Who needs privacy? Exploring the relations between need for privacy and personality

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Abstract

Privacy is defined as a voluntary withdrawal from society. While everyone needs some degree of privacy, we currently know little about people's privacy needs. In this study, we explore the relations between the need for privacy and personality. Personality will be operationalized using the HEXACO personality inventory. Need for privacy will be measured in relation to social, psychological, and physical privacy from other individuals (horizontal privacy); need for privacy from government agencies and companies (vertical privacy); as well as need for informational privacy, anonymity, and general privacy (both horizontal and vertical privacy). A sample of 1,576 respondents representative of the U.S. in terms of age, gender, and ethnicity will be collected. The correlations between privacy, personality, and sociodemographics will be analyzed using structural equation modeling.

Keywords: Privacy, need for privacy, personality, HEXACO

Who needs privacy? Exploring the relations between need for privacy and personality

Privacy is a major topic of public discourse and academic interest (Dienlin & Breuer, 2023). Yet despite its importance, to date we still know surprisingly little about the relation between privacy and personality (Masur, 2018, p. 155). What can we infer about a person if they desire more privacy? Are they more introverted, more risk-averse, or more traditional? Asking **these questions** seems relevant, not least because people who desire more privacy are often regarded with suspicion, having to justify why they want to be left alone. Consider the "nothing-to-hide" argument (Solove, 2007), which is that people who oppose state surveillance only do so because they have something to hide—because if you have nothing to hide, you would have nothing to fear. Is it true that people who desire more privacy are also more dishonest, greedy, or unfair? Or are people simply less extraverted, more diligent, or more prudent? With this paper, we seek to answer the following question: What can we learn about a person's personality if they say they desire more privacy?

Privacy and Personality

Privacy captures a *withdrawal* from others or from society in general (Westin, 1967). This withdrawal happens *voluntarily*, and it is under a person's *control* (Westin, 1967). Privacy is also multi-dimensional. On the broadest level, we can differentiate the two dimensions of horizontal and vertical privacy (Masur, Teutsch, & Dienlin, 2018; Schwartz, 1968). Whereas horizontal privacy captures withdrawal from other people or peers, vertical privacy addresses withdrawal from superiors or institutions (e.g., government agencies or businesses). In her theoretical analysis, Burgoon (1982) argued that privacy has four more specific dimensions: informational, social, psychological, and physical privacy. Pedersen (1979) conducted an empirical factor analysis of 94 privacy-related items, finding six dimensions of privacy: **reserve ("unwillingness to be with and talk with others, especially strangers," p. 1293); isolation ("desire to be alone and away from**

others," p. 1293), solitude ("being alone by oneself and free from observation by others," p. 1293), intimacy with friends ("being alone with friends," p. 1293), intimacy with family ("being alone with members of one's own family," p. 1293), and anonymity ("wanting to go unnoticed in a crowd and not wishing to be the center of group attention," p. 1293). Building on these understandings of privacy, in this study we employ a multifaceted model of need for privacy. We focus on *vertical* privacy with regard to people's felt need for **withdrawal from surveillance by a) the government and b) private companies;** *horizontal* privacy in terms of the perceived need for (c) psychological, (d) social and/or (e) physical withdrawal from other people; and *general* privacy as captured by people's felt need for (f) informational privacy, (g) anonymity, and (h) privacy in general. **Although all of these dimensions were defined and established in prior research, combining these dimensions into one single comprehensive measure of privacy represents a novel approach.**

Acknowledging that various understandings of personality exist, we operationalize personality using the factors and facets of the HEXACO inventory of personality (Lee & Ashton, 2018). HEXACO is a large and comprehensive operationalization of personality, and thus is less likely to miss potentially relevant aspects than other operationalizations. The HEXACO model stands in the tradition of the Big Five approach (John & Srivastava, 1999). It includes six factors (discussed below), which have four specific facets each. In addition, the HEXACO model includes a sixth factor not present in the Big Five labeled honesty-humility (plus a meta-facet called altruism), which seem particularly well-suited to investigate the nothing-to-hide-argument.

In predicting the need for privacy, we will primarily focus on the facets, because it is unlikely that the very specific need for privacy dimensions will relate closely to more general personality factors (Bansal, Zahedi, & Gefen, 2010; Junglas, Johnson, &

Spitzmüller, 2008). And for reasons of scope, below we cannot discuss all four facets for all six factors. Instead, we focus on those we consider most relevant. However, all we be analyzed empirically.

Predicting the Need for Privacy

So far, only few studies have analyzed the relation between personality and need for privacy empirically (Hosman, 1991; Pedersen, 1982, see below). Moreover, we are not aware of a viable theory specifically connecting privacy and personality. Due to the dearth of empirical studies and the lack of theory, in this study we hence adopt an exploratory perspective.

In order to understand how personality might relate to privacy, we can ask the following question: Why do people desire privacy? Privacy is important. But according to Trepte and Masur (2017), the need for privacy is only a secondary need—not an end in itself. Accordingly, privacy satisfies other more fundamental needs such as safety, sexuality, recovery, or contemplation. Westin (1967) similarly defined four ultimate purposes of privacy: (1) self-development (i.e., the integration of experiences into meaningful patterns), (2) autonomy (the desire to avoid being manipulated and dominated), (3) emotional release (the release of tension from social role demands), and (4) protected communication (the ability to foster intimate relationships). Privacy facilitates self-disclosure (Dienlin, 2014), and thereby social support, relationships, and intimacy (Omarzu, 2000). But privacy can also have negative aspects. It is possible to have too much privacy. Being cut-off from others can diminish flourishing, nurture deviant behavior, or introduce power asymmetries (Altman, 1975). And privacy can also help conceal wrongdoing or crime.

