

# A Cross-Cultural Perspective on the Privacy Calculus

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## Abstract

The “privacy calculus” approach to studying online privacy implies that willingness to engage in disclosures on social network sites (SNSs) depends on evaluation of the resulting risks and benefits. In this article, we propose that cultural factors influence the perception of privacy risks and social gratifications. Based on survey data collected from participants from five countries (Germany [ $n=740$ ], the Netherlands [ $n=89$ ], the United Kingdom [ $n=67$ ], the United States [ $n=489$ ], and China [ $n=165$ ]), we successfully replicated the privacy calculus. Furthermore, we found that culture plays an important role: As expected, people from cultures ranking high in individualism found it less important to generate social gratifications on SNSs as compared to people from collectivist-oriented countries. However, the latter placed greater emphasis on privacy risks—presumably to safeguard the collective. Furthermore, we identified uncertainty avoidance to be a cultural dimension crucially influencing the perception of SNS risks and benefits. As expected, people from cultures ranking high in uncertainty avoidance found privacy risks to be more important when making privacy-related disclosure decisions. At the same time, these participants ascribed lower importance to social gratifications—possibly because social encounters are perceived to be less controllable in the social media environment.

## Keywords

privacy calculus, individualism, uncertainty avoidance, social network sites, self-disclosure, social capital

Disclosures on social network sites (SNSs) follow a “privacy calculus” whereby users analyze the perceived risks and benefits of SNS use (Dienlin & Metzger, 2016); however, they are also influenced by cultural norms and values (Krasnova & Veltri, 2010; Krasnova, Veltri & Günther, 2012). SNS users weigh risks and benefits and decide only then how much information they want to disclose online. Whereas the benefits mainly include social gratifications such as social support and social capital, users’ concerns predominantly refer to data abuse or privacy infringements (see Ellison, Vitak, Steinfield, Gray, & Lampe, 2011). Forms of SNS disclosures include a wide range of privacy-relevant behavior, such as uploading pictures or the level of public access to the users’ SNS profile information.

SNS use is among the most prevalent forms of media use worldwide (European Commission, 2015; Pew Research Center, 2015). However, while SNS use in itself may be a cross-cultural phenomenon, users’ privacy calculus and their evaluations of the potential gains and risks associated with their SNS disclosures seem to show striking cultural differences. Empirical evidence suggests that perceived privacy risks as well as social gratifications are bound to cultural

norms and values (Li, 2011; Posey, Lowry, Roberts, & Ellis, 2010).

For example, US users have more general privacy concerns about Facebook use than German users, but they do not anticipate privacy infringements and data abuse by other users of Facebook as much as German users (Krasnova & Veltri, 2010). Social gratifications, such as connection and communication with others, are among the most prevalent motives of SNS use around the globe, but between countries, there are significant differences. For example, people from China and Korea emphasize these motives more than users from the United States (Kim, Sohn, & Choi, 2011).

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Following Hofstede's (1991) cultural dimensions, we aim to identify patterns in these international differences. Individualism and uncertainty avoidance are particularly important to consider in the context of online privacy (Krasnova & Veltri, 2010; Krasnova, Veltri & Günther, 2012). A cultural difference in the individualism/collectivism dimension suggests that Internet users from cultures that emphasize being an individual as opposed to being part of a coherent community may be more self-centered (Hofstede, 1991). As such, they would focus less on the social gratifications of SNS disclosures than those from collectivist cultures when considering the "privacy calculus." A difference among countries in the uncertainty avoidance cultural dimension suggests that some users may try to avoid uncertain and ambiguous situations such as facing privacy risks (Hofstede, 1991). Thus, people from cultures ranking high in uncertainty avoidance should emphasize the risks of SNS disclosures and have stronger privacy concerns.

Based on these considerations, we aim at establishing an understanding of the privacy calculus and SNS users' disclosure decisions that acknowledges their culturally distinct nature. A culturally determined privacy calculus would allow for a more differentiated and "culture-fair" view of online privacy and would result in a better understanding of conflicting results in different countries.

From a practical perspective, a cultural view of the privacy calculus would allow us to address SNS users according to their cultural values in media literacy training and privacy interventions. In other words, a cultural perspective on privacy will allow culture-sensitive privacy interventions.

With our research, we can further our current understanding of how policymaking and cultural norms may interact. With the study presented in this article, we first complement this current understanding with regard to the question of what people with different cultural values want and value in terms of online privacy. However, needs and values cannot always be pursued in the context of national policymaking. Hence, in our conclusion, we discuss examples of how not only cultural values but also cultural policymaking influences online privacy.

## The Privacy Calculus

Privacy—as a psychological construct—refers to a process of boundary management and to the strategies used by individuals to regulate access to the self (Altman, 1975; Petronio, 2002; Westin, 1967). Contextual privacy is determined by the perception of a current level of privacy that is compared to the individual's intended or ideal level of privacy (Altman, 1977). Individuals strive to attain their ideal level of privacy by applying context-specific strategies of self-disclosure and withdrawal. In the process of managing individual privacy and while communicating individual needs of privacy, the perceived risks and benefits of disclosure play a major role in guiding the privacy-related behavior of the individual (Masur

& Scharkow, 2016). The "privacy calculus" concept implies that online users' disclosures are a result of balancing the risks of their disclosures with the gratifications gained (Culnan & Armstrong, 1999).

The idea of the privacy calculus was first mentioned by Laufer and Wolfe as early as 1977 and was termed the "calculus of behavior" (p. 35). They suggested that individuals determine their disclosures by assessing whether they can manage the information to be shared while minimizing the negative consequences of these self-disclosures. Culnan and Armstrong (1999), as well as Dinev and Hart (2006), built on this foundational work and applied it to Internet use. Their studies were directed toward the acceptance of personal data use for targeted advertising (Culnan & Armstrong, 1999) and online shopping (Dinev & Hart, 2006). Since then, the privacy calculus has also been applied to the SNS context (Chang & Heo, 2014; Dienlin & Metzger, 2016; Krasnova, Spiekermann, Koroleva, & Hildebrand, 2010; Min & Kim, 2015; Shibchurn & Yan, 2015; Sun, Wang, Shen, & Zhang, 2015; Wilson, 2015).

