior, not attitudes. Behavioral data is thus preferable to survey data in privacy, just as reliable market data is preferable to contingent valuation data in the realm of environmental law. [FN39]

A "public opinion" standard for evaluating reasonable expectations of privacy would create other problems as well. For one thing, such a standard necessarily introduces circularity into the law. A well-***937** publicized Supreme Court opinion holding that people have a reasonable expectation of privacy against the use of infrared cameras to detect heat emanating from their

homes [FN40] presumably will increase the percentage of poll respondents who view such searches as unduly intrusive. Indeed, the Supreme Court has expressed substantial uneasiness about the possible circularity between people's expectations of privacy and the content of privacy law. [FN41] What's more, poll responses can be manipulated rather easily based on the way in which a particular question is framed. [FN42] Slobogin and Schumacher point out that their poll results will vary dramatically based on the subject of the search, whether the search revealed anything, and whether the poll respondent is asked about a search of himself or a search of a third party. [FN43] And polling is more uniform in the Fourth Amendment context, where all fact patterns necessarily involve police surveillance. In the tort context, the public's reaction to a possible privacy invasion will depend heavily on the identities of the parties, the extent of the disclosure, ***938** the purpose of the disclosure, the nature of the information disclosed, and various other facts.

The case for "computer model" data over "public opinion" data, then, hinges largely on the law's preference for observational data over survey data. A complete defense of computer modeling should invoke two additional points. First, jury sentiment may be a decent proxy for localized public opinion polls, substantially reducing the value added by survey research. Second, in defamation cases that involve privacy interests, the courts have long relied on a methodology that is analytically similar to computer modeling. In cases involving private figures or non-newsworthy events, defamation law focuses on the truth or falsity of the defendant's statement. [FN44] The law does not focus on whether the defendant expected that the information at issue was true, but on whether it actually was true. A newspaper that publishes a false story about a private figure may be liable, even if the newspaper reporter believed the story to be true at the time of publication. As a result, the newspaper has a strong incentive to evaluate the story's accuracy before publishing it. Evaluating privacy is no more difficult for a would-be defendant than evaluating truth, and in some cases it will be easier. And successful privacy claims, particularly those involving public disclosure of private facts, necessarily involve non-newsworthy facts and often involve private-figure plaintiffs. The analog to defamation law, where misguided expectations are irrelevant as to liability for private-figure plaintiffs, therefore buttresses the case for a "computer model" approach. [FN45]

It remains to be seen whether the "computer model" approach to tort privacy is workable for resource-constrained courts. The answer to that question depends, of course, on the state of the science, so this Article will evaluate that important question in great detail. To foreshadow a bit, the models developed by social networks theorists are becoming increasingly sophisticated at predicting whether information will be disseminated widely through a given community. Though their models remain far from perfect, there are already enough useful insights to render social networks theory a superior alternative to public opinion polls for evaluating the parties' reasonable expectations of privacy. Before reaching that section of the Article, I will ***939** make the discussion more concrete by describing the tort law in some detail.

II. The Law of "Limited Privacy"

The American law eschews a categorical answer to the question of under what circumstances a limited disclosure of private information about one's self renders that information "public" for

the purposes of tort law. Puzzlingly, little legal scholarship has addressed this central issue of privacy law. [FN46]

A. "Limited Privacy"

Privacy law is better developed in California than in any other U.S. jurisdiction, and it appears that California has most emphatically accepted the concept of limited privacy. "Limited privacy" is the idea that when an individual reveals private information about herself to one or more persons, she may retain a reasonable expectation that the recipients of the information will not disseminate it further.

The leading California case is the California Supreme Court's 1999 opinion, Sanders v ABC, Inc. [FN47] Sanders involved the efforts of Stacy Lescht, an ABC investigative journalist, to expose fraud in the telephone psychic industry. To that end, she obtained employment as a telephone psychic and used a hidden video camera to record her conversations with her new coworkers. [FN48] One of these coworkers, Mark Sanders, sued after part of his conversation with Lescht was broadcast on ABC's PrimeTime Live program. [FN49] Lescht argued that because Sanders' coworkers could overhear her conversations with him, he had no reasonable expectation of privacy in the communication. [FN50] The court disagreed:

> This case squarely raises the question of an expectation of limited privacy. . . . (P)rivacy, for the purposes of the intrusion tort, is not a binary, all-or-nothing characteristic. There are degrees and nuances to societal recognition of our expectations of privacy: the fact that the privacy one expects in a given setting is not complete or absolute does not render the expectation unreasonable ***940** as a matter of law. . . . "The mere fact that a person can be seen by someone does not automatically mean that he or she can legally be forced to be subject to being seen by everyone." [FN51]

The court thus held that information can be public vis-a-vis one's fellow employees, but private vis-a-vis the outside world. Sanders presumably would have suffered little damage if Lescht had played their recorded conversations for fellow employees, but he had a cause of action when she exposed millions of television viewers to the contents of the conversations. Following a jury trial, Sanders was awarded $635,000 for intrusion upon seclusion. [FN52] In other interesting contexts, the California courts generally have adhered to the "expectation of limited privacy" approach laid out in Sanders. [FN53]

This notion of "limited privacy" does not turn up only in intrusion upon seclusion cases like Sanders. Rather, it has found receptive audiences***941** in several other cases involving public disclosure of private facts. Courts' willingness to accept "limited privacy" arguments in both the intrusion and public disclosure contexts makes sense, since the intrusion tort's concept of privacy fully encompasses the conception of privacy that arises in the public disclosure context. [FN54] The two leading public disclosure cases appear to be Missouri's Y.G. v Jewish Hospital [FN55]and Georgia's Multimedia WMAZ, Inc v Kubach, [FN56] although a number of other cases contain similar reasoning. [FN57]

Y.G. involved a couple who found themselves unable to conceive a child naturally. They

therefore underwent in vitro fertilization at the defendant hospital, resulting in a pregnancy. [FN58] Only hospital employees and the mother of one of the plaintiffs knew about the couple's participation in the in vitro program, and the couple apparently did not tell others about their involvement because their church condemned the practice. [FN59] Several months into the wife's pregnancy, the couple was invited to a party at the hospital to celebrate the in vitro fertilization program's five-year anniversary. [FN60] A camera crew and reporter from a local television station were at the party, and, although the plaintiffs refused to be interviewed and "made every reasonable effort" to avoid being filmed, their image was used on the nightly news, with a voiceover stating that the (unnamed) plaintiffs were expecting triplets as a ***942** result of their participation in the program. [FN61] After the broadcast, the plaintiffs were chastised by their church and the husband was ridiculed at his workplace. [FN62] The defendant argued that the plaintiffs had waived any reasonable expectation of privacy as to their involvement in the in vitro clinic by attending a party that forty other people also attended. [FN63] The court rejected this argument, holding that by attending the party the plaintiffs "clearly chose to disclose their participation to only the other in vitro couples. By so attending this limited gathering, they did not waive their right to keep their condition and the process of in vitro private, in respect to the general public." [FN64]

Similarly, in Kubach, the plaintiff was an HIV-positive man who had disclosed his condition to relatives, "friends, medical personnel and members of his AIDS support group," approximately sixty people in all. [FN65] Kubach agreed to appear on a local television broadcast to discuss AIDS, and was assured by station personnel that his face would be digitized, and hence unrecognizable to the viewing audience. [FN66] The station employee responsible for the digitization evidently set the digitization setting too low, and Kubach was recognized by members of his local community when the broadcast aired. [FN67] After Kubach sued the station for invasion of privacy, the station responded by arguing that Kubach had waived his expectation of privacy in his HIV status by disclosing it to his friends, relatives, acquaintances, and medical service providers. [FN68] The court disagreed, noting that Kubach had made these disclosures to people who "cared about him . . . or because they also had AIDS." [FN69] Although Kubach did not tell his friends and relatives to keep his HIV status confidential, "there was also testimony that they understood that plaintiff's condition was not something they would discuss indiscriminately." [FN70]

These cases suggest that even if a plaintiff reveals information about himself to dozens of people, and even if there are no legal or contractual constraints on those people's ability to disseminate the ***943** information further, the information can remain "private" for the purposes of privacy tort law. Such information can remain private regardless of whether the people to whom the information was initially disclosed were the plaintiff's intimates (as in Kubach), coworkers (as in Sanders), or strangers (as in Y.G.).

B. The Hard-Line Cases

Some opinions have rejected a plaintiff's invocation of limited privacy, holding that his disclosure to a group of persons waived all privacy expectations in the information. New York's Nader v General Motors [FN71] has long been a landmark case in privacy law. The nation's

largest automobile manufacturer tried to discredit and intimidate consumer advocate Ralph Nader prior to the publication of his best seller, Unsafe at Any Speed. [FN72] To that end, General Motors allegedly interviewed Nader's close friends and business associates about his racial and religious views, his sexual proclivities, his personal habits, and his political beliefs. [FN73] GM's agents secured these interviews by falsely telling the interviewees that they worked for a company at which Nader was seeking employment. [FN74] Nevertheless, the court rejected Nader's claim that the interviews amounted to an intrusion upon Nader's seclusion or private affairs: [FN75]

> Although those inquiries may have uncovered information of a personal nature, it is difficult to see how they may be said to have invaded the plaintiff's privacy. Information about the plaintiff which was already known to others could hardly be regarded as private to the plaintiff. Presumably, the plaintiff had previously revealed the information to such other persons, and he would necessarily assume the risk that a friend or acquaintance in whom he had confided might breach the confidence. [FN76]

The court thus found unpersuasive the argument that Nader's disclosure to this network of close friends and associates maintained the privacy of the information that he had shared. Indeed, the court rejected a basic premise of limited privacy--the idea that one's associates ***944** may be willing to share confidential information with people who were considering employing Nader, but not with a corporation that was trying to discredit him. [FN77] According to the court, once one shares a fact about himself with a friend, that fact is no longer private, as a matter of law.

A Michigan case, Duran v Detroit News, Inc, [FN78] provides further illumination. Consuelo Sanchez Duran was a Colombian judge who had indicted the notorious drug lord Pablo Escobar. [FN79] After she and her family received several death threats, she resigned from the bench and fled the country. Duran took a job as the Colombian consul in Detroit, and signed a lease for an apartment in the area. [FN80] The State Department hired security guards to protect Duran. She used her real name when shopping in stores or eating at restaurants, and told a few of her curious neighbors that she had been threatened by drug dealers. [FN81] At the same time, Duran "kept an unlisted telephone number, did not join any social clubs or organizations, and did not attend any concerts, sporting events, or motion pictures." [FN82] A few months after Duran moved to Detroit, local reporters exposed Duran's history and disclosed her address, providing readers and television viewers with photographs of her apartment complex. [FN83] At least one reporter also described a $1 million bounty that the Colombian drug cartel had placed on Duran's head. [FN84] Duran sued the media outlets for public disclosure of private facts, but the court of appeals affirmed the lower court's decision to grant the defendants summary judgment. In the court's assessment, ***945** the plaintiff's actions in the United States had rendered her identity "open to the public eye." [FN85]

Fisher v Ohio Department of Rehabilitation and Correction [FN86] completes the trilogy of interesting hard-line opinions. In that case, the plaintiff told four coworkers that some of her interactions with her seven-year-old son had "sexual overtones." [FN87] The court held that this disclosure rendered the information nonprivate, such that the plaintiff's employer was free to disclose the information to her soon-to-be ex-husband. [FN88] In the court's view "the report

merely recounts a conversation which the plaintiff publicly and openly conducted with her fellow employees. The plaintiff's discussion of her personal experiences were freely offered to the persons around her without concern of the impact it might have on her character." [FN89]

***946** By way of summary, then, what constitutes a "private" matter for the purposes of privacy tort law is not obvious. The courts are not being terribly explicit or precise about why particular disclosures waive privacy expectations and others do not. Certainly, a simple head-counting approach does not reconcile the precedents. After all, Kubach's disclosure of facts to sixty people did not render them public, but Fisher's disclosure to four people did. [FN90] Yet, as I will explain below, both courts reached the appropriate results. Kubach's disclosure was more "private" than Fisher's in important ways, his greater initial audience notwithstanding. [FN91]

All these cases involve judicial efforts to assess the flow of information through social networks. At this point, it therefore seems appropriate to examine how a sociologist might try to answer the questions that courts are considering in these kinds of cases.

III. Social Networks Theory

For the past several decades, sociologists, epidemiologists, computer scientists, electrical engineers, economists, and researchers from various other fields have been converging on an understanding of the way that much of the world works, best described as "network theory." [FN92] The basic challenge of network theory is to understand how ***947** change occurs and is transmitted among adjacent units in any kind of network. [FN93] Perhaps surprisingly, the same basic insights about network structure have been found applicable to a variety of disparate disciplines. For example, scholars studying the flow of electricity through power grids have noticed substantial structural similarities to the way that impulses make their way through the neural networks of various species. [FN94] Similarly, epidemiologists are examining how diseases spread through particular populations, looking at the levels of connectedness between members of an at-risk population, [FN95] in much the same way that scholars of organizational structure have studied the overlapping memberships of American corporate boards of directors, searching for clues about the effects of inter-connectedness on corporate governance. [FN96] Whether scientists are discussing computer networks, social networks, [FN97] or biological networks, the same "scale-free" patterns of network structure are frequently observable. [FN98]

***948** A. An Overview of Social Networks

A scale-free network, sometimes called a "power-law" network, has a very large number of poorly connected nodes (called "peripherals") and a smaller number of highly connected nodes (called "supernodes" or "hubs") that actively transmit lots of data to many other nodes. [FN99] We can contrast this scale-free structure with a random network structure, where one would expect each node in a network to have approximately the same number of links to other nodes. This distinction becomes relevant to our purposes because it turns out that most human social networks, particularly information networks, are scale-free. [FN100]

Figure 1 contrasts a "pure" scale-free structure on the left, with a random structure on the right. In the pure scale-free network each (relatively isolated) peripheral actor (P) is connected to

a single (well-connected) supernode (S). [FN101] There are a total of eight links in the scale-free network, each represented by a line. In the random network, there are also a total of eight links among actors, and each actor is connected to between one and three other actors. Even a cursory examination of the diagrams below shows that a scale-free structure is far more efficient at linking up a society of actors, provided, of course, that all connections and actors are stable, and that there is no danger of network congestion. For example, P1 and P3 can be connected via two links in the scale-free network, as can any other peripherals. In the random network, however, connecting actors presents much greater difficulties. Linking up P1 and P3 requires connecting via P5, P4, P8, and P9 . Indeed, with only eight connections and nine actors, there is a substantial possibility that the members of a random network will ***949** not be able to connect at all. If one removes the linkage between P4 and P5, and replaces it with a linkage connecting P7 and P6, at least two of the actors (P1 and P5) will become entirely isolated from the group.

Figure 1

Scale-Free Networks versus Random Networks
TABULAR OR GRAPHIC MATERIAL SET FORTH AT THIS POINT IS NOT DISPLAYABLE

In the context of social connections, the scale-free social structure can be illustrated using the only social networking game that has penetrated American popular culture: Six Degrees of Kevin Bacon. In 1994, fraternity brothers at Albright College discovered that the actor Kevin Bacon could be connected to virtually all of the roughly half a million people who had acted in feature films since 1898. [FN102] The students popularized a game, the object of which was to figure out how to connect a particular actor to Kevin Bacon in the fewest number of links possible. For instance, the actor Laurence Fishburne appeared in Mystic River with Kevin Bacon in 2003. Fishburne is one of 1,806 actors with a Bacon number of one. Carrie-Anne Moss has not appeared in a film with Kevin Bacon, but costarred in the Matrix films with Laurence Fishburne, so she has a Bacon number of two, along with 145,024 other actors. Justin Allder is one of 395,126 actors who has a Bacon number of three, having appeared in the obscure 1996 film ***950** Sabotage with Carrie-Anne Moss, who appeared in the Matrix films with Laurence Fishburne, who appeared in Mystic River with Kevin Bacon. [FN103]

The average actor in the Internet Movie Database [FN104] has a Bacon number of 2.946 [FN105]--meaning that he can be connected to Kevin Bacon through fewer than two other actors. This means Bacon is quite well connected to Hollywood actors, but there are actually 1,048 actors in the Internet Movie Database who are even better connected than Kevin Bacon. [FN106] Rod Steiger--yes, Rod Steiger [FN107]--was evidently the best connected Hollywood actor of all time, with the average Internet Movie Database actor having a Rod Steiger number of 2.679 as of June 2004. [FN108]

This data from the Internet Movie Database helps us understand the way in which human social networks work. There are hundreds of thousands of obscure actors in the Internet Movie Database, such as Deborah Reagan, who appeared in only two films during her career. She happens to have a Kevin Bacon number of one, because she played Kevin Bacon's wife in the 1979 film, Starting Over. (Bacon and Reagan had bit parts in that movie.) In any event, we can

contrast the plethora of Deborah Reagans with the few thousand Kevin Bacons and Rod Steigers who connect everyone in the actors' guild to everyone else. [FN109] Reagan has a Bacon number of one, but her presence in the Internet Movie Database isn't facilitating anyone else's connections. She's just taking up space at the periphery.

***951** As we imagine our own lives and our own social networks, we can all identify some Kevin Bacons and lots of Deborah Reagans. [FN110] There are people who stay in touch with old friends, throw dinner parties, play matchmaker, and, most importantly, have close friends in a variety of different cliques. These are the Kevin Bacons of the world: society's supernodes. [FN111] The Deborah Reagans of the world, by contrast, are more isolated, hermitted, and aren't introducing people who wouldn't otherwise meet each other. Deborah Reagan may have some friends, but her friends all know one another already, so she's not facilitating new connections. She is a classic peripheral.

A real social network, of course, is more complicated than the Kevin Bacon actors' network. Most pertinently, a real social network is dynamic, not static. People are constantly making new connections, and old connections are disappearing through death, quarrels, geographic constraints, or simple indifference. [FN112] Each of us can recall friends from elementary school, high school, or college with whom we've lost touch, along with scores of former neighbors, coworkers, service providers, and acquaintances. In the Kevin Bacon world, by contrast, Rod Steiger continues to promote network connectedness even though he died more than three years ago. Still, the similarities between an actors' network and a normal social network are substantial. While communications networks among humans generally are not "pure" scale-free networks like the one pictured in Figure 1, they do ***952** exhibit a strong tendency toward scale-free structure, with substantial clustering among members, and a minority of supernodes who facilitate the interactions between members who would not otherwise meet. [FN113] Moreover, ties among members of well-connected social clusters can be expected to become stronger as time passes. The more time I spend socializing with Joe, the higher the odds become that I will be introduced to one of Joe's other good friends. [FN114]

All that said, what's interesting about the Kevin Bacon network is precisely what's interesting about human societies in general. A rural farmer in Omaha and a banker in Boston may be separated by only a few links, and yet they will live their entire lives oblivious to each other's existence. [FN115] When exponential functions like these operate, humans are sometimes genuinely surprised. Two strangers seated next to each other on an airplane might utter with great sincerity the clichéd observation that "it's a small world" upon realizing that they both know someone in common who resides in a distant city. The danger, however, is not this occasional surprise. The danger, at least from a privacy perspective, is that people learn to stop being surprised by these encounters, and guard their personal information too much as a consequence. [FN116] Even though our farmer and banker might be connected through only a few links, it will be exceedingly rare for one of them to hear a story about the other. When only a few or no links connect a group of Boston bankers and Omaha farmers, they are separated by what Ronald Burt calls a "structural hole," a lack of effective ties between the groups that renders the probability of information exchange quite low, even if both parties could benefit substantially from such communication. [FN117]

***953** This point is critical to the study of how previously private information spreads through society. In scale-free social networks, there is always the potential that information any person discloses to any other person will spread to the entire world. [FN118] By some fluke, any bit of information might be widely distributed. Yet, as I will argue below, in light of the prevalence of structural holes between certain social networks, people will be well served by ignoring this possibility, and the law ought to validate their decision to do so. Relatedly, whether information becomes " public" will depend on whether it reaches a supernode or not, and whether the supernode finds the information worth disseminating. As I will suggest in Part IV, the fact that information has reached one defendant supernode hardly renders it inevitable that it would have reached another supernode in the defendant's absence.

