12-12-2021

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Craig Van Slyke
Louisiana Tech University, vanslyke@latech.edu

Mihir Parikh
Nishith Desai Associate

Damien Joseph
Nanyang Technological University, Singapore

W. Grant Clary
Louisiana Tech University

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Craig Van Slyke[1]
College of Business, Louisiana Tech University,
Ruston, LA, USA

Mihir Parikh
Nishith Desai Associates,
Palo Alto, CA, USA

Damien Joseph
Nanyang Business School, Nanyang Technological University,
Singapore, SG

W. Grant Clary
College of Business, Louisiana Tech University,
Ruston, LA, USA

ABSTRACT

The role of rationality in information privacy intention and behavior is a topic of long and enduring interest. Some popular privacy models and concepts, such as privacy calculus and the privacy paradox, among others, use rationality as their basis. However, in this paper, we present the concept of rational ignorance, which may help advance conversations about the role of rationality in privacy decision-making and behavior. Rational ignorance, in essence, states that when individuals believe that the costs of seeking and acquiring information exceed the benefits of that information, they will not acquire the information and will choose to remain ignorant. We describe rational ignorance and its genesis in political economics and discuss how rational ignorance may serve as a privacy pre-calculus. We also outline several avenues for future research.

Keywords: Rational ignorance, rationality, rational decision-making, irrationality, privacy, privacy calculus, privacy paradox

[1] Corresponding author: vanslyke@latech.edu +1 318 257 2324

INTRODUCTION

Privacy researchers have been interested in how rationality affects privacy intention and behaviors for over a half-century (e.g., Miller 1968). Interest has intensified in the last two decades due to the growing importance of the Internet in daily life. Rationality has provided the basis for widely researched concepts such as privacy calculus (Culnan and Armstrong 1999) and the privacy paradox (Brown 2001). In broad terms, rationality refers to an actor maximizing the ratio of benefits to costs in taking an action (Downs 1957). In decision making, the calculus involves a decision-maker identifying alternative actions that can be taken. By determining a rank order of those actions based on his/her preferences for potential future states combined with the probability judgments about which actions will lead to the preferred future state, the decision-maker will choose the action that maximizes expected utility (Doyle 1999).

However, this view of rationality assumes that the decision-maker already possesses the information necessary to develop these preferences with some degree of accuracy. This is rarely the case. In fact, most decision-makers lack all the information necessary to make decisions in an objectively rational manner. In addition, they face considerable uncertainty about potential future states, judgments regarding the probability of achieving them, and even sources of information. So, they try to increase decision confidence by reducing uncertainty by collecting relevant collecting information. But identifying, acquiring, and assimilating the information requires using limited resources (Downs 1957). Further, it is virtually impossible to gather sufficient information to eliminate all uncertainty. So, rational decision-makers limit their information acquisition prior to making the decision.

This brings up the question of how a rational decision-maker determines when to stop information-seeking behaviors – which is also a decision. This is where the concept of rational

ignorance comes in. According to the rational ignorance principle, a rational actor will stop information seeking and acquisition activities when the perceived costs of acquiring that information exceed the perceived benefits of possessing that information (Downs 1957).

Rational ignorance differs from a related concept that has been applied to privacy research, bounded rationality. Bounded rationality asserts that decision-makers are intendedly rational. However, it also acknowledges that decision-makers fail to make an optimal decision because of procedural and substantive limits. Procedural limits constrain how decision-makers go about decision-making, and substantive limits affect the range and quality of decision choices directly. Rational ignorance addresses a particular procedural limit, i.e., information acquisition. This procedural limit in information acquisition, in turn, may result in substantively limiting decision choices. In addition, rational ignorance also involves situations where a decision-maker makes a rational choice of simply not using limited resources in acquiring and analyzing information even when procedural and substantive limits do not exist.