In summary, the privacy calculus perspective considers disclosures to be the result of a rational cost-benefit calculation in which the risks of disclosing are weighed against the benefits gained. Although many studies do not explicitly mention such rational cost-benefit logic, most research investigating either privacy concerns or social gratifications of SNS disclosures seems to subscribe to the general idea that users weigh the costs and benefits of Internet use. Petronio's (2002) Communication Privacy Management theory, which has been widely applied to privacy in computer-mediated communication (Metzger, 2007), refers to the negotiation of privacy risks and benefits. In addition, Ellison et al. (2011) argue that online users are "negotiating privacy concerns and social capital needs in a social media environment" (p. 19). Similarly, Peter and Valkenburg (2011) state that "adolescents have to negotiate constantly between the risks and opportunities of communicating in networked publics" (p. 231).

Despite its popularity, the simple cost-and-benefit logic underlying the privacy calculus has been criticized for two reasons. First, it may neglect bounded rationalities (Wilson, 2015): Users may not be able to weigh all the risks and benefits due to lack of information, situational constraints, or cognitive abilities. With such criticism in mind, we chose to address two forms of disclosure in the SNS environment in the context of our study: (1) uploading a picture that can be accessed by all network friends and (2) having an open SNS profile that can be accessed Internet-wide. Both forms of disclosure represent specific types of SNS user behavior that facilitate social gratifications but come with a price, in that they represent specific privacy risks.

Posting pictures that are visible to all network friends is associated with social benefits arising from the social interactions initiated by postings (e.g., positive feedback from other users; Valkenburg, Peter, & Schouten, 2006).

This disclosure strategy, however, may be associated with privacy risks due to the heterogeneity of the group of SNS friends (“context collapse,” Vitak, 2012) and the resulting problems of audience management. While posted pictures may be suitable for and elicit positive responses from parts of one’s SNS audience (e.g., close friends), they may pose a privacy risk in the hands of other sub-groups of SNS friends (e.g., colleagues, supervisors, or parents). Similarly, having an open, public profile increases the visibility of the user and helps potential online friends find the person’s profile. At the same time, however, it comes with the risk of global public access to and traceability of the private information disclosed on the profile, especially with regard to unanticipated audiences, such as potential employers, law enforcement, or insurance companies.

Naturally, it is beyond the scope of this study to address the full spectrum of all possible forms of disclosure behaviors in the SNS context and the resulting privacy risks. However, we believe that the two forms of disclosure chosen for this study are well-suited scenarios for testing cultural differences in the privacy calculus, as they are representative of the types of social rewards and privacy risks frequently encountered by SNS users around the globe.

The second criticism addresses the conflicting evidence for the privacy calculus. Some studies have found that users do not take into account their privacy concerns when deciding whether and how to disclose information online. Instead, these studies suggest that users’ behaviors or behavioral intentions are mainly influenced by expected benefits and not the concerns (Taddicken, 2014; Tufekci, 2008). In contrast, the majority of studies have shown that the more people want to avoid privacy risks—such as data abuse or unwanted advances from others—the more they refrain from disclosures, such as having an open profile or deliberately sharing pictures with others on SNSs (Dienlin & Treppe, 2015; Joinson, Reips, Buchanan, & Paine Schofield, 2010; Masur & Scharkow, 2016; Mohamed & Ahmad, 2012).

In view of these inconsistent results regarding the role of privacy concerns for the willingness to self-disclose in the SNS context, one central goal of this study was to test the basic assumptions of the privacy calculus in an intercultural setting. Before we discuss how cultural dimensions relate to benefits and risks of SNS disclosure, we consider the general privacy calculus model for the overall sample. Following the privacy calculus rationale, we thus expect that the users’ desire to avoid privacy risks should lead to an increased willingness to protect their own SNS profile and to minimize SNS disclosures:

*H1a.* The subjective importance of avoiding privacy risks is negatively related to the willingness to have an open SNS profile.

*H1b.* The subjective importance of avoiding privacy risks is negatively related to the willingness to upload pictures accessible to all network friends.

Further following the privacy calculus rationale, expected social gratifications should increase the wish to disclose. In contrast to the ambiguous results regarding the effects of privacy concerns on disclosure, this second basic assumption of the privacy calculus paradigm has received broad empirical support: Numerous studies have shown that social gratifications and SNS disclosures are related (for an overview, cf. Brandtzaeg, 2012; Kim & Dindia, 2011). Social gratifications can represent numerous rewarding experiences in the SNS context, such as getting in touch with other people, making friends, or maintaining existing friendships (Utz, 2014). In current research on SNSs, social gratifications have mainly been investigated within the theoretical frameworks of social capital (Ellison & boyd, 2013) and social support (Treppe, Dienlin, & Reinecke, 2014). There is considerable empirical evidence that both social capital and social support are related to SNS use (Brandtzaeg, 2012; Ellison, Gray, Lampe, & Fiore, 2014; Kim & Dindia, 2011).

Furthermore, supporting the assumptions of the privacy calculus, perceived social gratifications substantially drive SNS disclosures (Debatin, Lovejoy, Horn, & Hughes, 2009). This can particularly be observed in the privacy calculus studies in this field so far: For instance, Chang and Heo (2014) demonstrated that users who perceived more social gratifications than others also disclosed more information about themselves. Min and Kim (2015) showed that the motivation of relationship management through SNSs and the perceived usefulness of SNSs for self-presentation had a substantial influence on the intention to share personal information in a sample of SNS users. Further, it was shown that the motive of relationship building significantly influences SNS disclosures (Krasnova et al., 2010). Based on these findings and following the predictions of the privacy calculus, we thus assume that users who find social gratifications to be important will be more likely to have an open profile and deliberately share photos with their entire network:

*H2a.* The subjective importance of social gratifications is positively related to the willingness to have an open profile.