B. The Strength of Weak Ties

There are people with whom we frequently exchange information about a number of different topics, and people with whom we share less information about a narrower range of topics. Sociologists generally refer to relationships falling into the former category as "strong ties" or "high intensity" and relationships falling into the latter category as "weak ties" or "low intensity." [FN119] Assume I have two neighbors. Neighbor A and I frequently discuss work, sports, television, romantic involvements, and politics. Neighbor B and I occasionally discuss the weather and exchange pleasantries. My relationship with A is a strong tie. My relationship with B is a weak tie.

In the real world, we can map these relationships onto organizational structures. Imagine a large law firm in a big city. As a general matter, attorneys within the tax department will have relatively strong ties to other attorneys in the same firm's tax department, and weaker ties to attorneys in the firm's intellectual property litigation department. ***954**[FN120] There will be some strong ties that cross departmental lines--for example, the attorneys who serve on the firm's hiring committee or management committee are likely to spend a great deal of time talking to each other. But as a general matter, intradepartment ties will be stronger and interdepartment ties will be weaker.

As one moves outside the firm, the same patterns hold. A tax attorney at Jenner & Block LLP in Chicago may have strong ties to a tax attorney at Kirkland & Ellis LLP in Chicago, based on having worked on deals together in the past or simultaneous service on bar association committees. But most professional ties outside of one's own law firm will be weak ties, and in a large city like Chicago, the vast majority of lawyers will not know each other personally. [FN121] That said, the social distance between an intellectual property litigator at Kirkland & Ellis and a tax attorney at Jenner & Block will not be substantial. There is probably at least one person who knows both lawyers, and so an introduction between the two attorneys could be arranged rather easily. [FN122]

Mark Granovetter's work on "the strength of weak ties" has become a canonical text in the study of social networks. [FN123] Granovetter observed that social networks tend to be highly clustered: I have very close ties to people in my family, but they have close ties to each other,

too, and their connectedness is not dependent on me. [FN124] People within ***955** a closely knit network are likely to be quite similar to one another--they may share the same jobs, neighborhoods, last names, knowledge base, or alumni connections. [FN125] As a result, relationships within a close-knit group have high levels of transitivity [FN126]--all of my friends on my law school's faculty are friends with each other as well. This makes information redundant within a network of people bound together by strong ties. By the time I learn new and interesting information from a colleague, it is likely that other colleagues with whom I am strongly tied would have already learned it, or will learn it soon enough even if I do not tell them.

Strong ties are plainly a source of strength, but relying exclusively on close ties for sources of information is a bad idea. As Granovetter argues: "(I)ndividuals with few weak ties will be deprived of information from distant parts of the social system and will be confined to the provincial news and views of their close friends." [FN127] Granovetter suggests that the economically disadvantaged tend to rely too much on strong ties. [FN128] And because strong ties are so much costlier to maintain than weak ties, [FN129] poor people's heavy investments in strong ties preclude them from developing valuable weak ties.

Granovetter's research suggests that weak ties are often critical in helping individuals learn about new job opportunities. [FN130] Weak ties serve a "bridging" function, transferring new information from one closely knit group to another. [FN131] Information gained from weak ties is therefore more likely to be new and nonredundant. Granovetter found that weak ties were particularly instrumental in helping managers and professionals find jobs. [FN132] Notably, each individual weak tie has ***956** a low probability of transferring useful information, but because so many weak ties exist, their sheer numbers make them, in the aggregate, a critical source of new and valuable information. [FN133] Strong ties could be useful too, particularly in job-seeking contexts where an unemployed person needed help from a social contact who was highly motivated to help him find work. [FN134]

Granovetter's analysis of how information about job openings gets transmitted through a social network has obvious applications to the study of information diffusion generally. Information dissemination through the wider society often depends on weak ties:

> What makes cultural diffusion possible, then, is the fact that small cohesive groups who are liable to share a culture are not so cohesive that they are entirely closed; rather, ideas may penetrate from other such groups via the connecting medium of weak ties. It is a seeming paradox that the effect of weak ties, in this case, is homogenization, since my emphasis has been the ability of weak ties to reach out to groups with ideas and information different from one's own. The paradox dissolves, however, when the process is understood to occur over a period of time. The ideas that initially flow from another setting are, given regional and other variations, probably new. Homogeneous subcultures do not happen instantly but are the endpoint of diffusion processes. [FN135]

In Granovetter's framework, weak ties help explain the spread of everything from knowledge to fads from one edge of the global social network to the other. Follow-up work by other sociologists has revealed that weak ties are particularly important in spreading gossip and news, but information about new products and consumer opportunities is generally spread through

stronger ties. [FN136] The chief advantage of information diffusion through weak ties stems from the rapidity with which information is transmitted between different close-knit groups. [FN137] Information transmitted via strong ties generally spreads less quickly, but is more accurate and credible. [FN138]

Those who actively spread information via many weak ties function as supernodes, and are likely to gain economic and status advantages because they are the first members of their close-knit groups to ***957** learn about new information that has originated in far-flung, close-knit groups. [FN139] These supernodes tend to be happier and better informed than the peripherals--supernodes are more likely to be perceived as "leaders" and are more likely to earn promotions within a workplace. [FN140] Supernodes maintain their privileged status by continuing to serve as information clearinghouses, and, in certain contexts, become supernodes based in part on their willingness to share previously private information about themselves. [FN141]

That said, there will be certain types of information that do not lend themselves to communication via weak ties. For example, scholars studying product innovation have suggested that weak ties function quite well at facilitating searches for stand-alone information, but are not particularly successful means of transferring complex knowledge. [FN142] This suggests an aggregation difficulty--if two different people have two pieces of information that must be aggregated to yield a useful result, it is more likely that they will "put two and two together" if they are bound by a strong tie. For example, investigations into the September 11 hijackings have revealed that various people in government understood different parts of the terrorist conspiracy, but because there were structural and legal limitations on their ability to ***958** communicate with each other, no individual had enough information to prevent the terrorist attacks from taking place. [FN143]

C. Network Structure

Not all social networks are equally effective at transmitting information to their members. Network structure will reflect varying gradations of scale-free structure, and those variances may well be determinative with respect to whether information revealed at one node of a network makes its way to a distant node on the same network. [FN144]

One critical structural variable is the prevalence of supernodes in a network, and the social distance from those supernodes to the periphery. Under a "strength of weak ties" analysis, we can see that the prevalence of supernodes who are weakly tied to multiple different close-knit communities will play a substantial role in determining how quickly and completely new information is disseminated through a society. All else being equal, a society solely interested in the rapid diffusion of stand-alone information will probably prefer for weak ties to exist between supernodes, as opposed to between peripherals.

A second important structural variable is the extent of linkages in society. Supernodes can have functioning weak ties with one hundred people, or weak ties with two thousand people. The greater the number of active linkages a supernode has, the better information will flow through a network. The same is true of a social network's peripherals, and the "ordinary nodes" who fall

somewhere in between supernodes and peripherals. Ceteris paribus, better-linked nodes mean more information transmission. [FN145] Indeed, this idea that links are essential is ***959** part of the basis for Robert Putnam's influential argument that social capital and robust associational activity help promote economic well-being. [FN146]

The need for concealment of network activities from outsiders may also decrease the communicative efficiency of a social network. When the information at issue is highly sensitive, perhaps because it reflects illegal or politically disfavored motivations, network members will have to be quite cautious about sharing information. In such circumstances, weak ties may become totally inactive, as individuals begin sharing information only with well-trusted associates. Examples of such networks include criminal conspiracies, networks of political opposition in totalitarian regimes, and interaction networks in certain singles bars. [FN147]

D. Cultural and Strategic Considerations in Sharing

Staying with the subject of concealment, sociological research shows that certain kinds of information are inherently more likely to be shared among members of a social network than other kinds of information. The better empirical studies of information sharing involve topics as diverse as HIV status, academic discipline, and bakery closings. [FN148] A brief discussion of these three studies will help contextualize ***960** the lessons that can be drawn from the empirical literature on social networks.

1. HIV.

Courts often treat HIV-positive status as a presumptively private fact. [FN149] And yet, not surprisingly, virtually all people who are HIV positive disclose this information to at least some people. [FN150] Gene Shelley and coauthors interviewed a population of seventy HIV-positive people to determine how widely information about them was known in their social networks. [FN151]

This study revealed several interesting findings. First, there were many facts about the interviewees that were less widely known by friends, relatives, and acquaintances than their HIV status. HIV status was more widely known within the interviewees' social networks than their political party affiliation, their blood type, the presence or absence of a criminal record, their labor union membership, whether their home had been broken into in the past year, their approximate income, their religion, whether they had served in the military, the most important problems in their households, major life events that had happened during the last twelve months, whether they had ever been shot or threatened with a gun, the amount of time they had lived at their current address, where they had traveled during the past ***961** twelve months, and several other facts. [FN152] There were relatively few facts about the interviewees that were more widely known than their HIV status: just their sexual preference, their real first name, whether they used illegal drugs, their number of children, their address, their birthplace, their age, their marital status, their work status, and their occupation. [FN153] To be sure, someone's HIV status may be more pertinent than his blood type, and hence an individual may have more acquaintances who "need to know" his HIV status, but this data still suggests that people's HIV-

positive status is not a terribly closely guarded secret.

Second, the researchers found strong evidence of selective disclosure within the social networks of HIV-positive individuals. Interviewees were much more likely to have disclosed their HIV status to members of organized support groups than to their relatives and friends. [FN154] Indeed, a number of HIV-positive interviewees reported that they were reluctant to tell relatives, close friends, and even sexual partners about their HIV-positive status because of the fear of stigmatization, abandonment, homophobia, job loss, or violence. [FN155] Disclosing HIV status to support group members, many of whom were themselves HIV positive, was seen as less threatening. [FN156] Reciprocity safeguarded the disclosures. Other studies of selective disclosure have found similar results in varied contexts. [FN157] There is a critical finding implicit in this data, although Shelley and his coauthors did not highlight it: HIV-positive individuals disclosed their status to some members of their social networks while successfully keeping other members of their networks from discovering the information. Disclosure to a support group member did not make disclosure to other friends or relatives inevitable, even though those kept in the dark might have been highly interested in learning about the interviewees' HIV status. [FN158]

***962** Third, the researchers discovered that HIV-positive individuals had unusually small social networks. [FN159] There were several factors contributing to this lack of links: some HIV-positive individuals were shunned by former friends and relatives; some withdrew from former friends and relatives as a way of sparing them the pain of death; many had seen their social networks shrink because of HIV-related mortality; and most interviewees were no longer working, which removed them from employment-related social networks. [FN160] Moreover, the HIV-positive people interviewed tended to behave like economically disadvantaged people--they withdrew into small, close-knit communities comprised mostly of other HIV-positive individuals, cutting off many weak ties with the outside world. [FN161]

2. Girls' school gossip.

A second important study of information networks predates the advent of social networks theory. In the mid-1950s, Stanley Schachter and Harvey Burdick studied the flow of gossip through a school for girls. [FN162] The researchers had teachers publicly remove one student from each of four classrooms, explaining out loud that the student would be gone for the rest of the day. [FN163] In the remaining classrooms at the school, no students were removed. The researchers then planted a rumor about the explanation for the students' removal with four student confederates, two of whom were in classes from which a student had been removed. A few hours later, following lunch and recess, all the girls in the school were interviewed to gauge what they had heard about the reasons for the four girls' removal.

The researchers reported several interesting findings. First, all but one of the ninety-six girls interviewed had heard the rumor in question. ***963** [FN164] Second, girls from whose classes a student was removed passed along the rumor to a significantly greater number of students, and spent more time discussing the rumor, than did those girls whose classes witnessed no disruption that morning. [FN165] Schachter and Burdick concluded on the basis of this data that there were far stronger incentives to discuss and transmit the rumor "when the issue to which it is relevant is

important" to the audience and/or speaker. [FN166] Third, the planted rumor was not distorted substantially as it passed through the school's social network. [FN167] The story that the girls told the interviewers was essentially the same story that the researchers had planted that morning. Fourth, although the planted rumor survived intact, non-planted alternative stories to explain the girls' removal also circulated. Approximately twelve alternative rumors relating to the girls' removal circulated through the school. [FN168] Students in classes that had witnessed a removal were much more likely to concoct new rumors and to discuss them with peers. [FN169] Moreover, students who were friends of the removed students tended to circulate rumors that cast them in a favorable light (for example, "she's receiving an award"), while students who were not friendly with the removed students circulated rumors that cast them in a negative light (for example, "she broke school rules and is being disciplined"). [FN170]

3. Hong Kong bakeries.

A third study, by Gina Lai and Odalia Wong, looked at the spread of an untrue rumor through Hong Kong. [FN171] The somewhat whimsical ***964** episode, and the data that Lai and Wong obtained about how the tale spread, revealed a great deal about how information gets transmitted through large, complicated social networks.

On November 24, 1997, several workers at a Hong Kong bakery chain saw fellow employees receiving layoff notices and evidently concluded that the chain was going bankrupt. [FN172] This belief was plausible enough, since during that same year a department store with which the bakery chain was previously affiliated had declared bankruptcy and closed all its stores. [FN173] In any event, the bakery shutdowns would have affected many consumers, as it is apparently common in Hong Kong for people to exchange bakery vouchers, which can be redeemed for baked goods. [FN174] With thousands of bakery vouchers in circulation, the rumor caused Hong Kong residents to rush to the bakeries, trying to redeem their vouchers before the stores closed. Within a few hours of the rumor's origination,

> thousands of Hong Kong people, upon hearing the news, brought all their vouchers (ranging from one to dozens) and rushed to the shops. . . . (T)hey pushed and squeezed into the shops and got whatever cakes or pastries (were) left. When all the cakes and pastries in the shops were taken, many people would even wait for hours outside the shops for new batches to come out. To calm down this mass hysteria, the (bakery) immediately made public announcements to clear the rumor in that evening. However, there were still people coming to the shops to redeem their vouchers the next day. [FN175]

The rumor was totally unfounded, and yet it caused a complete breakdown in the generally orderly Hong Kong market for pastries.

Luckily, something good came out of the disturbance, as sociologists Lai and Wong were able to launch a telephone poll of 1,011 respondents within a week of the event, asking Hong Kong residents how they learned about the rumor. By that time, more than 90 percent of the respondents had heard of the rumor. [FN176] Lai and Wong's data provides the most detailed analysis to date of how a rumor spreads ***965** through an urbanized society. I'll focus on a few of their more interesting findings.

First, informal social networks seem to have been vital in spreading the information. Many people heard about the rumor before it was reported in the mass media, and personal ties were the second most common source for hearing about the rumor (after television). [FN177]

Second, only 30 percent of those who heard the information through personal ties passed the information on to others. [FN178] This suggests a tendency for information to degrade as it passes through a network. It will degrade in a predictable manner, not a random manner: people will pass along a rumor that they have heard if they perceive it to be new and nonredundant, interesting to the relevant audience, and credible. The Hong Kong data also suggests that there can be an opportunity cost of passing along new information--in this case, slowing down one's dash to the bakery and increasing the odds of encountering a longer line upon one's arrival. Social networks thus function somewhat differently from the communications network associated with the childhood game "Telephone." Each player can choose whether or not to pass along the information to the next player, and we can expect that many rumors will never make their way through the entire social network. [FN179]

Third, people tended to spread the rumor to members of their networks who they believed would benefit the most from the information. [FN180] Thus, those surveyed were more likely to spread the information to people who they thought owned bakery vouchers. [FN181] Because the vouchers are frequently given as gifts, we might have expected reasonably high levels of awareness with respect to whether close associates might have vouchers. Moreover, because the information concerned ***966** shopping for food, which is predominantly done by women in Hong Kong, people were more likely to tell females about the rumor. [FN182]

Fourth, those interviewed played some role in redirecting the information from weaker ties to stronger ties. Whereas more than 74 percent of interviewees heard the news from non-kin (typically coworkers), those interviewed passed the information on to a group that was composed of 45 percent kin and 55 percent non-kin. [FN183] To the extent that kinship is a proxy for strong ties, this suggests that most people were more highly motivated to spread the potentially valuable information to those whose relationships they valued the most. [FN184] Further data backed up this assessment. Among those who heard the information through personal ties, 34 percent described their relationships with the informants as "very good," 24 percent described them as "good," and 41 percent described the relationships as "fair." But those surveyed redirected the information to a different population: 52 percent of those who the respondents informed of the rumor had "very good" relationships with the respondents, 22 percent had "good" relationships, and only 26 percent had "fair" relationships. [FN185]

Finally, the source of the information mattered--both the original source and the identity of the immediate informant. [FN186] The rumor appeared to spread quickly, in part, because it was reported to have originated inside the company. And it also spread quickly because the rumor was passed on by people who had an incentive to be truthful--the sampled population was more likely to pass it along to people they cared about, and we know from other studies that information transmitted through strong ties tends to be more persuasive and influential than information transmitted through less reputable sources. [FN187]

***967** E. Interaction Between Structure and Culture

Synthesizing these insights about structure and culture can produce new insights that apply to information dissemination. For example, structure and culture combine to make it exceptionally unlikely that information about a private figure will be interesting beyond two degrees of separation. Duncan Watts notes that "anyone more distant than a friend of a friend is, for all intents and purposes, a stranger. . . . (A)nything more than two degrees might as well be a thousand." [FN188] Watts's argument that people have trouble seeing beyond two degrees of separation is true, but it is also the case that, at least in the pre-Friendster era, no one much cared about those people who were removed from us by more than two links. [FN189]

An illustration will be helpful: extramarital affairs are fascinating events. That said, no self-respecting person would go to a cocktail party and tell a private story about a friend of a friend of a friend who is having an adulterous affair with someone unknown to the speaker and listener. It is only if the speaker or listener knows who the adulterers are, or if the details of the affair are particularly sordid, humorous, or memorable, that the information is likely to get disseminated further through the social network. [FN190] And by the time the information makes it through this chain, it seems likely that the participants' names ***968** would have dropped out of the story. [FN191] Thus, when dealing with events described via word of mouth, someone should have a reasonable expectation of privacy beyond two links in a social network. If A tells B something private about A, and B tells C, and C tells supernode D, who shares the information with the public, then A should have a reasonable expectation of privacy as against D, assuming that A has no direct connections to either C or D.

This rule of thumb appears to hold less strongly when one moves away from word-of-mouth communications. Indeed, the increased prevalence of email, blogging, and other new forms of communications in recent decades has facilitated the more rapid dissemination of new information and created new categories of potential supernodes. [FN192] Thus, particularly embarrassing emails or memoranda have on occasion made their way around the world, even though few of the eventual recipients were familiar with the original parties to the communication. [FN193] The same is true of photographs or videos depicting private scenes, such as nudity or sexual conduct. [FN194] That said, the percentage of ***969** emails that get forwarded beyond two degrees of separation from the initial recipient must be so low as to render this risk the kind that a prudent private figure should ignore. [FN195] Moreover, so many emails flow into peoples' inboxes that the likelihood of any particular message being singled out for widespread dissemination is usually negligible. [FN196] Noise has long been an important method of protecting privacy. [FN197]

The presence of legal or moral constraints on subsequent disclosure of information does (and ought to) inform a plaintiff's reasonable expectation of privacy in particular information, too. [FN198] Obviously, a plaintiff has a reasonable expectation of privacy in the privileged information that he reveals to his attorney. Barring a malpractice suit, the client can expect that the information will remain confidential. But in certain cases, there will be no clearly established legal duty binding the person to whom information is disclosed. Suppose a famous actress

attends an Alcoholics Anonymous meeting and says, "Hello, My name is Lara Flynn, and I'm an alcoholic." [FN199] There are evidently no legal or contractual constraints on the ability of those who attend Alcoholics Anonymous meetings to disclose what they hear. [FN200] But Alcoholics Anonymous participants apparently share deeply held social norms barring the disclosure of information about attendees outside ***970** of the group setting. [FN201] If these norms are sufficiently powerful and almost universally adhered to by those who attend Alcoholics Anonymous, even where attendees are public figures, then the actress ought to have a reasonable expectation of privacy in the disclosed information. In short, certain groups can be designed to trigger reciprocal nondisclosure, and people making germane disclosures within these settings generally ought to expect that the information disclosed will not circulate outside the group.