Privacy also has strong evolutionary roots (Acquisti, Brandimarte, & Hancock, 2022). Confronted with a threat—for example, the prototypical a tiger—people are inclined to withdraw. In the presences of opportunities—for example, the unexpected sharing of resources—people open up and approach

one another. Transferred to privacy, we could imagine that if other people, the government, or companies are considered a threat, people are more likely to withdraw and to desire more privacy. Conversely, if something is considered a resource, people might open up, approach others, and desire less privacy (Altman, 1976). Privacy also affords the opportunity to hide less socially desirable aspects of the self from others, which may bestow evolutionary advantages in terms of sexual selection or other social benefits and opportunities. Indeed, the need for privacy may have evolved precisely because it offers such advantages.

In what follows, we briefly present each HEXACO factor and how it might relate to need for privacy.

Honesty-Humility & Altriusm. Honesty-humility consists of the facets sincerity, fairness, greed avoidance, and modesty. The meta-facet altruism measures benevolence toward others and consists of items such as "It wouldn't bother me to harm someone I didn't like" (reversed).

According to the nothing-to-hide argument, a person desiring more privacy might be less honest, sincere, fair, or benevolent. People who commit crimes likely face greater risk from some types of self-disclosure because government agencies and people would enforce sanctions if their activities were revealed (Petronio, 2010). In those cases, the government and other people may be perceived as a threat. As a consequence, people with lower honesty and sincerity might desire more privacy as a means to mitigate their felt risk (Altman, 1976).

Empirical studies have linked privacy to increased cheating behaviors (Corcoran & Rotter, 1987; Covey, Saladin, & Killen, 1989). Covey et al. (1989) asked students to solve an impossible maze. In the surveillance condition, the experimenter stood in front of the students and closely monitored their behavior. In the privacy condition, the experimenter could not see the students. Results showed greater cheating among students in the privacy

condition, suggesting that in situations with more privacy people are less honest. While this shows a connection between privacy and dishonesty, other studies more directly support the notion that a desire for privacy is related to increased dishonesty. In a longitudinal sample with 457 respondents in Germany (Trepte, Dienlin, & Reinecke, 2013), people who felt they needed more privacy were also less authentic (and therefore, arguably, also less honest and sincere) on their online social network profiles (r = -.48). People who needed more privacy were also less authentic in their personal relationships (r = -.28).

We do not mean to suggest that it is only dishonest people who feel a need for privacy. Everyone, including law-abiding citizens, have legitimate reasons to hide specific aspects of their lives (Solove, 2007). A recent study confirmed this notion, finding that also those people who explicitly endorsed the statement that they would have nothing to hide still engaged in several privacy protective behaviors (Colnago, Cranor, & Acquisti, 2023). Our argument is rather that people lower on the honesty HEXACO factor may feel a greater need for privacy. Considering all the evidence, it seems more plausible to us that lack of honesty may indeed relate to an increased need for privacy, and perhaps especially when it comes to privacy from authorities such as government agencies.

Emotionality. Emotionality is captured by the facets fearfulness, anxiety, dependence, and sentimentality. People who are anxious may be more likely to view social interactions as risky or threatening (especially with strangers or weak ties, Granovetter, 1973). Anxious people might hence desire more privacy. People who are more concerned about their privacy (in other words, more anxious about privacy) may be more likely to self-withdraw online, for example by deleting posts or untagging themselves from linked content to minimize risk (Dienlin & Metzger, 2016). On the other hand, the opposite may also be true: People who are more anxious in general may desire less privacy from others (especially their strong ties), as a means to cope better with their daily challenges or to seek social approval to either verify or dispel their social anxiety.

People who are more anxious might also desire less privacy from government surveillance. Despite the fact that only 18% of all Americans trust their government "to do what is right," almost everyone agrees that "it's the government's job to keep the country safe" (Pew Research Center, 2015, 2017). More anxious people might hence consider the government a resource rather than a threat. They might more likely consent to government surveillance, given that such surveillance could prevent crime or terrorism. On the other hand, it could also be that more anxious people desire more privacy from government agencies, at least on a personal level. For example, while they might favor government surveillance of *others*, this does not necessarily include *themselves*. Especially if the government is perceived as a threat, as often expressed by members of minority groups, then anxiety might lead one to actually desire more personal privacy.

Extraversion. Comprising the facets social self-esteem, social boldness, sociability, and liveliness, extraversion is arguably the factor that should correspond most closely to need for privacy. Conceptually, social privacy and sociability are closely related. More sociable people are likely more inclined to think of other people as a resource, and thus they should desire less horizontal privacy and less anonymity (e.g., Buss, 2001). Given that privacy is a voluntary withdrawal from society (Westin, 1967), people who are less sociable, more reserved, or more shy should have a greater need for privacy from others.

