

Integrating Privacy, Personal Disclosure, and Social Exchange Theory: An Experimental Test

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Abstract

Information privacy researchers have drawn on several theoretical frameworks in their empirical work examining personal disclosure in digital environments, primarily: articulating privacy as control; privacy in interpersonal dynamics; and privacy as contextual integrity. A common element missing from this literature is an accounting of *social structure*—a consideration of how structural factors affect one’s decision to disclose in relationships between individuals and the companies to whom they share their personal information. This paper fills a gap in the privacy literature by using a relational framework—social exchange theory (SET)—to explore how structural factors affect individuals’ decisions to disclose their personal information to companies. Using the exchange of personal information for access to a service as the basis for analysis, I use the predictive aspects of SET to understand the role relational factors such as power, fairness, trust, and benefits play in affecting personal disclosure decisions. I examine the ways in which *the relationship between the discloser and the recipient*, and in particular *the distribution of power within the relationship*, affects individuals’ decisions to disclose by presenting the results of a controlled survey experiment designed to test the effect of manipulating an individual’s negotative power both on one’s propensity to disclose.

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**Introduction**

Maintaining the privacy of one's personal information—one's choice of when to disclose it and to whom, how one maintains control over it, and the risks of disclosure—is one of the most important social issues of the internet era. Whether the risks are posed by hackers possessing one's health records, a credit agency exposing the details of one's financial life, or the collection of one's personal data by third parties, few (if any) internet users are free from persistent online information collection. A 2015 Pew Internet survey found that only nine percent of the U.S. public felt they had "a lot of control over how much information is collected about them and how it is used." (Madden & Rainie, 2015)

Over the past decade, information privacy researchers have drawn on several theoretical frameworks in their empirical work examining personal disclosure in digital environments, primarily: articulating privacy as control, as theorized by political scientist Alan Westin (Westin, 1967); a focus on the interpersonal dynamics of personal disclosure, drawing upon the work of social psychologists Irwin Altman and Sandra Petronio (Altman, 1975) (Petronio, 2002); and privacy as a matter of preserving contextual integrity, as articulated by Helen Nissenbaum. (Nissenbaum, 2009) While a substantial body of research has emerged that draws from these three theoretical orientations, a common element missing from this literature is an accounting of *social structure*. Meaning, that as researchers consider the various factors that affect personal disclosure, they often do not consider how structural factors affect one's decision to disclose in relationships between individuals and the companies to whom they share their personal information. One of the specific relational aspects that is overlooked but likely has a considerable impact on personal disclosure is the influence of structural power—the extent to which each actor in a relationship can control the terms under which personal information is exchanged, the options available to each actor to obtain similar resources elsewhere, who benefits more from the exchange, and ultimately the fairness of the exchange to each actor.

This paper seeks to fill a gap in the privacy literature by using a relational

framework—social exchange theory (SET)—to explore how structural factors affect individuals’ decisions to disclose their personal information to companies. Using the exchange of personal information for access to a service as the basis for analysis, I use the predictive aspects of SET to understand the role relational factors such as power, fairness, trust, and benefits play in affecting personal disclosure decisions. By incorporating SET’s relational framework into an empirical analysis of information privacy, I seek to move beyond a focus on individual cognition, heuristics, or the design of user interfaces as primary factors in understanding personal disclosure. I use SET as the framework for this inquiry because the transfer of personal information in exchange for a service is an exchange between social actors, and SET provides an empirically tested scaffolding for exploring key features of these relationships and their impact on normative aspects of exchange (i.e., individuals’ perceptions of trust, fairness, and benefits) that affect disclosure choices. Incorporating these dimensions into analyses of relationship-based disclosure helps to explain individual decisions that appear paradoxical yet are predictable when examining them through a relational analytic framework. Further, it illuminates the role of structural power on individual decision-making, which I believe is both significant and under-appreciated in extant research on privacy and disclosure. I examine the ways in which *the relationship between the discloser and the recipient*, and in particular *the distribution of power within it*, affects individuals’ decisions to disclose by presenting the results of a controlled survey experiment designed to test the effect of manipulating an individual’s negotiative power both on one’s propensity to disclose as well as key aspects of the relational framework.

### **Privacy and Institutional Disclosure**

This analysis focuses a specific form of personal disclosure: the relationship between individuals and the companies, organizations, and platforms—institutions—to whom they disclose their personal information. Within the institutional disclosure context, privacy is typically operationalized as one’s ability to practice *selective disclosure*—the ability of an individual to choose to whom she wishes to disclose, what, when, and why, following privacy

theorist Alan Westin's conception of privacy as control over one's personal information. However, not all privacy violations result from a lack of control, and nor do they necessarily result in individualized harm. Thus, philosopher Helen Nissenbaum's theory of contextual integrity (CI) offers a fuller accounting of privacy in these types relationships (and interpersonal relationships as well). Nissenbaum defines information privacy as based on contextually dependent informational norms, with violations of privacy resulting from normative violations of information flows.(Nissenbaum, 2009) When information flows respect contextual norms, individual (and arguably, societal) information privacy is maintained. This study uses CI to define information privacy and to explain violations of privacy as violations of context.

