

PRIVATE INFORMATION IN A SOCIAL WORLD: ASSESSING CONSUMERS' FEAR AND UNDERSTANDING OF SOCIAL MEDIA PRIVACY

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As companies connect with consumers on social media, privacy becomes a significant area of concern. This research assesses consumers' understanding of social media privacy policies (CUSPP) and fear related to those policies. Study one develops a scale to measure CUSPP. Study two examines the influence of text, audio, and pictorial cues used in social media privacy policies, on consumers' CUSPP and physiologically-measured fear. Results suggest presentational cues affect CUSPP and fear of social media privacy policies. This research is among the first to use self-report and physiological measures to assess consumer understanding and emotional reactions in a social media context.

Companies are increasingly understanding the value of connecting with consumers on social media, with social media advertising spending expected to increase from 16 billion dollars in 2014 to 31 billion dollars in 2016 (Statista 2016). Moreover, the company-consumer relationship is facing more changes than ever before due to the increase in digital technologies (Hendrix 2014). This relationship is commonly operationalized in terms of an exchange where goods or services are given in return for money or other goods (Bagozzi 1975). But as consumers become increasingly connected with companies via social media, defined as a group of internet-based applications that build on the ideological and technological foundations of Web 2.0 that allows the creation and exchange of user-generated content (Kaplan and Haenlein 2010), another lesser-known exchange also occurs when consumers make a nonmonetary, intangible exchange of their personal information for social media membership, putting their personal privacy at risk. Hence, while social media offers consumers access to a vast quantity of company information with minimal effort and cost to enable better, more efficient decision making (Alba et al. 1997), consumers are vulnerable when it comes to the information they share. In fact, many consumers are uncertain about (Sheehan and Hoy 1999) and have little control over how information is collected, stored,

shared, purchased, stolen, and/or misused by both public and private businesses, beyond the original purpose for information collection (Buchanan et al. 2010).

Since Facebook's inception in 2004, the popular social networking site has grown from one million active users to 1.65 billion (Facebook 2016). Moreover, marketers have increasingly realized the lucrative opportunities for brand presence and advertising on social media sites (Foster, West and Francescucci 2011). Despite the explosive growth of this trend, little academic research has explored consumer privacy in the social media context. The media has drawn much attention to the idea that consumers are concerned with their online privacy (Milne, Labrecque and Cromer 2009), but consumers continue to readily disclose personal information to social networking sites in exchange for membership and the opportunity to connect with other members, including companies.

Indeed, it is unclear whether consumers truly understand how their personal information such as name, contact information, and birthdate is used by these social networking sites. Although some research has studied *concern* for privacy in the general context of the internet (e.g., Harrison-Walker 2002), little research has examined consumers' *understanding* of privacy policies on social media. This is especially concerning, given that many social networking sites collect data for their own use, as well as to distribute and sell it to third parties. Social media privacy policies typically include explanations of information collection and usage practices (Stanaland, Lwin, and Leong 2009), but also tend to be laden with modality markers (Bodle 2011) that make it seem as if user information is collected to benefit the users without mentioning the

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benefits obtained by the social networking site. It is important for researchers to measure consumers' understanding of social media privacy policies so they can better understand how consumers make decisions regarding their privacy and ultimately, help consumers make the best choices possible when sharing their personal information online.

Further, although the Federal Trade Commission has established the Self-Regulatory Principles for Online Behavioral Advertising (Federal Trade Commission 2009) that provide suggested information disclosure policies for companies to follow, companies are not required by federal law to abide by these principles; they are merely suggestions. The state of California has enacted the California Online Privacy Protection Act of 2003 (OPPA) (Cooley Godward LLP 2004), which requires commercial websites that collect personally identifiable information from California site users to post and comply with a privacy policy. However, for websites that do disclose such information, it is unclear how the presentation cues used in their privacy policies affect consumers' emotional reactions to such policies.

The purpose of this research is (1) to develop a measure of consumer understanding of social media privacy policies (CUSPP), (2) to test CUSPP in an empirical study, and (3) to explore consumer physiological reactions to social media privacy policies. In study one, the authors develop a scale to measure CUSPP. Study two examines the effectiveness of presentation cues, including text, audio, and pictorial cues, used in the privacy policy for a social networking site, and the impact of those cues on consumers' physiologically-measured fear while reading the privacy policy and CUSPP. This research is among the first to use self-reporting and physiological measures to assess consumer understanding as well as emotional reactions in a social media context. The authors conclude with implications for both consumers and marketers.

CONSUMER PRIVACY

Consumer privacy is rooted in the work of Westin (1967) who defined *privacy* as individual control over disclosure and subsequent uses of personal information. More recently, privacy has been defined as consumers' ability to control when, how, and to what extent their personal information is to be transmitted to others (Milne and Culnan 2004; Phelps, Nowak, and

Ferrell 2000). Based on these definitions, privacy can be considered a two-dimensional construct that deals with (1) control over information (i.e., disclosure) and (2) information use (i.e., intrusion). Although many consumers are unsure of how retailers collect, save, and use their personal data (Sheehan and Hoy 1999), most consumers are willing to give up some privacy simply to participate in a consumer society (Turow, Hennessey, and Bleakley 2008). As such, it is increasingly apparent that personal data have become a commodity, which makes it more susceptible to exploitation.

Existing Privacy Constructs

Much of the research on consumer privacy examines privacy concern (i.e., Buchanan et al. 2006; Eastlick, Lotz, and Warrington 2006), or "the desire to keep personal information out of the hands of others" (Buchanan et al. 2006). Both privacy concern and understanding can be viewed as important aspects of consumer privacy, but privacy concern can be viewed as an affective construct, which is quite different from consumers' cognitive ability to understand social media privacy policies. Hence, concern and understanding should be studied as separate, though theoretically-related, consumer privacy constructs. Many studies that examine privacy awareness and understanding do not provide a conceptual definition of the constructs, just operational definitions (e.g., Milne and Culnan 2004). Although many privacy construct names imply the nature of the construct (i.e., awareness of information capture, comprehension of privacy policy), it is difficult to build theory without a clear conceptual definition.