F. Predictive Social Networks Analysis

In 1977, H. Russell Bernard, Peter Killworth, and Lee Sailer articulated a lofty goal for social networks analysis. They noted that a useful theory of information diffusion "must be able to predict how information flows through the system, how quickly it will go from point A to point B, and how likely it is to be trapped in pockets and loops." [FN202] Twenty-eight years later, perfect predictability of information diffusion has not been achieved. This literature still has quite a ways to go, and would benefit from collaborative work that can shed light on the legal applications of information diffusion and social networks theories. That said, there are several lessons from the literature that might help us predict with reasonable accuracy whether subsequent dissemination will follow initial disclosure. More precisely, information will or will not be disseminated through a social network depending on these factors:

The structure of a network

•Prevalence of ties and supernodes

•Mix of strong and weak ties

•Proximity of disclosure to a supernode

•Difficulty of aggregating complex information through weak ties

•Concealment versus efficiency tradeoff in network structure

•Extent to which technologies used by members of a social network facilitate or constrain information dissemination

***971** The cultural variables

•Differentials in willingness to disclose facts to particular groups or types

•Presence of moral or legal constraints on disclosure

•Network participants' ability to know which information other network members are likely to deem relevant

•Propensity of certain information to degrade as it passes through a network

•Whether the information is of the type that is ordinarily transmitted through strong or weak ties

Many of these variables will in turn depend on the nature of the information itself. Stand-alone information is efficiently transmitted through weak ties, but complex information cannot be aggregated and analyzed effectively through weak ties. People try to pass along information

that will be particularly valuable to a recipient, based on their own awareness of the recipient's traits. Information about bakery closings will flow toward people interested in that subject matter and away from people unlikely to hold bakery vouchers. AIDS support group members may feel morally bound to avoid disclosing a fellow member's HIV-positive status to a stranger, but may disclose the information freely upon learning that the stranger is himself HIV positive. In short, structural and cultural factors alone make it impossible to judge the ex ante likelihood of information transmission through a network without knowing the content of the purportedly private information. Interestingly, privacy doctrine essentially ignores the nature of the information itself in determining whether a plaintiff who has disclosed it to some people retained a reasonable expectation of privacy. [FN203]

***972** G. Lessons

We have seen that weak ties generally do a poor job of aggregating nonredundant information that is possessed by multiple nodes on a network. Thus, instances in which scattered private information about an individual is pieced together, and the aggregated information is disclosed, can be expected to be rare. [FN204] Where this information aggregation occurs through multiple sources linked via weak ties, we can write it off as a fluke that a reasonable person should have disregarded. By contrast, when scattered bits of private information exist within a close-knit network of people linked by strong ties, aggregation of that information is much more likely, and the plaintiff's expectation of privacy with respect to the aggregated information ought to be low.

We also have seen that the more interesting a particular piece of private information, the less likely it is to degrade as it passes through a network. Thus, if private information involves a highly unusual or surprising event, a well-known public figure, or relates to an important current event or trend, it is more likely to be disseminated through a network. Monica Lewinsky can expect greater privacy in her revelation to Linda Tripp that she is having an affair with Joe Schmo than she should in her revelation that she is having an affair with the President of the United States. Relatedly, once interesting information ***973** reaches a supernode, the supernode is more likely to deem the information worth sharing with her many contacts. And information that can be traced to an inherently credible source, such as a bakery employee at a store rumored to be closing, is also more likely to be disseminated through a network by people seeking to help out their peers. As a general matter, then, a plaintiff ought to expect that if he discloses previously private information that is likely to be regarded as highly interesting, novel, revealing, or entertaining, that information is rather likely to be disseminated. And, as in most privacy cases, where it is the plaintiff who has made the initial disclosure of damaging information, [FN205] the plaintiff ought to understand that his involvement at the story's origin made it more likely that the story would spread. [FN206]

IV. Reading the Case Law in Light of Social Networks Theory

Let us return to the tort law discussed in Part II. Some opinions hold that because the plaintiff has disclosed the information to a few people, she can no longer recover on the basis of a subsequent disclosure. Most opinions reach a contrary result, holding that a limited disclosure of private information by the plaintiff doesn't necessarily render that information "public" for the

purposes of the privacy torts. There is, in short, substantial uncertainty with respect to how much disclosure can occur before the information becomes "public." Judges appear to be applying an ad hoc, "I know it when I see it" standard to reasonable expectations of privacy. This raises the natural question of how well courts' intuitive judgments comport with the social networks findings discussed in the previous section. This Part addresses that question.

Before I do that, let me say a few words about what it means for something to become "public." In the cases that follow, I will assess publicity as the likelihood of the previously private information at issue reaching the people from whom the plaintiff would like to keep it. In some cases, like Kubach, that means people who have no relationship ***974** to the plaintiff. In other cases, like Fisher, that means people who have strong ties to the plaintiff. So at what point has a fact crossed over from private to public? Surely the test for public information cannot be whether a majority of the American public is aware of the information. [FN207]

Perhaps social networks theory can be used to provide a more attractive answer. One preoccupation of social networks theorists has been to determine the size of an individual's social network. Although the studies vary somewhat, it appears that the median adult has met or otherwise interacted with approximately 1,700 people. [FN208] This does not mean that the average person has 1,700 active ties, but rather that he "knows" roughly this number of people.

We can use this 1,700-person threshold to establish the most liberal acceptable definition for public facts. If a fact about me is known by everyone with whom I am acquainted, as well as a few people with whom I am not acquainted, then that fact must be public under any meaningful conception of publicity. If, on the other hand, a particular fact is known by my friends, but not by any strangers, then I might argue that I retain an expectation of limited privacy in it. To determine whether someone has a reasonable expectation of privacy in information, we therefore might evaluate the possibility that the information will be disseminated to a number of people that exceeds the size of his social network. [FN209] If there is a low risk of such dissemination (for example, lower than 5 percent), the courts can recognize a reasonable expectation of privacy.

The idea behind this approach, in short, is to assume that a plaintiff had perfect information about the risks of various outcomes at the time of his initial disclosure, and then assess whether those risks were sufficiently remote to justify the plaintiff's decision to disregard them. We assume that the plaintiff is fully informed about what might happen, but not about what will happen. We then use this calculus to evaluate whether it was reasonable for the plaintiff to proceed with the disclosure and assume that the information would remain obscure. ***975**[FN210] Because social networks tend to be scale-free, this analysis should often direct our attention to the proximity of a disclosure to a supernode. Widespread dissemination frequently will depend on the ex ante likelihood of particular information reaching a supernode and being disseminated further via that supernode.

Disclosure to a supernode will not only increase the number of people who will be exposed to the information at issue. It will also enhance the likelihood that the information will "jump" across a structural hole that otherwise separates two distinct subnetworks. Through supernode

activities, information that the plaintiff did not mind sharing with members of his twelve-step group might find its way into a network of dentists, professors, secretaries, or-- worst of all-- tabloid reporters. In a tort suit, courts are always called upon to examine causation: would the plaintiff have been harmed in the absence of the defendant's actions? Social networks theory provides a basis for evaluating that question when the plaintiff's injury stems from dissemination of previously private information. Courts simply need to ask themselves: was the widespread dissemination of this information inevitable, or did the defendant's actions materially affect the extent of subsequent disclosure?

A. Evaluating the Leading Cases

Recall that Sanders involved a conversation between two coworkers, within earshot of other coworkers at a telephone psychic business. [FN211] The problem, from the plaintiff's perspective, was that Lescht, one of the coworkers involved in the conversation, was actually an undercover journalist. There was an obvious dispute in this case about whether the communication between Sanders and Lescht was consensual and, as I suggested in Part I, social networks theory provides little direct help there. [FN212] Sanders might well argue that the ***976** journalist's misrepresentations elicited from him information that he would have never revealed otherwise. And, of course, had Sanders known he was being interviewed on the record by a journalist producing a news clip, then he could not possibly have had a reasonable expectation of privacy in the information he revealed. A journalist, working in her employment capacity, is the most extreme version of a supernode, weakly tied to all her readers, viewers, or listeners.

Social networks theory remains pertinent, however, because ABC defended its reporter's actions by arguing that as a matter of law what was said within earshot of fellow employees could not have been private. According to the court, Sanders told Lescht about "his personal aspirations and beliefs and gave Lescht a psychic reading." [FN213] This is rather vague, but secondary media reports suggested that ABC broadcast a six-second clip of Sanders stating that he had previously worked as a stand-up comedian and implying that he was not a particularly motivated telepsychic. [FN214] Suppose five or ten coworkers overheard these statements. The odds of them disseminating the information to others were rather low, and the odds of this information being disseminated beyond the circle of people who knew Sanders personally were essentially nil. Even if this stand-alone information had reached a supernode, no self-respecting supernode would risk the ire of her weak contacts by passing along such trivial information about a private figure. [FN215] It is unsurprising that some telephone psychics are skeptical about the soothsaying enterprise, and the fact that one obscure psychic previously worked as a comedian borders on the inane. In holding that the presence of coworkers did not render the communication public, the Sanders court reached a result that is both intuitive and consistent with the social science. [FN216]

***977** Multimedia WMAZ, Inc v Kubach raised the more difficult question of whether an individual's disclosure of his HIV status to sixty friends, relatives, support group members, and healthcare professionals rendered that information public for the purposes of privacy law. The Court of Appeals of Georgia held that the information remained private. [FN217] Obviously,

much of the disclosure to healthcare providers would be protected by a doctor-patient privilege, duties of confidentiality, and substantive regulations such as the Health Insurance Portability and Accountability Act, [FN218] and so these disclosures would hardly render the information public. But what about nonprivileged disclosures to friends, relatives, and support group members? The Shelley study of HIV disclosure suggests that information about HIV status is frequently shared with some parts of an individual's social network, while other members, who might know the HIV-positive person well and be interested in her health status, remain in the dark. [FN219] Information about HIV status, therefore, seems not to flow through social networks readily, at least in the case of private figures. [FN220] Although this particular fact was far more interesting, inherently, than the facts at issue in Sanders, and although the information was again stand-alone, Kubach had a reasonable expectation that his disclosure to some people who knew him would not result in the information being revealed to others who knew him, let alone thousands of people in his local community. [FN221] So the court got this harder case right too.

It is less obvious whether the court reached the right result in Y.G. v Jewish Hospital. Again, set aside the consent issue of whether the plaintiffs could have done more to avoid being filmed. The plaintiffs went to a party attended by similarly situated couples in their local community, and were horrified when their attendance became known to members of their church and the husband's coworkers. The defendants argued that by going to this large party with forty attendees, ***978** the plaintiffs lost any expectation that their participation would remain private. [FN222]

Evaluating this claim is difficult, especially since there has not been an empirical study similar to the Shelley study conducted to discern knowledge of in vitro fertilization participation within the couple's social network. So we will have to extrapolate from what we do know. The Y.G. plaintiffs' participation in the program, combined with their membership in a church that condemned in vitro fertilization, amounted to complex information. Such information would be unlikely to be aggregated via weak ties. Hence, if the plaintiffs went to the party and disclosed to no one there that they belonged to a church that condemned in vitro fertilization, then they should have a rather strong expectation of privacy. Moreover, the objections of that church notwithstanding, there appears to be less stigma associated with in vitro fertilization or infertility generally than there is with HIV-positive status. The hospital's decision to invite a television crew to the party, and the other attendees' evident lack of objection to its presence, provides at least weak inferential evidence in support of that view. From this it follows that there would be fewer moral constraints among the people at the party against subsequent disclosure but also less interest in spreading that information. Moreover, anyone in attendance at the party, other than the TV crew, would have been a healthcare provider (with a duty of confidentiality) or a fellow participant in the program. Fellow participants who belonged to the same church, if any, would have been prevented from disclosing information about the plaintiffs' participation to fellow church members by a fear of symmetrical disclosure by the plaintiffs. At the same time, it appears that the hospital was located in the plaintiffs' local community, and their odds of being recognized by someone from their church or workplaces were therefore heightened.

In short, the court's determination that the information was not public is at least defensible,

and probably right, but ideally the court would have investigated (a) whether the plaintiffs' statements at the party transformed previously complex information into stand-alone information (that is, whether they disclosed both their identities and their church's objections to the procedure); and (b) whether the plaintiffs spent much time talking to other party attendees and sharing identifying information.

Duran, by contrast, is a case where the court's analysis cannot be squared with social networks theory. Recall that Duran was a former Colombian judge who had battled Pablo Escobar's drug cartel. According ***979** to the court, Duran used her real name when shopping in stores or eating in restaurants, which waived an expectation of privacy in her identity. [FN223] Under a social networks theory approach, these acts, combined with her notoriety in Colombia, would not have eliminated her reasonable expectation of privacy in her identity. Shopping in a store or eating in a restaurant involves weak-ties interactions. At most, Duran would have come into fleeting contact with other customers or service-sector employees. There was nothing interesting about Duran's shopping or eating out. In order to generate interest in the story, the defendant had to connect Duran's presence in Detroit to her past notoriety in Colombia and the bounty that had been placed on her head. Such information was quite unlikely to be aggregated through the kinds of weak ties that Duran established in Detroit's public spaces. Perhaps a Colombian waiter would have put two and two together, but this would have been a highly improbable turn of events. Duran's general obscurity in Detroit properly engendered a reasonable expectation of privacy with respect to her shopping and visiting restaurants. [FN224]

Nader v General Motors presents a closer case. General Motors was interested in obtaining information about Nader's sexual proclivities, political and religious beliefs, and views regarding race relations. [FN225] Its agents therefore interviewed Nader's close friends and business associates under false pretenses. These acts raised the question of whether the interviews amounted to an intrusion upon Nader's seclusion. The court found no intrusion upon seclusion, but it is difficult to answer this legal question in the abstract. Nader was a public figure, and so there was a heightened probability that information he revealed to friends and associates eventually would have been disclosed to the public at large. [FN226] That said, the likelihood of disclosure would depend on the extent to which the information at issue was interesting or surprising, and the existence of any moral constraints on the disclosure of such information. Simply put, one needs to know the details of ***980** Nader's sexual proclivities, political and religious beliefs, and racial attitudes in order to determine whether he possessed a reasonable expectation of privacy against subsequent disclosure of them to third parties.

Social networks theory even helps us understand the numerically puzzling result in Fisher v Ohio Department of Rehabilitation and Correction, where the plaintiff's disclosure of information to four coworkers rendered it nonprivate as a matter of law. Recall that the information at issue there involved sexually charged encounters between a mother and her seven-year-old son. [FN227] At least in the United States, such information is so inflammatory that it is unlikely to remain bottled up in an office environment that includes large numbers of strong ties. In most American workplaces, people tend to meet their coworkers' spouses. Given the likelihood of at least weak ties between office workers and the plaintiff's husband, disclosure to him was probable, if not inevitable. While additional facts about the relationships among Fisher,

her former spouse, and her coworkers would have been helpful, the court's categorical determination is defensible in light of the salaciousness and possible illegality reflected in the plaintiff's disclosures.

B. Judges or Juries?

In the cases discussed above, appellate court judges examined whether the plaintiff's disclosure of previously private information rendered that information public as a matter of law. In cases where a trial court had answered that question in the affirmative, the plaintiff's privacy claims were dismissed. But in those cases where the trial court had answered that question in the negative, the plaintiff's privacy claims were submitted to the finder of fact. Essentially, the trial judges were holding that the information at issue could be private, and letting the jury decide whether it was in fact private.

In both Sanders and Kubach, juries ultimately found that the defendants had publicized private information. The Sanders jury awarded the plaintiff $635,000, [FN228] and the Kubach jury awarded the plaintiff $500,000 in compensatory damages and $100 in punitive damages. [FN229] Thus, the jurors' conception of privacy tracked the results that are consistent ***981** with social networks theory. [FN230] In Fisher, the trial court properly concluded that the plaintiff's disclosure of her oedipal thoughts regarding her young son was likely to result in her estranged husband's learning this salacious information. Maybe the likelihood of disclosure was 50 percent or maybe it was 15 percent, but armchair social networks analysis suggests that no reasonable juror could find a very low likelihood of disclosure to the husband. The court's decision to prevent the issue from going to the jury was defensible.

In the other cases discussed above, Nader and Duran, the courts similarly removed from the jury the opportunity to determine that information that the plaintiff had shared with some people nevertheless remained private. For the reasons stated above, although Nader reached a result that may well have been correct under social networks theory, it presented a sufficiently close question to warrant resolution of the issue by the finder of fact. Jurors could hear evidence about the facts of the case, as well as expert testimony from sociologists skilled in social networks theory to help them evaluate the likelihood that the information in question would have been disseminated widely in the absence of GM's involvement. In Duran, by contrast, it seems that no reasonable juror could have concluded that the plaintiff's use of her name in restaurants would enable someone to connect her to the Colombian drug cartel, and it would have been appropriate for the court to hold that the former judge's identity and the threats against her were private as a matter of law.

There is an alternative approach. Although it should be much easier for jurors to apply social networks theory in privacy disputes than economic theory in antitrust cases or cutting-edge scientific principles in patent suits, we might still worry that jurors will prefer to rely on their own intuitions rather than the social science data, distilled through expert testimony. If this concern becomes paramount, we might treat "privacy" as a pure question of law, which would allow trial courts to develop a set of bright-line rules regarding the division between the public and private realms.

Having said that, one can make a strong case that juries will do better than judges in cases requiring social networks analysis. Judges are constrained by precedent and a desire to develop a coherent body of law, and a desire for good law may make for bad science. As a result of that, they will sometimes seize upon rules developed in one context ***982** and apply them to wholly divergent contexts. The most egregious example of this in the limited privacy context is Zieve v Hairston, [FN231] a Georgia case handed down last year. In Zieve, the Court of Appeals of Georgia considered a privacy claim brought by a man who had undergone hair replacement surgery at his local clinic. Hairston, the appropriately-named plaintiff, had agreed to let the clinic use his "before" and "after" photographs in their television advertisements, so long as those ads did not air within 500 miles of Georgia. [FN232] After advertisements featuring Hairston's photograph aired in Georgia and he was recognized by a coworker, Hairston sued for invasion of privacy. [FN233] The Zieve court determined that following Kubach (another Georgia case) required it to rule for the plaintiff, since Kubach has embraced the notion of limited privacy. [FN234] But whereas Kubach reached the right result under social networks theory, Zieve almost certainly did not. After all, Georgia residents (including Hairston's acquaintances) travel out of state and watch television while traveling; Hairston presumably had out-of-state acquaintances who would recognize him in the television advertisements and communicate with Georgia residents about this highly noteworthy information ("Hey, our buddy Hairston is on TV. You'll never guess why!"). The court should have asked how many out-of-state viewers would have seen the advertisement and explored the attributes of Hairston's social network. Yet the Zieve court did not examine any of these social networks questions, instead slavishly applying Kubach's apparent holding to an easily distinguishable case. Adherence to precedent, in this instance, caused the court to disregard the inquiries dictated by social science and common sense. [FN235]

***983** Indeed, adherence to precedent may be undesirable in the realm of privacy law, given the rapidity with which new technologies and new norms can cause expectations of privacy to change. Making "privacy" an issue of law threatens to ossify obsolete expectations of privacy that existed in an earlier era. [FN236] Of course, for the same reason, courts considering social networks analysis ought to be wary of relying on dated social science--a classic study like Schachter and Burdick's ought to be judged in light of recent developments at girls' schools, like text-messaging, blogging, and the substantial changes in adolescent culture that have occurred in the intervening years. In light of all this, we may prefer to have the law of privacy determined by responsive juries that need not worry about creating consistency in the law, provided the expert testimony at trial informs the jury about how to apply insights from social networks theory. The world is a complicated place, and many of the "rules" of social networks theory cannot be reduced to West headnotes. [FN237]

C. Institutional Competence

Some readers undoubtedly will lack confidence in the ability of courts to resolve the technically difficult social networks analysis problems that are embedded in privacy tort cases. This concern might be particularly salient in light of the vexing problems of hindsight bias that

arise in the public disclosure of private facts context. [FN238]

But let us survey the performance of courts in evaluating the reasonableness of privacy protections in leading cases. The courts in Sanders and Fisher reached intuitive conclusions that map well onto the likely results of predictive social networks analysis. The court in Kubach reached an arguably counterintuitive result that is well supported by social networks studies of dissemination of the information ***984** at issue there. In Nader and Y.G., hard cases both, the courts reached defensible results, though I have suggested that courts might have asked for additional factual information that should have had some bearing on the likelihood of subsequent dissemination there. Only in Duran were the court's intuitions about how information might spread through society far off the mark, and perhaps hindsight bias is to blame there.