### **Social Exchange Theory—A Brief Overview**

Social Exchange Theory (SET) is in actuality a set of theories focusing “on the benefits people obtain from, and contribute to, social interaction.”(Molm & Cook, 1995) The main assumptions (or scope conditions) of social exchange theory are that:

1. Behavior is motivated by the desire to increase gain and to avoid loss;
2. Exchange relations develop in structures of mutual dependence (that there some reason to engage in exchange to obtain resources of value);
3. Actors engage in recurrent, mutually contingent exchanges with specific partners over time;
4. Valued outcomes obey the psychological principle of satiation. (Molm, 1997); (Molm & Cook, 1995)

Working from these initial assumptions, researchers use SET to make predictions about the behavior of actors within exchange relations, as well as the effects of different factors on exchange outcomes, that meet these four conditions.

Social exchange theory emerged principally from the early writings of sociologists George C. Homans , Phillip Blau and Richard Emerson. (Homans, 1961) ;(Blau, 1964); (R. M. Emerson, 1962); (R. M. Emerson, 1972); R. Emerson (1972) These theorists were interested primarily in

the micro-level social processes that occur between individuals or small groups, and applied microeconomic theory to understand them. As Emerson describes it, “the exchange approach in sociology might be described, for simplicity, as the economic analysis of non-economic social situations.” (R. M. Emerson, 1976) As such, social exchange theory shares many of the same core assumptions as microeconomics, but as Emerson elaborates, “neoclassical economic theory is organized so heavily around rational individual decision making in a perfectly competitive market that its applicability to tradition-bound or normatively regulated behavior outside of competitive markets is placed in doubt, yet goods are produced and distributed through exchange.”

(R. M. Emerson, 1976) Molm and Cook elaborate on this point further: “whereas classical microeconomic theory typically assumed the absence of long-term relations between exchange partners and the independence of sequential exchange transactions, social exchange theory took as its subject matter and its smallest unit of analysis the more or less enduring relations that form between specific partners.” (Molm & Cook, 1995)

### **Forms of Exchange**

Working from these four core assumptions there are several different forms that exchanges can take. The first distinction Molm and Cook make is between direct exchange and indirect exchange. In direct exchanges, two actors exchange with one another. In an indirect exchange, three or more actors are linked in an exchange relation, but the benefits from the exchange are not directly reciprocated; for example, Actor A may make an exchange with Actor B that indirectly benefits Actor C. Within the classifications of direct and indirect exchange several sub-forms have been identified, based on characteristics such as reciprocity (reciprocal exchange), negotiation (negotiated exchange), and contributions to groups (generalized exchange, between three or more actors), with different outcomes based on the type of exchange. Cheshire *et al* argue that the dominant factor contributing to this differentiation is the “underlying difference in types of risk and levels of uncertainty involved in each mode of exchange.” (Cheshire, Gerbasi, & Cook, 2010) Risk and uncertainty are core features of exchange theory, as they required for the development of

trust in social exchange. In a binding exchange, *assurance structures* exist to reduce uncertainty and to provide a form of enforcement that the terms of the exchange will be upheld by a third party or external structure.

Trust plays a central role in exchange relationships. Molm *et al* tested the classical proposition in SET that trust was more likely to develop in reciprocal rather than negotiated relationships and found strong support: negotiated exchanges presented lower amounts of risk and uncertainty as compared to reciprocal exchanges. This difference was attributable to the reliance in negotiated exchanges on jointly negotiated agreements that bind the actors to a specific outcome, whereas negotiated relationships are based on trust that develops between actors. (Molm, Takahashi, & Peterson, 2000) While trust may be a stronger component of reciprocal relationships, it is still a necessary ingredient in negotiated relationships, though its salience may be mediated both by risk and assurances. (Molm, Collett, & Schaefer, 2006)

In this article I focus on two forms of exchange which are most relevant for personal disclosure relationships: *direct negotiated binding exchange, and direct reciprocal exchange.*

**Direct Negotiated Binding Exchange.** In a direct negotiated binding exchange (DNBE), the exchange occurs directly between two actors with the expectation that the exchange itself has been negotiated, meaning the product of the exchange is agreed upon based on a joint decision process and known to each actor. According to Cheshire *et al*, “[i]n negotiated direct exchange the only risk involved is the risk of not concluding a successful exchange by failing to reach an agreement, since jointly reached agreements are binding on the actors.” (Cheshire et al., 2010)

**Direct Reciprocal Exchange.** A direct reciprocal exchange is an exchange between two actors “in which the terms are not negotiated.” (Molm & Cook, 1995) According to Molm, reciprocity is “the giving of benefits to another in return for benefits received.” (Molm, 2010) A reciprocal exchange includes both high uncertainty and high risk, as exchange partners do not know in advance what might be exchanged, or whether a partner will reciprocate.

### **The Object of Exchange**

In all social exchange interactions, the object of exchange is a key factor. One early effort to create a typology of exchange goods is Resource Exchange Theory. (Foa & Foa, 1974) This theory attempts to identify the structure of the exchange interactions between individuals by classifying the nature of resources exchanged. These resources include love, services, money, goods, status, and information. Cheshire specifically argues that information is a good that can be an object of exchange as it is a good “much like any other good, since it can be transferred and it has value,” albeit with different properties than physical goods. (Cheshire, 2007)

In this article, the object of exchange I examine is personal information, specifically *disclosures of personal information made in exchange for access to specific information-based products or services*. I define an act of disclosing personal information for services as a type of information exchange—the act of revealing personal information to another person, group, or organization.