Several existing privacy-related constructs are particularly relevant to the study of consumers' understanding of social media privacy policies. Nowak and Phelps (1997) offer a framework for addressing privacy concerns that arise when direct marketers utilize consumer information. They examine knowledge of data collection which is defined as "full knowledge of collection and use, knowledge of collection but not of use, or ignorance of both collection and use." Such a definition is helpful because it focuses on consumer knowledge of data collection, but it is not an empirical study. Kim and Kim (2011) examine perceived privacy empowerment, or an individual's perception of the extent they can control the distribution and use of their personally identifiable information, to study the relationship between the use of a third-party privacy

seal and consumer trust. Similarly, Tucker (2014) assesses how consumers' perception of control over their personal information affects their likelihood of clicking on social media advertisements. Such studies are useful because they examine consumer perceptions of control over individuals' information, but they still study a perception of affect (i.e., concern), as opposed to a cognition (i.e., understanding).

Finally, Youn (2009) examines determinants of young adolescents' level of privacy concerns and their influence on privacy protective behaviors. The author examines privacy knowledge which is defined as "general knowledge of e-marketers' information collection and use practices." Youn looks at knowledge of websites' information collection in general, as opposed to specific knowledge of privacy policies adopted by certain websites. While privacy knowledge is the most theoretically similar construct to CUSPP, it deals only with objective knowledge, which may not fully tap the dimensions of the CUSPP construct.

Privacy Disclosure

Privacy disclosure is marketers' notification to consumers about what information is collected from them and by what entity appears to allay privacy concerns (Sheehan and Hoy 1999). Marketers should disclose the uses of the information they ask consumers to provide and offer consumers the opportunity to opt out of lists to reduce privacy concerns (Nowak and Phelps 1997). Often, marketers include privacy notices on websites to help the consumer decide whether or not to disclose information to an online marketer or to engage with the website at any level (Culnan and Milberg 1998). Such notices provide consumers with information about the organization's information practices in an attempt to reduce their perceived risk of information disclosure and build their trust (Milne and Culnan 2004).

Privacy statements, however, are generally written "with the threat of privacy litigations in mind rather than commitment to fair data handling practices" (Pollach 2007). That is, privacy policies are written so the companies that create them will be covered in case of a legal dispute; they are not developed for consumers to understand them. For instance, Google is a well-known search engine that organizes information in more than 130 languages (Google 2016). Google's privacy policies frequently use the modality marker "may"

to downplay the frequency of how many times something actually occurs (Bodle 2011). For instance, the company states, "We [Google] may combine the information you submit under your account with information from other Google services or third parties." Such a statement can be misleading to consumers because the word "may" indicates that Google may or may not use consumers' information, but in reality, they will likely do so.

Further, Google articulates its privacy policy using educational, user-generated videos on its own video-streaming product, YouTube. In doing so, Google attempts to replace the official, legalistic language often used in privacy statements with wording more familiar to the average Google user. However, it can be argued that the added simplicity does not thoroughly articulate the details of Google's privacy policies (Bodle 2011). Martin (2015) suggests that consumers often perceive privacy notices as offering greater protections than they actually do, and the marketing literature suggests that consumers' preferences for information-processing vary (Ramsey and Deeter-Schmelz 2008). The question remains whether the presentation cues used in social media privacy policies truly make a difference in consumers' fear and understanding of the effects of sharing personal information on social media.

CUSPP

Consumers' understanding of social media privacy policies (CUSPP) is defined as a user's knowledge about social media privacy policies. More specifically, CUSPP refers to both a cognition and a perception of what is known about social media privacy policies, each of which can be viewed as unique aspects of understanding. Therefore, the authors believe that the CUSPP construct is comprised of both objective knowledge and subjective knowledge. The distinction between objective and subjective knowledge follows traditional consumer knowledge literature (i.e., Brucks 1985; Park, Mothersbaugh, and Feick 1994), where objective knowledge focuses on actual knowledge and subjective knowledge focuses on perceived knowledge. Subjective knowledge provides a better understanding of decision makers' systematic biases (Park and Lessig 1981) and therefore, should be considered independently of objective knowledge, which assesses what is actually stored in memory. Brucks (1985) defines objective knowledge as "what an individual actually knows" and subjective knowledge as "what an individual

perceives that he or she knows.” Similarly, Parks, Mothersbaugh, and Feick (1994) define objective knowledge as “accurate information about the product class stored in long-term memory” and subjective knowledge as “people’s perceptions of what or how much they know about a product class.” Thus, the authors define objective knowledge as “what the user actually knows about social media privacy policies,” and subjective knowledge as “what the user perceives that he or she knows about social media privacy policies.”

SOCIAL MEDIA

Although social media is burgeoning, it is still a relatively new concept for both practitioners and academics. While some marketing scholars are now investigating different aspects of social media (Ang 2011; Foster, West and Francescucci 2011), its definition is typically not closely examined. The Interactive Advertising Bureau (2008) defines social media as “the convergence of user commentary with video, photos, and music sharing, all presented in a simple, user-friendly format.” This definition, however, fails to explicitly account for Web. 2.0. While online content was static in Web 1.0, content in Web. 2.0 is continuously modified by internet users in a participatory and collaborative fashion (Kaplan and Haenlein 2010). This content is termed “user-generated content,” which refers to “media content created or produced by the general public rather than by paid professionals and primarily distributed on the internet” (Daugherty, Eastin, and Bright 2008). Hence, social media is defined as “a group of internet-based applications that build on the ideological and technological foundations of Web 2.0 that allows the creation and exchange of user generated content” (Kaplan and Haenlein 2010).