Privacy decisions require that individuals understand the benefits and risks of divulging personal information to a third party. They involve uncertainty about potential benefits of disclosure as well as future use or misuse of the information once divulged. In acquiring information about the benefits and risks, individuals must use limited resources, including time and cognitive effort. Often, the information about the benefits is readily available, but the risks are relatively unknown and require extensive information seeking to understand and evaluate risks. According to the rational ignorance principle, the expected costs of information acquisition and the expected uncertainty reducing benefits of that information will determine the extent of information seeking and acquisition that takes place. Thus, we contend that rational ignorance is a precursor to privacy calculus - a privacy pre-calculus.

In this paper, we explore rational ignorance and expand on how it may affect our thinking about privacy-related decision-making. First, we discuss the origins of rational ignorance. Then conceptualize how rational ignorance can be applied to information privacy. We also outline some boundary conditions for applying rational ignorance in privacy research. We conclude by offering some potential avenues for research that employs rational ignorance.

RATIONAL IGNORANCE

Downs (1957) is credited with originating the idea of rational ignorance in his book *An Economic Theory of Democracy*. Downs describes the rational "rule" for deciding how much information to acquire thusly: "The information-seeker continues to invest resources in procuring data until the marginal return from information equals its marginal cost. At that point, assuming decreasing marginal returns or increasing marginal costs, or both, he has enough information and makes his decision" (Downs 1957, p. 215). When the cost of being ignorant increases, a decision-maker at some point chooses to spend resources to gain additional information that may lead her to revise the decision and take a different action. We acknowledge that actual returns and costs are typically difficult to determine, so this stopping rule is made based on the decision-maker's perceptions of the returns and costs.

Downs was concerned with understanding the behavior of voters, but the same logic can be applied to any decision that is made under uncertainty. Interestingly, Downs' concept of rational ignorance is based on the paradox of nonvoting, which is the idea that voters will vote only if they believe that their votes will be pivotal in determining the outcome of the election (Mackie 2008). If this is true, then there is no reason for a voter to gather any political information. However, Downs recognized that people can be motivated by factors beyond simple egocentric motives such as a sense of social responsibility or a future orientation (Mackie 2008)

in which the number of votes for a candidate matter not only for the outcome of an election but also as a signaling device with respect to government policy.

Rational ignorance has been criticized for being egoist in assuming that decision-makers are driven only by only egocentric interests. However, these criticisms have themselves been criticized for taking a literal and contextless interpretation of rational ignorance (Taylor 2020). In response, it has been argued that "the rational ignorance framework is quite consistent with recent theoretical and empirical work in cognitive psychology …" (Taylor 2020, p. 71). Rational ignorance offers an interesting way of thinking about how people decide the extent to which they are informed in a particular domain. Rational ignorance offers us a way to identify potential causal relationships that may not be available using current ways of thinking about privacy.

While the concept of rational ignorance originated in the context of citizens' voting decisions (Caplan 2007; Downs 1957; Mackie 2008), it has been applied in various other domains. Murphy (2020) discusses rational ignorance in public policy. He articulates that most Americans choose to remain rationally ignorant on many public policy issues, such as quota on sugar, because it is difficult and time-consuming to get the right information from trustworthy sources, whereas benefits of making a rational decision are relatively very small, such as few cents saving on soda or chewing gum. In the context of religion, rational ignorance is seen through a believer's low level of knowledge about his/her own religion, much less about other religions (Caplan 2007). Dee and Jacob (2012) explained student plagiarism through rational ignorance and found that it can be reduced through informational interventions. Freeman et al. (2017) have used it to explain the phenomenon of a bidder at an auction paying more for an item than the posted price. Lemley (2001) explained decision-making by the U.S. Patent and Trademark Office through the lens of rational ignorance. Dunning (2011) offers examples of

willful ignorance in two important decisions about financial wellbeing for retirement and personal healthcare. He argues that people are ignorant because they do not know where their own ignorance about an issue starts and where it ends.