### **The Effect of Structural Power on Exchange Relationships**

According to Molm and Cook, “*power* is a potential that derives from the structural relations among actors—their relative dependence on one another.”(Molm & Cook, 1995) (emphasis in original) Much of the research examining power differentials in SET has focused on network structures, such as how an actor’s relative position in a network can lead to predictable differences in the use of power. (Cook, Cheshire, Rice, & Nakagawa, 2013) According to Molm, “Emerson’s theory of power-dependence relations provided the impetus for the focus on structural power by proposing that structure determines power use, regardless of actors’ intentions to use power or their awareness of the power structure.” (Molm, 1997) Cook and Emerson argued that “power is an attribute of position in a network structure observable in the occupant’s behavior, even though the occupant does not know what position or what amount of power s/he possesses.” (Cook & Emerson, 1978) Emerson’s prediction that “an imbalance or inequality in structural power produces corresponding inequality in exchange benefits that favors the less dependent actor

in an exchange relation is one of the more robust findings in the social science literature.” (Molm, 1997)

Power dependency is another key aspect: “an actor is *dependent* on another to the extent that outcomes valued by the actor are contingent on exchange with the other.” (Molm & Cook, 1995) Exercises of power occur when one actor uses this potential to gain advantage in exchange over another; “actors with few or no alternatives are vulnerable to exploitation.” (Molm & Cook, 1995) Key to power dependency is the availability of alternatives. One’s dependence *increases* as one’s access to exchange alternatives *decreases*, and the actor with greater control over the valued resource in the exchange has more capacity to exercise power.

The explicit recognition of power in exchange relationships differentiates the theory from the basic model of economic exchange, where actors are generally portrayed as on equal footing. It incorporates both the reality of inequality between social actors as well as the influence of social network structure on exchange relationships. As Cook and Cheshire describe it, “[p]ower inequality is an inevitable outcome of differentiation in resources and structural position. Over time some actors gain positions of advantage in their exchange relations (or networks of exchange relations) and thus have the capacity to exploit this advantage.”(Wittek, Snijders, & Nee, 2013) The authors also noted that without differentiation in resources and preferences between actors there would be little reason for exchange; universal equality would not foster exchange. Power differentials between actors are not inherently bad, nor do they exclusively result in poor outcomes for the power-disadvantaged actor.

While assessing the effect of structural power on negotiated exchange is beyond the scope of this article, it is worth noting that many information-intensive companies benefit from network effects, which provide them with greater structural power both over other companies as well as individual consumers. The rise of the “Frightful Five,” as *The New York Times* technology reporter Farhad Manjoo calls Apple, Amazon, Google, Facebook, and Microsoft, exemplifies the effects of structural power. (Manjoo, 2017) Madden and Rainie’s 2015 Pew Internet study found that over 90 percent of the public believed that they had lost control over their personal

information. (Madden & Rainie, 2015) The subtext of these findings points both to a loss of individual power as well other factors I assess in this study: respondents' perceptions of *fairness* and *distribution of benefits*. In short, some people may disclose their personal information in part because they feel powerless to affect the terms by which they disclose. Further, the effects of structural power are also felt when users attempt to cut ties with a powerful company, as the 2018 movement to delete Facebook demonstrates. (Hsu, 2018) Many Facebook users, fed up with the combination of privacy and 2016 election hacking scandals, confronted the challenges of quitting the network, given that the platform remained the single most useful way many stayed in contact with family and friends. Assessing how *fair* respondents find these relationships, and who stands to *benefit* more, provides additional insight into these issues.

### **Integrating SET and Information Privacy**

The explicit application of SET to an analysis of information privacy is a novel area; within the information systems literature in particular, there are presently only two extant papers that grapple with this issue. (Stanton & Sham, 2002)(Luo, 2002) In order to integrate SET and information privacy, I start first with the assumption that privacy is necessary for societies to function as it provides the psychological space for individuals to live authentically in society without the threat of constant surveillance. It is an essential feature of personal relationships and is practiced through selective disclosure. However, *one's capacity to choose what, when, and how to disclose in a relationship is affected by the structural features of the relation itself*. In this sense, privacy is not only individualistic in nature; as Professor Priscilla Regan argues in *Legislating Privacy*, privacy also has a *social value*, a value to society at large, which she defines in three specific ways: it is a *common value* in that all people value some degree of it; it is a *public value* in that it holds value to our common democratic system; and, it is a *collective value* in that “technology and market forces are making it hard for any one person to have privacy without all persons having a similar minimum level of privacy.”(Regan, 2000) From this perspective, the structural effects on personal disclosure do not simply affect individuals—they also affect society.

According to Molm and Cook, social exchange theory “attempts to explain how relations between social actors (both individuals and groups) develop and change, how the structure of networks in which relations are embedded affects processes of interaction, and how processes such as power use and coalition formation lead, in turn, to changes in social structure.” (Molm & Cook, 1995) One of the key features of this articulation is the focus on the relation between social actors as the smallest unit of analysis, rather than on the actors themselves.

It is this focus on relations between actors that differentiates the analytic framework of SET from existing theories used in extant privacy research and introduces another way to empirically analyze information privacy. In moving the unit of analysis away from individuals and individual cognition to relations between actors, SET allows us to consider how the structure of the relation affects disclosure. When one actor practices *selective disclosure* (privacy) as part of the exchange relation, this disclosure is in part dependent on the actor’s *power dependency*: her ability to obtain valued resources from other actors. And one’s capacity to choose what, when, and how to disclose in an exchange relationship is affected by the structural features of the relation itself, including power differentials. Further, the *form of the relationship* can enable researchers to make predictions about how exchanges will unfold. Armed with this framework, I argue that examining many of the disclosure relationships that cause critics to invoke the privacy paradox actually aren’t paradoxical when reconsidering them as direct negotiated exchanges and taking into account the influence of structural power. (Barnes, 2006) An individual decision to disclose personal information to Google’s search engine may appear paradoxical given its inherent risk to one’s privacy, but less so when considering that the company exerts near-monopolistic control over its resource, there are few viable alternatives to it, and the company controls the terms of the exchange.