This **assumption** is supported by several empirical studies. People who scored higher on the personality meta-factor plasticity, which is a composite of the two personality factors extraversion and openness, were found to desire less privacy (Morton, 2013). People who described themselves as introverted thinkers were more likely to prefer social isolation (Pedersen, 1982). Introverted people were more likely to feel their privacy was invaded when they were asked to answer very personal questions (Stone, 1986). Pedersen (1982) reported that the need for privacy related to general self-esteem (but not social self-esteem), which in turn is a defining part of extraversion (Lee & Ashton, 2018). Specifically, he found respondents who held a lower general self-esteem were more reserved ($r = .29$), and needed

more anonymity ($r = .21$) and solitude ($r = .24$). Finally, Larson and Bell (1988) and Hosman (1991) suggested that people who are more shy also need more privacy.

As a result, we **expect** that people who are more extraverted also need less social privacy and less privacy in general. Regarding the other dimensions of privacy, such as privacy from governments or from companies, we do not expect specific effects.

Agreeableness. Agreeableness has the four facets of forgiveness, gentleness, flexibility, and patience. It is not entirely clear whether or how agreeableness might relate to the need for privacy, although people who are more agreeable are also moderately less concerned about their privacy (Junglas et al., 2008). Thus, because need for privacy and privacy concern are closely related, more agreeable people might desire less privacy. To explain, more agreeable people might hold more generous attitudes toward others and are less suspicious that others have malicious motives, and consequently perceive less risk from interacting with others.

Conscientiousness. Conscientiousness consists of the facets organization, diligence, perfectionism, and prudence. Arguably, all facets are about being in control, about reducing relevant risks and future costs. Because control is a central part of privacy (Westin, 1967), people who avoid risks, who deliberate, and who plan ahead carefully, might prefer to have more privacy because it affords them greater control. Especially if others are considered a threat, being risk averse might increase the desire for more horizontal privacy. Similarly, if government agencies or private companies are considered a threat, risk averse people might have a stronger desire for vertical privacy. In either case, the most cautious strategy to minimize risks of information disclosure would be to keep as much information as possible private. Empirical studies have found that people with a stronger control motive require slightly more seclusion ($r = .12$) and anonymity ($r = .15$) (Hosman, 1991). People who considered their privacy at risk are less likely to disclose information online (e.g., Bol et al., 2018). Moreover, conscientious people are more concerned about their privacy (Junglas et al., 2008).

Openness to experience. Openness to experiences comprises the facets aesthetic appreciation, inquisitiveness, creativeness, and unconventionality. Openness to experience is also considered a measure of intellect and education. In one study it was found that more educated people have more knowledge about how to protect their privacy (Park, 2013), which could be the result of an increased need for privacy. Similarly, openness to experience is positively related to privacy concern (Junglas et al., 2008).

On the other hand, openness is conceptually the opposite of privacy. People more open to new experiences might not prioritize privacy. Many digital practices such as social media, online shopping, or online dating offer exciting benefits and new experiences, but pose a risk to privacy. People who are more open to new experiences might focus on the benefits rather than the potential risks. Hence, either a positive or negative relationship between need for privacy and openness is possible.

Socio-demographic variables. The need for privacy should also be related to sociodemographic aspects, such as sex, age, education, and income. For example, a study of 3,072 people from Germany found that women desired more informational and physical privacy than men, whereas men desired more psychological privacy (Frener, Dombrowski, & Trepte, 2023). In a nationally representative study of the U.S. and Japan, people who were older and who had higher income reported more privacy concern. More educated people possess more privacy knowledge (Park, 2013), and as a consequence they might desire more privacy. Ethnicity might also correspond to the need for privacy, perhaps because members of minority groups desire more privacy from the government, although not necessarily from other people. Some minorities groups (e.g., Black or Native Americans) often report lower levels of trust in white government representatives (Koch, 2019), which might increase the desire of privacy from government agencies. Last, we will examine whether one's political position is related to the need for privacy. We could imagine that more right-leaning people desire more privacy from the government, but not necessarily from other people. People who are more conservative tend to trust the

government slightly less (Cook & Gronke, 2005), which might be associated with an increased need for privacy. We will also explore whether a person's romantic relationship status corresponds to their expressed need for privacy.

Overview of expectations. The arguments discussed above lead to a number of expectations for our data which we delineate below, in order from most to least confidence in terms of identifying significant effects. First, we strongly assume that more extraverted people will desire less privacy, especially less social privacy. We also expect that people who are less honest will express greater need for privacy. We further assume that more conscientious people will desire more privacy and that more agreeable people may desire less privacy. Yet it is largely unclear how privacy needs relate to openness to experience and emotionality. In terms of the sociodemographic variables, we expect females likely need more informational and physical privacy, while males will likely report needing more psychological privacy. Older, more highly educated, and affluent people are also expected to need more privacy, and we anticipate that people who are ethnic minorities or are politically conservative will express greater need for privacy from the government than from other people.

Method

This section describes how we determine the sample size, data exclusions, the analyses, and all measures in the study. The Study will be conducted as an online questionnaire, programmed with Qualtrics. A preview of the survey can be found here.