Given the continuing interest in understanding individuals' privacy beliefs, attitudes, intentions, and behaviors, we contend that it is worthwhile considering how the concept of rational ignorance may illuminate our collective understanding of information privacy decisions. In the following section, we describe one way in which rational ignorance may add to our knowledge of privacy decisions.

APPLYING RATIONAL IGNORANCE TO PRIVACY DECISIONS

Only a few researchers have noted the potential for the application of rational ignorance to information privacy. For example, Acquisti and Grossklags (2007) contend that individuals avoid learning about privacy risks believing that the costs of learning about those risks would exceed the potential benefits that accrue. Others have drawn similar conclusions (e.g., Barth and de Jong 2017; Tsai et al. 2020). Some suggest that people do not understand the privacy trade-off—what is gained and lost by revealing, hence they remain "willfully ignorant" (Huang 2008). Beales and Muris (2008), who were instrumental in creating the National Do Not Call Register at the Federal Trade Commission, argued that people maintain rational ignorance about sharing their information because of a perception of few practical consequences from sharing. Hence, governments need to consider potential consequences of information use and misuse in formulating regulatory policies.

The information privacy literature broadly tries to understand 1) factors that influence individuals' decisions to undertake privacy risks by disclosing information and 2) steps that individuals take to protect their privacy. Various privacy theories and frameworks, such as

privacy calculus, antecedents-privacy concerns-outcomes (APCO) (Smith et al. 2011) and its extensions, and the privacy paradox (Brown 2001) all consider one or both of these two decisions – whether to disclose and whether to protect.

Rational ignorance can inform theories, models, and frameworks that examine either of these. Rational ignorance can add to our understanding of privacy behaviors by discussing how it affects privacy calculus since privacy calculus is integral to many information privacy theories. Figure 1 is a simplified illustration that merges the two subprocesses of rational ignorance (i.e., evaluations of costs and benefits) and shows how rational ignorance affects privacy calculus.