In assessing this performance, courts appear to do a pretty good job of intuiting sound answers to what are essentially predictive social networks analysis problems. But they provide little by way of explanation for these results, other than articulating or rejecting the notion of limited privacy. Given this background, it may well be that with a bit more methodological rigor and a few hints about experimental and empirical results--particularly in those instances where social networks studies produce counterintuitive findings-- courts can craft more transparent, and hence more persuasive, opinions in these kinds of cases. [FN239]

Indeed, if courts are able to gauge the risks of information dissemination with reasonable accuracy, perhaps ordinary people can too. [FN240] One promising sociological research agenda would try to see how closely laypeople's guesses about the extent of information dissemination track the actual data on information dissemination. [FN241] If people learn, through experience, how likely dissemination is to occur, then this should comfort those worried about the law's decision to disregard subjective expectations of privacy in torts doctrine and my ***985** advocacy of such an approach. [FN242] Subjective expectations of privacy and objectively reasonable expectations of privacy could correlate reasonably well. What little evidence we have on this front shows that people have a tendency to overestimate their own centrality within social networks. [FN243] This suggests, in turn, that an individual will have a tendency to overestimate the extent to which his acquaintances will find the details of his private life worth discussing. If courts apply an objective measure of reasonable privacy expectations, they will probably err on the side of protecting privacy too little, rather than too much. [FN244] Judicial errors of the Duran variety will be more common than judicial errors of the Zieve variety.

We may also expect that helpful feedback mechanisms will develop from courts' occasional use of sociological research in the same way that economic research is occasionally used at present by courts. Although I have found a few illuminating studies, the dissemination of previously private information through social networks has not been a central concern of sociologists. Yet the privacy context seems like the most obvious application of this discipline to a field of law. Were courts to take social networking seriously, one can imagine that sociologists will conduct more studies like the HIV disclosure and bakery rumor studies, each of which teaches a great deal about the dissemination of previously private information through particular social networks.

D. Extensions of the Approach

The issue of reasonable expectations of privacy or confidentiality cuts through many different substantive fields of law, including Fourth Amendment law, [FN245] the constitutional right of information privacy, [FN246] ***986** Freedom of Information Act privacy, [FN247] various evidentiary privileges, [FN248] patents, [FN249] and trade secret law. [FN250] In this Article, I have for the most part confined my analysis to the privacy torts context. There are a couple of reasons for this. First, the notion of limited privacy has found receptive audiences in the torts cases, and so incorporating ideas from social networks theory into the law would not require wholesale revision of the tort laws in many states. Second, and relatedly, a notion of limited privacy might be more normatively appealing ***987** in the tort context than in some other contexts. [FN251] That said, there may be substantial benefits from unifying these divergent bodies of privacy law, and, in the event that the current Article persuades some of its readers, future work will explore applications of networks theory to some or all of these fields.

Beyond the potential for insights about these substantive fields, the study of social networks opens up enormous possibilities for those who fancy themselves scholars of the law and social norms. First-generation social norms scholarship suggested that gossip networks could be highly effective in facilitating informal social control, as an alternative to formal law. [FN252] In recent years, the social norms literature may have lost a little bit of momentum. One way for legal scholars to recover that momentum is to study gossip networks in more rigorous ways, so that we can evaluate when informal social control might function as a welfare-enhancing alternative to legal process.

This idea has many potential applications, but two examples here will be illustrative. If we learn that gossip networks in the landlord-tenant context are highly efficient, the law ought to be more receptive to landlord self-help. [FN253] Similarly, inefficiencies in the social networks of lawyers and legal clients may explain the need for judges to impose Rule 11 sanctions against litigators who misbehave. [FN254] Understanding the relevant social networks helps us evaluate the need for legal regulation of private actors. Social network theory, in short, may lay the foundation for a second generation of interesting social norms scholarship.

***988** Conclusion

Privacy torts doctrine directs judges to evaluate whether it was appropriate for a plaintiff to assume that her initial disclosure of information about herself would result in the widespread dissemination of that information. As most courts understand this test, it calls for seemingly difficult, generally counterfactual, ex ante analysis that sociologists are better equipped to perform. In light of all this, it is perhaps surprising that courts seem to reach defensible results in many of the leading privacy cases. Their analysis leaves something to be desired, and I have tried to show that insights from social networks theory can improve that analysis. The substantial recent improvements in the quality of this body of social science, mediated through expert testimony, ought to find their way into American courtrooms.

This Article attempts to furnish courts with a theory of privacy that they can embrace readily,

taking as a given the choice of these courts to base the privacy determination on what the parties should have expected to follow the initial disclosure of information by someone other than the defendant. Where a defendant's disclosure materially alters the flow of otherwise obscure information through a social network, such that what would have otherwise remained obscure becomes widely known, the defendant should be liable for public disclosure of private facts. By the same token, when a court must determine whether a defendant has intruded upon the plaintiff's seclusion by improperly gathering information about the plaintiff's private matters or affairs, judges ought to ask whether the plaintiff's information was likely to have remained obscure had the defendant never acted. For both these torts, social networks theory holds out the promise of replacing the common law's vagueness with a relatively objective, testable, rigorous, and principled approach.

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[FN1]. The law's answer to the Mary Cheney question is "no." Press accounts had mentioned her sexual orientation long before the debates. See, for example, Susan Greene, Gays: Cheney's Views an Issue: Daughter's Orientation Seen as "Dichotomy," Denver Post A14 (July 27, 2000). Once a fact has been reported in the press, courts hold that it is no longer private, and third parties can disseminate the fact with immunity. See, for example, Sipple v Chronicle Publishing Co, 154 Cal App 3d 1040, 201 Cal Rptr 665, 669-70 (1984). Nevertheless, an influential columnist invoked Cheney's privacy as a basis for criticizing Kerry and Edwards. See William Safire, The Lowest Blow; The Kerry Campaign Believes Cheney's Daughter Is "Fair Game," Pittsburgh Post-Gazette A17 (Oct 19, 2004), noting that prior to Senator Edwards' mention of Mary Cheney's sexual orientation,

only political junkies knew that a member of the Cheney family serving on the campaign staff was homosexual. The vice president, to show it was no secret or anything his family was ashamed of, had referred to it briefly twice this year, but the news media--respecting family privacy--had properly not made it a big deal. The percentage of voters aware of Mary Cheney's sexual orientation was tiny.

[FN2]. The public disclosure of private facts tort requires the plaintiff to show that the defendant (a) gave publicity, (b) to a private fact, (c) that is not of legitimate concern to the public, where such disclosure (d) is highly offensive to a reasonable person. Restatement (Second) of Torts § 652D (1977).

The tort for intrusion upon seclusion requires the plaintiff to show that the defendant (a) intentionally intruded, physically or otherwise, (b) on the solitude or seclusion of another or on his private affairs or concerns, (c) in a manner highly offensive to a reasonable person. Id §

652B.

[FN3]. See notes 245-50.

[FN4]. See Multimedia WMAZ, Inc v Kubach, 212 Ga App 707, 443 SE2d 491, 494 (1994) (holding that the plaintiff's disclosure that he was suffering from AIDS to approximately sixty individuals--family members, friends, medical personnel, and fellow support group members--did not make the fact of his disease public as a matter of law). See also Zieve v Hairston, 266 Ga App 753, 598 SE2d 25, 30 (2004) (holding that the plaintiff did not waive his right to privacy in his status as a hair transplant recipient even after he agreed to allow photographs of his successful transplant surgery to be shown in television advertisements aired 500 miles outside of his home state).

[FN5]. See Fisher v Ohio Department of Rehabilitation and Correction, 61 Ohio Misc 2d 303, 578 NE2d 901, 903 (Ohio Ct Cl 1988).

[FN6]. United States Department of Justice v Reporters Committee for Freedom of the Press, 489 US 749, 763-64, 770 (1989) (internal citations omitted):
(B)oth the common law and the literal understandings of privacy encompass the individual's control of information concerning his or her person. In an organized society, there are few facts that are not at one time or another divulged to another. Thus the extent of the protection accorded a privacy right at common law rested in part on the degree of dissemination of the allegedly private fact and the extent to which the passage of time rendered it private. According to Webster's initial definition, information may be classified as "private" if it is "intended for or restricted to the use of a particular person or group or class of persons: not freely available to the public."
. . .
In sum, the fact that "an event is not wholly 'private' does not mean that an individual has no interest in limiting disclosure or dissemination of the information."

[FN7]. See Charles Fried, An Anatomy of Values: Problems of Personal and Social Choice 142 (Harvard 1970):
To be friends or lovers persons must be intimate to some degree with each other. Intimacy is the sharing of information about one's actions, beliefs or emotions which one does not share with all, and which one has the right not to share with anyone. By conferring this right, privacy creates the moral capital which we spend in friendship and love.

[FN8]. See Thomas E. Runge and Richard L. Archer, Reactions to the Disclosure of Public and Private Self-Information, 44 Soc Psychology Q 357, 361 (1981) (discussing experimental findings in which subjects claim to like their stranger-partner more if the stranger-partner shares information that she claims she has not previously revealed). See also Allan J. Kimmel, Rumors and Rumor Control: A Manager's Guide to Understanding and Combatting Rumors 111 (Lawrence Erlbaum 2004); Diego Gambetta, Godfather's Gossip, 35 Archives Européennes de Sociologie 199, 216 (1994) ("(G)ossip leads to more trust and trust leads to more gossip."); Mie Kito, Self-Disclosure in Romantic Relationships and Friendships Among American and Japanese

College Students, 145 J Soc Psychology 127, 128-29 (2005) (surveying the literature that shows a close connection between self-disclosure of personal information and relationship quality); Laurel Richardson, Secrecy and Status: The Social Construction of Forbidden Relationships, 53 Am Sociological Rev 209, 213 (1988) (arguing that disclosure of pertinent information promotes friendship and intimacy).

[FN9]. Robert S. Gerstein, Intimacy and Privacy, in Ferdinand David Schoeman, ed, Philosophical Dimensions of Privacy: An Anthology 265, 265 (Cambridge 1984). See also Carl D. Schneider, Shame, Exposure, and Privacy 42 (Beacon 1977) ("(I)n the area of personal relationships, such as family, friends, and lovers where quality is important, privacy is an operative principle. These relationships can't be sustained with everyone. To function, they depend on an excluding condition. Privacy creates the moral capital that is spent in friendship and intimate relations."); Charles Fried, Privacy (A Moral Analysis), in Schoeman, ed, Philosophical Dimensions of Privacy 203, 209 ("In general it is my thesis that in developed social contexts love, friendship and trust are only possible if persons enjoy and accord to each other a certain measure of privacy."). As an empirical matter, intimacy does exist in societies that provide little or no legal protections for private information. That said, we should not be legal centralists when evaluating Gerstein and Fried's claims. This Article essentially equates legal privacy protections with de facto privacy protections that arise via resource constraints on surveillance and impediments to information dissemination. It may well be that in a hypothetical super-Orwellian world of complete surveillance and instantaneous information dissemination, there would be no intimacy among human beings.

[FN10]. For an exploration of the competing values furthered by privacy law, see Daniel J. Solove, Conceptualizing Privacy, 90 Cal L Rev 1087, 1099-1153 (2002) (suggesting conceptions of privacy that include the right to be let alone; limited access to the self; secrecy; control over personal information; personhood; antitotalitarianism; intimacy; and individuality, dignity, and autonomy).

[FN11]. See Jaimie Wilson, United by Addiction--and Hope, Fla Times-Union C1 (Mar 20, 2001) (noting that Alcoholics Anonymous alone has 1.16 million members in the U.S.). See also James Rachels, Why Privacy Is Important, in Schoeman, ed, Philosophical Dimensions of Privacy 290, 295 (cited in note 9):

> Resistance to . . . group therapy is overcome when the patients begin to think of each other not as strangers but as fellow members of the group. The definition of a kind of relation between them makes possible frank and intimate conversation which would have been totally out of place when they were merely strangers.

For a discussion of the importance of twelve-step support groups in American society and an argument for extending an evidentiary privilege to communications among participants, see Thomas J. Reed, The Futile Fifth Step: Compulsory Disclosure of Confidential Communications Among Alcoholics Anonymous Members, 70 St John's L Rev 693, 724-51 (1996).

[FN12]. See Alan F. Westin, Privacy and Freedom 31-32 (Atheneum 1967) (asserting that anonymity allows the discloser to express himself freely and possibly receive an objective response, without fearing that the stranger is able to exert authority or restraint over him).

[FN13]. See, for example, Richard A. Posner, The Right of Privacy, 12 Ga L Rev 393, 409-21 (1978) (offering an economic critique); Eugene Volokh, Freedom of Speech and Information Privacy: The Troubling Implications of a Right to Stop People from Speaking About You, 52 Stan L Rev 1049, 1122 (2000) (offering a constitutional critique).

[FN14]. As a general matter, filing a lawsuit for public disclosure of private facts either introduces those facts into the public record or draws substantial press and public attention to those facts. For a plaintiff who wishes to suppress private information that another person has discovered, filing suit is often a very poor strategy. We can therefore expect that invasion of privacy disputes will be filed when the plaintiff has little left to lose from further publicity.

[FN15]. Obviously, deep pockets provide a partial explanation for this as well. In some of these cases, there will be an intermediate discloser who is not a party to the suit--for example, a friend who has blabbed to a reporter.

[FN16]. The relationship I am describing, of course, is nonlinear. There may be a tipping point at which sensitive information about individuals becomes so widely disseminated in the media that any stigma attached to the disclosure will wither. This is arguably what has begun to happen in recent years with respect to the disclosure of information about individuals' homosexuality. In such circumstances, we might expect more disclosure of such information within social circles. By the same token, however, as the stigma is diminished, we can expect that the disclosure of the destigmatized information will generate less intimacy between the discloser and disclosee and fewer psychological benefits for the discloser.

[FN17]. For a provocative exploration of the idea that the government may have to restrict certain forms of individual liberty in order to prevent societal expectations of privacy from being undermined, see Anita L. Allen, Coercing Privacy, 40 Wm & Mary L Rev 723, 755-57 (1999).

[FN18]. For a related argument, see Shubha Ghosh and Vikram Mangalmurti, A Social Insurance Perspective on Security and Privacy (unpublished working paper July 2004), online at http://papers.ssrn.com/abstract_id=569643 (visited May 16, 2005) (asserting that a theory of liability for information security breaches caused by software should be based on a social insurance approach, rather than on private rights, because it underscores regulation's role in establishing the social foundation of trust necessary for cyberspace transactions).

[FN19]. See notes 7-8.

[FN20]. Simply put, trusting someone with one's own secrets makes one vulnerable in a way that sharing someone else's secrets does not. This vulnerability is an ingredient of intimacy. The relationship between gossip and trust is less susceptible to categorical characterizations. See Gambetta, 35 Archives Européennes de Sociologie at 216 (cited in note 8):
If I confide my secrets to you this may encourage you to trust me and, in turn, to confide more secrets to me. . . . On the other hand, trust increases the likelihood of revealing personal secrets to others and thereby increases the exposure to gossip by increasing the circulation of material

suitable for it: if you tell me in confidence a secret about yourself I can pass it on to someone else and breach your trust. If we join the two effects together we find that gossip ultimately should generate positional trust: it increases mutual trust among gossiping agents at the cost of breaching trust with those who are the object of gossip. The overall effect on the amount of trust, however, is not clear.

[FN21]. See Ronald S. Burt, Bandwidth and Echo: Trust, Information, and Gossip in Social Networks, in James E. Rauch and Alessandra Casella, eds, Networks and Markets 30, 37-38 (Russell Sage 2001) ("Conversations about social structure are an integral part of building and maintaining relationships, with the primary effect of reinforcing the current structure.") (emphasis added); Donna Eder and Janet Lynne Enke, The Structure of Gossip: Opportunities and Constraints on Collective Expression Among Adolescents, 56 Am Sociological Rev 494, 494-95 (1991) (citing, for example, a study finding that early adolescent girls rely more on gossip than direct ridicule to clarify social norms).

[FN22]. See, for example, Robert C. Ellickson, Order Without Law: How Neighbors Settle Disputes 57-59, 79-80 (Harvard 1991) (observing that rural ranchers use gossip as a self-help sanction to discipline those who allow their animals to stray or fail to do their share of fence maintenance and financing). See also Kimmel, Rumors and Rumor Control at 85 (cited in note 8) (arguing that gossip makes social groups more cohesive).

[FN23]. Restatement (Second) of Torts § 652D.

[FN24]. See Kim Lane Scheppele, Legal Secrets: Equality and Efficiency in the Common Law 260 (Chicago 1988) ("(P)rivacy is not allowed . . . when the information has been judged necessary for someone else to know in order to make decisions that she is entitled to make."). The legal determination of "legitimate concern to the public" necessitates paternalistic judgments by judges about what forms of information the public should receive and what forms of information it should not receive. Even if there is great consumer demand for an unauthorized videotape of a celebrity engaged in sexual intercourse, this does not necessarily, and in my view should not necessarily, render the information of "legitimate concern to the public." See note 203. The presence of paternalistic judgments does not render privacy law paternalist, but it does indicate judicial skepticism about whether market demand is an accurate proxy for welfare. For a critique of privacy tort law on welfarist grounds, see generally Posner, 12 Ga L Rev 393 (cited in note 13) (suggesting a legal privacy right based on economic efficiency that would protect certain trade and business secrets, unprotect most personal facts, and limit intrusive surveillance to surveillance of illegal activities).

[FN25]. The law's deference to individuals' decisions stems from a belief that individuals are in a better position than government officials to make decisions about sharing personal information. That said, my analysis in this section suggests that there may be negative externalities associated with an individual's voluntary disclosure of personal information about herself in circumstances where that consent is not obvious to those who hear the voluntarily disclosed information. See text accompanying notes 16-17. It may be appropriate, therefore, for the law to require that viewers, listeners, and readers be exposed to evidence of the subject's consent in those cases

where media outlets disseminate previously private information about individuals.

[FN26]. Exceptions arise for a few categories of private speech. For example, the criminal law prohibits adults from sharing with minors information relating to their own sexuality. See, for example, John D. v Department of Social Services, 51 Mass App Ct 125, 744 NE2d 659 (2001) (holding that a stepfather's repeated nudity in the presence of his teenage daughter, combined with other sexual communications, constituted child abuse). These laws might also be couched as protecting consent, however, because the minors affected would be unable to effectively consent to participate in these conversations and would be exposed prematurely to highly charged sexual content.

[FN27]. See Scheppele, Legal Secrets at 199-200, 203 (cited in note 24) (observing that in the absence of fraud or coercion an initially voluntary disclosure generally cannot be grounds for an invasion of privacy claim). The leading case for this proposition is Daily Times Democrat v Graham, 276 Ala 380, 162 So 2d 474, 478 (1964) (holding that although a person implicitly consents to be photographed while out in public, when his status involuntarily changes to one embarrassing to a reasonable person, he does not forfeit his right to be "protected from an indecent and vulgar intrusion of his right of privacy merely because misfortune overtakes him in a public place"). For a discussion of consent as a defense in privacy tort cases, see William L. Prosser, Privacy (A Legal Analysis), in Schoeman, ed, Philosophical Dimensions of Privacy 104, 123 (cited in note 9) (stating that gratuitous consent may be revoked at any time prior to the invasion of privacy but that contractual consent is normally irrevocable if the publicity or appropriation stays within the agreement's terms).
Under the view laid out in this Article, consent is often a decisive consideration in privacy cases. That said, it is unrealistic to expect that people will always reach formal agreements regarding subsequent dissemination in cases involving the disclosure of sensitive information. Litigated privacy cases frequently involve legally unsophisticated plaintiffs, and the sharing of confidential information is so common, and so central to society's flourishing, that formalizing all such disclosures via binding contracts would be foolhardy. Many of the social interactions that provide the facts for privacy law's leading cases involve non-repeat players, and highly improbable or surprising turns of events. The transaction costs associated with preventing these controversies via contracts often will be prohibitive. In such cases, reasonable expectations of privacy help "fill in the blanks" of a contract that the parties to a communication would have agreed to, had they been able to do so costlessly.