While the influence of power on privacy in surveillance contexts is often discussed, given it typically emanates from state control, its role in online disclosure relationships, particularly in experimental studies, is under-explored. Many researchers take for granted the assumption that individuals can or have exercised their power through *consumer choice*: that consumers can freely

decide whether or not to use a specific product or service, and barring any contractual obligations can ‘vote with their feet’ by ceasing to use a service if they are unhappy with it. (Hirschman, 1970) Another assumption is that both actors hold equal power in the relationship to negotiate its terms, and that each has access to comparable alternatives. I suggest that power differentials affect the outcome of disclosure relationships—that individuals’ choices to engage in these relationships are not based on free choice but are affected by power-dependence, and that the structural power advantage that companies and organizations enjoy lend themselves to exchange terms that favor the companies at the expense of individuals. Explicit examinations of power differentials between individuals and companies is an underexplored concept in privacy scholarship, yet one that is arguably salient when examining individual disclosure to companies or organizations. Extant studies have noted exercises of power indirectly, such as through the application of defaults that maximize personal disclosure (Gross & Acquisti, 2005), information asymmetry between individuals and companies (Tsai, Egelman, Cranor, & Acquisti, 2011), and the limitations of privacy policies as a device for communicating company privacy practices (Jensen & Potts, 2004). Most research (and theorizing) treat individuals and companies as if they are equal actors, when in terms of negotiation power, they are likely anything but. In many consumer contexts, individuals may have access to multiple alternatives such that they have substantive choices in deciding with whom to exchange their information for a service. But when the majority of information-based services follow the same consent model, the actual negotiation power of individuals in the marketplace is reduced to ‘take-it-or-leave-it’ as individuals have no opportunity for substantive negotiation. As Molm notes, “[i]n negotiated exchange, the response to exclusion increases power use by increasing the inequality of the negotiated agreement and increasing the powerful actor’s benefits.” (Molm, Peterson, & Takahashi, 1999) As long as individuals are unable to represent their interests in the negotiation process company actors can demand unequal agreements. Further, in information exchange relationships the power of the company relative to the individual may increase over time as the company collects greater amounts of information about them. This may have the effect of increasing the utility of the

service to the consumer (e.g., personalizing a service such as Google to increase relevant search results) while at the same time increasing the individual's switching costs.

### **Applying SET to Privacy and Disclosure: An Experimental Test**

Decades of laboratory experiments conducted by social exchange theorists have provided both the empirical evidence to support SET's fundamental propositions as articulated by Emerson as well as expanded elements of the theory beyond its core. (R. M. Emerson, 1972) (R. Emerson, 1972) They have fleshed out the forms of social exchange—reciprocal and negotiated exchanges—and identified key features: the role of trust and the influence of structural power. This experiment builds on this body of research by replicating elements of it in a new context, but uses information as the valued item of exchange between an individual and a company (rather than currency, which two other central theorists in this tradition, Molm and Cook, note is the common resource used in lab studies). (Molm & Cook, 1995)

The study also builds on a key 2012 experiment by Brandimarte, Acquisti and Loewenstein which established a “paradox of control” for privacy: as individual control over personal disclosure increases, one's willingness to disclose personal information also increases; and inversely, lower individual control results in less disclosure of personal information. (Brandimarte, Acquisti, & Loewenstein, 2012) My study attempts to replicate their core findings by examining whether increased control over disclosure translates into increased willingness to disclose. The difference is that this study focuses explicitly on the effects of power on personal disclosure that varies as a form of more equitable power relationship (optional disclosure) as compared to a less equitable one (mandatory disclosure).

I operationalized social exchange in the experiment by creating a direct negotiated exchange that isolates and helps analyze the effect of structural power. The exchange occurs between two actors: an individual (the study participant) and a fictional company (the ‘High Tech Device Company’, or HTDC). It is information-based, consisting of the disclosure by the individual of personal information in order to obtain access to an information-based service

offered by the fictional company.

I developed a vignette for the study where the fictional company offers a product for sale (the WearMe wearable tracking device, similar to a wristwatch, for \$99) that requires an explicit disclosure of personal information by the customer in order for them to use and experience the benefits of the product. The recipient of the individual's disclosure of personal information is a company providing an information-intensive consumer service, but this study differs from Brandimarte *et al* in that I evaluate the individual's personal disclosure in response to a manipulation of the terms of the exchange, rather than focusing on access and use by others. With this approach, I attempt to examine an individual's decision to disclose their personal information within the context of their relationship with recipient of the disclosure (the company) rather than as a decision made independent of this relationship.

I define the exchange of personal information by an individual to a company as a form of social exchange: a direct negotiated exchange (DNE). In DNEs, actors exchange resources (in this case, personal information for access to a service) through a process of negotiation that reduces the risk and uncertainty that comparatively accompanies reciprocal exchanges, which by definition have no prior agreements. The benefits of DNE are jointly negotiated and thus bilateral (though they can be unequal), and the actors are assumed to understand the terms of the exchange. (Molm et al., 1999)

Negotiation in this study was operationalized as a process consisting of the participants' review and acceptance of a set of terms governing the use of their personal data that either presented an offer of negotiation or 'take-it-or-leave-it' terms. This negotiation was intended to resemble the negotiation process that most consumers face when selecting a new product or service: their agreement (or acquiescence) to an offer made by the company, where the consumer's choice is to accept the offer as it stands or decline to use the product or service.