SOCIAL MEDIA PRIVACY

Social media often enables users to vary their levels of private and public disclosure (Ford 2011). In this way, a particular activity on social media need not need be fully public (i.e., for any member of the site user to see) or fully private (i.e., for only the user himself/herself to see), but can be quasi-public or quasi-private (i.e., for a restricted number of members to see, as controlled by the user). Here, a single act of communication can be public and private at the same time

(Jurgenson and Rey 2012). However, given the tendency for privacy statements to be written using highly technical language, it is uncertain if social media users truly understand how their private information is being used, even if they have implemented privacy controls. If a social media site’s policy states that consumers’ personal information can be shared with third parties, a company may be able to access the personal information that consumers share on the site. In other words, social media users’ “private” information may not be as private as they think, which may lead consumers to improperly assess what actually happens to the information they share on social media, and ultimately, with the companies they are connected to.

In general, many consumers are uncertain and misinformed about the sources of personal information available to marketers (Nowak and Phelps 1992). Consumers use a number of cues to determine whether to trust an organization such as third-party seals of approval, security mechanisms, the organization’s reputation, and online privacy statements (Beldad, de Jong, and Steehouder 2011). It is well established that privacy statements can be useful in alleviating consumers’ privacy concerns (Milne and Culnan 2004; Phelps, Nowak, and Ferrell 2000). In fact, privacy statements are often the only source of information available to consumers to help them evaluate how their personal data will be used once shared online (Vail, Earp, and Anton 2008). It is imperative that marketers pay attention to the content and format of the notice (Milne and Culnan 2004), because many consumers are unaware of marketers’ data collection efforts (Culnan 1995; Milne and Rohm 2000). The readability and explicitness of warnings influence consumers’ information processing of such warnings (Lethto and Miller 1986), such that consumers are better able to process warnings that are written in user-friendly language. Further, privacy notices can be viewed as analogous to warnings because of their similar function (Milne and Culnan 2004).

To assess the costs and benefits of the aforementioned secondary exchange (Culnan and Milberg 1998), consumers must be informed of a website’s plans for using their personal data, and a well-articulated privacy policy can prevent information asymmetry. Moreover, awareness levels among consumers about online privacy vary (LaRose and Rifon 2007); knowledge that data collected on a website may be

used by others is expected to influence consumer response to online requests for personal information (Poddar, Mosteller and Ellen 2009). Yet, the effects of how privacy information is presented is still quite unclear in marketing academic literature.

FEAR

In marketing literature, fear is often studied as a persuasive strategy used to influence consumer attitudes and behaviors (Fishbein and Ajzen 1975). For example, fear appeals have long been used to address public health issues such as smoking prevention, intoxicated driving, and poor eating habits (e.g., Freimuth et al. 1990). For many years, scholars have examined the effectiveness of fear appeals (Wheatley 1971; Wood and Moreau 2006) and ethical concerns (Hastings, Stead, and Webb 2004) related to using them in marketing. Other scholars have examined how fear appeals work in conjunction with other emotions such as disgust (e.g., Morales, Wu, and Fitzsimmons 2012). Still other research considers how fear appeals affect consumers' privacy expectations (e.g., Beitelspacher et al. 2012).

Although the research on fear as a predictor variable continues to make useful contributions to the marketing literature, fear is much less frequently studied as an outcome variable. For example, fear is rarely studied as a discrete emotion, despite its prevalence in the psychology literature (e.g., Gross and Levenson 1995; Roseman, Wiest, and Swartz 1994). Discrete emotions include anger, joy, surprise, disgust, sadness, fear, and contempt (D'Mello, Picard, and Graeser 2007), and measuring discrete emotional reactions can help scholars better understand motivations that underlie behavior (Gross and Levenson 1995). The question remains, however, how do consumers experience fear as they attend to social media privacy policies in real time? As such, in the present research, the authors study the effect of presentation cues used in social media privacy policies on physiologically-measured fear.

HYPOTHESES DEVELOPMENT

The authors use auditory and visual modality as a theoretical lens to examine the hypothesized effects. Modality refers to the sensory medium through which information is communicated (Unnava, Agarwal, and Haugtvedt 1996). Eimer (1999) demonstrates that

visual and auditory stimuli, or modalities, compete for audiences' attention and emotions due to consumers' limited ability to process multiple sources of information. While the marketing literature suggests that visual elements interfere with the learning of ad copy and inhibit consumers' ability to elaborate on a message (Tavassoli and Lee 2003), research in psychology demonstrates that visual information tends to lead to more accurate speech perception than audio information, because the visual signal complements the audio signal (e.g., Peck and Childers 2008). Thus, findings are inconclusive as to whether visual and audio components truly work in tandem to facilitate processing.

Still, pictures are the most important structural element in magazine advertising (Rossiter and Percy 1997), and play an important role in marketing promotions. Some scholars have concluded that details are more easily recalled with audiovisual presentation, when compared to audio only (e.g., Beagles-Roos and Gat 1983; Pratt and Mackenzie-Keating 1985), and that audiovisual information has a better chance of being attended to, thus facilitating stronger brand association than visual-only information (Bonnell and Hafter 1998). More recent research on mobile device content even suggests that attitudes toward such content are more favorable when both pictorial and audio modalities are used to present the message (Nasco and Bruner 2007). As such, it appears that audio and visual cues can affect both cognitive and affective reactions to marketing stimuli. Thus, the authors hypothesize that audio and pictorial presentation cues will lead to greater fear and understanding than text only cues:

- H1:** The presence of text, audio, and pictorial presentation cues together in a privacy policy will lead consumers to experience (a) more fear about the information in the privacy policy and (b) greater CUSPP than text-only presentation cues.