Prestudy

This study builds on a prior project in which we analyzed the same research question (Dienlin & Metzger, 2019). This study was already submitted to Collabra, but rejected. The main reasons were that the sample was too small, that not one coherent personality inventory was used, that most privacy measures were designed ad-hoc, and that the

inferences were too ambitious. We hence decided to treat our prior project as a pilot study and to address the criticism by conducting a new study. In this new study, we redevelop our study design, we collect a larger sample, implement the HEXACO inventory together with established need for privacy measures, and overall adopt a more exploratory perspective. Being our central construct of interest, we also develop a small number of new items to have a more comprehensive measure of need for privacy.

Sample

Participants will be collected from the professional online survey panel Prolific. The sample will be representative of the US in terms of age, gender, and ethnicity. The study received IRB approval from the University of Vienna (#20210805_067). We calculated that participation will take approximately 15 minutes. We will pay participants $2.00 for participation, which equals an hourly wage of $8.00.

To determine sample size, we ran a priori power analyses using the R package *simsem* (Pornprasertmanit, Miller, Schoemann, & Jorgensen, 2021). We based our power analysis on a smallest effect size of interest (SESOI; see also below). We only considered effects at least as great as $r = .10$ as sufficiently relevant to support an effect's existence (Cohen, 1992). **To estimate power, we simulated data."** We set the correlation between two exemplary latent factors of personality and privacy variable to be $\Psi = .10$. We, furthermore, set the latent factor loadings to be $\lambda = .85$ (the SESOI) Adopting an exploratory perspective, and not wanting to miss actually existing effects, we considered both alpha and beta errors to be equally relevant, resulting in balanced/identical alpha and beta errors (Rouder, Morey, Verhagen, Province, & Wagenmakers, 2016). Because balanced alpha and beta errors of 5% are outside of our budget, we opted for balanced alpha and beta errors of 10%. A power analysis with an alpha and beta error of 10% and an effect size of $r = .10$ revealed that we required a sample size of $N = 1501$. To account for potential attrition (see below), we will oversample

by five percent, leading to a final sample size of N = 1576.** We obtained sufficient funding to collect a sample of this size.

Exclusions and Imputation

We will individually check answers for response patterns such as straight-lining or missing of inverted items. We will conservatively remove participants with clear response patterns. We will automatically exclude participants who miss the two attention checks we will implement. Participants who miss one attention check will be checked individually regarding response patterns. We will remove participants below the minimum participation age of 18 years. We will remove respondents with unrealistically fast responses (three standard deviations below the median response time).

Missing responses will be imputed using multiple imputation with predictive mean matching (ten datasets, five iterations, using variables that correlate at least with $r = .10$). The analyses will be run with all ten datasets, and the pooled results will be reported.

Planned Analyses

The factorial validity of the measures and the relations will be tested using structural equation modeling. If Mardia's test shows that the assumption of multivariate normality is violated, we will use the more robust Satorra-Bentler scaled and mean-adjusted test statistic (MLM) as estimator. We will test each scale in a confirmatory factor analysis. To assess model fit, we will use more liberal fit criteria to avoid overfitting (CFI $>$ .90, TLI $>$ .90, RMSEA $<$ .10, SRMR $<$ .10) (Kline, 2016). In cases of misfit, we will conservatively alter models using an a priori defined analysis pipeline (see online supplementary material). As a "reality check," we will test items for potential ceiling and floor effects. If means are below 1.5 or above 6.5, these items will be excluded.

We want to find out *who* needs privacy, and not so much *what causes* the need for privacy. Hence, to answer our research question, in a joint model combining all variables (including sociodemographic variables) we will analyze the variables' bivariate relations. To predict the need for privacy, we will first use the six personality factors. Afterward, we will predict privacy using the more specific facets. To get a first idea of the variables' potential causal relations, we will also run a multiple structural regression model.

We will use two measures as inference criteria: statistical significance and effect size. Regarding statistical significance, we will use an alpha value of 10%. Regarding effect size, we will define a SESOI of $r = .10$, and thereby a null-region ranging from -.10 to .10. As proposed by Dienes (2014), we will consider effects to be meaningful if the confidence interval falls outside of the null region (e.g., .15 to .25 or -.15 to -.25). We will consider effects irrelevant if the confidence interval falls completely within the null region (e.g., .02 to .08). And we will suspend judgement if the confidence intervals partially include the null region (e.g., .05 to .15).

Fully latent SEMs seldom work instantly, often requiring modifications to achieve satisfactory model fit. Although we explicate our analysis pipeline, there still remain several researcher degrees of freedom. We decided to use fully latent SEMs because we consider it superior to regular analyses such as correlation or regression using manifest variables (Kline, 2016). Combining several items into latent factors helps reduce noise and thereby the beta error. To provide context, in the online supplementary material (OSM) we will also share the results of alternative analyses, such as correlations of average scores.

We anticipate to finish the project three months after our registration was accepted.

Measures

All items will be answered on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).[1] A list of all the items that we will use are reported in the online supplementary material. The personality and privacy items will be presented in random order, and the sociodemographic questions will be asked at the end. We will later report also the results of the CFAs/EFAs, as well as item statistics and their distribution plots.