SET provides a theoretical framework for examining the outcome of this negotiation by identifying the structural components that affect the exchange itself: trust and power. Trust is an emergent phenomenon that arises in response to uncertainty and risk, which Molm defines as the

“expectations that an exchange partner will behave benignly, based on the attribution of positive dispositions and intentions to the partner in a situation of uncertainty and risk.” (Molm, 2010)

Trust can be supplanted or bolstered by assurances that seek to provide external guarantees to the exchange in order to mitigate risk. Ultimately, without trust or assurances, exchange relationships cannot flourish. The same is true for disclosure relationships; without some form of trust in the exchange partner or an external assurance, most individuals would be reticent to disclose personal information in any relationship, let alone with unfamiliar partners.

Within SET power is articulated in terms of dependence: “an actor is dependent on another to the extent that outcomes valued by the actor are contingent on exchange with the other.” (Molm & Cook, 1995) This study focuses on measuring participants’ perception of power at the initiation of the relationship and their assessment of the company’s power over their disclosed data.

Generally, an exchange partner can exert power over another when the first partner has more options for exchange than the second. According to Molm, “[i]nequality in exchange benefits arises from . . . unequal rates of exclusion from transactions, and unequal divisions of profit within transactions. The former drives the latter. More powerful actors benefit from a lower probability of exclusion and from the greater profit they receive when they are included.” (Molm et al., 1999)

### **Experimental Design**

The survey experiment presented all participants with a short vignette. The experimental manipulation consisted of a text statement that was appended to the vignette. Participants were randomly assigned to a condition upon commencing the study; their assignment condition dictated which manipulation statement they viewed. After reading the vignette and the manipulation statement, all participants were given a single survey consisting of three parts: vignette-specific questions; general questions primarily focusing on privacy attitudes; and demographic questions.

The hypotheses were tested using a context that involved an explicit exchange of personal information with a company in order to access to a service. I chose a health and fitness wearable as the context for the study because there was a clear disclosure of personal information required

in order for the device to function; the personal tracking device category is a popular and growing area of consumer electronics but without dominance by a single company; and, the premise of the exchange was likely widely understandable by most participants. The vignette provided a high level description of how the wearable device worked. The survey also included questions to record whether: the participants had ever used or were currently using any wearable devices; how likely they would be to use *any* similar type of wearable device; and, how likely they would be to use *this* wearable device described in the study. The experiment was reviewed and approved by the U.C. Berkeley Office for the Protection of Human Subjects.

### **Independent Variable**

One independent variable was manipulated: the *form of negotiation*. Negotiation was operationalized as the participant's ability to control her disclosure of personal information to the company and the device. There were two conditions: a mandatory disclosure condition, and an optional disclosure condition. The conditions were appended to the end of the vignette and entitled "WearMe Terms of Use."

- *Mandatory Disclosure Condition*: You must allow the WearMe to track all the data it requests about your body and your physical location.
- *Optional Disclosure Condition*: You can choose the types of data about your body and your physical location the WearMe device will track.

### **Dependent Variables**

There were four dependent variables measured in this study: participants' perceptions of trust, power, fairness, and privacy. Trust, power, and fairness are theoretical components of SET and empirically measurable dimensions of an exchange relationship.

## Trust

Trust between exchange partners facilitates the exchange itself, and its presence or absence may indicate the extent to which an exchange partner relies on assurances to engage in the relationship. Trust is also a core concept within privacy theories in that it is an antecedent to disclosure: a lack of trust undermines an individual's willingness to disclose. Trust is measured here as both a general concept based on Yamagishi and Yamagishi's definition of trust as: *expectations of benign behavior based on inferences about a partner's personal traits and intentions*, and as encapsulated trust (where the individual believes the company is acting in her own best interests). (Yamagishi & Yamagishi, 1994) (Hardin, 2002) I predicted the participants in the optional disclosure condition would report higher levels of trustworthiness than participants in the mandatory negotiation condition. To the extent that trust is based on an expectation of benign behavior, a condition where one is constrained from exerting autonomy over personal disclosure is likely to be perceived as less benign.

**H1a: participants in the optional disclosure condition will rate the company as significantly more trustworthy as compared to participants in the mandatory disclosure condition.**

**H1b: participants in the optional disclosure condition will rate the company as significantly more trustworthy with their personal data as compared to participants in the mandatory disclosure condition.**

## Structural Power

Structural power is a core feature of exchange relations. Actors' mutual dependence forms the basis of power in SET: "power is a potential that derives from the structural relations among actors—their relative dependence on one another." (Molm & Cook, 1995) In this study, I measure the participants' perceptions of individual power and control over the terms of the relationship (negotiative power). The power one partner has over another in the relationship indicates the extent to which one partner controls access to alternatives for the other partner and their

dependency on the exchange itself. Power is affected by one's position in an exchange network: even in situations where individuals do not trust their exchange partners and find the exchange unfair, they may find that they have no access to reasonable alternatives (other than the power to exit), or they are resigned to their status. (Cook & Emerson, 1978)

I predicted that participants in the optional disclosure condition would report having greater power and more control over the terms than those in the mandatory disclosure condition. Despite how common 'take-or-leave-it' terms are in technology usage, my own past research suggests that users are often dissatisfied with them. (King, 2012)

**H2a: participants in the optional disclosure condition will rate themselves as having significantly higher measures of individual power in the relationship as compared to participants in the mandatory disclosure condition.**