Compared to text-only, audio and text content provides reinforcement (Gibbons et al. 1986). This may be due to how the English language is processed. Reading alphabetic words relies on sound-based (phonological) processes, and letters represent sounds. Moreover, readers of English tend to subvocalize written words (McCusker, Hillinger, and Bias 1981). As such, English language processing does not rely on visual short-term memory other than through mental imagery (Gathercole and Baddeley

1993). An audio-only presentation provides a much more emotionally involving experience than does an audiovisual presentation; in fact, audio can capture the full range of emotions and is superior to other modalities in communicating emotions (Liu and Stout 1987). As such, the researchers hypothesize that audio presentation cues are more effective at evoking fear related to the information in a privacy policy:

H2: The presence of text and audio presentation cues in a privacy policy will lead consumers to be more fearful of the information in the privacy policy than the presence of text and pictorial presentation cues.

Marketing communications are often in the form of text (Unnava, Agarwal, and Haugtvedt 1996), so it is important to examine the effects of visual cues on cognitive reactions such as learning. When pictorial and text elements are paired together, the goal is often for the pictorial element to convey an aspect of the text in graphic form (Pieters and Wedel 2007). Moreover, visual elements combined with text elements are more effective than words alone in facilitating message recall (Childers and Houston 1984). That is to say, visual movement is positively related to attention levels (Reeves et al. 1983), and consumers remember visual information better than verbal information (Job, Rumati, and Lotto 1992). In an advertising context, compared to text only, the presence of pictorial ad elements significantly increases the amount of attention that consumers pay to an ad (Pieters and Wedel 2004). Given the significant impact of text and visual information on cognitive processing, the authors hypothesize that pictorial presentation cues are more effective at increasing understanding of information in a privacy policy:

H3: The presence of text and pictorial presentation cues in a privacy policy will lead to greater CUSPP than the presence of text and audio presentation cues.

STUDY 1: MEASURE DEVELOPMENT

Item Generation

As noted, the CUSPP construct is comprised of both objective knowledge and subjective knowledge. To generate a set of items to represent the objective knowledge

dimension, the authors followed Stanaland, Lwing, and Leong (2009) and first conducted a content analysis of the privacy policies of the top five social networking sites (Facebook, Twitter, LinkedIn, Pinterest, and MySpace), based on the number of active members (eBiz 2013). The authors extracted concepts that were common to these sites' policies and extracted items from the previous literature on objective knowledge (i.e., Brucks 1985; Youn 2009). To generate items that fully represent the conceptual domain of the subjective knowledge dimension, the authors conducted twenty informal interviews with representatives of the population to which the focal construct is expected to generalize (adult social media users). The authors asked interviewees about their interactions with social media privacy policies to determine words and phrases that are commonly mentioned to describe issues related to consumers' experiences with such policies. This allowed the authors to uncover consumers' perceived areas of concern about social media privacy policies. This process has been used to develop other scales related to online consumer privacy (e.g., Eastlick, Lotz, and Warrington 2006). The authors also extracted items from existing literature on subjective knowledge (e.g., Stanaland, Lwing, and Leong 2009; Wills and Zeljkovic 2011). These efforts resulted in the generation of nine subjective and twenty-five objective knowledge items.

Content Validity Assessment

All items were evaluated for their content validity following the procedure recommended by MacKenzie, Podsakoff, and Podsakoff (2011). First, the authors constructed a matrix with the definitions of objective and subjective knowledge listed at the top of the columns and the generated items listed in the rows. Sixteen graduate students who are social media users from a variety of universities were asked to rate the extent to which each item captures each aspect of the construct domain using a five-point Likert-type scale ranging from 1 (not at all) to 5 (completely). This information was transposed to create a matrix that summarized each rater's rating of the items on both the objective knowledge and subjective knowledge dimensions.

Following Hinkin and Tracey (1999), a one-way repeated measures ANOVA was used to assess mean differences between the objective and subjective knowledge dimensions. Five items were not significantly different

across the two dimensions. Hence, CUSPP is posited to be comprised of two dimensions: subjective knowledge and objective knowledge.

Initial Data Collection and Sample

Business undergraduate students at a university in the Midwest United States were recruited to take an online survey in exchange for extra credit. Because the goal was to generalize results to social media users, and the majority of social media users are 18–29 years of age (Pew Research Center 2015), the use of a student sample was appropriate. Participants read a privacy policy, which was created from the privacy policies of social networking sites that were used in the item generation phase. In addition, the survey included Malhotra, Kim, and Agarwal's (2004) Awareness of Privacy Practices scale, which assesses the degree to which a consumer is concerned about his or her awareness of organizational information privacy practices. Consumers are only able to control their privacy if they possess the information necessary to make relevant choices (Nairn and Monkogol 2007), suggesting that consumer knowledge about privacy should be related to concern. All items were measured with a seven-point Likert scale. The questionnaire also included basic demographic information, including gender, ethnicity, and age. A total of 154 usable surveys were completed. Approximately 62 percent of the respondents were male and 69 percent were Caucasian. Respondents ranged from 19 to 28 years of age, with a mean of 22 years.

Measurement Results

All items were subjected to an exploratory factor analysis (common factor) with direct oblimin rotation. Following recommendations from Hinkin (1998) and Anderson and Gerbing (1988), eigenvalues greater than 1 and the scree test of the percentage of variance explained were used as criteria to determine the number of factors. Based on these criteria, a four-factor solution was identified. These factors collectively accounted for 80 percent of the variance in item scores, and the first factor explained 34.7 percent of the variance. Items were retained if (a) they had high loadings on their primary factor ($\lambda > .40$; Hinkin 1998) and (b) they had low-cross loadings on any other factor (cross-loadings less than .40; Hair, Black, and Babin 2010). Two subjective

knowledge items and eight objective knowledge items were removed due to high cross-loadings (cross-loadings ranging from .41 to .53), and one objective knowledge item was removed because it did not load adequately on any factor.