Need for privacy. Although there exist several operationalizations of need for privacy (Buss, 2001; Frener et al., 2023; Marshall, 1974; Pedersen, 1979), we are not aware of one encompassing, comprehensive, and up-to-date scale. Hence, we use both existing scales and self-developed items, some of which were tested in our pilot study. Ad-hoc scales were or will be (preliminarily) validated using the following procedure: We (a) collected qualitative feedback from three different privacy experts;[2] (b) followed the procedure implemented by Patalay, Hayes, and Wolpert (2018) to test (and adapt) the items using four established readability indices (i.e., Flesch–Kincaid reading grade, Gunning Fog Index, Coleman Liau Index, and the Dale–Chall Readability Formula); (c) like Frener et al. (2023), we will assess convergent validity by collecting single-item measures of privacy concern and privacy behavior, for which we expect to find small to moderate correlations; (d) all items will be analyzed in confirmatory factor analyses as outlined above.

Overall, we will collect 32 items measuring need for privacy, with eight subdimensions that all consist of four items each. Three subdimensions capture horizontal privacy—namely *psychological*, *social*, and *physical* privacy from other individuals. Psychological and physical privacy were adopted from Frener et al. (2023). Because Frener

[1] Note that the HEXACO inventory normally uses 5-point scales. Because we were not interested in comparing absolute values across studies, we used 7-point scales to have a uniform answer format across all items.

[2] The three experts who provided feedback were Moritz Büchi (University of Zurich), Regine Frener (University of Hohenheim), and Philipp Masur (VU Amsterdam).

et al. (2023) could not successfully operationalize the dimension of social privacy, building on Burgoon (1982) we self-designed a new social privacy dimension, which in the prestudy showed satisfactory fit. Two subdimensions measure vertical privacy. The first subdimension is *government surveillance*, which represents the extent to which people want the government to abstain from collecting information about them. The scale was pretested and showed good factorial validity. The second subdimension is need for privacy from *companies*, which we will measure using four new self-designed items. Finally, three subdimensions capture general privacy. The first subdimension is *informational* privacy, with items adopted from Frener et al. (2023). The second subdimension is *anonymity*, which captures the extent to which people feel the need to avoid identification in general. The scale was pretested and showed good factorial validity; one new item was designed for this study. Third, we will also collect a new self-developed measure of *general* need for privacy.

Personality. Personality will be measured using the HEXACO personality inventory. The inventory consists of six factors with four facets each, including the additional meta scale of "altruism".

Results

To visualize how results might look like, we have simulated some random data. Please note that these results are completely random and do not make sense from a theoretical perspective. When calculating the multiple regressions, the models did not converge, which is why several estimates could not be computed (see below).

In Table 1, we report how sociodemographics predict need for privacy.

In Table 2, we report how personality factors predict need for privacy.

In Table 3, we report how personality facets predict need for privacy.

Table 1

Predicting the need for privacy dimensions using sociodemographic variables.

	Need for privacy							
Sociodemographics	Social	Phys.	Psych.	Comp.	Gov.	Anonym.	Inform.	General
Age	-0.05	0.16	0.00	0.02	-0.29	0.41	-0.14	0.31
Gender	0.20	0.00	-0.03	-0.03	-0.12	-0.06	0.04	-0.51
Ethnicity	0.19	0.05	-0.01	-0.01	0.05	-0.07	0.01	-0.47
Relationship	0.09	-0.04	-0.01	0.00	-0.19	-0.07	-0.11	-0.19
College	-0.10	0.07	-0.03	-0.03	-0.07	0.10	0.07	-0.42
Income	-0.10	-0.07	0.04	-0.01	0.12	-0.13	-0.08	-0.22
Conservatism	-0.26	0.06	0.12	0.01	-0.05	0.30	-0.03	0.48

Table 2

Predicting the need for privacy dimensions using personality factors.

	Need for privacy							
Personality factors	Social	Phys.	Psych.	Comp.	Gov.	Anonym.	Inform.	General
Honesty humility	-0.31	0.01	-0.01	0.24	0.26	-0.85	-0.03	-0.28
Emotionality	0.94	-0.02	0.07	-0.47	-0.04	1.27	0.05	0.20
Extraversion	-0.99	-0.03	0.07	0.77	1.78	-0.10	0.71	-2.68
Agreeableness	-0.64	0.04	-0.12	-0.52	0.84	0.95	0.08	2.09
Conscientiousness	0.25	-0.01	0.02	0.01	-0.82	-0.04	0.15	-0.13
Openness	0.07	0.01	-0.07	-0.56	0.09	0.99	0.11	-0.21

Table 3

Predicting the need for privacy dimensions using personality facets.