**H2b: participants in the optional disclosure condition will rate themselves as having greater control over the terms of the relationship as compared to participants in the mandatory disclosure condition.**

## **Fairness**

Fairness was measured by the participant's assessment of the overall fairness of the exchange relationship, as well as the participant's perception of who specifically gains more benefit from the exchange. According to Molm *et al*, "the form of exchange has strong and consistent effects on actors' perceptions of fairness." (Molm & Cook, 1995) While one might expect that the process of joint negotiation would lead to greater perceptions of fairness than a non-negotiated exchange, based on a lab experiment contrasting perceptions of fairness between negotiated and reciprocal exchanges, Molm and her colleagues found that negotiated exchanges were actually perceived as more unfair than reciprocal exchanges. They suggested this was due to the fact that the negotiation process itself highlights conflict between actors, even under conditions where the outcomes of the exchange were equivalent. (Molm & Cook, 1995)

This study contrasts two forms of negotiation, one of which features an offer that directly

benefits the company at the expense of the individual, explicitly establishing inequality between them. I predicted that the participants' perceptions of the fairness and benefit of the exchange would be higher in the optional disclosure condition, where the individual retains autonomy in the relationship and the benefits appear to be shared (at least in this bilateral transaction).

**H3a: participants in the optional disclosure condition will rate the fairness of the exchange significantly higher as compared to participants in the mandatory disclosure condition.**

**H3b: participants in the optional disclosure condition will rate their benefit significantly higher as compared to participants in the mandatory disclosure condition.**

## Privacy

Privacy is a multidimensional concept, and the dimensions I measured were *dimensions of protection* and *dimensions of provision*, specifically: the object of privacy (personal control), the target of privacy protection (personal information), and the mechanisms by which privacy is protected (as implemented by the company through policy and practices). (Mulligan, Koopman, & Doty, 2016) As reported by Brandimarte *et al.*, when individuals are given increased control over disclosure, their willingness to disclose personal information increases. (Brandimarte *et al.*, 2012) However, given the negative light in which loss of control is discussed, I predicted that providing more control over disclosure will not only lead to an increased likelihood to disclose, it will also lead to higher ratings of the company's privacy practices as well as their ability to meet one's privacy expectations as compared to participants in the mandatory disclosure condition.

**H4a: participants in the optional disclosure condition will rate the company significantly higher in meeting their privacy expectations as compared to participants in the mandatory disclosure condition.**

**H4b: participants in the optional disclosure condition will be significantly more likely to disclose their personal information to the company as compared to participants in the mandatory disclosure condition.**

**H4c: participants in the optional disclosure condition will rate the company's privacy practices significantly higher as compared to participants in the mandatory disclosure condition.**

### **Demographic Factors**

I collected the following standard demographic information from participants: current age, ethnic affiliation, education level, annual income, and gender.

### **Findings**

Two hundred and fifty participants completed the experiment, with 122 (49%) randomly assigned to the optional disclosure condition, and 128 (51%) to the mandatory disclosure condition. The participant pool skewed younger (84% under the age of 44), identified primarily as White/Caucasian (71%), was slightly more male (56% to 42% female), was predominantly college educated (32% had completed some college or an AA degree; 52% had completed college or graduate school), and low to middle income (37% reported annual income under \$25,000/year; 39% reported annual income of between \$25K-\$75K).

I examined the main direct effect of the experimental condition by conducting a series of *t*-tests comparing the means between the two experimental groups against each of the dependent variables. I also conducted a series of regression analyses controlling for other key factors but those results are not reported in this article.

### **Hypothesis 1: Trust**

**H1a: supported**

**H1b: supported**

A comparison of means between experimental groups supported both H1a and H1b. The mean value for general trust was statistically significantly higher in the optional disclosure condition than the mandatory disclosure condition ( $t = -1.71, p \leq .05$ , Cohen's  $d = .22$ ), as well as for encapsulated trust ( $t = -2.34, p \leq .05$ , Cohen's  $d = .30$ ). The optional disclosure group

demonstrated both higher levels of general trust toward the company directly and trust towards the company's access to their personal data than the mandatory disclosure group. The means for both groups for the general trust measure were slightly above neutral (between 4 (Neither agree nor disagree) and 5 (Somewhat agree)), while the means for the encapsulated trust measure were lower, between 3 (Somewhat disagree) and below 5 (Somewhat agree).

### **Hypothesis 2: Power**

**H2a: supported**

**H2b: supported**

A comparison of means between experimental groups supported both H2a and H2b. The mean value for general power was statistically significantly higher in the optional disclosure condition than the mandatory disclosure condition ( $t = -2.50, p \leq .01$ , Cohen's  $d = .32$ ), as well as for negotiative power ( $t = -2.14, p \leq .05$ , Cohen's  $d = .27$ ). The optional disclosure group reported greater individual power in the relationship and over the terms of the relationship than the mandatory disclosure group. The means for the general power measure for both groups were between 3 and 5 on a scale of 1-10, with each extreme representing total power over the relationship (1 = the company, 10 = the individual). Thus, both groups felt the balance of power in the relationship favored the company over the individual. The means for the negotiative power measure for both groups were between 3 and 4 on a scale of 1-10, and used the same scale as the general power measure. Similarly, both groups expressed that the company had more control over the terms than the individual did.