The items shown in Table 1 (the eighteen remaining objective and subjective knowledge items, along with the four Awareness of Privacy Practices items) were then subjected to a second principal axis factoring

Table 1
Study 1 Items Subjected to Second-Round EFA

Subjective Knowledge Items

Compared to most people who I know who use social networking sites:

- I fully understand the social networking site's privacy policy.
- I understand the terms used in the privacy policy.
- I am confident in my understanding of the privacy policy.
- I understand how my information will be used.
- I understand enough about the privacy policy to feel confident about my actions on the site.
- I am knowledgeable about how my information will be used.
- I could explain this privacy policy to others with confidence.

Objective Knowledge Items

- Third-party affiliates can share information about me with the social networking site.
- If the owner of the social networking site changes, my information can be transferred to the new owner.
- When I add content to the social networking site, the site will collect this data for future use.
- If I modify my personal information, the site can keep a copy of the original information.
- If I choose to delete my account, my information can still be retained on the site.
- If I interact with third-party affiliates through the social networking site, those affiliates will receive my personal information.
- The information that I provide can be copied by anyone who can see it.

The social networking site:

- Places cookies on my computer.
- Allows third-parties to place cookies on my computer.
- Identifies the website I visit after leaving the social networking site.
- Uses the information shared about me by my connections on the site.

Awareness of Privacy Practices Items

- Companies seeking information online should disclose the way the data are collected.
- Companies seeking information online should disclose the way the data are used.
- A good consumer online privacy policy should have a clear and conspicuous disclosure.
- It is very important to me that I am aware and knowledgeable about how my personal information will be used.

with direct oblimin rotation using the same sample of 154 respondents. Results showed that a three-factor solution fit the data, based on the eigenvalue and scree test criteria, and these factors collectively accounted for 69.6 percent of the variance. The first factor explained 35.9 percent of the variance, which suggests that common-method bias may not be a problem (Malhotra, Kim, and Patil 2006; Podsakoff and Organ 1986). None of the cross-loadings were above 0.40; hence, no items were discarded.

SCALE PURIFICATION AND REFINEMENT

Data Collection and Sample

Business undergraduate students at a university in the Southeast United States were recruited to take an online survey in exchange for extra credit. A total of 171 usable surveys were completed. Participants read the same privacy policy and completed the same survey as in phase one. About 67.5 percent of the respondents were female and 72.5 percent were Caucasian. Respondents ranged from 19 to 27 years of age, with a mean of 21.5 years.

Measurement Results

A confirmatory factor analysis was applied to the three-factor model with MPlus version 6.12 (Muthén and Muthén 2011) using full-information maximum likelihood estimation. Fit statistics indicated a poor fit ($X^2_{132} = 942.94$ $p = 0.00$, RMSEA = .19, NFI = .65, CFI = .74, SRMR = .093) (Hu and Bentler 1999). Hence, based on standardized regression weights less than the recommended .7 cutoff and standardized covariance residuals greater than 1 (Arbuckle 2007), five problematic items were removed. In addition, modification indices and large expected change estimates were analyzed to explore which parameters could be freely specified to improve model fit. As a result, two subjective knowledge items that focus explicitly on confidence were eliminated; respondents may not have perceived a difference between their belief in their understanding and their confidence in their understanding. In addition, six objective knowledge items that deal with third-party affiliates and information use by other connections were eliminated due to their redundancy with other items as well as strong measurement error

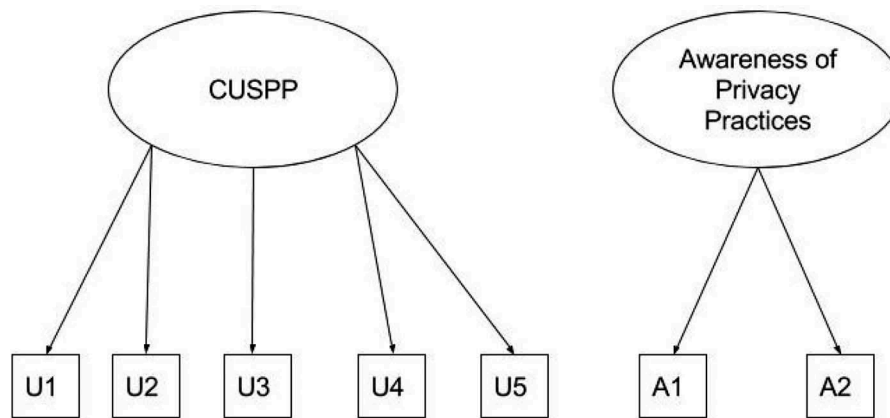
covariances (MacKenzie, Podsakoff, and Podsakoff 2011). Furthermore, although the Awareness of Privacy Practices scale has been validated in a variety of studies (i.e., Angst and Agarwal 2009; Tsai et al. 2011) and Malhotra, Kim, and Agarwal (2004) report a high reliability coefficient ($\alpha = .74$), results of the present study indicate strong measurement error covariances for two items. Therefore, the two items were eliminated.

Additional analysis indicated that subjective knowledge and objective knowledge are negatively correlated ($r = -.313$, $p < .05$). This could be due to overconfidence, which refers to a bias where consumers assume that they know more than they do (Moorman 1999), and has been demonstrated in students' social media usage (Muñoz and Wood 2015; Redecker et al. 2009). Indeed, there is some discrepancy among scholars about the relationship between objective and subjective knowledge. While some studies find the two constructs to be moderately to strongly correlated ($r = 0.30$ – 0.60) (Cole et al. 1992; Raju, Lonial, and Mangold 1995), some literature suggests otherwise. Subjective and objective knowledge have been suggested to influence information processing in different ways (Brucks 1985), and a weak relationship (Duhan et al. 1997), a nonsignificant relationship (Ellen 1994), and a negative relationship (Oskamp 1965) have been reported between consumers' confidence in performance and actual performance accuracy. While the results of the present study suggest that both subjective and objective knowledge may be important constructs to examine when studying understanding in general, they may not be distinct concepts within the nature of understanding privacy. Hence, the authors focus on understanding, or "what the user *actually* knows about the social networking site's privacy policy," as a unidimensional construct of interest. The modified model is shown in Figure 1.