*H2b.* The subjective importance of social gratifications is positively related to the willingness to upload pictures accessible to all network friends.

## The Privacy Calculus From a Cross-Cultural Perspective

The right to privacy is a question of dignity and freedom and thus refers to core values all over the world (Warren & Brandeis, 1890). Altman (1977) showed that privacy is a universal requirement, but one that needs to be understood in the context of culture. Today, cultural values and norms

are decisive for the way *online* privacy is perceived and negotiated. For example, vast differences between online concerns and uses exist across the 28 member states of the European Union (European Commission, 2015). Furthermore, culturally shared privacy norms can also be found to differ within one country. For the United States, it has been demonstrated that 35% of Asian Americans, African Americans, and Hispanic Americans, but only 21% of White Americans, never managed their SNS privacy settings (Hargittai & Litt, 2013). In addition, white users are more likely to engage in privacy-securing behaviors such as disguising their identities (Park, 2013). Hence, race and culture are important issues to consider for the analysis of privacy-related behavior.

Hofstede (1991) distinguished four dimensions of national culture: uncertainty avoidance, individualism versus collectivism, power distance, and masculinity versus femininity. More recently, these initial dimensions have been complemented by long-term orientation and indulgence versus restraint (Hofstede, Hofstede, & Minkov, 2010). Hofstede (1991) assumes that culture is comparable to a “collective programming of the mind that distinguishes one group or category of people from another” (Hofstede & McCrae, 2004, p. 54). Hofstede and colleagues (Hofstede, 1991; Hofstede et al., 2010) conducted surveys in 102 countries and published rankings and nation-level scores of the six cultural dimensions named above. Hofstede’s dimensions have been widely used in communication and computer-mediated communication research (for an overview, cf. Ess & Sudweeks, 2006). Lowry, Cao, and Everard (2011) used Hofstede’s cultural dimensions in an investigation of disclosure via instant messenger in the United States and China, as did Posey et al. (2010) in an investigation of disclosure on SNSs (France and the United Kingdom). Cho, Rivera-Sanchez, and Lim (2009) investigated Internet use in five different countries and related these to Hofstede’s scores. In the context of our study, we focus on the dimensions of individualism and uncertainty avoidance. These dimensions have been shown to be of particular relevance for Internet use and the privacy calculus (Cho et al., 2009; Krasnova et al., 2012; Lowry et al., 2011).

### **Individualism and the Cost–Benefit Ratio of SNS Disclosures**

People from individualist cultures prefer loosely knit social frameworks. They are more self-contained and place a higher priority on personal success (Hofstede, 1991). People from collectivist cultures, in contrast, prefer tightly knit societal frameworks. In their lives, they place a high priority on looking after their families and friends (Hofstede, 1991). People in individualist countries act more autonomously and look after themselves. In contrast, in collectivist cultures, people experience stronger ties and coherent, caring communities. Furthermore, individualism is closely related to self-enhancement, whereas collectivism is associated

with a stronger focus on the status and well-being of social groups (Markus & Kitayama, 1991; Stone-Romero & Stone, 2002).

Consequently, we expect that people from individualist countries care less about the social gratifications offered on SNSs as opposed to collectivist countries. Lowry et al. (2011) demonstrated in their study on instant messaging (IM) technologies that collectivism positively influenced the desire for online interpersonal awareness, which is strongly related to a desire to connect with others. Kim et al. (2011) showed in their study with Korean and US-college students that Koreans who, according to Hofstede (1991), are more collectivist-oriented were significantly more motivated to use SNSs with the aim of seeking friends and social support than their individualist US counterparts. Although social gratifications are important drivers of SNS use all around the globe, we assume that users from collectivist-oriented cultures hold them to be more important:

*H3. Individualism is negatively related to the subjective importance of social gratifications on SNSs.*

As discussed above, the cultural dimension of collectivism is connected closely and inherently to the social gratifications emerging from SNS use. The picture is less clear, however, when we try to establish a link between individualism/collectivism and the appraisal of the privacy risks emerging from SNS use. Findings on the relationship of individualism and the evaluation of privacy risks are mixed.

On one hand, having control over private life and independence from the collective can be considered a key element of individualism (Hofstede, 1991). Consequently, people from individualist cultures should be eager to have control over their lives and their personal data and are more likely to avoid privacy risks than those from collectivist cultures. This rationale was supported by data from Krasnova and Veltri (2010), who explored the level of concern of Facebook users from the United States and Germany with respect to their Facebook privacy. Their findings demonstrate that US users are more concerned about general forms of data abuse (e.g., concerned that the data “can be used in a way you did not foresee” or that data “can be continuously spied on”). Additionally, other studies corroborate the notion that people from the United States or Australia—representing individualist countries—are more concerned about their privacy than people from more collectivist cultures such as China, India, or Singapore (Cho et al., 2009; Wang, Norice, & Cranor, 2011).

On the other hand, collectivist values demand an orientation along the interests of one’s own collective of friends and family (Hofstede, 1991). Thus, people from collectivist cultures should be more alarmed about the harm they could impose on their collective’s privacy (Posey et al., 2010). SNSs derive their power from the collective: Ellison and boyd (2013) underline the social connectedness of network participants in their definition of SNSs. They point out that



SNSs are “a *networked communication platform*” in which participants have profiles, can “*publicly articulate connections*,” and can “*interact with streams of user-generated content provided by their connections*” (p. 158). Hence, in SNS contexts, it is likely that privacy violations may harm not only the users but also his or her network connections. In other words, in SNS settings, the collective is at risk. Following this argument, Krasnova et al. (2012) showed that the relationship between concerns and disclosures only reached significance for German, but not US participants. According to these results, only users from the less individualist culture of Germany managed their disclosures based on their risk assessment, speaking for the argument that a more collectivist culture predisposes users to avoid privacy risks. Also, in the context of IM services, Lowry et al. (2011) found that users ranking high in collectivism had more concerns regarding the collection of their data, errors of data use, secondary use of data, and improper access to information.