[FN28]. See Barbara Moretti, Outing: Justifiable or Unwarranted Invasion of Privacy? The Private Facts Tort as a Remedy for Disclosures of Sexual Orientation, 11 Cardozo Arts & Enter L J 857, 861 (1993) (arguing that disclosures of sexual orientation unrelated to any public issues and merely satisfying public curiosity are unjustified invasions of privacy that can be remedied by privacy torts); John P. Elwood, Note, Outing, Privacy, and the First Amendment, 102 Yale L J 747, 750 (1992) (arguing for a standard of newsworthiness that would grant First Amendment protection to disclosure of a public figure's homosexuality only when it is relevant to a legitimate public concern). See also Keith J. Hilzendeger, Comment, Unreasonable Publicity: How Well Does Tort Law Protect the Unwarranted Disclosure of a Person's HIV-Positive Status?, 35 Ariz St L J 187, 188, 217-18 (2003) (arguing that in cases where a person's HIV-positive status has

been disclosed, the Restatement's approach to the public disclosure of private facts tort should limit the requirement that the information not be of legitimate concern to the public).

[FN29]. Causation is not, in and of itself, an element in the public disclosure tort. See, for example, Johnson v Sawyer, 4 F3d 369, 382 n 69 (5th Cir 1993), revd on other grounds, 47 F3d 716 (5th Cir 1995) (en banc). At the same time, my discussion of the case law in Part II will show that when courts encounter privacy cases involving the plaintiff's disclosure of information to one or more people other than the defendant, they tend to analyze the "reasonable expectation of privacy" element in a manner similar to the way in which a tort lawyer would understand but-for causation, asking whether the plaintiff's injury would have occurred in the absence of the defendant's involvement.

[FN30]. Privacy is highly responsive to changes in technologies or social norms. Privacy law ought to reflect democratic sentiments, not fight them. It would thus be a substantial mistake to embed in the law the expectations of privacy that prevailed in one era, one society, or one court's opinion. As Albert Alschuler has noted in the Fourth Amendment context,

(F)or a judge to elevate his personal visions of privacy above those of the rest of society would be arrogant and inconsistent with appropriate concepts of judicial restraint. A test of constitutional protection that looks to changing cultural sentiments may raise the specter of adjudication by Gallup poll; but idiosyncratic judicial concepts of natural justice--visions, for example, of an inherent human need for privacy at odds with the visions prevalent in society--would have less claim to respect.

Albert W. Alschuler, Interpersonal Privacy and the Fourth Amendment, 4 NIU L Rev 1, 7 n 12 (1983).

Any normative framework regarding what should or should not remain private will be highly contestable, which strengthens the case for privileging the descriptive over the normative, as this Article does. Of course, one needs some normative principle for determining that privacy is worth protecting. See Parts I.A and I.B. That said, the structure of the privacy torts already makes normative considerations relevant. An actionable public disclosure or intrusion must be "highly offensive to a reasonable person." Given that a violation of community standards is a necessary, normative element of the tort, there is little justification for making the separate "privacy" element turn on normative calculations. This is another reason why I advocate a positivist approach to privacy in this Article.

[FN31]. Compare Editorial, Outing Mary Cheney, Wall St J A14 (Oct 15, 2004) ("By outing Mary Cheney before millions of viewers on prime-time television, Messrs. Kerry and Edwards may hope to score points with their base of gay activists."), with Brian Lehrer, Editorial, They'll Point Fingers but Won't Show Their Hands--With the Media's Complicity, Candidates Attack Opponents and Avoid Discussing Ideas, Newark Star-Ledger 15 (Oct 27, 2004):

The Bush campaign is trying to focus voter attention on the fact that John Kerry mentioned in the last debate that Dick Cheney's daughter is a lesbian. This takes the focus off the real issue of what legal rights gay people should have and puts it on the fake issue of whether Kerry invaded the privacy of someone who is already out and who was already an issue in the campaign.

See also note 1.

[FN32]. For a fuller and more provocative exploration of these themes, see Randall P. Bezanson, The Right to Privacy Revisited: Privacy, News, and Social Change, 1890-1990, 80 Cal L Rev 1133, 1159-62 (1992). Bezanson and I part ways, however, in that he believes that social norms have broken down with respect to the communication of sensitive information, while I believe that empirical studies of communication identify widely held norms and regularities.

[FN33]. See Part II and the cases discussed therein.

[FN34]. See, for example, Sanders v American Broadcasting Companies, Inc, 20 Cal 4th 907, 85 Cal Rptr 2d 909, 913 (1999); Multimedia WMAZ v Kubach, 212 Ga App 707, 443 SE2d 491, 494 (1994); Y.G. v Jewish Hospital of St. Louis, 795 SW2d 488, 502 (Mo Ct App 1990).

[FN35]. In this sense, privacy tort law is quite different from Fourth Amendment law, which ostensibly requires a court to examine both subjective and objective expectations of privacy. The courts first ask whether the defendant had a subjective expectation of privacy, and if so, courts examine whether that expectation of privacy is one that society ought to recognize as reasonable. See Katz v United States, 389 US 347, 361 (1967) (Harlan concurring). As a practical matter, however, defendants virtually always claim to have a subjective expectation of privacy, and the courts rarely second-guess those representations about the defendant's state of mind. When courts do discuss the first prong, their analysis sometimes invokes the "reasonableness" issues that ought to be analyzed under the second prong. See, for example, Smith v Maryland, 442 US 735, 742-43 (1979) (discussing the issue of whether telephone subscribers in general expect privacy in the numbers that they dial but, strangely, considering this question as part of the first prong of Katz). The second prong of Katz, the so-called objective prong, is therefore the locus of most of the action under Fourth Amendment law. See, for example, James J. Tomkovicz, Beyond Secrecy for Secrecy's Sake: Toward an Expanded Vision of the Fourth Amendment Privacy Province, 36 Hastings L J 645, 651-54, 679-80 (1985) (noting that Katz's first prong has become decreasingly important relative to its second prong); David W. Cunis, Note, California v. Greenwood: Discarding the Traditional Approach to the Search and Seizure of Garbage, 38 Cath U L Rev 543, 565 (1989) (observing that the Court in four cases has summarily glossed over the question raised by the first prong of Katz); Jon E. Lemole, Note, From Katz to Greenwood: Abandonment Gets Recycled from the Trash Pile--Can Our Garbage Be Saved from the Court's Rummaging Hands?, 41 Case W Res L Rev 581, 595 n 92, 601 (1991) (noting that the Court usually uncritically accepts as fact any assertion by a defendant of a subjective expectation of privacy).
Two other differences are worth noting here. First, in the Fourth Amendment context, the law deems the government agents' expectations of the plaintiff's privacy irrelevant. Rather, the law focuses only on what the subject of the search expected, and whether those expectations were reasonable. In the privacy tort context, by contrast, both parties' expectations might be relevant. Before assigning civil liability to a defendant, a court might want to know whether the defendant expected that the information in question was supposed to remain private. Second, in the Fourth Amendment context, the federal courts have adopted a version of what I call the hard-line approach to privacy. If an individual discloses information to a third party, that information is deemed to have been disclosed to the entire world. See Part II.B and note 245. For criticisms of existing Fourth Amendment jurisprudence, and arguments on behalf of "privacy in public," see

Marc Jonathan Blitz, Video Surveillance and the Constitution of Public Space: Fitting the Fourth Amendment to a World that Tracks Image and Identity, 82 Tex L Rev 1349, 1364-66 (2004); Christopher Slobogin, Public Privacy: Camera Surveillance of Public Places and the Right to Anonymity, 72 Miss L J 213, 215 (2002).

[FN36]. It might be argued that the Supreme Court requires nothing less of judges in such circumstances. See Alschuler, 4 NIU L Rev at 8 n 12 (cited in note 30) (describing the dictate of Katz as asking that judges "assume the role of armchair sociologists and attempt to assess cultural expectations of privacy").

[FN37]. Christopher Slobogin and Joseph E. Schumacher, Reasonable Expectations of Privacy and Autonomy in Fourth Amendment Cases: An Empirical Look at "Understandings Recognized and Permitted by Society," 42 Duke L J 727, 732, 774-75 (1993) (surveying 217 persons in order to gauge the impact of police investigative techniques on their privacy and autonomy and to ascertain their understanding of the interests implicated by the various techniques, and suggesting that courts consult such data in their search and seizure jurisprudence, "at least if community values remain the lynchpin of search and seizure jurisprudence"). See also Slobogin, 72 Miss L J at 273-75 (cited in note 35) (noting that there have been few U.S. polls inquiring into American society's views on the intrusiveness of public camera surveillance, but offering results of United Kingdom polls).

[FN38]. Divergences between poll results and behavioral data are common in the information privacy context. For an interesting discussion of these divergences and how they might be interpreted, see Katherine J. Strandburg, Too Much Information: Privacy, Rationality, Temptation and the Implications of "Willpower" Norms 8-13 (unpublished working paper September 2004), online at http://papers.ssrn.com/abstract_id=587950 (visited May 16, 2005). Similar divergences between polling and observation arise in the family law context. Fiancés who are aware of high American divorce rates nevertheless assume that their own marriages will not end in divorce. See generally Lynn A. Baker and Robert E. Emery, When Every Relationship Is Above Average: Perceptions and Expectations of Divorce at the Time of Marriage, 17 L & Human Beh 439, 443 (1993) (indicating that although marriage license applicants' median response was an accurate estimate that 50 percent of U.S. married couples will divorce, the median response was 0 percent when assessing their own likelihood of divorce).

[FN39]. See Note, "Ask a Silly Question . . .": Contingent Valuation of Natural Resource Damages, 105 Harv L Rev 1981, 1982 (1992) (asserting that contingent valuation measurements of nonuse values, which are derived from survey responses, are so speculative that their costs almost always outweigh any benefits).

[FN40]. Kyllo v United States, 533 US 27 (2001).

[FN41]. See Smith, 442 US at 740 n 5:
Situations can be imagined, of course, in which Katz' two-pronged inquiry would provide an inadequate index of Fourth Amendment protection. For example, if the Government were suddenly to announce on nationwide television that all homes henceforth would be subject to

warrantless entry, individuals thereafter might not in fact entertain any actual expectation of privacy regarding their homes, papers, and effects.
Some have criticized the Supreme Court's Fourth Amendment jurisprudence for facilitating the incremental erosion of people's privacy expectations. See, for example, Shaun B. Spencer, Reasonable Expectations and the Erosion of Privacy, 39 San Diego L Rev 843, 860-62 (2002) (asserting that the Supreme Court's expectation-driven concept of privacy is vulnerable to encroachment by actors powerful enough to influence social behavior and change societal expectations of privacy). This does not strike me as a particularly persuasive critique of privacy law. Rather, the advantage of the reasonable expectations of privacy approach is its flexibility and responsiveness to technological and social changes that affect privacy norms. In any event, a theory of privacy grounded in a social networks theory/computer model approach will be responsive to technological changes as well.

[FN42]. See, for example, John Zaller and Stanley Feldman, A Simple Theory of the Survey Response: Answering Questions versus Revealing Preferences, 36 Am J Polit Sci 579, 579 (1992) (stating that survey respondents react strongly to the context in which questions are asked, the order in which options are presented, and wholly nonsubstantive changes in question wording); Lee Anne Fennell, Death, Taxes, and Cognition, 81 NC L Rev 567, 594-95 (2003) (questioning whether opinion polls are a valid measure of public sentiment given their susceptibility to question-framing manipulations).

[FN43]. Slobogin and Schumacher, 42 Duke L J at 759-60 (cited in note 37) (indicating that intrusiveness rankings were highest when the participants were presented with a first-person scenario where no evidence was found and lowest when the participants were presented with a third-person scenario where evidence was found). For another report on the results of national polls dealing with privacy matters and how responses have varied over time, see James E. Katz and Annette R. Tassone, The Polls--A Report: Public Opinion Trends: Privacy and Information Technology, 54 Pub Op Q 125, 133 (1990).

[FN44]. See Gertz v Robert Welch, Inc, 418 US 323, 327-28 (1974); Dun & Bradstreet, Inc v Greenmoss Builders, Inc, 472 US 749, 761 (1985).

[FN45]. Nor does trade secret law consider the parties' expectations to be a substantial factor in whether a valuable commercial idea has been shared so widely as to have lost its status as a trade secret. See Rockwell Graphic Systems, Inc v DEV Industries, Inc, 925 F2d 174, 178-79 (7th Cir 1991).

[FN46]. For a notable exception, see Paul M. Schwartz, Privacy and Democracy in Cyberspace, 52 Vand L Rev 1609, 1664-70 (1999) (embracing a limited privacy vision of the law and discussing it in several privacy law contexts, including abortion and information sharing over the internet).

[FN47]. 20 Cal 4th 907, 85 Cal Rptr 2d 909 (1999).

[FN48]. Id at 70.

[FN49]. See id at 70 n 1 (indicating that Sanders' claims against ABC based on the broadcast were disposed of without trial).

[FN50]. See id at 75. Approximately one hundred telephone psychics worked at cubicles in a large room. Id at 69.

[FN51]. Id at 72, quoting J. Thomas McCarthy, 1 The Rights of Publicity and Privacy § 5.10(A)(2) (West 1998).

[FN52]. Sanders, 978 P2d at 70-71 (including about $300,000 in exemplary damages after the jury found that ABC had acted with malice, fraud, or oppression).

[FN53]. See, for example, M.G. v Time Warner, Inc, 89 Cal App 4th 623, 107 Cal Rptr 2d 504, 511-12 (2001) (finding that Little League players and coaches had a reasonable expectation of privacy in their team photo, after Sports Illustrated published the photo in a story about the team manager's molestation of several team members); Pettus v Cole, 49 Cal App 4th 402, 57 Cal Rptr 2d 46, 72-74 (1996) (concluding that an employee has a limited expectation of privacy in medical information he provided to a physician hired by his employer for the purposes of evaluating the employee's disability claim); Urbaniak v Newton, 226 Cal App 3d 1128, 277 Cal Rptr 354, 360 (1991) (finding that a patient's disclosure of his HIV-positive status to a nurse, for the purpose of warning her about the risk of infection, did not amount to consent for the nurse's supervising physician to include the patient's HIV status in a report evaluating the patient's workers' compensation claim); Times-Mirror Co v Superior Court, 198 Cal App 3d 1420, 244 Cal Rptr 556, 560-61 (1988) (concluding that the plaintiff had a reasonable expectation of privacy in having witnessed the murder of her roommate by an at-large suspect, even though she had shared this information with friends, relatives, and police officers).
The only California case that, at first glance, seems like a rejection of "limited privacy" underscores just how far the principle extends. In Sipple v Chronicle Publishing Co, 154 Cal App 3d 1040, 201 Cal Rptr 665 (1984), the California courts held that a plaintiff's decision to share information about his homosexuality with members of the gay community deprived him of a cause of action when a general circulation San Francisco newspaper mentioned his orientation after he became a public figure by foiling an assassination attempt against President Ford. Id at 668-69. Sipple argued that his willingness to share his sexual orientation with supportive gays hardly indicated a willingness to share it with unsupportive heterosexuals. Indeed, Sipple's family shunned him after they learned about his sexual orientation. Id at 667. The court held that Sipple's sexual orientation had become a matter of public knowledge well before the defendant's publication, citing the fact that Sipple's orientation was known to "hundreds of people in a variety of cities, including New York, Dallas, Houston, San Diego, Los Angeles, and San Francisco." Id at 669. The court further emphasized that several gay magazines had published stories referencing Sipple's homosexuality. Id. Against this backdrop, and with Sipple gaining substantial fame by virtue of his heroic act, id at 666, the court was incredulous that Sipple's poorly-kept secret would have remained unknown to heterosexuals generally had the defendant not acted. For further discussion of Sipple, see note 216.

[FN54]. Compare Restatement (Second) of Torts § 652B (defining intrusion upon seclusion as an intentional intrusion "upon the solitude or seclusion of another or his private affairs or concerns"), with § 652D (defining public disclosure as giving publicity "to a matter concerning the private life of another"). It is difficult to imagine how something can be another's "private affair or concern," but not "a matter concerning the private life of another."

[FN55]. 795 SW2d 488 (Mo Ct App 1990).

[FN56]. 212 Ga App 707, 443 SE2d 491 (1994).

[FN57]. See, for example, Sheets v Salt Lake County, 45 F3d 1383, 1388 (10th Cir 1995) (finding that the plaintiff's having turned over a diary to police investigators did not indicate a willingness to have the diary released to an author for use in a published book); Doe v B.P.S. Guard Services, Inc, 945 F2d 1422, 1427 (8th Cir 1991) (concluding that female models who undressed in each other's presence had a cause of action against security guards who used a security camera to leer at the models in various states of undress); Huskey v NBC, Inc, 632 F Supp 1282, 1288 (ND Ill 1986) (finding that a prisoner who exercised in a prison's exercise cage had a reasonable expectation of privacy against being filmed for a television broadcast, even though other inmates and prison guards could see him exercising); Vassiliades v Garfinckel's, 492 A2d 580, 590 (DC 1985) (concluding that a plaintiff had a privacy claim against a doctor who disclosed that she had undergone plastic surgery, even though the plaintiff had told her family and friends about the procedure); Peckham v Boston Herald, Inc, 48 Mass App Ct 282, 719 NE2d 888, 891-92 (1999) (finding that the plaintiff's disclosure to his daughter and two close friends of his involvement in a paternity suit did not necessarily waive a reasonable expectation of privacy in that information). See also Benitez v KFC National Management Co, 305 Ill App 3d 1027, 714 NE2d 1002, 1010 (1999).

[FN58]. Y.G., 795 SW2d at 492.

[FN59]. Id at 492-93.

[FN60]. Id at 492.

[FN61]. Id.

[FN62]. Id at 493.

[FN63]. Id at 502.

[FN64]. Id.

[FN65]. 443 SE2d at 494 & n 1 (stating that Kubach told "a relatively small number of people he thought had reason to know of his disease").

[FN66]. Id at 493 (noting that Kubach would not have participated without this assurance). The

court's opinion makes no mention of Kubach pursuing a cause of action for breach of contract.

[FN67]. Id.

[FN68]. Id at 493-94 (noting the station's additional argument that Kubach had appeared on a national television show where he allowed his back to be viewed undigitized and his voice to be heard undisguised).

[FN69]. Id at 494.

[FN70]. Id.

[FN71]. 25 NY2d 560, 255 NE2d 765 (1970).

[FN72]. Ralph Nader, Unsafe at Any Speed (Grossman 1965).

[FN73]. Nader, 255 NE2d at 767.

[FN74]. Id. See also Recent Cases, Right of Privacy--Eavesdropping and Shadowing State Actionable Claims, but Accosting, Interviewing Third Parties, Making Harassing Phone Calls and Continuing Harassing Investigation Do Not.-- Nader v. General Motors Corp., 25 N.Y.2d 560, 255 N.E.2d 765, 307 N.Y.S.2d 647 (1970), 83 Harv L Rev 1923, 1926 n 16 (1970).

[FN75]. Because GM never publicly disclosed the dirt that it may have dug up on Nader, he sued for intrusion upon seclusion rather than public disclosure of private facts.

[FN76]. Nader, 255 NE2d at 770.

[FN77]. Alabama has followed Nader's approach in two recent opinions. Myrick v Barron, 820 S2d 81, 85 (Ala 2001); Johnston v Fuller, 706 S2d 700, 702-03 (Ala 1997).
The Ninth Circuit has held that Arizona courts would also reject an expansive application of the doctrine of "limited privacy" enumerated by the California courts. Medical Lab Management Consultants v ABC, Inc, 306 F3d 806, 815 (9th Cir 2002):
The question before us then is whether Arizona law would recognize as objectively reasonable (the plaintiff's) subjective expectation that his conversation with the ABC representatives would not be broadly disseminated to others . . . . (W)e conclude that, under Arizona law, (the plaintiff) could not have reasonably expected privacy against the ABC representatives' secret videotaping of his communications with them. We conclude that the Arizona Supreme Court would not recognize as broad an interest in limited privacy as the California Supreme Court has done.

