



Americans' Attitudes toward Information Privacy in the World of Big Data

Public and private organizations are collecting an unprecedented amount of data, what many call *big data*, on Americans through social media, Internet logs and trackers, sensor networks, and, increasingly, the Internet of Things (i.e., Internet-connected refrigerators, thermostats, lamps, watches, transportation systems, smart city sensor networks, surveillance devices, etc.). These developments offer the promise of a future in which government and business can more easily identify and address consumer and citizen needs and understand societal problems. Simultaneously, however, big data raises questions about the protection of privacy and possible adverse uses of personal information.

Surveys indicate that Americans highly value information privacy, both in terms of what is gathered and by whom. Trust in the integrity of the data gathering agents is low. Most Americans claim to have reduced their online visibility, but more than half—and up to three-quarters—register lack of knowledge of privacy tools and how to employ them. Despite saying they value information privacy, Americans readily share information, a puzzle that researchers call the *privacy paradox*.

The Importance of Privacy

Most Americans indicate in surveys that information privacy is “very important” to them. In a 2015 survey, about three-fourths of respondents (74%) indicated it was very important for them to control *who* can get information about them, and 65% considered it very important to control *what* information is collected about them (Madden and Rainie 2015). Ninety percent or more said that these types of control are somewhat important to very important.

Perceived Privacy Threats

While Americans view privacy as important, they also believe their privacy is threatened. In 2013, only 9% of Americans surveyed said they believed they have “a lot” of control over the information collected about them by electronic means in daily life. About half of Internet users among those surveyed worried about how much information is available about them online in 2013, an increase over the 33% who said they were worried in 2009 (Rainie et al. 2013).

In a 2014 poll, few people trusted that various organizations would keep their personal information secure. Two percent of Americans expressed trust in social networking websites or applications; 6% trusted online retailers; and 12%–19% trusted federal or state governments, e-mail providers, and cellphone carriers. At the high end, 26% trusted health insurance companies, and 39% banks and credit card companies (Fleming and Kampf 2016; Madden and Rainie 2015).

Adaptation

Given their belief in the importance of privacy and concerns about threats to privacy, Americans may adapt their behavior to improve their privacy. The vast majority (86%) of Internet users said they had taken steps to reduce their visibility online (Rainie et al. 2013). Further, people’s reported willingness to share private information appears to vary by context, including which organization is getting the information, what the organization will do with it, and what the consumer gets in return (Rainie and Duggan 2016). Young adults (18–29 years old) reported being more likely than other age groups to seek greater anonymity online (Madden and Smith 2010; Rainie et al. 2013).

The Challenges of Adaptation

Despite saying they have taken steps to improve their privacy online, Americans feel they should do more but are unclear on just what to do. In a 2014 survey, about 61% of respondents said they felt they “would like to do more” (Madden 2014). In a 2015 survey, however, 54% indicated that finding tools to improve their privacy was “somewhat” or “very” difficult, and many said they were unaware of specific privacy tools (Rainie and Madden 2015). Seventy-four percent disagreed or strongly disagreed that it was easy for them to be anonymous online, with larger percentages of more knowledgeable

users disagreeing more strongly (Madden 2014). Nearly half of Americans in a 2015 survey indicated they were not confident they understood how their data would be used when deciding whether to share it (Pew Research Center 2015b).

Researchers who study privacy have found a *privacy paradox*—while people indicate strong general concern over privacy, observations of their actual behavior show that they readily divulge personal information (Smith, Diney, and Heng 2011; Wilson and Valacich 2012). They give such information in exchange for small discounts, personalization, online social interaction, and other inducements (Chellappa and Sin 2005; Norberg, Horne, and Horne 2007; Pötzsch 2009; Spiekermann, Grossklags, and Berendt 2001).

Privacy researchers have proposed several potential explanations for this apparent paradox, including concerns that conventional surveys do not obtain adequately considered opinions, thus giving an exaggerated impression of people's privacy concerns in real decision making (Baek 2014). When divulging private information, people get few indications about potential privacy dangers but do receive clear indications about benefits and the apparent trustworthiness of the organization asking for information (Acquisti, Brandimarte, and Loewenstein 2015; Li, Sarathy, and Xu 2011; Norberg, Horne, and Horne 2007; Pötzsch 2009; Wilson and Valacich 2012). People are not sufficiently knowledgeable or certain about how technology affects privacy (Acquisti, Brandimarte, and Loewenstein 2015; Pötzsch 2009). Also, people ignore future risk or are unable to weigh the complex benefits and costs of sharing information (Acquisti 2009; Acquisti and Grossklags 2003; Tsai et al. 2011; Wilson and Valacich 2012). Researchers disagree as to whether people's attitudes or behaviors are better guides to their rational preferences.

Many technology experts believe that the public will experience greater difficulty protecting their privacy as technology progresses (Rainie and Anderson 2014). In 2014, 64% of the public said they wanted government to "do more to regulate what advertisers do with customers' personal information," according to the Pew Research Center (Madden 2014).