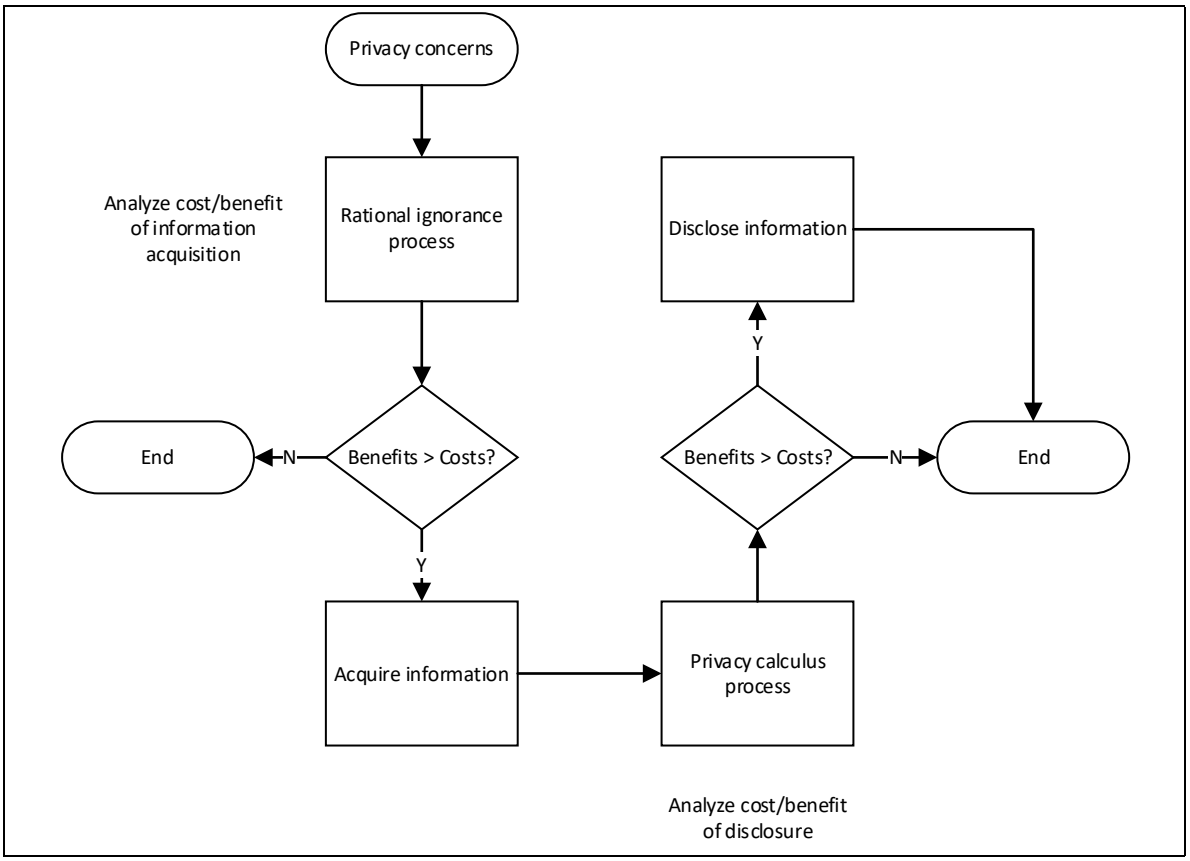

Figure 1. Rational Ignorance as Privacy Pre-Calculus

It is important to state some assumptions and boundary conditions for applying the concept of rational ignorance in privacy research. First, the privacy-related behaviors in question should be volitional. Privacy decision-making processes would be distorted in coercive

situations, including at workplaces or governmental services. Second, there should be some uncertainty involved, and the decision-maker believes that acquiring information may reduce this uncertainty. Third, the privacy decision must be driven by utilitarian concerns. While the definition of utility gives a wide range for applicability, there may be situations where non-utilitarian concerns, such as personal identity or societal issues, may come into play and alter the role of rational ignorance.

The rational ignorance process weighs the benefits of information against its acquisition costs. With respect to privacy risks, the benefits of the information come from reducing risk. However, as noted above, it is challenging to estimate privacy risks, so it is also challenging to estimate the value of information about privacy risks. In fact, it is even more challenging since the value of risk information is uncertain. Basically, the deck is stacked against gathering risk information because of the multiple uncertainties involved, combined with delay discounting. These factors tend to reduce perceptions of the usefulness of risk information, which moves the rational ignorance calculation towards "do not acquire" with respect to risk information.

Privacy calculus is the process by which individuals compare the benefits of information disclosures against the risks of disclosing (Culnan and Armstrong 1999). Before engaging in this calculus, however, the individual must possess or acquire information regarding the benefits and risks of disclosure. It is unlikely that the individual has complete knowledge (Acquisti and Grossklags 2004), especially regarding the risks of disclosure. Therefore, the individual will first evaluate whether the effort expended in acquiring information about the benefits and risks is justified. In other words, they will consider whether the benefits of acquiring the information will exceed its acquisition costs. This is the rational ignorance process. Thus, we contend that rational ignorance can be applied whenever privacy calculus is involved.

It is important to note that even when the rational ignorance process determines that information acquisition is not worthwhile, the privacy calculus process still occurs, but it takes place based on the information the individual already possesses. When facing a decision regarding whether to disclose information, privacy calculus predicts that an individual will disclose only when the benefits of disclosing exceed the risks of doing so. Privacy calculus follows this logic even when insufficient information is available to the privacy decision-maker.