Based upon this conflicting evidence, we pose a research question with the aim of shedding more light on the relationship between individualism and the evaluation of privacy risks that SNS users do face:

*RQ1.* Is individualism significantly related to the subjective importance of avoiding privacy risks on SNSs?

## Uncertainty Avoidance and the Cost-Benefit Ratio of SNS Disclosures

Uncertainty avoidance refers to the subjective evaluation of ambiguous or uncertain situations as threatening (Hofstede, 1991). It pertains to cultures in which people believe that the state or governmental institutions should take care of these ambiguities. People from cultures rating high in uncertainty avoidance support rules and formal structures and avoid deviation.

With their defining characteristics, uncertainty avoidance and privacy are inherently linked to each other. Uncertainty avoidance describes how much an individual adheres to rules. Also, privacy itself can be considered as a set of rules—particularly the rules and boundaries of disclosures that are negotiated among individuals (Petronio, 2002). In SNS environments, the rules of privacy oftentimes are implicit and not as clear as in other contexts (Treppe, 2015). As a consequence, users negotiate rules of disclosures with their SNS connections and carefully navigate the network to find out what their online friends need and want (Krämer & Haferkamp, 2011; Vitak, Blasiola, Patil, & Litt, 2015).

In sum, the rules and boundaries of SNS-related privacy are not as clear as in other contexts. Hence, people from cultures ranking high in uncertainty avoidance should be more concerned about SNS privacy. This is clearly supported by previous research. Lowry et al. (2011) demonstrated in their study on IM use that uncertainty avoidance is strongly related to privacy concerns. Furthermore, Krasnova, Veltri, and

Günther (2012) compared German and US Facebook users and demonstrated that the Germans—members of a culture ranking higher in uncertainty avoidance—reduced their self-disclosure in response to privacy concerns more often than users from the United States. We thus expect to find a significant relationship between uncertainty avoidance and the evaluation of how important it is to avoid privacy risks:

*H4.* Uncertainty avoidance is positively related to the subjective importance of avoiding privacy risks on SNSs.

As discussed above, uncertainty avoidance and the handling of privacy risks are closely linked, as both refer to how people negotiate boundaries and rules in interpersonal communication. We now turn to the other side of the privacy calculus and consider the relationship between uncertainty avoidance and the evaluation of social gratifications. Here, again, the picture is less clear and results are ambiguous.

On one hand, people ranking high in uncertainty avoidance might emphasize the importance of social gratifications of SNSs because SNS communication can be perceived to be more controllable than, for instance, face-to-face communication. As pointed out earlier, SNS users can edit their posts, select their social connections, and calibrate disclosures to online friends via friends' lists (Ellison & Boyd, 2013). This environment could appeal to individuals who want to reduce uncertainty and to control who has access to them (Lowry et al., 2011).

For example, Yum and Hara (2005) pointed out that managing and editing online communication crucially influence social gratifications received on SNSs because it allows for a controllable self-presentation. The more users can curate their SNS communication and thus control their self-presentation, the more effectively they can shape their social network and generate social gratifications. This is supported by findings from Lowry et al. (2011): Their study participants ranking high in uncertainty avoidance had a greater need for “online awareness”; in other words, they were motivated to use IM with the aim of generating connections and participating in others' activities. The authors argued that social connections and gratifications increase the users' subjective sense of certainty. Thus, following this line of argument, users high in uncertainty avoidance should actively seek social gratifications to support their wish for a secure and controllable environment.

On the other hand, it can be argued that users of online communication and SNSs do not have much control over their online lives and that they face ambiguity and uncertainty (Marwick & Boyd, 2014; Tidwell & Walther, 2002). Information posted online can be archived, forwarded, and edited by other parties (Boyd, 2013). In addition, users may not be able to predict who shares what with whom. In other words, in the SNS context, social gratifications do not adhere to reliable rules and norms of disclosures as much as may be expected or desired by people from cultures ranking high in

uncertainty avoidance. Vitak (2012) and boyd (2014) pointed out that, at times, SNS users find it complicated and complex to manage and oversee their networks and to deal with how connections from different offline contexts are often collapsed in SNSs. Krasnova and Veltri (2010) found that German users—who rank significantly higher in uncertainty avoidance than their US counterparts (Hofstede, 1991)—considered relationship maintenance a less important gratification offered by Facebook than users from the United States. Hence, following this line of argumentation, SNSs are an environment without a clear set of universal or global rules or social norms. Users from cultures high in uncertainty avoidance may perceive the complexity of SNSs as particularly unsuitable for providing relational benefits.

Overall, the evidence concerning the relationship between uncertainty avoidance and social gratifications of SNS use is scarce and conflicting. Hence, we pose a research question to explore further how both dimensions are connected in the SNS context:

*RQ2.* Is uncertainty avoidance significantly related to the subjective importance of social gratifications on SNSs?