[FN78]. 200 Mich App 622, 504 NW2d 715 (1993).

[FN79]. Id at 718.

[FN80]. Id.

[FN81]. Id.

[FN82]. Id.

[FN83]. Id.

[FN84]. Id at 721.

[FN85]. Id at 720. Duran is not the only U.S. case holding that a private figure lacks an expectation of privacy with respect to normal conduct at a restaurant. See, for example, Stessman v American Black Hawk Broadcasting Co, 416 NW2d 685, 687 (Iowa 1987) (finding that, even though a plaintiff would have no reasonable expectation of privacy against being filmed while eating in an ordinary restaurant, he might have such an expectation if seated in a restaurant's private dining room).

[FN86]. 61 Ohio Misc 2d 303, 578 NE2d 901 (Ohio Ct Cl 1988).

[FN87]. Id at 903 (indicating that the topic of conversation was sexual situations involving minor children).

[FN88]. Id. Fisher's disclosures were not communicated to a large audience, at least not until she filed her lawsuit. Although some jurisdictions, such as Illinois, treat the public disclosure tort's "publicity" element as having been satisfied by a disclosure to a small group of people with whom the subject has a special relationship, Ohio rejects this approach. Compare Miller v Motorola, 202 Ill App 3d 976, 560 NE2d 900, 903 (1990) (finding that the public disclosure requirement is satisfied where private information is disclosed only to the plaintiff's fellow employees), with Fisher, 578 NE2d at 903 (refusing to construe defendant's mailing of plaintiff's statements to her soon-to-be ex-husband's lawyer as a "publication to the public at large"). The Fisher court identified the lack of publicity as an additional reason for dismissing Fisher's privacy claim. In my view, Fisher's conception of publicity is far more appealing than Miller's. The Miller standard will render some casual gossip by unsophisticated parties tortious. By making the relevant social network for privacy law purposes a handful of people, Illinois law has the potential to deter a great deal of socially valuable communication. See also Restatement (Second) of Torts § 652D, comment a (siding with the Ohio view of publicity).

[FN89]. Fisher, 578 NE2d at 903 (emphasis added). The Eighth Circuit has embraced similar reasoning in Fletcher v Price Chopper Foods of Trumann, Inc, 220 F3d 871 (8th Cir 2000). In that case, the court held that the plaintiff lost her reasonable expectation of privacy after informing two coworkers that she had a staph infection. Id at 877-78. These coworkers spread the information quickly, such that "(b)y the end of the day, both Fletcher's immediate supervisor . . . and . . . a corporate manager in another town . . . knew that Fletcher had been diagnosed with a staph infection." Id at 878.

Another line of privacy authority is broadly consistent with the Nader/Fisher/Duran approach to limited privacy. This line of cases suggests that a subject does not have a reasonable expectation

of privacy with respect to acts that occur in public places. See Daniel J. Solove and Marc Rotenberg, Information Privacy Law 95-96 (Aspen 2003); Lance E. Rothenberg, Comment, Re-Thinking Privacy: Peeping Toms, Video Voyeurs, and the Failure of Criminal Law to Recognize a Reasonable Expectation of Privacy in the Public Space, 49 Am U L Rev 1127, 1146-55 (2000). Hence, a couple photographed kissing at a farmer's market has no cause of action against a news magazine that published this photograph, Gill v Hearst Publishing Company, Inc, 40 Cal 2d 224, 253 P2d 441, 444-45 (1953), a couple filmed walking from their home to a squad car has no expectation of privacy in such footage, Reeves v Fox Television Network, 983 F Supp 703, 709 (ND Ohio 1997), and a high school athlete whose genitalia were exposed in a soccer match photograph that was published in a newspaper had no privacy cause of action, McNamara v Freedom Newspapers, Inc, 802 SW2d 901, 905 (Tex Ct App 1991). If a tree falls in a public forest, the images of its fall become public, even if the photographer who captures it on film was the only person around to see it fall. But see Daily Times Democrat v Graham, 276 Ala 380, 162 S2d 474, 476 (1964) (permitting a tort suit by a woman who was photographed at a county fair with her skirt blown up over her head, relying in part on the fact that the photographer was lying in wait to catch the woman in an embarrassing situation); Cook v WHDH-TV, Inc, 37 Media L Rep 1242, 1999 WL 1327222, *5 (Mass Super Mar 4, 1999) (noting that "(c)auses of action for intrusions on one's right to privacy . . . are ordinarily foreclosed when the invasion occurs in a public place" but holding, nevertheless, that the plaintiff might have a reasonable expectation of privacy with respect to his conduct in a Burger King parking lot).

[FN90]. Note that in numerical terms the Eighth Circuit has gone further than the Fisher court did, holding that a plaintiff's disclosure of her staph infection to two coworkers deprived her of a reasonable expectation of privacy. See Fletcher, 220 F3d at 877-78.

[FN91]. See text accompanying notes 217-21 and 227.

[FN92]. For accessible, cross-disciplinary analyses of network theory, see Duncan J. Watts, Six Degrees: The Science of a Connected Age (Norton 2003); Albert-László Barabási, Linked: How Everything Is Connected to Everything Else and What It Means for Business, Science, and Everyday Life (Penguin 2003).
Just one month after my paper appeared on SSRN, Thomas Smith posted a very interesting working paper, in which he notes that federal case law is itself a scale-free network, with certain precedents functioning as hubs and most functioning as obscure nodes. See Thomas A. Smith, The Web of Law (San Diego Legal Studies Research Paper No 06-11, Spring 2005), online at http:// papers.ssrn.com/abstract_id=642863 (visited May 16, 2005). Smith's paper makes several fascinating observations about the implications of this finding for the development of legal precedent more generally. For an earlier application of a few aspects of network theory to international law, see Kal Raustiala, The Architecture of International Cooperation: Transgovernmental Networks and the Future of International Law, 43 Va J Intl L 1, 4-5 (2002). See also Amitai Aviram, Regulation by Networks, 2003 BYU L Rev 1179, 1223-37 (discussing network structure more generally).

[FN93]. Network theorists tend to focus on network structure and relationships as a means of understanding social phenomena. See, for example, Timothy J. Rowley, Moving Beyond Dyadic

Ties: A Network Theory of Stakeholder Influences, 22 Acad Mgmt Rev 887, 897 (1997) (arguing that dense networks lead to efficient communication and the establishment of shared behavioral expectations).

[FN94]. See, for example, Duncan J. Watts, Networks, Dynamics, and the Small-World Phenomenon, 105 Am J Sociology 493, 515-16 (1999).

[FN95]. See, for example, Fredrik Liljeros, et al, The Web of Human Sexual Contacts: Promiscuous Individuals Are the Vulnerable Nodes to Target in Safe-Sex Campaigns, 411 Nature 907, 907-08 (2001) (discussing how the structure of sexual partner networks should influence the use of educational strategies to curtail the transmission of sexually transmitted diseases); David C. Bell, John S. Atkinson, and Jerry W. Carlson, Centrality Measures for Disease Transmission Networks, 21 Soc Networks 1 (1999) (analyzing data from a study of more than one hundred networks of drug users and nonusers in high drug-use neighborhoods in Houston, Texas to determine how HIV spreads among such networks).

[FN96]. See, for example, Gerald F. Davis, Mina Yoo, and Wayne E. Baker, The Small World of the American Corporate Elite, 1982-2001, 1 Strategic Org 301, 321-22 (2003), observing that:
On average any two of the 4538 directors of the 516 largest US firms . . . in 1999 could be connected by 4.3 links, and any two of the boards are 3.5 degrees distant. Mills saw a small set of private schools, such as Groton and Exeter, providing an essential agency for socializing and organizing members of the upper class, and Mintz and Schwartz argued for a special role for money-center banks in knitting together corporate directors. But our results suggest that the small-world organization of the corporate elite is an emergent property of networks qua networks and requires no coordinating mechanism whatsoever, for the same reasons that brains, power grids, and the World Wide Web are also small worlds.

[FN97]. "(Social networks consist) of a set of individuals and of the links among them. Links between pairs of individuals might represent a wide range of connections, including such activities as friendship, advice seeking, informational communication, and material transfers." David Krackhardt and Robert N. Stern, Informal Networks and Organizational Crises: An Experimental Simulation, 51 Soc Psychology Q 123, 127 (1988).

[FN98]. Watts, Six Degrees at 107 (cited in note 92); Lada A. Adamic and Eytan Adar, Friends and Neighbors on the Web, 25 Soc Networks 211, 215 (2003) (noting that the distribution of links to and from internet homepages mirrored real-world social networks; like social networks, in which most people only have a few close ties but some people have many, most homepages had just a few links either to or from them, but a few homepages had many).

[FN99]. Watts, Six Degrees at 107 (cited in note 92).

[FN100]. See Ronald S. Burt, Structural Holes and Good Ideas, 110 Am J Sociology 349, 351-52 (2004) (examining networks among managers in a large electronics company); Adamic and Adar, 25 Soc Networks at 215 (cited in note 98); Daniele Bondonio, Predictors of Accuracy in Perceiving Informal Social Networks, 20 Soc Networks 301, 306 (1998) (examining social

networks among coworkers); Rebecca W. Tardy and Claudia L. Hale, Getting "Plugged In": A Network Analysis of Health-Information Seeking Among "Stay-at-Home Moms," 65 Commun Monographs 336, 352-53 & table 3 (1998) (examining social networks among stay-at-home mothers in a toddler playgroup); A. Kimball Romney and Katherine Faust, Predicting the Structure of a Communications Network from Recalled Data, 4 Soc Networks 285, 296 (1982) (examining social networks generally).

[FN101]. For an explanation of this terminology, see text accompanying notes 110-11.

[FN102]. See The Oracle of Bacon at Virginia, online at http:// www.cs.virginia.edu/oracle (visited May 16, 2005) (noting that 12 percent of the movie actor universe cannot be linked to the rest of the movie universe, either because they appeared in straight-to-video films not included in the Internet Movie Database, or because they have not appeared in any films with mainstream Hollywood actors). The Kevin Bacon game is commonly used to illustrate network theory principles. See, for example, Barabási, Linked at 58-62 (cited in note 92); Watts, Six Degrees at 93-95 (cited in note 92); David L. Faigman, The Tipping Point in the Law's Use of Science: The Epidemic of Scientific Sophistication that Began with DNA Profiling and Toxic Torts, 67 Brooklyn L Rev 111, 119-20 (2001).

[FN103]. See Who Is the Center of the Hollywood Universe?, online at http:// www.cs.virginia.edu/oracle/center.html (visited May 16, 2005) (calculating Bacon numbers as of June 29, 2004).

[FN104]. See http://www.imdb.com (visited May 16, 2005).

[FN105]. Who Is the Center of the Hollywood Universe? (cited in note 103).

[FN106]. Id.

[FN107]. Steiger is best known for playing Charley in On the Waterfront, where he acted opposite Marlon Brando in the famous "I could've been a contender" scene. Steiger won the Best Actor Academy Award for the 1967 film In the Heat of the Night. See Internet Movie Database, online at http:// www.imdb.com/name/nm0001768 (visited May 16, 2005).

[FN108]. The remainder of the top ten list consists of Christopher Lee, Dennis Hopper, Donald Sutherland, Harvey Keitel, Donald Pleasence, Max von Sydow, Michael Caine, Martin Sheen, and Anthony Quinn. Karen Black is the most connected actress--she ranks twenty-first of all time. See The Center of the Hollywood Universe, online at http://www.cs.virginia.edu/oracle/center_ list.html (visited May 16, 2005).

[FN109]. One variation on the Kevin Bacon game involves non-actors. Ordinary citizens can compare how many degrees of separation they are from Kevin Bacon, using personal connections instead of acting roles. This version of the Kevin Bacon game recently was made the subject of a successful Visa television commercial. See Kevin Bacon Central, Six Degrees of Kevin Bacon, online at http://www.allstarz.org/kevinbacon/six.htm# (visited May 16, 2005).

[FN110]. This is particularly true once we exclude kin from a person's social network. Kin relationships are less voluntary than other kinds of relationships, and most people maintain at least some connections to their families. Kin thus play a role in promoting the equalization of social network size among introverts and extroverts. See Henry W. Irving, Social Networks in the Modern City, 55 Soc Forces 867, 868 (1977).

[FN111]. See Herminia Ibarra and Steven B. Andrews, Power, Social Influence, and Sense Making: Effects of Network Centrality and Proximity on Employee Perceptions, 38 Admin Sci Q 277, 279 (1993). For a typology of different types of supernodes, see Kimmel, Rumors and Rumor Control at 101 (cited in note 8).
As used in this Article, having many friends and acquaintances does not suffice to make an individual a supernode. Rather, the supernode has many friends and acquaintances who are not independently connected and actively shares information with many of those far-flung friends and acquaintances. Thus, someone who is very discreet but has many friends may well be an ordinary node, whereas someone who is constantly sharing new information with a smaller number of friends would be a supernode.

[FN112]. See Ronald S. Burt, Bridge Decay, 24 Soc Networks 333, 333-34 (2002) (studying network relationships among bankers in a large organization and concluding that "bridge" relationships--those that span two social groups-- decay remarkably quickly despite their demonstrative value as social capital); Karen Klein Ikkink and Theo van Tilburg, Broken Ties: Reciprocity and Other Factors Affecting the Termination of Older Adults' Relationships, 21 Soc Networks 131, 142-45 (1999) (arguing that relationships with children, children-in-law, other kin, friends, neighbors, and non-kin are increasingly likely to decay, and it is more likely these relationships will decay if they are nonreciprocal, that is, if one member of the relationship benefits more from it than the other).

[FN113]. See note 100.

[FN114]. See Scott L. Feld, The Focused Organization of Social Ties, 86 Am J Sociology 1015, 1019-20 (1981).

[FN115]. This small-world phenomenon was examined by Jeffrey Travers and Stanley Milgram in 1969. Travers and Milgram designated three "starting populations"--one composed of Boston residents, one of Nebraska residents, and one of blue-chip stockholders in Nebraska--and asked them to send a letter to a first-name acquaintance in order to advance the letter toward a target individual, a Boston stockbroker. Each recipient was similarly asked to send the letter on to a first-name acquaintance, still with the goal of reaching the target. Of the 217 original letters, 64 eventually reached the target, and the average distribution chain contained 5.2 links between the starter and the target. See Jeffrey Travers and Stanley Milgram, An Experimental Study of the Small World Problem, 32 Sociometry 425, 431-33 (1969).

[FN116]. Indeed, some social networks research suggests a tendency for this to occur. See Ece Kumbasar, A. Kimball Romney, and William H. Batchelder, Systematic Biases in Social

Perception, 100 Am J Sociology 477, 498 (1994) (finding that people systematically overestimate the extent to which their friends communicate with each other).

[FN117]. Ronald S. Burt, Structural Holes: The Social Structure of Competition 18 (Harvard 1992) ("The hole is a buffer, like an insulator in an electric circuit. As a result of the hole between them, the two contacts provide network benefits that are in some degree additive rather than overlapping.").

[FN118]. This is true of all information. A joke I tell one other person could conceivably spread to the entire United States population. And yet, to the best of my knowledge, that's never occurred. Perhaps if my jokes were funnier . . .

[FN119]. See John Scott, Social Network Analysis 32 (Sage 2d ed 2000); Gabriel Weimann, The Strength of Weak Conversational Ties in the Flow of Information and Influence, 5 Soc Networks 245, 246 (1983). See also Daniel J. Brass, Kenneth D. Butterfield, and Bruce C. Skaggs, Relationships and Unethical Behavior: A Social Network Perspective, 23 Acad Mgmt Rev 14, 17 (1998) ("The strength of a relationship refers to the frequency, reciprocity, emotional intensity, and intimacy of that relationship. Casual acquaintances, represented by infrequent interaction and indifferent affect, are characterized by weak ties.").

[FN120]. See Morten T. Hansen, The Search-Transfer Problem: The Role of Weak Ties in Sharing Knowledge Across Organization Subunits, 44 Admin Sci Q 82, 106 (1999) (discussing a similar phenomenon among engineers).

[FN121]. See John P. Heinz, et al, The Constituencies of Elite Urban Lawyers, 31 L & Socy Rev 441, 448 (1997) (noting that even highly prominent members of Chicago's legal community were not directly tied to most lawyers surveyed).

[FN122]. Indeed, directed networking seems to occur within large law firms with some regularity. When I worked at a large Seattle law firm, someone would occasionally send out an email to all the lawyers at the firm asking if anyone knew Mr. So-and-So. Mr. So-and-So was usually a potential client, mediator, or co-counsel. Another effective strategy would be to obtain Mr. So-and-So's Martindale-Hubbell biography, and then search for people within one's own firm who share a possible tie. Most obviously, one might look for someone who graduated from the same law school at roughly the same time.

[FN123]. Mark Granovetter, The Strength of Weak Ties: A Network Theory Revisited, 1 Sociological Theory 201 (1983).

[FN124]. Id at 201-02. Other studies of social networks have found substantial clustering of social ties within racial and ethnic groups. See Charles Korte and Stanley Milgram, Acquaintance Networks Between Racial Groups: Application of the Small World Method, 15 J Personality & Soc Psychology 101, 107 (1970) (discussing the results of another small-world experiment involving letter chains where white subjects had particular difficulty in connecting with black targets in separate, racially-based social networks). In another study, Gabriel

Weimann examined the ability of Ashkenazi and Sephardic Jews in Israel to reach target individuals through chains of social connections. He found substantial segregation of social networks along ethnic lines and determined that efforts to contact a target individual often failed because of a lack of contacts between Ashkenazi and Sephardic Jews. Gabriel Weimann, The Not-So-Small World: Ethnicity and Acquaintance Networks in Israel, 5 Soc Networks 289, 297-98 (1983).

[FN125]. See Granovetter, 1 Sociological Theory at 204 (cited in note 123).

[FN126]. Id at 218; Weimann, 5 Soc Networks at 260-63 (cited in note 119).

[FN127]. Granovetter, 1 Sociological Theory at 202 (cited in note 123).

[FN128]. Id at 213. See also Matthijs Kalmijn, Shared Friendship Networks and the Life Course: An Analysis of Survey Data on Married and Cohabiting Couples, 25 Soc Networks 231, 246 (2003) (finding that well-educated people have more friends, but spend less time with them, than their lesser-educated counterparts); Brian R. Patterson, Communication Network Activity: Network Attributes of the Young and Elderly, 43 Commun Q 155 (1995) (finding that, as they age, the elderly tend to rely more on strong ties and less on weak ties).

[FN129]. Hansen, 44 Admin Sci Q at 105 (cited in note 120); Giuseppe Labianca, Daniel J. Brass, and Barbara Gray, Social Networks and Perceptions of Intergroup Conflict: The Role of Negative Relationships and Third Parties, 41 Acad Mgmt J 55, 58 (1998). See generally Krackhardt and Stern, 51 Soc Psychology Q at 127-28 (cited in note 97):
(I)ndividuals have a limited amount of time, energy, and need for the social interaction and intimacy which are demanded in maintaining friendships. Given this assumption, one will find, on the average, a tradeoff between the number of friends one can maintain outside the subunit and the number one can maintain inside the subunit.

[FN130]. Granovetter, 1 Sociological Theory at 205 (cited in note 123).

[FN131]. Weimann, 5 Soc Networks at 264-65 (cited in note 119).

[FN132]. Granovetter, 1 Sociological Theory at 208 (cited in note 123).

[FN133]. See Noah E. Friedkin, Information Flow Through Strong and Weak Ties in Intraorganizational Social Networks, 3 Soc Networks 273, 284-85 (1982) (examining the effect of tie strength on the probability of information flow).

[FN134]. Granovetter, 1 Sociological Theory at 209 (cited in note 123).

[FN135]. Id at 215-16.

[FN136]. See Weimann, 5 Soc Networks at 254-55 (cited in note 119).

[FN137]. Id at 258.

[FN138]. Id.