This point is especially important. People likely already have some *a priori* notion of the benefits of disclosure, otherwise they would not even consider disclosing information. Essentially, this puts the benefits in a position of advantage in privacy calculus. If benefits are already known and risks are not known, then it is likely that privacy calculus will result in disclosure unless pre-conceived privacy concerns are already high. In addition, privacy risks are difficult to assess because of the complexity of the risks involved. Further, harm from privacy violations is often hidden and is almost always delayed, often for long periods of time. This makes the evaluation of risks subject to delay discounting. Delay discounting is an adaptive response to uncertainty (Green et al. 1994). Benefits are not only more salient, they are also more immediate and therefore less subject to delay discounting. In addition, risk is a function of two factors – the probability of harm and the magnitude of the harm. Both are difficult to estimate and subject to delay discounting. A similar issue exists with respect to rational ignorance. Because risks are less salient and subject to delay discounting, the rational ignorance process is likely to discount the value of information about risks, which may lead to a decision not to seek information about risks.

To further understand how rational ignorance affects privacy decisions, it is useful to compare it to other privacy concepts. Several emergent concepts reflect feelings of helplessness

with respect to protecting one's privacy. Privacy cynicism is "an attitude of uncertainty, powerlessness, and mistrust towards the handling of personal data by online services, rendering privacy protection behavior subjectively futile" (Hoffmann et al. 2016). Privacy fatigue is a "sense of weariness toward privacy issues, in which individuals believe that there is no effective means of managing their personal information on the Internet" (Choi et al. 2018). Privacy fatigue combines cynicism with emotional exhaustion (Choi et al. 2018). Privacy resignation is an ongoing acceptance of privacy threats born from the idea that they cannot protect themselves from these threats (Wirth et al. 2018). Privacy cynicism, fatigue, and resignation all reflect feelings of powerlessness. Protecting one's privacy is exhausting and ultimately pointless, so there is no reason to expend effort in protecting one's privacy.

Rational ignorance is less bleak – it is not an evaluation that a course of action (information acquisition) is without value; rather, it is an assessment that the value of the information gained is insufficient because the costs are higher than the benefits. In addition, privacy cynicism, fatigue, and resignation are based on feelings of powerlessness, which can be viewed as a perceived lack of agency. In contrast, rational ignorance is an exercise of agency based on a consideration of the benefits and costs of information acquisition. So, we can see that rational ignorance occupies a unique space with respect to privacy research and thus may represent a useful perspective for improving our knowledge of information privacy behaviors. In the following section, we discuss some ways this might occur.

PRIVACY AND RATIONAL IGNORANCE RESEARCH AGENDA

In this section, we offer some preliminary thoughts regarding how rational ignorance can be applied to enduring information privacy issues. This discussion is not intended to be complete

or exhaustive but rather to illustrate the value of rational ignorance and to stimulate further thought and discussion.

Privacy paradox: The privacy paradox has been and continues to be a topic of much interest among researchers. There is considerable debate regarding the existence of the privacy paradox, and many explanations for its existence have been proposed. When viewed through the lens of rational ignorance, it is not clear that the paradox is actually paradoxical. The costs of gaining a full understanding of the risks of information disclosure are likely to be high, while the information value is low because the material risks are difficult to assess and may not be salient due to the delay discounting discussed earlier. Baek's (2014) findings hint at the effects of rational ignorance. In that study, providing information about risks closed the mismatch between concerns and intentions. For a control group that was not provided such information, the mismatch still existed. Effectively reducing the information acquisition costs by providing risk information changed the outcome of the rational ignorance process and prevented disclosure.

APCO: Rational ignorance can shed light on the APCO (Antecedents Privacy Concerns Outcomes) model and the Enhanced APCO (E-APCO) model (Dinev et al. 2015). Rational ignorance is an antecedent to privacy calculus (which is part of E-APCO), similar to the way in which peripheral cues, biases, etc., are positioned in E-APCO. Rational ignorance may also serve as an antecedent to the level of effort constructed in E-APCO. Level of effort refers to the extent of cognitive effort involved in evaluating behavior-relevant information. When rational ignorance indicates that limited information acquisition is warranted, it is likely that low-effort cognition may occur. Of course, other factors may influence the use of low- or high-effort cognition. If high-effort cognition occurs, a new round of rational ignorance may be triggered.