Refined Measurement Results

The refined model was subject to a confirmatory factor analysis using MPlus version 6.12 (Muthén and Muthén 2011) utilizing full-information maximum likelihood estimation. Fit statistics indicated that the measurement model fit the data well ($X^2_{12} = 23.28$ $p = 0.025$, RMSEA = .07, CFI = .99, SRMR = .023) (Hu and Bentler 1999), and all items loaded significantly on their respective factors ($p < .05$), as shown in Table 2. Such results indicate that the

Figure 1
Study 1 Modified Model



selected items are good indicators of their underlying respective constructs.

As shown in Table 2, the reliability coefficients (coefficient alpha) were well above the .70 level suggested by Nunnally (1978), at .92 for CUSPP and .80 for Awareness of Privacy Practices, indicating internal consistency within

the respective measures (Bollen and Lennox 1991). The AVE of both underlying constructs was above .50, and the square root of the AVE for each construct was larger than its corresponding correlation with the other construct (Fornell and Larcker 1981). Collectively, these results show that the measures are reliable and exhibit convergent and discriminant validity.

Table 2
Study 1 Measurement Model Results

Scale	Standardized Loading
CUSPP	
When I add content to the social networking site, the site will collect this data for future use.	0.81
If I modify my personal information, the site can keep a copy of the original information.	0.82
If I choose to delete my account, my information can still be retained on the site.	0.84
If I interact with third-party affiliates through the social networking site, those affiliates will receive my personal information.	0.89
The information that I provide to the site can be copied by anyone who can see it.	0.85
Awareness of Privacy Practices	
A good consumer online privacy policy should have a clear and conspicuous disclosure.	0.93
It is very important to me that I am aware and knowledgeable about how my personal information will be used.	0.69

Notes: Model fit statistics: $\chi^2_{12} = 23.28$, RMSEA = .07, CFI = .99, SRMR = .023.

Nomological Validity

MacKenzie, Podsakoff, and Podsakoff (2011) suggest examining potential antecedents, consequences, and/or correlates that are theorized to be related to the construct of interest. As noted, Awareness of Privacy Practices was included as a construct that is theoretically related to CUSPP to increase confidence in the validity of its measures. Given that knowledge about a phenomenon has been shown to be positively correlated with concern for that phenomenon (i.e., Ellen, Wiener, Cobb-Walgren 1991; Flynn and Goldsmith 1999), CUSPP and Awareness of Privacy Practices are expected to be positively correlated. Results support this expectation. CUSPP is significantly and positively associated with Awareness of Privacy Practices ($r = .21$, $p < .05$), which demonstrates nomological validity. Furthermore, the construct intercorrelation is less than .71, which provides further evidence of discriminant validity (MacKenzie, Podsakoff, and Podsakoff 2011).

Study 1 Discussion

Study one develops a measure of CUSPP, which has not yet been conceptualized or empirically tested in the marketing literature. The authors originally defined CUSPP as “a user’s knowledge about a social networking site’s privacy policy,” which included both subjective and objective knowledge. While both types of knowledge may be important constructs to examine when studying understanding, the scale development process suggests that they may not be distinct concepts within the nature of understanding privacy. Hence, we refine the definition of CUSPP to “what the user *actually* knows about the social networking site’s privacy policy.”

The final measure of CUSPP is a five-item, Likert-type scale that assesses what consumers understand about social media privacy policies. Until now, most online privacy research focused on consumers’ perceptions of online privacy and its importance in their lives; however, researchers were unable to assess consumers’ cognitive abilities related to privacy policies. CUSPP allows marketing scholars to measure the information consumers actually understand in social media privacy policies, which can lead to important implications for how these policies are written. Specifically, if privacy policies exist for consumers’ protection, but consumers cannot understand the information that is being conveyed in the policies, perhaps this means that the language, style, and complexity of the policies must be altered accordingly.

The development of a scale to measure CUSPP is an important one in the consumer behavior literature, specifically as it relates to online privacy. However, it is not only important to further the empirical testing of this scale, but to determine the effect of how a policy is written on consumers’ reactions. Therefore, study two uses an experimental design to test the effect of text, audio, and pictorial cues, and various combinations thereof, to determine their effect on consumers’ CUSPP and physiologically-measured fear experienced while reading the privacy policy in real time.

STUDY 2: PRESENTATION CUES

Experimental Procedure and Stimuli

The second study uses a one-factor, four-condition (text, text/audio, text/pictorial, and text/audio/pictorial)

between subjects experimental design to test the effects of presentation cues on participants’ fear while reading the privacy policy of a social networking site, as well as their CUSPP. A total of 107 undergraduate students participated in the study in exchange for extra credit, with approximately twenty-six participants per condition, a sample size acceptable in both psychology (Harris et al. 2010; Reinhard and Sporer 2010) and advertising (i.e., Cervellon 2012; Royne et al. 2012) research. Undergraduate students are very familiar with social media (Wood, Bukowski, and Lis 2016); thus, the use of a student sample was appropriate.

Subjects reported to a research laboratory at a major southeastern university in the United States to participate in the study one at a time. Participants were set up in front of a computer monitor and viewed the instructions and the privacy policy on the monitor. This allowed for the capture of the fear emotion through the FACET module (FACET) in the iMotions Biometric Research platform (iMotions 2014), which was used to automatically detect facial micro-expressions evident in fear as a discrete emotion throughout the experimental procedure. After random assignment to one of the four conditions, each participant was presented with the following instructions:

“Imagine that you are about to sign up for a new social networking site that everyone is excited about. Before you can create a user profile, the site requests that you watch the following brief video.”