[FN139]. See Gordon W. Allport and Leo Postman, An Analysis of Rumor, 10 Pub Op Q 501, 512 (1946-1947) (discussing the prestige associated with being the first to share truthful, newsworthy information with a group). While supernodes tend to be the highest-status individuals in a social network, there may be costs associated with supernode status in certain contexts. For example, Wayne Baker and Robert Faulkner found that central players in price-fixing conspiracies faced a greater risk of prosecution and longer sentences than peripheral members of such conspiracies. Wayne E. Baker and Robert R. Faulkner, The Social Organization of Conspiracy: Illegal Networks in the Heavy Electrical Equipment Industry, 58 Am Sociological Rev 837, 854 (1993). Baker and Faulkner suggest that there are more possible witnesses who can cooperate with government prosecutors and testify against a supernode. Because a more peripheral member has fewer contacts within the conspiracy, there are fewer people who could testify against him. Id at 855 n 14. This seems plausible, but I also suspect that prosecutors view the supernodes of criminal conspiracies as more culpable than the peripheral members, so they may seek harsher sentences against these individuals. For another discussion of gossip and information flow issues unique to the organized crime setting, see Gambetta, 35 Archives Européennes de Sociologie at 220-22 (cited in note 8) (suggesting that mafiosi's obsession with secrecy impedes gossip).

[FN140]. See Daniel J. Brass, Being in the Right Place: A Structural Analysis of Individual Influence in an Organization, 29 Admin Sci Q 518, 520, 532 (1984) (explaining that individuals with a high level of network centrality have greater access to and control over resources leading to increased influence and a better chance of promotion); Ronald S. Burt, The Social Capital of Opinion Leaders, 566 Annals Am Acad Polit & Soc Sci 37, 50 (1999) (finding that supernodes "enjoy more positive job evaluations, faster promotions, and higher compensation"); Burt, 110 Am J Sociology at 354, 369-89 (cited in note 100) (adding that supernodes' ideas are evaluated favorably within an organizational hierarchy).

[FN141]. See Tardy and Hale, 65 Commun Monographs at 353 (cited in note 100).

[FN142]. See Hansen, 44 Admin Sci Q at 82, 105 (cited in note 120) (examining the transfer of information among department subunits in a company based on the type of information sought to be transmitted).

[FN143]. See National Commission on Terrorist Attacks upon the United States, Staff Statement No. 9: Law Enforcement, Counterterrorism, and Intelligence Collection in the United States Prior to 9/11, 3-5, 8-10 (July 26, 2004); Philip Shenon and David Johnston, Threats and Responses: The Inquiry, NY Times A17 (Oct 2, 2002) (reporting that the Department of Transportation and the Immigration and Naturalization Service might have caught two 9/11 hijackers before the attacks if their agencies had received information being shared elsewhere in the government). See also Roberta Wohlstetter, Pearl Harbor: Warning and Decision (Stanford 1962) (discussing the failure of American intelligence and defense officials to connect the dots

regarding the pending Japanese attack on Pearl Harbor).

[FN144]. Compare Amitai Aviram and Avishalom Tor, Overcoming Impediments to Information Sharing, 55 Ala L Rev 231 (2004) (discussing the ability of entities to achieve optimal levels of information sharing by examining competitors in network industries and finding that structural problems within such a network prevent the achievement of optimal information transfer).

[FN145]. The extent to which all of a community's members are directly linked to each other is referred to as the network's "density." So imagine a network with twenty people. If each of these twenty people knows all nineteen of their fellow community members, then the network can be described as having high density. If, on the other hand, each of these twenty people knows only three or four of the other community members, then the network can be described as having low density. Scott, Social Network Analysis at 32 (cited in note 119). For further discussion of various measures of network structure, see Rowley, 22 Acad Mgmt Rev at 896-900 (cited in note 93).

[FN146]. See Robert D. Putnam, Bowling Alone 319-25 (Simon & Schuster 2000) (describing the decline of social capital in the United States and identifying social capital's impact on education, safety, productivity, economic well-being, democracy, health, and happiness); Robert D. Putnam, Making Democracy Work: Civic Traditions in Modern Italy 152-62 (Princeton 1993) (comparing the wealth of social capital in northern Italy to the dearth of social capital in southern Italy and using the discrepancy to explain the south's relative impoverishment).

[FN147]. See, for example, Rowley, 22 Acad Mgmt Rev at 903 (cited in note 93) (characterizing a Colombian drug cartel's structure as centralized and low-density); Baker and Faulkner, 58 Am Sociological Rev at 854 (cited in note 139) (finding that "the need to conceal overrides the need for efficient coordination" in price-fixing conspiracies); Raymond A. Bauer and David B. Gleicher, Word-of-Mouth Communication in the Soviet Union, 17 Pub Op Q 297, 309-10 (1953) (discussing the Soviet Union's attitude toward unofficial, unsanctioned word-of-mouth networks, and the behavior of participants in these networks); Carol Brooks Gardner, Access Information: Public Lies and Private Peril, 35 Soc Probs 384, 386-94 (1988) (discussing women's reluctance to provide men with their correct names, addresses, and other identifying information in bars and other public spaces).

[FN148]. Other interesting and pertinent empirical work includes Laurel Richardson's study of sixty-five unmarried women who engaged in long-lasting adulterous relationships with married men. Richardson, 53 Am Sociological Rev 209 (cited in note 8). Perhaps surprisingly, Richardson found that none of the women ever publicly revealed their affairs, and that it never occurred to them to do so. Id at 213-14. Moreover, many of the women curtailed their conversations with third parties as a means of preventing themselves from "letting slip" information about their involvement with married men. Id at 216. Mie Kito's recent paper on the self-disclosure of personal information among friends and lovers is also interesting. Kito, 145 J Soc Psychology 127 (cited in note 8). Kito found that American students shared more information with friends and lovers than Japanese students did and also found more disclosure by lovers than by friends. Id at 135-37.

A third study, by Loretta Stalans and Karyl Kinsey, looked at the information that audited taxpayers spread through their social networks. Loretta J. Stalans and Karyl A. Kinsey, Self-Presentation and Legal Socialization in Society: Available Messages About Personal Tax Audits, 28 L & Socy Rev 859 (1994). Most people who were audited did talk to others about the experience, and nearly one in four people talked to more than eleven people about the audit. Id at 874. Auditees were most likely to talk to family members, then friends or neighbors, then coworkers. Id. Stalans and Kinsey concluded that, for the most part, "stories about personal experiences that spread through social networks often provide a fair representation of the audit process and serve to correct media portrayal of auditors as primarily rude, punitive, and unfair." Id at 889- 90. There were, however, some distortions: where auditees felt their integrity had been attacked during the audit process, or where they had been treated rudely but received favorable outcomes (that is, no increased tax liability), they were quite likely to discuss the incompetence of the auditors and the slowness of the process with members of their social networks. Id at 878-79, 890. As a result, messages reflecting rude treatment and auditor incompetence were overrepresented in network communications, while polite treatment and auditor competence were underrepresented.

[FN149]. See, for example, Doe v High-Tech Institute, 972 P2d 1060, 1070 (Colo App 1998) (finding that a diagnosis of HIV is "unquestionably very highly sensitive"); Kubach, 443 SE2d at 495; Urbaniak v Newton, 226 Cal App 3d 1128, 277 Cal Rptr 354, 360 (1991) (stating that HIV status "is clearly a 'private fact'").

[FN150]. See Gene A. Shelley, et al, Who Knows Your HIV Status? What HIV+ Patients and Their Network Members Know About Each Other, 17 Soc Networks 189, 211 (1995).

[FN151]. Id at 189.

[FN152]. Id at 203. At least seventeen facts about the interviewees were less widely known than their HIV status; approximately two facts were as widely known (health status and education level). Id.

[FN153]. Id.

[FN154]. Id at 203-04.

[FN155]. Id at 194, 204-13.

[FN156]. Id at 204.

[FN157]. See, for example, Leslie A. Baxter and Sally Widenmann, Revealing and Not Revealing the Status of Romantic Relationships to Social Networks, 10 J Soc & Personal Relationships 321, 331 (1993) (finding that individuals were much more likely to conceal their romantic involvements from their parents than from their friends).

[FN158]. There is evidence suggesting that closeted homosexuals consciously go to great lengths

to make sure that the parts of their social networks that know their sexual orientation do not intersect with the parts of their social networks that assume they are heterosexual. See Peter Davies, The Role of Disclosure in Coming Out Among Gay Men, in Ken Plummer, ed, Modern Homosexualities: Fragments of Lesbian and Gay Experience 75-81 (Routledge 1992).

[FN159]. See Shelley, et al, 17 Soc Networks at 200 (cited in note 150). See also William Craig Carter, Social Networks and Stigmatization 14-19, unpublished Ph.D. dissertation, Louisiana State University (2000) (available from UMI Dissertation Services, Microform No 9984316) (finding that HIV-positive people, along with other stigmatized individuals, have smaller social networks).

[FN160]. See Shelley, et al, 17 Soc Networks at 194, 200, 213-14 (cited in note 150).

[FN161]. Id at 213-14. See also text accompanying notes 128-29. Indeed, this correlation is not surprising, since so many of the HIV-positive individuals interviewed were poor. See id at 194 (calculating that the HIV-positive interviewees had an average income of $8,674, but noting that the study's methodology "probably eliminated access to some more affluent (interviewees)").

[FN162]. Stanley Schachter and Harvey Burdick, A Field Experiment on Rumor Transmission and Distortion, 50 J Abnormal & Soc Psychology 363 (1955). For a review of the Schachter and Burdick studies, as well as several other early studies of rumor transmission, see H. Taylor Buckner, A Theory of Rumor Transmission, 29 Pub Op Q 54, 65-70 (1965).

[FN163]. Schachter and Burdick, 50 J Abnormal & Soc Psychology at 365 (cited in note 162).

[FN164]. Id at 366.

[FN165]. Id at 368.

[FN166]. Id. See also Kimmel, Rumors and Rumor Control at 48 (cited in note 8).

[FN167]. Schachter and Burdick, 50 J Abnormal & Soc Psychology at 370 (cited in note 162).

[FN168]. Id at 369.

[FN169]. Id.

[FN170]. Id at 369-70. Related studies suggest that people would be more likely to spread negative rumors about a girl to groups of students who had negative impressions of her, and positive rumors to students who had favorable impressions of her. See E. Tory Higgins, Achieving "Shared Reality" in the Communication Game: A Social Action that Creates Meaning, 11 J Language & Soc Psychology 107, 113-17 (1992). See also Charles Stangor, Gretchen B. Sechrist, and John T. Yost, Changing Racial Beliefs by Providing Consensus Information, 27 Personality & Soc Psychology Bull 486, 493 (2001) (concluding that "personal endorsement of racial beliefs is affected by perceptions about the extent to which those beliefs

are shared by others"). There may have been a second-order effect here, too, since people generally believe rumors whose truth they want to believe. Buckner, 29 Pub Op Q at 57 (cited in note 162). See also Gambetta, 35 Archives Européennes de Sociologie at 211 (cited in note 8) ("A convincing story gets repeated because of its appeal not its truthfulness.").

[FN171]. Gina Lai and Odalia Wong, The Tie Effect on Information Dissemination: The Spread of a Commercial Rumor in Hong Kong, 24 Soc Networks 49 (2002). The run on baked goods that Lai and Wong describe is in many ways similar to standard runs on bank funds or currencies. See, for example, Barrie A. Wigmore, Was the Bank Holiday of 1933 Caused by a Run on the Dollar?, 47 J Econ Hist 739, 754 (1987). For another good study on rumor transmission in mass society, see generally J.N. Kapferer, A Mass Poisoning Rumor in Europe, 53 Pub Op Q 467 (1989) (researching the transmission of a persistent European rumor accusing ten well-known brands of food products of being toxic and/or carcinogenic).

[FN172]. Lai and Wong, 24 Soc Networks at 54 (cited in note 171).

[FN173]. Id at 53.

[FN174]. Id at 54.

[FN175]. Id (internal citations omitted).

[FN176]. Id at 56-58.

[FN177]. More than 60 percent of respondents heard the news from television sources, versus approximately 42 percent who heard it from personal ties. Television was the exclusive information source for roughly 24 percent of respondents, whereas word of mouth was the exclusive information source for 16 percent of respondents. Id at 58, 59 table 3.

[FN178]. Id at 59. In another study involving a rumor that a common food additive was toxic, slightly more than half the people who heard the rumor reported passing it along to one or more people. Kapferer, 53 Pub Op Q at 476 table 5 (cited in note 171). The most common response was discussing the rumor with other persons or showing others the leaflet on which the rumor circulated. Id.

[FN179]. Although Schachter and Burdick's rumor did spread to almost all of the girls at the school, the authors noted that this result was anomalous, driven to a substantial extent by the mysterious, unprecedented, and highly salient removal of four girls from classes for unspecified reasons. Schachter and Burdick, 50 J Abnormal & Soc Psychology at 365, 368 (cited in note 162). Schachter and Burdick noted that in the vast majority of previous experimental studies of rumor transmission, the planted rumor barely spread through the studied population. Id at 363-64.

[FN180]. See Lai and Wong, 24 Soc Networks at 62 (cited in note 171). See also Kimmel, Rumors and Rumor Control at 94 (cited in note 8); Buckner, 29 Pub Op Q at 64-65 (cited in note

162).

[FN181]. Lai and Wong, 24 Soc Networks at 62 (cited in note 171).

[FN182]. Id at 62-63 (finding that 71.4 percent of those spreading the rumor and 65 percent of those being contacted about the rumor were female).

[FN183]. Id at 67. This data suggests that a relatively small number of supernodes, mostly in workplaces, passed along the information to very large numbers of people. Thus, it appears that the communications network at issue here was scale-free.

[FN184]. Other social network studies have suggested that in times of crisis, or extreme need, people are much more likely to rely on strong ties, especially kinship ties, than weak ties. Yossi Shavit, Claude S. Fischer, and Yael Koresh, Kin and Nonkin Under Collective Threat: Israeli Networks During the Gulf War, 72 Soc Forces 1197, 1208-09 (1994).

[FN185]. Lai and Wong, 24 Soc Networks at 68 (cited in note 171).

[FN186]. See id at 54. See also Kapferer, 53 Pub Op Q at 478 (cited in note 171) (noting that tying a rumor to a credible source increases the likelihood of its transmission); Buckner, 29 Pub Op Q at 56 (cited in note 162) (same).

[FN187]. Kimmel, Rumors and Rumor Control at 56 (cited in note 8); Ibarra and Andrews, 38 Admin Sci Q at 282 (cited in note 111).

[FN188]. Watts, Six Degrees at 299-300 (cited in note 92). Diego Gambetta echoes this point in his discussion of gossip:

> If (an object of gossip) were unknown gossip would be meaningless. This requirement has been widely acknowledged. "Known," however, should be taken to mean that (the object) is relevant in some respect to both the transmitter and the receiver of gossip. They may not know (the object) personally, but know, say, that they will soon meet (him). We are at times interested in the lives of persons we will never know personally, but only in so far as they are friends of friends of friends. The more remote the link with (the object), the more speculative gossip's motives, which ultimately pale into a near-universal curiosity for human quirks.

Gambetta, 35 Archives Européennes de Sociologie at 205 (cited in note 8) (internal citations omitted). This trend is a good thing, to the extent that we are concerned about the accuracy of gossip and other forms of accurate information. With each retelling of a story to someone an additional degree of separation from the subject, the story becomes increasingly inaccurate, portraying the subject in an increasingly extreme manner. See Thomas Gilovich, Secondhand Information and Social Judgment, 23 J Exp Soc Psychology 59, 69-74 (1987) (concluding that secondhand impressions are generally more extreme than firsthand impressions, in either a positive or negative direction depending on the positive or negative nature of the account).

[FN189]. Friendster is an internet-based program that produces maps of its members' social networks, facilitating networking among members. It has proved particularly popular as a dating

network, with individuals examining the profiles of their friends' friends for attractive matches. See Friendster, online at http://www.friendster.com (visited May 16, 2005). Friendster's software interface seems to invite efforts to map the social networks of one's friends and expand the size of one's own social network by forging direct links with friends' friends.

[FN190]. See Allport and Postman, 10 Pub Op Q at 502-05, 512-14 (cited in note 139). See also text accompanying notes 165-66, 169-70.

[FN191]. Id at 505. For a terrific study of how pertinent information gets dropped from a story as it is sequentially retold by several individuals, see Anthony Lyons and Yoshihisa Kashima, The Reproduction of Culture: Communication Processes Tend to Maintain Cultural Stereotypes, 19 Soc Cognition 372 (2001). Lyons and Kashima found that aspects of a story that reinforced existing stereotypes about athletes were more easily recalled, and hence more likely to be repeated as the story passed through a chain of people, than stereotype-incompatible information, leading to convergence between the contents of the story and the stereotype upon serial retelling. Id at 385- 86. See also Kimmel, Rumors and Rumor Control at 91-93 (cited in note 8) (describing more generally how rumors change when they are transmitted through multiple links in a social network); Labianca, Brass, and Gray, 41 Acad Mgmt J at 64 (cited in note 129) (suggesting that rumors tend to get exaggerated when they circulate in social networks).

[FN192]. See Kimmel, Rumors and Rumor Control at 205 (cited in note 8); Uwe Matzat, Academic Communication and Internet Discussion Groups: Transfer of Information or Creation of Social Contacts?, 26 Soc Networks 221, 245-48 (2004) (analyzing the role of internet discussion groups in informal academic communication and concluding that the weak contacts made in these groups are useful for the reception of new research papers); Joel R. Reidenberg and Françoise Gamet-Pol, The Fundamental Role of Privacy and Confidence in the Network, 30 Wake Forest L Rev 105, 119-20 (1995) (discussing the increase in information transmission and the expansion of networks stemming from technological innovation).

[FN193]. See, for example, Jonathan D. Glater, Legal Research? Get Me Sushi, with Footnotes, NY Times A1 (Oct 22, 2003) (quoting from a now infamous research memo about the relative merits of Manhattan sushi restaurants, prepared at the direction of an attorney at Paul, Weiss, Rifkind, Wharton & Garrison LLP); The National Debate, Paul Kelly Tripplehorn, Jr., Your Fifteen Minutes Is Up (May 16, 2003), online at http://www.thenationaldebate.com/blogger/articles/HutchisonInternEmail.htm (visited May 16, 2005) (describing reactions to an infamous breakup email sent from one Senate intern to another, and subsequently forwarded to thousands of people); Shaun Waterman, Analysis: Click-Forward Morality, United Press International (Mar 3, 2003), online at http://www.upi.com/view.cfm?StoryID=20030303-023031- 9883r (visited May 16, 2005) (describing an off-the-record email that a journalist, Laurie Garrett, sent to a dozen friends, which was subsequently forwarded around the world and dissected on various blogs).

[FN194]. See Ian Ith, Local Porn Business Tries to Stay Under Wraps; Hilton Tape Bringing Unwanted Attention, Seattle Times B1 (Nov 20, 2003) (describing the dissemination of an amateur sex tape featuring heiress Paris Hilton). Compare Lovisi v Slayton, 539 F2d 349, 350-51

(4th Cir 1976) (involving a sodomy prosecution of participants in a ménage a trois, where the sex act came to light after the daughter of a participant discovered Polaroid photographs depicting her mother's sex acts and brought them into school).

[FN195]. This is different from being forwarded twice, which is more common. By two degrees of separation, I mean that the recipient of a forwarded email knows neither the recipient, the sender, nor anyone who knows the recipient or sender of the original email, nor anyone who knows someone who knows the recipient or sender of the original email.

[FN196]. When information overload occurs, interesting information might not be identified as such. As a result, information that would otherwise be passed along from one node to another never gets transmitted and remains obscure. On information overload, see Kimmel, Rumors and Rumor Control at 213 (cited in note 8).

[FN197]. Prior to the development of modern communications technologies, individuals wishing to have a "private" conversation might have met in a private space, like a home, or a deserted warehouse. Alternatively, they might have gone to a crowded pub, where the chatter of fellow patrons created enough of a din to preclude effective eavesdropping.

[FN198]. See Diane Leenheer Zimmerman, Secrets and Secretiveness: Patterns in the Fabric of the Law?, 78 Cal L Rev 515, 531 (1990) ("(B)reach of confidence ( ) clearly has teeth in that it affects how cases are decided. When information is obtained through a confidential relationship, courts allow disclosure only under extraordinary circumstances.").

[FN199]. The National Enquirer has reported on celebrity participation in Alcoholics Anonymous meetings in the past. See, for example, Lara Flynn Boyle in Alcoholics Anonymous, Natl Enquirer (Mar 20, 2003).