	Need for privacy							
Personality facets	Social	Phys.	Psych.	Comp.	Gov.	Anonym.	Inform.	General
Honesty humility								
Sincerity	-0.63	0.01	-0.87	0.38	-0.51	0.22	-0.04	0.44
Fairness	0.05	0.01	0.02	-0.31	0.50	1.61	0.16	-1.67
Greed avoidance	0.17	-0.06	-3.02	-0.47	-1.51	1.03	2.07	10.90
Modesty	0.43	-0.01	-1.11	-0.61	0.57	1.91	0.17	2.28
Emotionality								
Fearfulness	0.68	0.00	0.62	0.60	0.62	1.46	0.58	1.23
Anxiety	-0.64	0.03	-0.21	-0.05	0.42	-0.83	-0.05	-0.32
Dependence	-0.39	0.00	0.23	-0.15	-0.02	-0.31	0.26	1.12
Sentimentality	-0.88	0.02	-0.70	0.44	0.23	-0.08	0.30	1.65
Extraversion								
Social self-esteem	-0.44	0.02	0.16	0.28	-0.32	0.85	-0.49	-2.70
Social boldness	-0.91	-0.03	-0.21	-0.25	0.51	3.06	0.36	-0.07
Sociability	-0.49	-0.01	0.32	0.36	0.11	2.36	0.02	-0.07
Liveliness	2.00	0.00	-2.64	-2.49	-1.39	9.42	-4.20	-6.44
Agreableness								
Forgiveness	-0.45	0.03	0.26	-0.50	-0.17	0.80	-0.23	-0.51
Gentleness	0.00	0.00	0.00	0.00	0.00	0.04	0.00	-0.03
Flexibility	-0.25	0.01	0.26	-0.30	0.54	0.09	0.38	1.40
Patience	0.33	-0.01	0.11	-0.34	-0.63	-3.00	0.16	-0.55
Conscientiousness								
Organization	-2.04	0.02	0.61	-0.51	2.55	1.02	1.42	3.58
Diligence	-0.27	-0.01	0.08	-0.20	-0.07	1.10	0.28	0.79
Perfectionism	-0.41	0.02	0.69	-1.26	0.53	0.89	-0.39	1.79
Prudence	0.54	-0.02	-0.50	-0.04	-1.17	-3.01	-0.69	1.36
Openness to experiences								
Aesthetic appreciation	-0.30	0.00	-0.94	-0.07	-0.44	-2.01	-0.35	0.15
Inquisitiveness	-1.49	-0.03	-0.14	0.31	0.12	-0.56	-0.67	1.11
Creativeness	0.19	0.00	0.01	-0.65	-0.11	2.46	0.07	-0.12
Unconventionality	-0.82	-0.02	0.54	-0.08	0.12	1.51	0.05	0.97
Altruism	0.56	0.00	-0.28	0.18	-0.33	-0.36	0.36	0.70

In Figure 1, you can find how each personality factor—while holding constant all other personality factors and sociodemographics—predicts need for privacy.

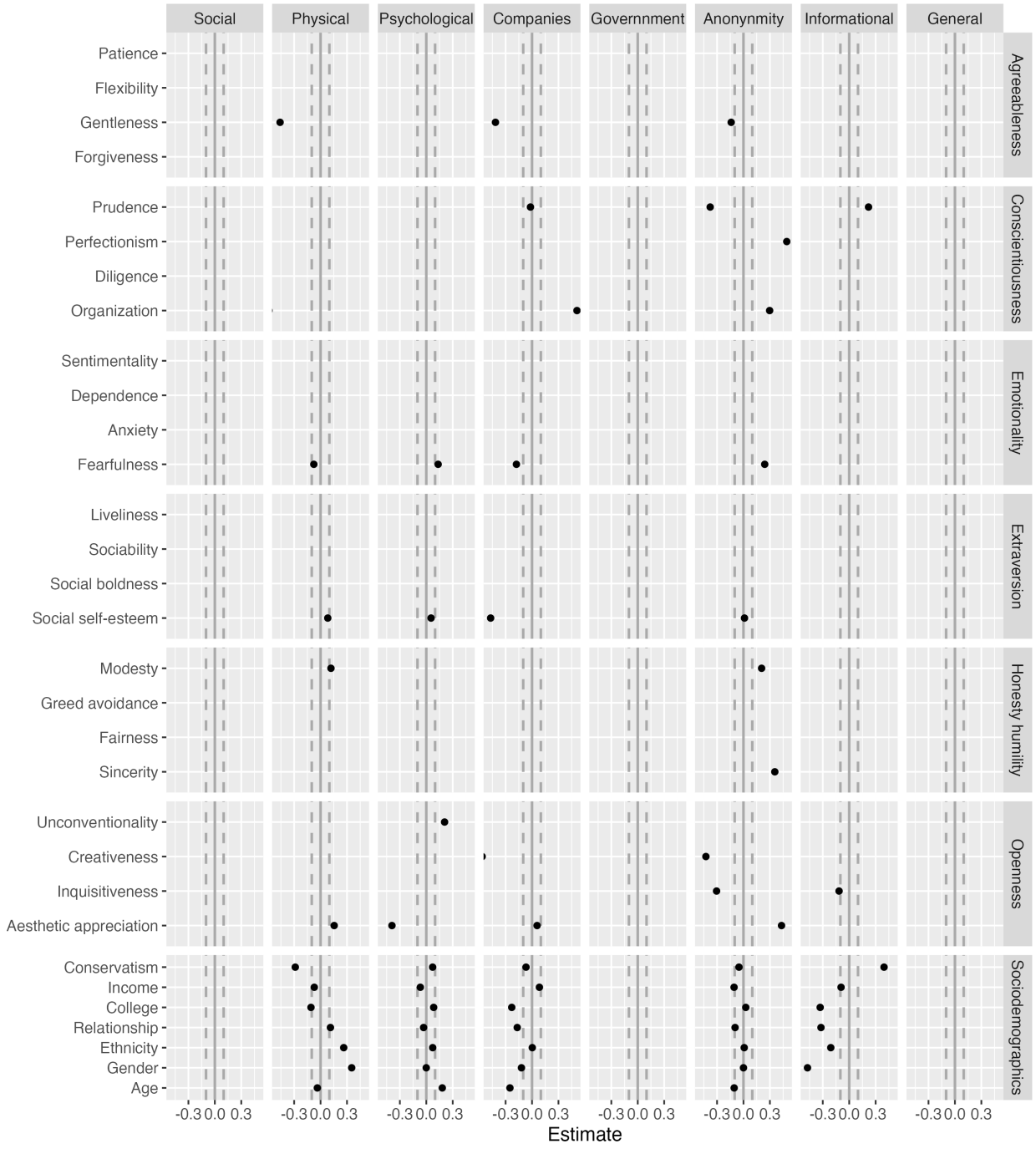

Figure 1. Results of multiple regressions, in which we predict all dimensions of need for privacy using all personality facets and sociodemgraphic factors simultaneously.