## Method

### Sample and Procedure

To address our research questions, we collected survey data from a cross-cultural sample of SNS users. Participants ( $N = 1,800$ ) were recruited in introductory psychology and communication classes at large universities in Germany, the Netherlands, the United Kingdom, the United States, and China (for general results and descriptive statistics of the research project, please see Trepte & Masur, 2016). The data of 250 participants had to be excluded from analysis due to incomplete responses, resulting in a final sample of  $N = 1,550$  respondents (65.0% male,  $M_{\text{age}} = 22.63$ , standard deviation [ $SD$ ] = 5.04). The sample includes participants of German ( $n = 740$ , 73.1% male,  $M_{\text{age}} = 24.35$ ,  $SD = 5.65$ ), Dutch ( $n = 89$ , 78.7% male,  $M_{\text{age}} = 21.96$ ,  $SD = 6.17$ ), British ( $n = 67$ , 17.9% male,  $M_{\text{age}} = 22.12$ ,  $SD = 6.54$ ), US ( $n = 489$ , 54.2% male,  $M_{\text{age}} = 20.43$ ,  $SD = 2.46$ ), and Chinese nationality ( $n = 165$ , 72.7% male,  $M_{\text{age}} = 21.99$ ,  $SD = 3.38$ ). Depending on the particular requirements in the respective countries, some of the participants received course credit for participation, while others participated without being compensated. The majority of participants reported using SNSs once (12.8%) or several times per day (69.2%). On average, participants spend 70.07 min using SNSs per day ( $SD = 84.82$ ).

### Measures

Authors developed the items and measures in collaboration with scholars from five different nations (see section

“Acknowledgments”). They worded the items in English first. Subsequently, scholars translated the items into their respective language. Students in countries other than the United States and the United Kingdom translated the items back into English to ensure their comparability.

**Subjective Importance of Avoiding Privacy Risks.** Three items, adapted from Debatin et al. (2009), were used to measure the subjective importance of avoiding privacy risks. Participants reported how important it was for them to avoid each of these privacy risks (i.e., “to prevent data abuse on [NAME OF PREFERRED NETWORK],” “to prevent unwanted advances on [NAME OF PREFERRED NETWORK],” and “to prevent damaging gossip on [NAME OF PREFERRED NETWORK]”) on a 5-point scale ranging from 1 (*not important at all*) to 5 (*very important*). The scale showed a satisfactory internal consistency (Cronbach’s  $\alpha = .88$ ).

**Subjective Importance of Social Gratifications.** Three items adapted from the bonding social capital scale developed by Williams (2006) were used to measure the subjective importance of social gratifications. Participants reported how important each of these gratifications was for them (i.e., “to find people on [NAME OF PREFERRED NETWORK] you trust to help solve your problems,” “to find people on [NAME OF PREFERRED NETWORK] you can turn to for advice about making very important decisions,” and “to find people on [NAME OF PREFERRED NETWORK] who would put their reputation on the line for you”) on a 5-point scale ranging from 1 (*not important at all*) to 5 (*very important*). The scale showed a high internal consistency (Cronbach’s  $\alpha = .91$ ).

**SNS Disclosures.** Two separate single-item indicators were used to measure two different forms of SNS disclosures:

Now, please think about your use of [NAME OF PREFERRED NETWORK]. We would like to know: how high is your willingness to . . . 1) . . . have an open profile that may be found via Google and that contains information, which may be read by internet users that do not belong to your network friends. 2) . . . upload pictures that may be accessed by all of your network friends.

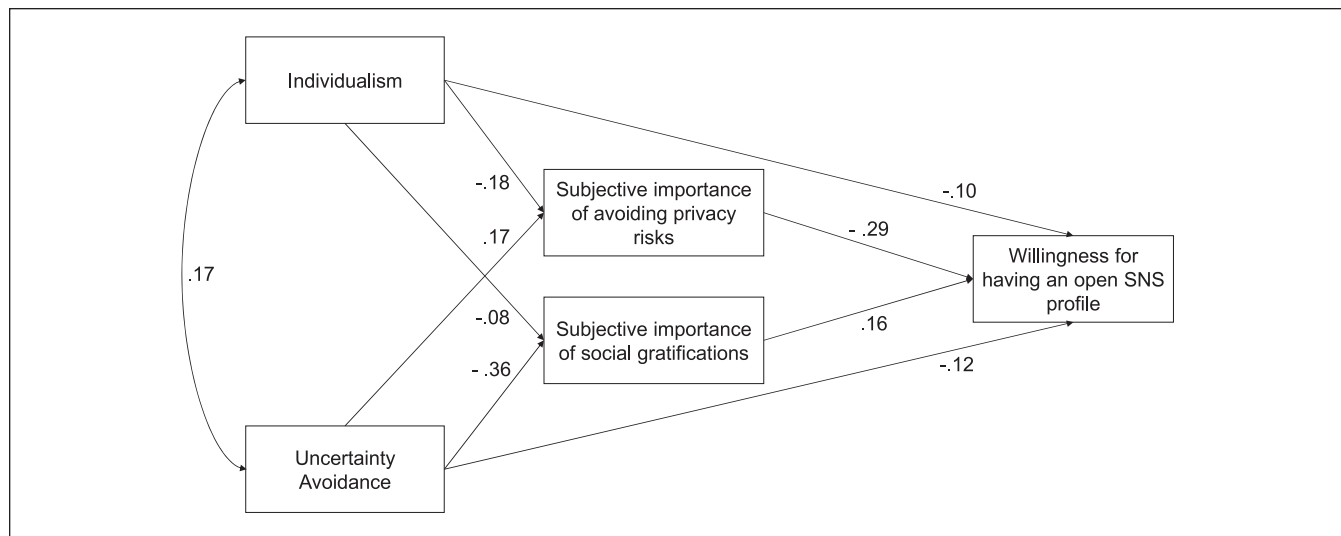
Participants rated their willingness to have an open profile and to upload pictures, respectively, on a 5-point scale ranging from 1 (*very low*) to 5 (*very high*).

**Individualism.** Individualism was coded on a country level according to the scores provided by Hofstede et al. (2010; the country scores are also available online at <http://geert-hofstede.com/countries.html>). Accordingly, an individualism score of 67 was assigned to participants from Germany, a score of 80 to participants from the Netherlands, a score of 89 to participants from the United Kingdom, a score of 91 to participants from the United States, and a score of 20 to participants from China.