[FN200]. See Bree Schonbrun, Comment, "In the Light of Reason and Experience": The Scope of Evidentiary Privilege in the Self-Help Setting: Alcoholics Anonymous Examined, 25 Cardozo L Rev 1203, 1227 n 124, 1237-38 (2004). Nor are communications within twelve-step groups privileged. See, for example, Cox v Miller, 296 F3d 89 (2d Cir 2002) (holding that defendant's communications to members of an Alcoholics Anonymous group are not privileged under New York state law).

[FN201]. See Cox, 296 F3d at 111-12; Schonbrun, Comment, 25 Cardozo L Rev at 1227 n 124 (cited in note 200).

[FN202]. H. Russell Bernard, Peter Killworth, and Lee Sailer, Summary of Research on Informant Accuracy in Network Data, and on the Reverse Small World Problem, 4 Connections: Bull Intl Network for Soc Network Analysis 11, 18 (1977).

[FN203]. Recall that the foundational privacy tort--public disclosure of private facts--has four elements: the defendant must (1) give publicity (2) to a matter concerning the private life of another (3) that is not of legitimate concern to the public (that is, it is non-newsworthy), and the

disclosure must be (4) highly offensive to a reasonable person. Restatement (Second) of Torts § 652D. Privacy law thus disaggregates the question of "privacy" from the question of whether the information is "of legitimate concern to the public." But as the foregoing analysis suggests, the privacy of facts and the public's interest in those facts are inherently connected. Information that has been disclosed to at least one person is more likely to be disseminated further if members of the public will be interested in the information. See text accompanying notes 165-166 and 180-81. If I tell you that I had a bowl of cereal for breakfast this morning, I can expect that this information will not be disseminated further because it is so trivial that no normal person would repeat it to others. If, on the other hand, I tell you that I watched Peter Singer eat bacon for breakfast this morning, that information would be more likely to transmit itself through a social network, because it would reflect the possible hypocrisy of a famous vegetarian and animal rights advocate.

There is a dispute among the courts with respect to the meaning of the "not of legitimate concern to the public" prong of the public disclosure tort. Is this element descriptive? Or is it normative? Are courts asking what the public is likely to find interesting? Or are courts asking what information the public has the right to know? See Solove and Rotenberg, Information Privacy Law at 107-10 (cited in note 89); Geoff Dendy, Note, The Newsworthiness Defense to the Public Disclosure Tort, 85 Ky L J 147, 157-64 (1996-1997) (examining existing methods in academic literature and case law used to determine the newsworthiness of private information). The privacy case law splits on this question, with some courts deferring to news media defendants' judgments about what information is newsworthy, see, for example, Neff v Time, Inc, 406 F Supp 858, 859, 862 (WD Pa 1976) (upholding publication of a photograph of a football fan with his "fly" open as protected by the Constitution, even though the picture was taken without the fan's express consent), and others holding that information is non-newsworthy, even though tens of thousands of individuals are willing to pay substantial sums of money to obtain the information, see, for example, Michaels v Internet Entertainment Group, 5 F Supp 2d 823, 828-30, 842 (CD Cal 1998) (issuing a preliminary injunction prohibiting the dissemination of a sex tape in order to prevent a violation of the plaintiff's right of privacy despite large public interest in the tape). In my view, courts should ask both questions. They should ask whether the public is interested in this information as part of the determination of whether the plaintiff had a reasonable expectation that the information would remain private, and they should ask whether the public ought to be entitled to see the information under the "legitimate concern to the public" prong of the public disclosure tort.

[FN204]. This discussion applies to information that has been transmitted through face-to-face interactions or telephone conversations. When information is communicated via the internet or other archived communications media, new technologies like Google might make aggregation of scattered information a relatively simple matter.

[FN205]. But not all. There are privacy cases in which the source of the information about an individual is a third party, not the plaintiff. Indeed, in some instances, third parties such as credit reporting agencies, health care providers, employers, or educators may have access to information about the plaintiff that he himself does not have. For example, an employer might improperly disclose to a third party confidential employment evaluations that the plaintiff has never seen.

[FN206]. Compare Runge and Archer, 44 Soc Psychology Q at 360 (cited in note 8) (noting that people assume that individuals are somewhat less likely to disclose private negative information about themselves than private positive information about themselves).

[FN207]. If that were the test, then facts such as the identity of the House minority leader or the capital of Canada would be deemed private with respect to the United States population.

[FN208]. Peter D. Killworth, et al, Estimating the Size of Personal Networks, 12 Soc Networks 289, 310 (1990) (offering the margin of error on this estimate at (+/-) 400). See also Peter D. Killworth, et al, Two Interpretations of Reports of Subpopulation Sizes, 25 Soc Networks 141 (2003).

[FN209]. Most states hold that public disclosure of private facts requires the defendant to give widespread publicity to the facts in question. In most states, and under the Restatement, disclosure to a small group is not generally tortious, even if that small group has a special relationship with the plaintiff. A few states disagree. See Solove and Rotenberg, Information Privacy Law at 98-101 (cited in note 89).

[FN210]. This analysis should apply to the plaintiff's conduct taken as a whole, not to a specific instance of disclosure. Thus, assume that there is a 1 percent chance of widespread dissemination every time Bill tells someone about his extramarital affair with Monica. If Bill tells only one friend about the affair, he might well have a reasonable expectation of privacy in the information. But if Bill tells one hundred friends about the affair, he should not expect that the information will remain private.

[FN211]. 85 Cal Rptr 2d at 912. For a full discussion of Sanders, see text accompanying notes 47-52.

[FN212]. For interesting discussions of these issues involving undercover journalists, compare Dietemann v Time, Inc, 449 F2d 245, 249 (9th Cir 1971) (recognizing an expectation of privacy), with Desnick v ABC, 44 F3d 1345, 1353 (7th Cir 1995) (refusing to recognize an expectation of privacy).
Social networks analysis may have something to contribute to this analysis. We are generally better able to determine whether someone is a supernode or peripheral if he is closely tied to us than if he is weakly tied to us. Bondonio, 20 Soc Networks at 301 (cited in note 100). One could argue, therefore, that if the discloser and disclosee are closely tied, the disclosee's actual status as a supernode or peripheral ought to be determinative. If, by contrast, they are weakly tied, and if society wants to encourage communication between weakly tied individuals, then the discloser was entitled to rely on the disclosee's statement that he was an ordinary telephone psychic (likely to be a peripheral) and not a journalist (a supernode by definition).

[FN213]. Sanders, 85 Cal Rptr 2d at 912.

[FN214]. See Jane Kirtley, Cracking Down on Covert Media Taping, Am Journalism Rev (Sept

1999), online at http://www.ajr.org/article.asp? id=3198 (visited May 16, 2005).

[FN215]. ABC broadcast the information only because it lent color to a more substantive news story about scams within the telephone psychic industry. ABC never would have broadcast this clip as the basis for a stand-alone news piece, especially not during February, when the piece aired. (February is a Nielsen sweeps month.)

[FN216]. The primary California case delineating the limits of limited privacy seems to have been rightly decided under networks theory, too. In Sipple v Chronicle Publishing Co, 154 Cal App 3d 1040, 201 Cal Rptr 665 (1984), discussed in note 53, the court implicitly held that once hundreds of homosexuals in several cities knew of Sipple's sexual orientation, and once Sipple's heroic actions to thwart the attempt on President Ford's life thrust him into the national limelight, then it was inevitable that Sipple's orientation would spread from the social network of homosexuals to the social network of heterosexuals. See id at 668-70. This analysis is convincing, and we might further expect that the "mainstreaming" of homosexuality since 1984 has increased the number and intensity of links between homosexuals and heterosexuals. For empirical analysis of network ties between gays and straights, see generally William Edward Wagner, III, Identity Management and the Social Networks of Gay Professional Men, unpublished Ph.D. dissertation, University of Illinois at Chicago (2002) (available from UMI Dissertation Services, Microform No 3074178).

[FN217]. 443 SE2d at 494. For a full discussion of Kubach, see text accompanying notes 65-70.

[FN218]. Pub L No 104-91, 110 Stat 1936 (1996), codified at 42 USC § 201 (1996) (establishing administrative requirements, including security and privacy provisions, for health care services). The Act is better known by its acronym, HIPAA.

[FN219]. See text accompanying notes 157-58.

[FN220]. The same may be true of celebrities. See Barbara Liss, The Public and Private Rock: Two Views of the Late Star, Houston Chron 15 (July 13, 1986) (suggesting that Rock Hudson's limited disclosure of his previously private HIV status just two months before his death was not intended for the public at large).

[FN221]. See Kubach, 443 SE2d at 494.

[FN222]. Id at 493. For a full discussion of Y.G., see text accompanying notes 58-64.

[FN223]. 504 NW2d at 718. For a full discussion of Duran, see text accompanying notes 78-85.

[FN224]. Duran's disclosure to her neighbors that she had been threatened by drug dealers, however, may be a different story. Particularly given the size of the bounty at issue, one wonders whether the dissemination of Duran's identity (if not to the public at large, then at least to Escobar's cartel) became rather probable if she shared with her neighbors a detailed account of her tribulations. Unfortunately, the court's opinion is quite vague with respect to the details of

these disclosures.

[FN225]. 255 NE 2d at 767. For a full discussion of Nader, see text accompanying notes 71-77.

[FN226]. Statements that would be unremarkable if uttered by a private figure can be remarkable if uttered by a public figure. An office worker's use of an expletive is totally unremarkable, but the vice president's use of the same word is front-page news in the paper of record. See Richard W. Stevenson, Cheney Owns Up to Profanity Incident and Says He "Felt Better Afterwards," NY Times A1 (June 26, 2004).

[FN227]. See 578 NE2d 901. For a full discussion of Fisher, see text accompanying notes 86-89.

[FN228]. 978 P2d at 70-71.

[FN229]. 443 SE2d at 495. Although this Article has limited its application of social network theory to tort liability, Ariel Porat has pointed out to me the possibility that the social network approach may be used to calculate optimal damages as well. If actual damages in privacy suits result in overdeterrence or underdeterrence, the law might calculate damages based on probabilistic analysis instead.

[FN230]. In Y.G., the judge remanded for a jury trial, but Shepardizing the case reveals nothing about what happened on remand, and the local media stopped covering the story after the appellate court published its opinion. See Andre Jackson, "Newsworthy" or No One's Business? 2 in Fertility Program Sue over TV; Publicity, St. Louis Post-Dispatch 1B (July 23, 1990) (reporting reactions to the appellate court decision).

[FN231].
266 Ga App 753, 598 SE2d 25 (2004).

[FN232]. Id at 28-29.

[FN233]. The facts of the case suggest breach of contract as an alternative cause of action to the plaintiff's public disclosure claim. Hairston argued that the defendant had breached its contract with him. It appears that the trial court granted the defendant a directed verdict on Hairston's claim that the defendant had breached an oral contract, but submitted the question of whether the defendant had breached its written contract to the jury. See id at 28. The appellate court did not consider issues relating to either breach of contract claim on appeal.

[FN234]. Id at 30 (finding similarities between Hairston's claims and those in Kubach, including explicit agreements between the plaintiff and defendant and the fact that the defendant's disclosure "went far beyond the scope of any prior disclosure by plaintiff").

[FN235]. Even if juries are primarily responsible for weighing social network theory evidence in tort cases, judges will remain involved in evaluating the social science through their roles as evidentiary gatekeepers for expert testimony. See Kumho Tire Co v Carmichael, 526 US 137,

148 (1999).
I have found a few other cases in which the courts have stretched the notion of limited privacy too far, most notably in Veilleux v NBC, Inc, 8 F Supp 2d 23 (D Me 1998), revd in part, vacd in part, remd for further proceedings, 206 F3d 92 (1st Cir 2000); Green v Chicago Tribune Co, 286 Ill App 3d 1, 675 NE2d 249 (1996); and Virgil v Time, Inc, 527 F2d 1122 (9th Cir 1975). In all of these cases, courts concluded that the subject's willingness to share information with a journalist, on the record, did not indicate a willingness to share the information with the journalist's readers. See Veilleux, 8 F Supp 2d at 40; Green, 675 NE2d at 252-53; Virgil, 527 F2d at 1127. Notably, Green relied heavily on Virgil, and Veilleux relied on both Virgil and Green. Alabama decisions relying on Nader and the Eighth Circuit's opinion in Fletcher v Price Chopper Foods of Trumann, Inc, 220 F3d 871 (8th Cir 2000), made the same mistake, but in the opposite direction, finding that one's willingness to share previously private information with friends or coworkers necessarily indicated a willingness to share information with the general public. See notes 77, 89.

[FN236]. For a report on the results of national polls dealing with privacy matters and how responses have varied over time, see Katz and Tassone, 54 Pub Op Q at 133 (cited in note 43).

[FN237]. Nor can they be translated into bullet points for readers of this Article. To repeat, social networks analysis is often context-dependent in ways that defy easy characterization or simplistic modeling. The "rules" of social network theory (for example, the strength of weak ties, the tendency for social networks to be scale-free, the tendency of information to degrade as it passes through a social network) necessarily operate at a medium to high level of generality.

[FN238]. On hindsight bias, see Christine Jolls, Cass R. Sunstein, and Richard Thaler, A Behavioral Approach to Law and Economics, 50 Stan L Rev 1471, 1523-31 (1998).

[FN239]. Slobogin and Schumacher are less positive in their assessment of the Supreme Court's Fourth Amendment jurisprudence, as they note several instances in which the Court's reasonable expectations of privacy differ substantially from survey respondents. Slobogin and Schumacher, 42 Duke L J at 740-42 (cited in note 37). This is interesting, since the Court has eschewed formal survey data in the Fourth Amendment context, just as the courts have ignored social networks analysis in the privacy tort setting.

[FN240]. Or maybe not. Obvious differences include judges' access to the fruits of the discovery process and the adversarial system of justice. Judicial detachment may also help them see social networks more accurately than people who are embedded in them. Indeed, social networks research suggests that individuals tend to overstate their own importance in a particular social network and overestimate the degree of connectedness among their own friends. See Kumbasar, Romney, and Batchelder, 100 Am J of Sociology at 499 (cited in note 116).

[FN241]. As best I can tell, however, no one in sociology is pursuing such an agenda. The closest related research agenda appears to be that of Tiziana Casciaro. Casciaro is studying individuals' perceptions of the social networks that surround them. She has found that location within a social network and personality traits such as positive affect alter the accuracy of people's

perceptions. See Tiziana Casciaro, Kathleen M. Carley, and David Krackhardt, Positive Affectivity and Accuracy in Social Network Perception, 23 Motivation & Emotion 285, 300-02 (1999); Tiziana Casciaro, Seeing Things Clearly: Social Structure, Personality, and Accuracy in Social Network Perception, 20 Soc Networks 331, 345-47 (1998).

[FN242]. We do know that people differ in their ability to accurately map the information flow through their own social networks. See Bondonio, 20 Soc Networks at 325-26 (cited in note 100); Casciaro, Carley, and Krackhardt, 23 Motivation & Emotion at 292 (cited in note 241). We might suppose on the basis of this data that people's ability to intuit social networks theory insights varies as well. For a general discussion of the gap between individuals' perceptions and realities in the context of social networks, see David Krackhardt, Cognitive Social Structures, 9 Soc Networks 109 (1987).

[FN243]. See Kumbasar, Romney, and Batchelder, 100 Am J Sociology at 499 (cited in note 116).

[FN244]. By "too little" I mean, relative to the parties' actual subjective expectations of privacy.

[FN245]. See, for example, Smith v Maryland, 442 US 735, 743-44 (1979) ("This Court consistently has held that a person has no legitimate expectation of privacy in information he voluntarily turns over to third parties."); United States v Miller, 425 US 435, 443 (1976):
This Court has held repeatedly that the Fourth Amendment does not prohibit the obtaining of information revealed to a third party and conveyed by him to Government authorities, even if the information is revealed on the assumption that it will be used only for a limited purpose and the confidence placed in the third party will not be betrayed.
Contrast Burrows v Superior Court, 13 Cal 3d 238, 118 Cal Rptr 166, 170-71 (1974) (embracing a notion of limited privacy, with respect to bank records, under the California Constitution).
Kyllo v United States, 533 US 27 (2001), seems somewhat receptive to the probabilistic approach that I have advocated herein. In Kyllo the Court held that using sense-enhancing technology to obtain information about the interior of a home is a search for Fourth Amendment purposes, "at least where . . . the technology in question is not in general public use." Id at 34. This "general public use" language suggests that, to some degree, obscurity is privacy, and people have a reasonable expectation of privacy against facts that an individual might conceivably, but probably won't, discover about them.

[FN246]. See generally Whalen v Roe, 429 US 589, 598-604 (1977) (concluding that the disclosure of information to New York government officials about prescription medication use did not violate the plaintiffs' constitutional right to information privacy, since such information was already routinely shared with health care providers and insurance industry employees); Doe v Borough of Barrington, 729 F Supp 376, 382-85 (D NJ 1990) (recognizing a constitutional right of information privacy claim where an individual disclosed his HIV status to police officers in order to prevent them from coming into contact with his open skin sores, and the officers later disclosed the man's HIV status to his neighbors).

[FN247]. See, for example, United States Department of Justice v Reporters Committee for

Freedom of the Press, 489 US 749, 780 (1989) (finding that an FBI rap sheet was private within the meaning of the Freedom of Information Act's privacy exception).

[FN248]. See, for example, United States v Evans, 113 F3d 1457, 1462 (7th Cir 1997). The attorney-client privilege is defined by a client's reasonable expectation of privacy and extends only to communications by a client to an attorney that were intended to be confidential:
Thus as a general matter, the attorney-client privilege will not shield from disclosure statements made by a client to his or her attorney in the presence of a third party who is not an agent of either the client or attorney. . . . (T)he presence of ( ) a third party defeats the privilege even though the client may harbor a desire for confidentiality because the privilege "goes no further than is necessary to secure the client's subjective freedom of consultation."
Id (internal citations omitted).

[FN249]. See, for example, W.L. Gore & Associates, Inc v Garlock, Inc, 721 F2d 1540, 1548-49 (Fed Cir 1983) (defining "secret" prior use); Rosaire v Baroid Sales Division, National Lead Co, 218 F2d 72 (5th Cir 1955) (holding that, because an invention is unpatentable if it was used by others before the patentee's invention, a prior, though obscure, use of appellant's invention deprived it of patentability).

[FN250]. See, for example, Rockwell Graphic Systems, Inc v DEV Industries, Inc, 925 F2d 174, 177, 180 (7th Cir 1991) (holding that while the plaintiff "could have done more" to protect the confidentiality of its trade secrets, "perfect security is not optimum security," and so the plaintiff was entitled to a jury trial on misappropriation of trade secrets despite having shared the secret with numerous vendors); Wilkes v Pioneer American Insurance Co, 383 F Supp 1135, 1141 (D SC 1974) (holding that absolute secrecy is not required in order for a trade secret to be protected, but a "substantial element of secrecy must exist").

[FN251]. A criminal defendant might say that he was perfectly willing to share information about a criminal conspiracy with his co-conspirators, but had a reasonable expectation that the information would not be disseminated outside the group of co-conspirators. When the communication at issue concerns violations of criminal laws, there may be strong justifications for holding that lessened expectations of privacy attach or deeming such expectations altogether irrelevant. Compare discussion of Fisher in text accompanying note 227.

[FN252]. See note 22 and accompanying text.

[FN253]. The idea here is that landlords who lock out tenants improperly will be sanctioned by the marketplace if gossip functions well. Would-be tenants would pay a premium to rent from landlords who have a reputation for behaving reasonably. If, on the other hand, tenant gossip networks function poorly, then the fear of a market sanction may inadequately deter landlords from engaging in opportunistic or illegal behavior. For recent efforts to enhance the efficiency of the tenant gossip network, see http:// www.apartmentratings.com (visited May 16, 2005) and http:// apartmentreviews.net (visited May 16, 2005). For more on landlord self-help, see Berg v Wiley, 264 NW2d 145 (Minn 1978).

[FN254]. With a perfectly efficient social network, judicial scoldings of attorneys in open court, combined with observations of misconduct by opposing counsel, would deter adequately those attorneys who hoped to win clients in the future.

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