References

Acquisti, A., Brandimarte, L., & Hancock, J. (2022). How privacy's past may shape its future. *Science*, *375*(6578), 270–272. https://doi.org/10.1126/science.abj0826

Altman, I. (1975). *The environment and social behavior*. Monterey, CA: Brooks Cole.

Altman, I. (1976). Privacy: A conceptual analysis. *Environment and Behavior*, *8*(1), 7–29. https://doi.org/10.1177/001391657600800102

Bansal, G., Zahedi, F. M., & Gefen, D. (2010). The impact of personal dispositions on information sensitivity, privacy concern and trust in disclosing health information online. *Decision Support Systems*, *49*(2), 138–150. https://doi.org/10.1016/j.dss.2010.01.010

Bol, N., Dienlin, T., Kruikemeier, S., Sax, M., Boerman, S. C., Strycharz, J., ... Vreese, C. H. (2018). Understanding the effects of personalization as a privacy calculus: Analyzing self-disclosure across health, news, and commerce contexts. *Journal of Computer-Mediated Communication*, *23*(6), 370–388. https://doi.org/10.1093/jcmc/zmy020

Burgoon, J. K. (1982). Privacy and communication. *Annals of the International Communication Association*, *1*, 206–249.

Buss, A. H. (2001). *Psychological dimensions of the self*. Thousand Oaks; Calif: Sage Publications.

Cohen, J. (1992). A power primer. *Psychological Bulletin*, *112*(1), 155–159. https://doi.org/10.1037/0033-2909.112.1.155

Colnago, J., Cranor, L., & Acquisti, A. (2023). Is there a reverse privacy paradox? An exploratory analysis of gaps between privacy perspectives and privacy-seeking behaviors. *Proceedings on Privacy Enhancing Technologies*, *2023*(1), 455–476. https://doi.org/10.56553/popets-2023-0027

Cook, T. E., & Gronke, P. (2005). The skeptical American: Revisiting the meanings of trust in government and confidence in institutions. *The Journal of Politics*, *67*(3),

784–803. https://doi.org/10.1111/j.1468-2508.2005.00339.x

Corcoran, K. J., & Rotter, J. B. (1987). Morality-conscience guilt scale as a predictor of ethical behavior in a cheating situation among college females. *The Journal of General Psychology*, *114*(2), 117–123. https://doi.org/10.1080/00221309.1987.9711061

Covey, M. K., Saladin, S., & Killen, P. J. (1989). Self-monitoring, surveillance, and incentive effects on cheating. *The Journal of Social Psychology*, *129*(5), 673–679. https://doi.org/10.1080/00224545.1989.9713784

Dienes, Z. (2014). Using Bayes to get the most out of non-significant results. *Frontiers in Psychology*, *5*. https://doi.org/10.3389/fpsyg.2014.00781

Dienlin, T. (2014). The privacy process model. In S. Garnett, S. Halft, M. Herz, & J. M. Mönig (Eds.), *Medien und Privatheit* (pp. 105–122). Passau, Germany: Karl Stutz.

Dienlin, T., & Breuer, J. (2023). Privacy is dead, long live privacy! Two diverging perspectives on current issues related to privacy. *Journal of Media Psychology*, *35*(3), 159–168. https://doi.org/10.1027/1864-1105/a000357

Dienlin, T., & Metzger, M. J. (2016). An extended privacy calculus model for SNSs—Analyzing self-disclosure and self-withdrawal in a representative U.S. sample. *Journal of Computer-Mediated Communication*, *21*(5), 368–383. https://doi.org/10.1111/jcc4.12163

Dienlin, T., & Metzger, M. J. (2019). Who needs privacy? *Preprint*. https://doi.org/10.31219/osf.io/m23bn

Frener, R., Dombrowski, J., & Trepte, S. (2023). Development and validation of the Need for Privacy Scale (NFP-S). *Communication Methods and Measures*, *0*(0), 1–24. https://doi.org/10.1080/19312458.2023.2246014

Granovetter, M. S. (1973). The strength of weak ties. *American Journal of Sociology*, *78*(6), 1360–1380.

Hosman, L. A. (1991). The relationships among need for privacy, loneliness, conversational sensitivity, and interpersonal communication motives. *Communication Reports*, *4*(2),

73–80. https://doi.org/10.1080/08934219109367527

John, O. P., & Srivastava, S. (1999). The big five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (2. ed., pp. 102–138). New York, NY: Guilford Press.