**Table 1.** Means, Standard Deviations, and Zero-Order Correlations.

	M	SD	1.	2.	3.	4.	5.
1. Importance avoiding privacy risk	4.12	0.99	–				
2. Importance social gratifications	1.96	1.08	–.07**	–			
3. Willingness open profile	1.61	0.97	–.31**	.24**	–		
4. Willingness uploading pictures	2.52	1.27	–.14**	.11**	.31**	–	
5. Individualism	71.27	20.73	–.15**	–.14**	–.10**	.06*	–
6. Uncertainty avoidance	53.29	12.43	.14**	–.37**	–.24**	–.04	.17**

SD: standard deviation.

\* $p < .05$ ; \*\* $p < .01$ .**Figure 1.** Model 1 (willingness for open profile),  $\chi^2(1) = 2.11$ ,  $p = .146$ , CFI = .998, RMSEA = .028 (90% CI = [.001, .079]), and SRMR = .01. Scores in the figure represent standardized path coefficient significant at  $p < .01$ .

CFI: comparative fit index; RMSEA: root mean square error of approximation; CI: confidence interval; SRMR: standardized root mean square of residuals.

**Uncertainty Avoidance.** Uncertainty avoidance scores were also obtained from Hofstede et al. (2010). An uncertainty avoidance score of 65 was assigned to participants from Germany, a score of 53 to participants from the Netherlands, a score of 35 to participants from the United Kingdom, a score of 46 to participants from the United States, and a score of 30 to participants from China.

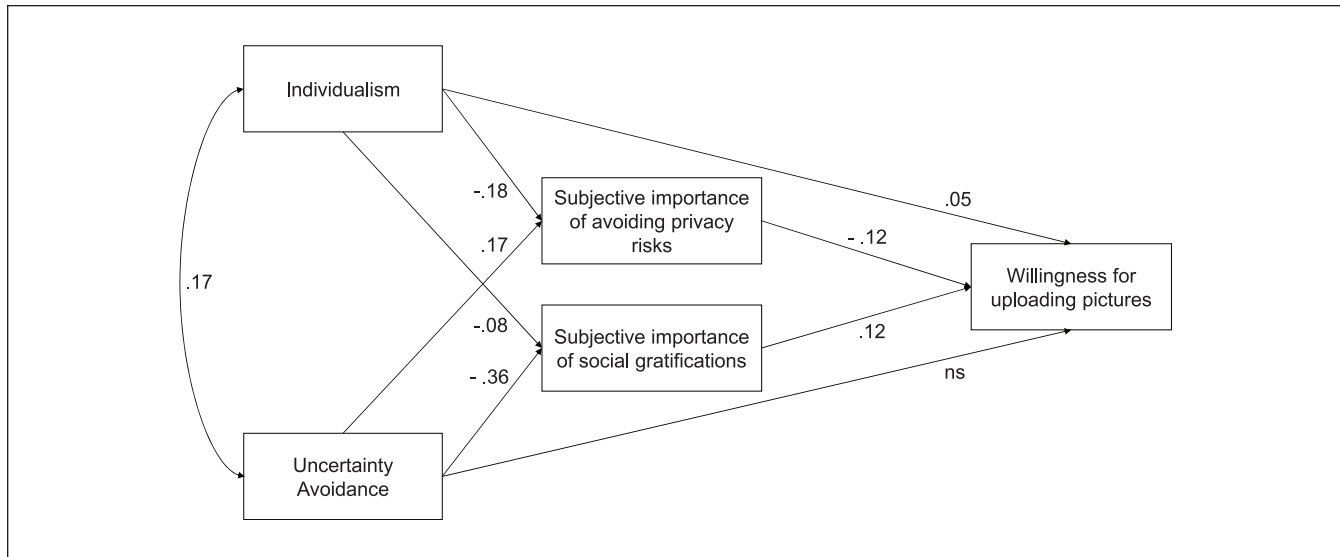
## Results

Mean values, *SDs*, and zero-order correlations among all variables addressed in hypotheses and research questions are presented in Table 1. The hypothesized model was tested separately for the willingness to (1) have an open profile and (2) upload pictures accessible to all network friends with two path models computed with the Amos 21 statistical package using the maximum likelihood method. To account for the significant zero-order correlation between individualism and uncertainty avoidance (see Table 1), both cultural dimensions were allowed to co-vary within the models. Model fit was assessed based on a combination of three fit indicators recommended by Hu and Bentler (1999): the comparative fit

index (CFI), the root mean square error of approximation (RMSEA), and the standardized root mean square of residuals (SRMR). Model fit was considered acceptable with an RMSEA approaching .06 or lower, a CFI above .95, and an SRMR of .09 or lower (Hu & Bentler, 1999).

Model 1 (see Figure 1) investigated our hypotheses and research questions with regard to the first indicator of unprotected self-disclosure on SNSs: willingness to have an open profile. With CFI = .998, RMSEA = .028 (90% confidence interval [CI] = [.001, .079]), and SRMR = .01, the model showed an excellent fit to the data. Model 2 (see Figure 2) tested our hypotheses with regard to the second indicator of unprotected self-disclosure on SNSs: willingness to upload pictures accessible to all network friends. Just like Model 1, Model 2 also showed an excellent fit to the data with CFI = .997, RMSEA = .027 (90% CI = [.001, .079]), and SRMR = .01.

As predicted in H1a, the subjective importance of avoiding privacy risks showed a negative relationship to the willingness to have an open profile ( $\beta = -.29$ ,  $p < .001$ ; Figure 1). Supporting H1b, the subjective importance of avoiding privacy risks was a negative predictor of the willingness to



**Figure 2.** Model 2 (willingness for uploading pictures),  $\chi^2(1) = 2.11$ ,  $p = .146$ , CFI = .997, RMSEA = .027 (90% CI = [.001, .079]), and SRMR = .01. Scores in the figure represent standardized path coefficient significant at  $p < .05$ .