Privacy protective behaviors: Rational ignorance can also be applied to models of behaviors that are intended to protect against privacy violations. For example, Crossler and Belanger (2019) developed a privacy behaviors research framework that included privacy risk awareness, privacy knowledge, and technology knowledge as predictors of privacy protective behavior. Rational ignorance can be applied as antecedents to any of these knowledge factors. Recently, Protection Motivation Theory (PMT) was applied to privacy behaviors (Mousavi et al. 2020). Rational ignorance can be applied to threat and coping appraisals components in PMT.

Privacy asymmetries and knowledge gaps: The effects of privacy information asymmetries are well recognized. For example, clear privacy policies are, in part, an attempt to reduce asymmetries. Applying rational ignorance to such attempts would dictate that information regarding privacy practices and threats must not only be made available but should be available in a manner that is easy to find and understand. This thinking has been alluded to in prior research (e.g., Tsai et al. 2011). Privacy seals can also be understood through a rational ignorance lens. In much the same way that trusted news agencies provide low-cost access to political information (Downs 1957), trusted third parties may also be able to aggregate information regarding privacy risks. The European Union's General Data Protection Regulation (GDPR) implementation has led to a shift in the rational ignorance calculus with respect to managing cookies. GDPR "cookie bars" eliminate the need to search for ways to manage tracking on specific websites. This effectively reduces information search costs, shifting the rational ignorance calculus in a way that encourages protective behaviors.

Applying rational ignorance in team and organizational settings: In this paper, we have focused on rational ignorance in the privacy decision process of individual actors. However, often privacy decisions are made by multiple actors together (e.g., parents making

decisions for children), teams or organizations. Previous studies have found that groups have differentiated behavior in technology adoption (Bayerl et al. 2016; Sarker and Valacich 2010). When multiple actors are involved in decision-making, various factors such as group dynamics, group pathologies, individual personalities, personal preferences, or even shared practices come into consideration. In such situations, the interplay of rational ignorance of involved actors may lead to group-level rational ignorance. The rational ignorance of dominant actors in a group may affect, in various degrees, the group-level rational ignorance and, eventually, privacy decisions. Differing leadership styles of group leaders may also lead to different privacy decisions under rational ignorance. A possible research direction would be to investigate this evolving area of privacy decision-making in group settings.

Interventions to reduce rational ignorance: Various interventions can help shift rational ignorance towards information acquisition. There are many sources of free information that the privacy decision-maker can use (McCarthy 2015). Creating awareness and easing access to such sources can reduce the cost of acquiring information and lead to a shift in the rational ignorance calculus. The degree of trust in the available information also affects its use in decision-making (Oxman and Paulsen 2019). When the trust level is low, the decision-maker has to acquire additional information to triangulate before using the information with a degree of confidence. Often this trust is also derived from the sources of information. So, how different sources, such as government publications, media, social networks, etc., influence rational ignorance may be worth investigating.

Regulations play a very important role in modern societies. Privacy regulations have been effective in helping users in their privacy decisions (Cranor 2021). Developing a deeper understanding of rational ignorance in privacy decisions can help develop better and more

effective prescriptive regulations. Some of these may include specific limits to the proliferation of data, privacy choices, disclosure requirements, or privacy consent expiry.

CONCLUSION

Rational ignorance has the potential to provide useful insights into information privacy decisions and behaviors, whether through integration with existing theories, models, and frameworks or as a starting point for new theoretical lenses. This paper represents a first step down this path. Increasing reliance on digital technologies, coupled with increasing data surveillance and concerns around that surveillance, makes understanding information privacy decisions and behaviors increasingly important. We hope our paper and the concept of rational ignorance can shine new light on our understanding of this important domain.

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