After ten seconds, the instructions automatically disappeared and the respective experimental manipulation appeared in its place. Each manipulation was two minutes and ten seconds in length, and displayed the same text at the same pace. The conditions differed by the type of cues presented. The text-only manipulation included only the written privacy policy. A screen shot of a portion of the text-only manipulation is shown in Appendix A. The text/audio manipulation was the same as the text-only manipulation from a visual perspective, but included an audio file that actually read the text to the participant as well. The text/pictorial manipulation was the same as the text-only manipulation, in which no audio was available, but included pictorial elements of the text as well. A screen shot of a portion of the text/pictorial manipulation is available in Appendix B. Finally, the text, audio, and pictorial manipulation was the same as the text/pictorial manipulation from a visual perspective, but also included the audio file from the text/audio manipulation. In this

way, the text/audio/pictorial manipulation included the most presentational cues. After the manipulation was displayed, it automatically disappeared and an online survey appeared in its place.

Data and Measurement

Fear. Fear was a physiological measurement captured in real time using automated facial expression analysis technology. Researchers have examined the relationship between emotions and facial expressions for over 100 years, and have determined universal facial expressions for a group of core, discrete emotions, including joy, surprise, disgust, and fear (Ekman 1999). The Facial Actions Coding System (FACS) (Ekman and Friesen 1978) is a well-established methodology to assess facial expressions and experienced emotions, and is considered a comprehensive description of facial behavior. Traditionally, human researchers trained in FACS coding must observe and record subjects’ facial expressions. However, micro-expressions are very small and can occur very quickly, which can lead investigators to misinterpret or neglect expressions. Further, expert coders must be trained, making FACS coding laborious, costly, and susceptible to errors (Cohn, Ambadar, and Ekman 2006). Recent developments in automated facial expression analysis allow for the continuous and nonintrusive measurement of facial expressions and provide objective measures of emotional responses. FACET (iMotions 2014) was used to automatically detect facial micro-expressions evident in fear as a discrete emotion.

FACET collects data on a moment-to-moment basis, which means that a set of unique observations is collected every sixteen milliseconds. It provides logarithmic evidence scores that represent the odds, in a logarithmic (base 10) scale, of a particular emotion being present as the participant experiences the privacy policy in real time. For example, an evidence value of 1 in the fear channel means that the observed expression is ten times more likely than not to be categorized by an expert human coder as experiencing fear (iMotions 2015). Taking the inverse log, an evidence score of 0.5 equates roughly to a human coder being 3.2 times more likely than not to rate the subject as experiencing fear. The researchers used a threshold of 0.5 to focus on the data that was most relevant to occurrences of fear. In this way, significant instances of fear were isolated, as opposed to minor occurrences.

CUSPP. CUSPP was a self-report measure assessed using the five-item scale developed in study one. As such, while one dependent variable of interest, fear, was assessed physiologically with automated facial expression analysis, the other dependent variable of interest, CUSPP, was assessed as a self-report measure.

Analysis and Results

Analysis of variance (ANOVA) was used to examine the effect of presentation cues on physiologically-experienced fear while reading the social media privacy policy, as well as CUSPP. The effect of fear is significant ($F = 4.90, p = .02$), while CUSPP is trending toward significance at $p = .07$ ($F = 2.07$). As shown in Table 3, a means comparison indicates that the presence of text, audio, and pictorial presentation cues led to greater fear ($M_{\text{Text/Audio/Pictorial}} = .11$) and CUSPP ($M_{\text{Text/Audio/Pictorial}} = 4.9$) than text-only presentation cues for both fear ($M_{\text{Text}} = .033$) and CUSPP ($M_{\text{Text}} = 4.3$), in support of hypotheses 1a and 1b. Furthermore, while the presence of text and audio cues ($M_{\text{Text/Audio}} = .05$) led to greater fear than the presence of text and pictorial cues ($M_{\text{Text/Pictorial}} = .04$), in support of hypothesis 2, the presence of text and pictorial cues led to greater CUSPP ($M_{\text{Text/Pictorial}} = 5.0$) than the presence of text and audio cues ($M_{\text{Text/Audio}} = 4.7$), in support of hypothesis 3.

Study 2 Discussion

Results of study two indicate that presentation cues play an important role in consumers’ affect and cognition related to social media privacy policies. While the use of audio and pictorial presentation cues are, indeed, more effective than presenting text-only information, audio and pictorial presentation cues are different in

Table 3
Study 2 Means Comparison

Manipulation	Means	
	Fear*	CUSPP**
Text-Only	0.03	4.3
Text/Audio	0.05	4.7
Text/Pictorial	0.04	5.0
Text/Audio/Pictorial	0.11	4.9

Notes: * $F = 4.90, p = .02$
** $F = 2.07, p = .07$

terms of cognitive and emotional effectiveness. Specifically, the use of audio presentation cues is more likely to evoke fear when consumers read social media privacy policies, while the use of pictorial presentation cues leads to greater CUSPP. This suggests that presentation cues offer consumers additional opportunities to assess what is happening to their personal information on social media. Not only do pictorial presentation cues aid their CUSPP, but audio cues can lead to greater levels of fear as consumers read the policies in real time.

These findings have important marketing and societal implications. Social media privacy policies, and privacy policies for many other websites and applications, often only present the information in text-only form, which, based on the results of the second study, leads to lesser fear and CUSPP. To truly be in the best interest of consumers, social media privacy policies should offer this information using different presentation cues. Indeed, consumers learn via different strategies, especially when it comes to technology (Liu and Reed 1995). As such, they should be given a variety of opportunities to react to and understand social media privacy policy information, so they can make the best possible decisions regarding their online behavior.