CFI: comparative fit index; RMSEA: root mean square error of approximation; CI: confidence interval; SRMR: standardized root mean square of residuals.

upload pictures accessible to all network friends ( $\beta = -.12$ ,  $p < .001$ ; Figure 2).

In contrast to that and supporting H2a, the subjective importance of social gratifications was a positive predictor for the willingness to have an open profile ( $\beta = .16$ ,  $p < .001$ ; Figure 1). Supporting H2b, respectively, the subjective importance of social gratifications showed a positive relationship with participants' willingness to upload pictures accessible to all network friends ( $\beta = .12$ ,  $p < .001$ ; Figure 2).

As predicted in H3, individualism was negatively related to the subjective importance of social gratifications ( $\beta = -.08$ ,  $p < .01$ ; Figures 1 and 2). People from individualist cultures find social gratifications on SNSs less important than people from collectivist countries.

In RQ1, we asked how individualism and the subjective importance of avoiding privacy risks are related. We found a negative relationship ( $\beta = -.18$ ,  $p < .001$ ), showing that SNS users from cultures ranking high in individualism find it less important to avoid privacy risks. In contrast, SNS users from collectivist cultures placed greater emphasis on avoiding privacy risks in their SNS communication. This supports the argument that SNS users from collectivist countries are motivated to avoid privacy risks to protect the interests of their collective of friends and family (Hofstede, 1991), perhaps because they wish to avoid harm they could impose on their collective's privacy (Posey et al., 2010).

Supporting H4, uncertainty avoidance was positively related to the subjective importance of avoiding privacy risks on SNSs ( $\beta = .17$ ,  $p < .001$ ; Figures 1 and 2). The results indicate that users from cultures ranking high in uncertainty avoidance are more eager to avoid privacy risks on SNSs.

In RQ2, we asked how uncertainty avoidance and the subjective importance of social gratifications are related. We

found a negative relationship ( $\beta = -.36$ ,  $p < .001$ ), showing that people from cultures ranking high in uncertainty avoidance find it less important to generate social gratifications on SNSs. This finding supports the argument that people from cultures ranking high in uncertainty avoidance show less appreciation for online social gratifications because they perceive the SNS context as being ambiguous. They may refrain from using SNSs, perhaps because they do not perceive the SNS environment sufficiently controllable and rule-oriented.

In addition to the paths referred to above, and in order to explore the direct effects of individualism and uncertainty avoidance on unprotected self-disclosure on SNSs, the paths between both cultural dimensions and the willingness to have an open profile accessible to all network friends were also tested in the path model (Figure 1). Both individualism ( $\beta = -.10$ ,  $p < .001$ ) and uncertainty avoidance ( $\beta = -.12$ ,  $p < .001$ ) showed a direct negative effect on the willingness to have an open profile. In a last step, the direct effects of individualism and uncertainty avoidance on the willingness to upload pictures were explored (Figure 2). While individualism showed a small but significant positive direct effect on the willingness to upload pictures ( $\beta = .05$ ,  $p < .05$ ), no significant direct effect was found with regard to uncertainty avoidance ( $\beta = .01$ ,  $p = .78$ ).

## Discussion

### Contributions

Like SNS use, privacy is an international phenomenon (EMC, 2014). People from many different countries and cultures are active SNS users. They differ, however, with respect to the amount of information they disclose and the



restrictiveness of their privacy settings (EMC, 2014; European Commission, 2015). An increasing body of research provides perspectives on the determinants of users' willingness to disclose personal information or to restrict their privacy settings. Yet, the vast majority of studies have adopted a single-country perspective and therefore cannot account for the fact that the cultures in which SNS members are socialized strongly influence privacy-related SNS behaviors. Thus, the contributions of our study are twofold.

First, our results confirm the basic tenets of the privacy calculus framework: The more participants wanted to avoid privacy risks associated with SNS use, the more cautiously they reported acting on SNSs. In contrast, the more value users ascribed to social gratifications on SNSs, the more openly they were willing to act on these platforms. We replicated this finding for two different privacy-related behaviors (having an open profile and uploading pictures accessible to all network friends), which suggests that a basic cost-and-benefit logic indeed guides the disclosing behavior of SNS users around the globe.

Yet, as a second contribution, our study also shows that cultural dimensions significantly affect the importance individuals ascribe to avoiding privacy risks and to receiving social gratifications of SNS use. As expected, SNS users from more collectivist-oriented countries place a higher importance on social gratifications. That said, people from collectivist countries reported it was more important for them to avoid privacy risks than people from individualist cultures. We believe that this finding complements previous research, because the link between individualism/collectivism and privacy attitudes was not as clear in prior studies. One interpretation of this finding—and the one we follow here—is that people from collectivist countries emphasize SNS privacy more than people from individualist countries because they are cognizant of privacy risks not only for themselves but also for the “collective” (Lampinen, Lehtinen, Lehmuskallio, & Tamminen, 2011). When deciding about whether or not to post pictures or to increase the visibility of their profile, users from collectivist countries may feel particularly torn between the perceived demand to socialize on SNSs and the perceived risks of this behavior for those in their network. For example, in their investigation of over three million twitter accounts, Liang, Shen, and Fu (2016) found that users from collectivist societies tend to set their accounts to private but engaged in more self-disclosure. Hence, the dialectics of individualism and collectivism remain an interesting influential factor to consider while investigating SNS behavior and SNS disclosures in particular.