### **Hypothesis 3: Fairness**

**H3a: supported**

**H3b: weakly supported**

A comparison of means between experimental groups supported H3a and weakly supported H3b. The mean value for general fairness was statistically significantly higher in the optional disclosure condition than the mandatory disclosure condition ( $t = -4.04, p \leq .001$ , Cohen's  $d =$

.51), as well as weakly so for perceptions of benefit in the relationship ( $t = -1.55, p \leq .10$ , Cohen's  $d = .20$ ). The optional disclosure group both rated the relationship as fairer to them and as having more benefit to them than the mandatory disclosure group. The means for the two groups on the general fairness measure were between 3 (*Somewhat disagree*) and below 5 (*Somewhat agree*), and above 4 and below 5 on a scale from 1-10 for the perception of benefit measure. Both groups rated the company as gaining more benefit from the relationship than them as individuals.

#### **Hypothesis 4: Privacy**

**H4a: supported**

**H4b: supported**

**H4c: supported**

A comparison of means between experimental groups supported H4a, H4b, and H4c. The mean value for the disclosure measure was statistically significantly higher in the optional disclosure condition than the mandatory disclosure condition ( $t = -7.35, p \leq .001$ , Cohen's  $d = .93$ ), for privacy practices ( $t = -3.68, p \leq .001$ , Cohen's  $d = .47$ ), and for privacy expectations ( $t = -3.01, p \leq .001$ , Cohen's  $d = .38$ ). Privacy was measured as one's perceived control over disclosure, as well as by having participants provide a rating of the company's privacy practices and whether the practices met their expectations. The optional disclosure group reported more control over disclosure, rated the company's privacy practices significantly higher, and rated the company data collection and usage as meeting their privacy expectations at a higher level. The difference between means was especially notable on the question of disclosure (controlling which data the participant would disclose to the company)—the mean for the optional disclosure group was 1.72 greater than for the mandatory disclosure group, almost a full standard deviation for both means.

#### **Discussion**

This study manipulated the role of optional versus mandatory personal disclosure in a direct negotiated exchange, hypothesizing that the disclosure optional condition would result in higher

ratings by participants of their perceptions of trust, fairness, power, and privacy. All of the nine hypotheses were supported, demonstrating that encouraging or constraining control over disclosure has direct effects on participants' perceptions of the relationship as well as their expectations of privacy and willingness to disclose. In sum, giving participants negotiation power increased their: perceptions of trust toward the company (both generally and specifically with regards to their personal data); perceptions that the relationship was fair to them; ratings of individual power as compared to the company; their perception of having more control over the terms of the relationship; perceptions of control over personal disclosure; and ratings of conformance with participants' privacy expectations. It weakly influenced their perception that they gained greater benefit from the exchange than the company, but in both groups, averaged responses were below the midpoint of the scale, indicating that overall the participants felt that the company benefited more from the relationship.

The study shows the utility of social exchange theory for further understanding individual decisions to disclose personal information. In particular, it provides a framework for understanding the social context of a disclosure relationship and the impact of social structure on it. These findings demonstrate that structural factors effect individual decisions to disclose personal information. Based on these findings, I argue that SET can add a valuable perspective to privacy research, specifically filling the gap between the theoretical areas of privacy as control and contextual integrity. Privacy as control, with its individualistic approach to understanding disclosure, places the locus of control entirely in the hands of the individual without acknowledging that individuals are subject to social and structural forces beyond their direct control. While both companies and individuals may be considered persons before the law in the U.S., they do not possess equal standing in the marketplace. As long as we continue to evaluate privacy and disclosure as if individuals were equal actors in these relationships, the distribution of power that informs the conditions under which decisions are made constrains the options individuals have to control disclosure in important ways.

Contextual integrity is useful for identifying normatively inappropriate flows of personal

information and understanding why they constitute privacy violations. However, SET aids in identifying the dynamics contributing to a violation in a way that CI may not. For example, consider the difference between analyzing personal disclosure using contextual integrity as the framework as compared to SET, with the use of Google's search engine as the context. The goal of CI is to uncover normatively inappropriate flows of personal information that violate the context in which it was collected. Within the search context specifically, Nissenbaum writes that "[c]onsulting a search engine. . . is akin to conducting research, seeking information and association, searching a library catalog, and pursuing intellectual enlightenment. . . [i]f I am right about how search engines are used and for what purposes, then the governing norms would be strict confidentiality with regard to Web search histories and perhaps, as practiced by many public libraries, the prompt expunction of such records to minimize risks of leakage or mandated handovers as well as the temptation of future sharing for financial gain." (Nissenbaum, 2011) CI locates the potential privacy harm in the violation of norms governing the activities or purposes of that sphere of social life—here, the use and reuse of the collected information outside of the context in which it was divulged—based on norms derived from corresponding activity in the non-digital realm.

Nissenbaum locates the contextually inappropriate flow of information based on past models of information seeking that she considers analogous to web search. But if SET informs us more broadly about the way in which people reason about disclosure this information will help us understand more about the composition of context. Identifying privacy risks is not limited to laws, ethics, and norms. Structural factors also create risk. From the perspective of this study, a participant's direct negotiated exchange with Google is marked by structural inequality: Google occupies a far more powerful position in the network of information intermediaries and consumers than both the individuals and other company actors. As such, the company's ability to dictate the terms of the exchange far exceeds the individual's. Depending on the length of the exchange relationship, it may further be influenced by aggregated power on the part of Google (manifested as information asymmetry) and power dependency by the individual on Google if her

ability to obtain comparable resources from other actors is limited. The individual may rely on an assurance to bind the terms of the relationship, but as this study demonstrates, individuals more often than not lack the power to dictate the terms of those assurances. These conditions can place an individual in the position of disclosing against her best interests.