Junglas, I. A., Johnson, N. A., & Spitzmüller, C. (2008). Personality traits and concern for privacy: An empirical study in the context of location-based services. *European Journal of Information Systems*, *17*(4), 387–402. https://doi.org/10.1057/ejis.2008.29

Kline, R. B. (2016). *Principles and practice of structural equation modeling* (4th ed.). New York, NY: The Guilford Press.

Koch, J. W. (2019). Racial minorities' trust in government and government decisionmakers. *Social Science Quarterly*, *100*(1), 19–37. https://doi.org/10.1111/ssqu.12548

Larson, J. H., & Bell, N. J. (1988). Need for privacy and its effect upon interpersonal attraction and interaction. *Journal of Social and Clinical Psychology*, *6*(1), 1–10. https://doi.org/10.1521/jscp.1988.6.1.1

Lee, K., & Ashton, M. C. (2018). Psychometric Properties of the HEXACO-100. *Assessment*, *25*(5), 543–556. https://doi.org/10.1177/1073191116659134

Marshall, N. J. (1974). Dimensions of privacy preferences. *Multivariate Behavioral Research*, *9*(3), 255–271. https://doi.org/10.1207/s15327906mbr0903_1

Masur, P. K. (2018). *Situational privacy and self-disclosure: Communication processes in online environments*. Cham, Switzerland: Springer.

Masur, P. K., Teutsch, D., & Dienlin, T. (2018). Privatheit in der Online-Kommunikation. In W. Schweiger & K. Beck (Eds.), *Handbuch Online-Kommunikation* (2nd ed.). Wiesbaden, Germany: Springer VS. https://doi.org/10.1007/978-3-658-18017-1_16-1

Morton, A. (2013). Measuring inherent privacy concern and desire for privacy - A pilot survey study of an instrument to measure dispositional privacy concern. *International Conference on Social Computing (SocialCom)*, 468–477. https://doi.org/10.1109/SocialCom.2013.73

Omarzu, J. (2000). A disclosure decision model: Determining how and when individuals will self-disclose. *Personality and Social Psychology Review*, *4*(2), 174–185. https://doi.org/10.1207/S15327957PSPR0402_5

Park, Y. J. (2013). Digital literacy and privacy behavior online. *Communication Research*, *40*(2), 215–236. https://doi.org/10.1177/0093650211418338

Patalay, P., Hayes, D., & Wolpert, M. (2018). Assessing the readability of the self-reported Strengths and Difficulties Questionnaire. *BJPsych Open*, *4*(2), 55–57. https://doi.org/10.1192/bjo.2017.13

Pedersen, D. M. (1979). Dimensions of privacy. *Perceptual and Motor Skills*, *48*(3), 1291–1297. https://doi.org/10.2466/pms.1979.48.3c.1291

Pedersen, D. M. (1982). Personality correlates of privacy. *The Journal of Psychology*, *112*(1), 11–14. https://doi.org/10.1080/00223980.1982.9923528

Petronio, S. (2010). Communication privacy management theory: What do we know about family privacy regulation? *Journal of Family Theory & Review*, *2*(3), 175–196. https://doi.org/10.1111/j.1756-2589.2010.00052.x

Pew Research Center. (2015). *Beyond distrust: How Americans view their government.* http://www.people-press.org/2015/11/23/beyond-distrust-how-americans-view-their-government/.

Pew Research Center. (2017). *Public trust in government: 1958-2017.* http://www.people-press.org/2017/12/14/public-trust-in-government-1958-2017/.

Pornprasertmanit, S., Miller, P., Schoemann, A., & Jorgensen, T. D. (2021). *Simsem: SIMulated structural equation modeling.* Retrieved from https://CRAN.R-project.org/package=simsem

Rouder, J. N., Morey, R. D., Verhagen, J., Province, J. M., & Wagenmakers, E.-J. (2016). Is there a free lunch in inference? *Topics in Cognitive Science*, *8*(3), 520–547. https://doi.org/10.1111/tops.12214

Schwartz, B. (1968). The social psychology of privacy. *American Journal of Sociology*,

73(6), 741–752.

Solove, D. J. (2007). 'I've got nothing to hide' and other misunderstandings of privacy. *San Diego Law Review*, *44*, 745–772.

Stone, D. L. (1986). Relationship between introversion/extraversion, values regarding control over information, and perceptions of invasion of privacy. *Perceptual and Motor Skills*, *62*(2), 371–376. https://doi.org/10.2466/pms.1986.62.2.371

Trepte, S., Dienlin, T., & Reinecke, L. (2013). *Privacy, self-disclosure, social support, and social network site use. Research report of a three-year panel study.*

Trepte, S., & Masur, P. K. (2017). Need for privacy. In V. Zeigler-Hill & T. K. Shackelford (Eds.), *Encyclopedia of Personality and Individual Differences* (pp. 1–4). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-319-28099-8_540-1

Westin, A. F. (1967). *Privacy and freedom.* New York, NY: Atheneum.

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Conflict of Interests

Both authors declare no conflict of interests.

Supplementary Material

All the stimuli, presentation materials, participant data, analysis scripts, and a reproducible version of the manuscript can be found or will be shared as online supplementary material on the open science framework (https://osf.io/e47yw/). The paper also has a companion website where all materials can be accessed (https://tdienlin.github.io/Who_Needs_Privacy_RR/proposal.html).

Data Accessibility Statement

The data will be shared on the open science framework (https://osf.io/e47yw/) and on github.