As another cultural mechanism, uncertainty avoidance proved to be an important influence on the risks and benefits of SNS disclosures. Our findings show that people from countries ranking high in uncertainty avoidance specifically emphasize the need to avoid privacy risks. We expected this finding because previous research suggested that privacy risks are abstract and hard to grasp. For example, users may

not know exactly how to avoid privacy infringements such as identity theft, data fraud, or even online harassment. Thus, people from cultures oriented toward reducing uncertainty are more apt to avoiding risks associated with online disclosures. In fact, our results show that people who try to avoid uncertain situations also try to avoid privacy-related risks.

Furthermore, and this is again a finding new to the field of privacy research, we found that individuals from countries scoring high in uncertainty avoidance were significantly less likely to emphasize the importance of social gratifications. This finding supports our argument that the vague, mostly implicit, and constantly shifting norms of social behavior on SNSs can have a negative impact on individuals who desire rules and formal structures. As there is no explicit rule that users have to engage in mutual support in the SNS context, individuals high in uncertainty avoidance may choose to avoid entering an environment governed by unclear norms. Instead, they may assume that SNSs are not the best place to find people who, for example, help them solve their problems—and thus deny themselves the social capital benefits associated with self-disclosure on SNSs (Ellison et al., 2014).

### Limitations

This study is exploratory in its nature, and therefore, the results can only be interpreted in light of several limitations. The main limitation refers to the unequal and in some cases small sample sizes in the different countries. The generalizability of our findings is therefore strictly limited and future studies should interpret them as a starting point for analyses with larger and more equally distributed sample sizes.

Whereas some previous studies have used the Hofstede scores on an aggregate level as we did in our study (Cho et al., 2009), others assessed Hofstede's dimensions with items at the individual level (Lowry et al., 2011; Posey et al., 2010). The lack of individual level indicators of cultural values could thus be considered a potential limitation of this study. That said, we believe that the aggregate level scores are a valid measure in this instance. For example, Treppe (2008) demonstrated that both kinds of assessments correlate between  $r = .49$  and  $.61$  for the different dimensions, indicating a satisfying concurrent validity.

While our results can be plausibly interpreted within the framework of cultural values, it should be mentioned that other factors might also explain some of the results. For example, Facebook is the most popular SNS in the United States, Germany, Great Britain, and the Netherlands, but not in China. SNSs, however, also differ in the number of features they offer their users to satisfy social needs; this shapes the kinds of social gratifications users associate with various platforms. This also applies to possible differences regarding the individual network structures of users from different countries, which we did not consider in our study. However, we do not believe that these alternative explanations render our interpretation of cultural values invalid, particularly as

our sample includes people from European countries that differ regarding their cultural values, but not regarding their preferred SNS or average number of friends, for example.

## Conclusion and Future Directions

With our research, we demonstrated that users from different cultures systematically differ in their evaluation of the importance of social gratifications and privacy concerns in the context of SNS disclosure. Hence, the perceptions of both benefits and risks of SNS disclosures are in fact influenced by culture. Therefore, cultural dimensions should be integrated more frequently and systematically in future research on SNS use.

Specifically, future research should expand beyond the cultural dimensions of uncertainty avoidance and individualism/collectivism used in this study and examine the other four cultural dimensions introduced by Hofstede et al. (2010): power distance, masculinity versus femininity, long-term orientation, and indulgence versus restraint. Power distance, for example, refers to the way individuals perceive hierarchies and the distribution of power. People from a culture ranking high in power distance accept power to be distributed unequally, mistrust governmental or other powerful institutions, and feel controlled by them. Power distance seems particularly suited to explain privacy behaviors because it is closely related to the question of who has control over personal information. People from cultures ranking high in power distance should avoid disclosing information about themselves because they do not trust how powerful institutions such as the government or Internet service providers handle their data. Power distance is just one variable that could help us better understand the complex relationship between culture and online privacy. There are many different perspectives on how online privacy may be handled and other cultural factors may be explored.

Next, other gratifications to use SNSs, such as fun or “hooking up,” could also be integrated into future investigations. We also recommend furthering our understanding of the cultural privacy calculus by looking at privacy risks other than those included in our study.

Overall, our exploratory study highlights the importance of analyzing the impact of cultural values on users’ privacy-related SNS behavior. Individuals around the globe have been socialized and have internalized cultural values primarily in offline settings. However, values acquired offline crucially affect the way we organize our self-presentation toward our micro-sociological environment online, that is, toward our circles of friends and acquaintances on SNSs. Thus, another particular challenge for future research will be to engage with the reciprocal dynamics of cultures on and off the Internet. The ways users interact can no longer be considered as one or the other—that is, only online or only offline. The lines between communication in online and offline realms are increasingly blurred as interactions move seamlessly from one channel to another and behavior in one realm

shapes that in another. For example, Marder, Joinson, Shankar, and Houghton (2016) found a “chilling effect” of SNS communication, meaning that users change behavior in offline contexts because they anticipate how these behaviors might be reported in online communication. In particular, SNS users who anticipated that their activities would be reported online altered their offline behavior to please their potential audiences. This chilling effect is likely to interact with attitudes toward SNS disclosures and other cultural factors, and will have to be taken into consideration for future research.

Our results demonstrate that dimensions of culture influence how users calculate the benefits and risks of online disclosure. Consequently, policymaking and legislation will have to take into account different cultural backgrounds if it has the aim of protecting and supporting people in pursuing privacy and freedom. Based on these considerations, we can assume that privacy behaviors and self-disclosure on and off the Internet intensely influence how people live their lives today. Although individuals around the globe engage in Internet use and online communication, specific user practices and the psychological processes underlying the privacy calculus are culturally specific. Hence, if we agree on an understanding of online behavior as being culturally determined, we must also agree to integrate knowledge about cultural practices into research and policymaking to make it effective. In this sense, with this study, we provide a further step to advance our understanding of how users make decisions about privacy-related SNS behaviors and demonstrate the importance of a culturally comprehensive approach to studying SNSs and privacy attitudes in general.

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