DISCUSSION AND IMPLICATIONS

This research makes a number of contributions to the consumer behavior, online privacy, and information processing literatures. Study one develops a measure of understanding of social media privacy policies. Although many social media privacy policies provide information about how consumer information is being collected, sites may be breaching a social contract if the policy is written in language that is too difficult for consumers to understand. This is particularly problematic given the increasing number of companies that have a presence on and interact with consumers on social media. If consumers begin to lose trust in the social media they use, the companies that take advantage of the opportunities for brand presence and advertising on social media may suffer. Thus, developing a measure of consumers' understanding of social media privacy policies could have important implications for the relationship marketing literature. Additionally, much of the consumer privacy literature tends to examine privacy *concern* (i.e., Buchanan et al. 2006; Culnan 1995; Eastlick, Lotz, and Warrington 2006), but little fails to consider consumers' *understanding* of privacy

policies. Indeed, the nature of a cognitive construct should be distinguished from that of an affective construct in academic literature. Hence, examining CUSPP makes a unique contribution to the online privacy literature.

This research also highlights the importance of scholars going beyond the content of privacy policies to examine *how* the information in the policies is communicated. Indeed, it has long been suggested that messages conveyed through video, audio, or written modes differ in the impact they have on learning and attitude change (Chaiken and Eagly 1976). Yet, the use of automated facial expression analysis technology in study two goes beyond attitudes to explore fear, a discrete emotion that can often be difficult to study. Results of study two suggest that presentation cues influence the amount of fear that a consumer experiences while reading a social media privacy policy. Specifically, participants experienced the least amount of real-time fear in the text-only condition and the most amount of real-time fear in the text/audio/pictorial condition, which suggests the more presentation cues available, the more opportunities consumers have to emotionally react to the information in the privacy policy. In other words, the use of numerous presentation cues in social media privacy policies could more accurately describe what happens to consumers' personal information when they become members of social media sites. Further, examining consumers' affective reactions using automated facial expression analysis technology could be useful in increasing scholars' understanding how consumers experience fear. Future studies should measure other self-report variables such as novelty of and involvement in social media privacy policies to determine if they can play a role in consumers' affective responses. Moreover, future research should study other discrete emotions such as confusion and surprise to assess their functions in consumer reactions to social media privacy policies.

In many cases, companies are able to access social media users' personal information so they can better target advertisements and incorporate such information into their advertising efforts (Privacy Rights Clearinghouse 2012). While OPPIA requires commercial websites that collect personal data to post and comply with a privacy policy, it is uncertain whether the wording of the privacy policy affects user reactions to the social networking site. Since privacy policies are often

written using complex legal jargon to circumvent privacy litigations rather than with language that is familiar and understandable to consumers (Pollach 2007), privacy policies—although meant for consumer protection—may be doing a poor job of carrying out their purpose. If these policies are difficult to read, consumers may be unaware of what happens to their shared information, unknowingly putting that information at risk.

Drawing on the multidisciplinary body of research on audio and visual modality, the authors find that the use of audio and visual cues leads to increased affective and cognitive reactions when it comes to social media privacy policies (hypothesis 1). Specifically, results suggest that the use of audio and visual cues lead to greater fear and CUSPP than text-only cues. In hypotheses 2 and 3, the authors focus on text and audio cues and their effect on fear and how text and pictorial cues affect CUSPP, respectively. This supports the prior research that finds audio leads to greater persuasion than text alone (Jacoby, Hoyer, and Zimmer 1983) and that pictures plus words are more effective than text alone in facilitating message recall and in inducing more favorable thoughts (Childers and Houston 1984). Future studies could explore the effect of pictorial cues on affective responses and audio cues on cognitive responses to further contribute to audio and visual modality theory and the design of effective social media privacy policies.

Currently, seventeen states require government websites to establish privacy policies or to incorporate machine-readable privacy policies into their websites (National Conference of State Legislatures 2016). However, these statutes only apply to government websites and are only required to be machine-readable (i.e., able to be crawled by search engines). Moreover, social networking sites do not have requirements related to the modality and lexical choice used in their privacy policies. To avoid such issues, privacy policies could be presented in the form of a “nutritional label” that consumers can read as they would a food label. Additionally, the text of the privacy policy could be simplified or presented in a table, as opposed to a paragraph. Some companies have even attempted to gamify consumer privacy; for instance, PrivacyVille encourages consumers to familiarize his or herself with a website’s privacy policy and then play a game based on his or her understanding of the policy (Zynga 2012). Such a format would effectively combine

pictorial and audio elements to maximize consumers’ CUSPP and emotional reactions to the information presented in the policy. Indeed, scholars and practitioners should test various combinations to identify differences in consumers’ CUSPP and fear levels. For example, consumers may find it more difficult to understand how companies use their information externally than how the site uses it internally. The presentation cues used in the privacy policies should accommodate these differences; a site that gives consumers’ personal information to companies should be presented differently than a site that only uses consumers’ information internally.

CONCLUSION

In today’s society, personal information is requested daily. While years ago, personal information spread slowly, today, the internet and social media make it possible to disclose personal data to wide populations (Fowler 2012) very rapidly. This research begins to shed light on how consumers interact with privacy issues on social media. Future research based on our findings should seek to understand how consumers respond to presentation cues and the implications this has for brands’ use of social media to connect with consumers. As social networking sites continue to gain popularity among consumers, websites and companies must ensure consumers are aware of and able to understand what is happening to the personal information they share on social media, so they can make the best possible decisions.

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APPENDIX A

Study 2 Sample Manipulation: Text-Only

When you register to become a member of the social networking site, you must provide the following information: name, e-mail address, birthday, and password. The information you provide may allow the social networking site or others to identify your nationality, gender, age, and other information about you. You and other users can choose to share information about you such as contact information, photos, and current location. We receive your personal information when you interact with the social networking site, such as when you join groups, connect with other members, and install applications.

APPENDIX B

Study 2 Sample Manipulation: Text/Pictorial

When you register to become a member of the social networking site, you must provide the following information: name, e-mail address, birthday, and password. The information you provide may allow the social networking site or others to identify your nationality, gender, age, and other information about you. You and other users can choose to share information about you such as contact information, photos, and current location. We receive your personal information when you interact with the social networking site, such as when you join groups, connect with other members, and install applications.

Name



Password:

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