Nissenbaum calls for the norms themselves to be judged in terms of “how they impinge on societal values, such as equality, justice, fairness and political liberties,” CI doesn’t provide an obvious means for doing this. (Benthall, Gürses, & Nissenbaum, 2017) In contrast, SET provides a framework for evaluating these values at the micro-level of social interaction, and to potentially generalize upward to macro-level scale. Structural inequality isn’t a problem limited to a single individual, but rather impacts a society at large.

These findings demonstrate that the power differentials that exist between individuals and companies can impact an individual’s personal disclosure decisions. While power differentials may not be present in all disclosure relationships, or even every individual to company relationship, for researchers who are attempting to understand real world disclosure dynamics between individuals and companies these findings make an important contribution towards understanding how power differentials contribute to individual disclosure decisions. The SET approach has significant consequences for examining information exchange relationships dominated by winner-take-all actors, such as Google or Facebook. The outsized position of power these actors have in exchange networks allow them to control the terms of disclosure when exchanging with any number of individual actors. And their ability to exert control over the terms of exchange allows the companies to continue to maintain and strengthen their positions of power. Subsequently, privacy as individual control becomes nearly useless in these relationships because individuals alone cannot change the power differential. Instead, as SET indicates, individuals can seek other alternatives or build coalitions to check the power of an exchange partner. Thus, changing the social structure through coalition building appears to be an obvious option. Regan outlines in depth the civil society coalition building that emerged to successfully help pass the Electronic Communications Privacy Act of 1986 and the Employee Polygraph Protection Act of

1988, noting that “[p]rivacy advocates were most successful in achieving privacy legislation when they reached beyond the privacy policy communities to form advocacy coalitions with other groups.” (Regan, 2000)

Relatedly, these findings also provide an additional perspective for interpreting the privacy paradox. They demonstrate that power dependency is a factor in disclosure relationships, and that an individual’s limited access to alternatives may tie them to a disclosure relationship that they would prefer to exit if they could obtain a comparable service that addressed their privacy concerns. This undercuts one of the assumptions of the paradox: that people are willingly electing to use these services despite their information collection practices. Further, these findings show that in these relationships people engage in strategies to deliberately mitigate their exposure, demonstrating both an awareness of information collection practices and strategic planning to thwart them.

There appear to be several assumptions underlying the privacy paradox: that there is a competitive marketplace resulting in multiple options for consumers for information services or the ability to port their data between competitors; there is competition between actors on information collection practices or for privacy enhancing technologies that result in higher privacy standards; and that consumers have leverage to negotiate the terms of their exchange. My findings challenge these assumptions, and suggest a bleaker interpretation—that consumers continue to engage with companies whose practices they dislike because they don’t have better options, they do not have the power to negotiate beneficial terms, and because structural factors benefiting the most powerful companies (such as a lack of privacy legislation) have allowed companies to collect personal information with few consequences. Robust privacy protection requires addressing the overall conditions of the marketplace in which decisions take place, not just mechanics of decision-making.

## Conclusion

This paper forges new ground in the analysis of information privacy and personal disclosure. Namely, it demonstrates the utility of the relational analytic approach for identifying social structural factors that affect personal disclosure. This approach yields a different set of insights into the dynamic of personal disclosure and information privacy. It reveals the impact of power differentials on personal disclosure, demonstrating that imbalances in power between individuals and companies can affect individual decisions to disclose.

But beyond merely revealing these aspects, this work demonstrates the value of examining personal disclosure more broadly than as a problem restricted to individual cognition or decision-making. The structural factors affecting disclosure that I discuss here are not limited to affecting individuals—they affect both society at large and implicate societal institutions as well. To be sure, this approach goes much further than simply identifying flaws in an interface that contribute to over-disclosure, and from that perspective seem overwhelming. However, a decade-plus of research examining the effects of user interfaces on personal disclosure and privacy have left many of us in information studies with a similar conclusion: there is only so much information science and human-computer interaction scholars and others can do to preserve privacy when the underlying social and legal structures are a source of conflict. Acquisti, Brandimarte, and Loewenstein presented a similar conclusion in their interdisciplinary review in *Science*: “[i]f the goal of policy is to adequately protect privacy (as we believe it should be), then we need policies that protect individuals with minimal requirement of informed and rational decisionmaking—policies that include a baseline framework of protection.”(Acquisti, Brandimarte, & Loewenstein, 2015) If we as a society want to earnestly work to preserve information privacy as a value, we need to move beyond blaming the public for making poor choices, acknowledge that the factors affecting disclosure to companies exist beyond the user interface, and critically examine the power differentials between individuals and companies.

### **Acknowledgements**

To come.

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**Experimental Results**

<b>Hypothesis</b>	<b><i>p</i>-Value</b>	<b>Effect Size</b>
<b>Trust</b>		
H1a: General Trust	$p \leq .05$	.22
H1b: Encapsulated Trust	$p \leq .05$	.30
<b>Power</b>		
H2a: General Power	$p \leq .01$	.32
H2b: Negotiative Power	$p \leq .05$	.27
<b>Fairness</b>		
H3a: General Fairness	$p \leq .001$	.51
H3b: Perceptions of Benefit	$p \leq .10$	.20
<b>Privacy</b>		
H4a: Disclosure	$p \leq .001$	.93
H4b: Privacy Practices	$p \leq .001$	.47
H4c: Privacy Expectations	$p \leq .001$	.38

Table 1

*Significance Values and Effect Sizes for Hypotheses Tested*