# A Multilevel Analysis of the Relationship Between Survey-Interview Privacy and the Expression of Opposition to Government Surveillance in 47 Countries

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**Abstract**

Some attitudes invite trouble when they get out, and people may voice those views with caution when other parties can surveil what's said. Past studies suggest that awareness of *government* surveillance has a chilling effect on expression (e.g., on people's intent to participate politically in surveilled circles). Using World Values Survey data from 47 countries, I examined whether *casual* forms of surveillance during survey interviews—the presence of anyone other than the interviewer who could follow the respondent's answers—predicted reduced expression of oppositional attitudes, focusing on an apropos example: Opposition to government surveillance. Accounting for plausible confounds, I found tentative evidence of a relationship between interview privacy and the expression of opposition to government surveillance, as well as between interview privacy and the expression of other conceptually relevant outcome measures: Lack of confidence in the courts and lack of confidence in the government.

*Keywords:* surveillance, privacy, attitudes, multilevel modeling, bootstrapping

*"Pervasive monitoring of every first move or false start will, at the margin, incline choices toward the bland and the mainstream…. The condition of no-privacy threatens not only to chill the expression of eccentric individuality, but also, gradually, to dampen the force of our aspirations to it."* (Cohen, 2000, p. 1426)

Ours is an era of surveillance. Escaping impositions on personal privacy is an increasing struggle. Governments, from those with authoritarian proclivities to those with ostensibly "free" citizenries (per organizations like Freedom House, 2020), seem unable to resist spying on their populations. China's Skynet program, for example, has armed authorities there with the power to monitor citizens near-constantly by way of millions of security cameras (Qiang, 2019). The United States is one of the most ardent indulgers in surveillance: Programs and surveillance tools with foreboding names like "XKeyscore" and "PRISM" have equipped the nation's spying services with the ability to comb through citizens' emails, internet histories, file transfers, and more, all with limited oversight (Gellman & Poitras, 2013; Greenwald, 2014, pp. 153-160; Greenwald & MacAskill, 2013).

Surveillance is hardly limited to the actions of governments. By late 2017, just shy of half of Americans (46%) were making use of virtual voice assistants (Alexa, Google Echo, etc.; Pew, 2017). It is not a novel observation that in order to "trigger" at the right times, these virtual assistants must *always* be on—that is, listening—in some capacity (Lynskey, 2019). Even for people abstaining from Alexa et al., simply using the internet entails being surveilled: A recent analysis estimated that >90% of websites use some form of tracking cookie(s) (Fouad et al., 2020). This incursive effort is aided by the fact that the world's most-used web browser, Google Chrome (Statcounter, 2021), makes little effort to shield its users from such surveillance, all while indulging in serious snooping on behalf of its advertising-giant owner (Fowler, 2019).

One might reasonably conclude that the state of privacy—especially in the tech-infused developed world and in nations with governments inclined toward authoritarianism—is poor.

Extreme surveillance raises normative questions, of course, but separate from the matter of its rightness or wrongness, one can study its effects on the surveilled. How are the inspected

affected? Recent research paints a dispiriting picture: Multiple past experiments, detailed below, suggest that awareness of government surveillance exerts a "chilling" effect on expression. In this analysis, I expanded the conceptual scope of that past work by examining whether a similar relationship was present between *casual* surveillance—as opposed to state snooping—and expression in data from a massive international survey.

Direct evidence for the suppressive effect of government surveillance has grown in recent years. Stoycheff et al. (2019) ran a one-week longitudinal experiment measuring American participants' likelihoods of engaging in online political activities at two time points. Before the second measurement, the researchers exposed half of the participants to an article about government surveillance. Although the average likelihood of engaging in online political activity increased for both the treatment and control groups over the week (Super Tuesday 2016 occurred between the measurement points, possibly explaining the overall bump), the increase was massively attenuated for participants who had encountered the article about surveillance.

A similar effect emerged in another one-week longitudinal experiment that Stoycheff et al. (2019) ran with a sample of American Muslim participants assessing their likelihoods of participating in online political activities. Before the second measurement, half of the participants were exposed to a "Terms of Service" statement suggesting that their responses to the survey may be surveilled by the government. Not surprisingly, these participants reported being less likely than controls to engage in online political activities at this second time point. There was no difference in the groups' average likelihoods at the first time point, suggesting that the exposure to surveillance messaging caused the drop in their inclinations to participate politically online.

These findings evoke Jeremy Bentham's panopticon and suggest that the fabled prison would indeed be an effective tool of control. His conception was of an institution in which the incarcerated would be arranged in a cylinder of cells around a central guard tower, with those in the tower being able to observe any prisoner at any time simply by spinning around. The prisoners, unable to see their observers in the tower (tinted glass or blinding lights could easily achieve this), would be left in a position of perpetual uncertainty: *I can be watched at any time, and I cannot know when I am being watched; my only option is to act as though I am being observed in every moment.* Replace the prisoners with citizenries; replace the central tower with surveillance agencies and data-hoovering companies; and replace the tinted glass and blinding lights with secret courts and bureaucratic obfuscation (who could oppose an organization with a name like "Government Communications Headquarters" [UK] or "National Security Agency" [USA]?). The metaphor is not subtle, and it is strengthened by recent evidence of surveillance's suppressive, chilling effects.

The studies described above focused on the effects of *government* surveillance. But suppressive effects may occur in response to *casual* forms of surveillance in the environment as well. Government surveillance, contemporary surveillance capitalism (à la Zuboff, 2019), and a nosy neighbor peering into another person's window all involve the same fundamental issue: An interference in one's ability to control information about oneself, and the potential risks associated with that information getting out. Insofar as effects like those in the studies referenced above are products of awareness of such interference generally (and not products of something unique about awareness of *state* surveillance), even casual, everyday privacy threats could chill expression. This possibility will ring familiar to anyone who has lowered their voice or looked over their shoulder before revealing a less-than-mainstream opinion to a friend over coffee or

cocktails. In this analysis, I focused specifically on the expression of *oppositional attitudes*, by which I mean views critical of relatively powerful figures/institutions that have some amount of authority over the attitude holders. Oppositional attitudes, on account of their sensitivity and capacity to invite repercussions, are prime targets to study when evaluating the suppression of expression. (Not all attitudes are wont to be influenced by the privacy conditions of the environment. Admitting a distaste for a particular variety of apple is sufficiently innocuous that the disclosure is unlikely be influenced by surveillance in any context outside of the most fanatical Honeycrisp conferences. Issuing criticism of authorities can be a riskier endeavor.)

I assessed the relationship between casual surveillance and the expression of oppositional attitudes using observational survey data. Conclusions are, therefore, non-causal. I discuss below reasons why a causal relationship is certainly plausible, and the experiments described above bolster the possibility, but given the nonexperimental data at hand, the investigation here is ultimately of an association.

For the analysis, I made use of an administrative note recorded for more than 60,000 of the interviews conducted as part of the most recent version of the World Values Survey (WVS Wave 7, Version 2.0; Haerpfer, 2020): *Whether the interview was conducted in private or not*. Tens of thousands of participants from dozens of countries responded to questions about topics ranging from life satisfaction to voting to social activism. I have proposed that casual surveillance—the presence of a family member, visitor, repairperson, or whoever else within earshot during the interview—will predict reduced expression of oppositional attitudes. One oppositional attitude that would plausibly be subject to surveillance-induced suppression is *opposition to surveillance itself*, which was measured in the WVS. I expected to find less opposition to state surveillance expressed by participants whose interviews were not conducted

in private than by participants whose interviews were conducted away from potentially invasive eyes and ears. To strengthen the claim that interview privacy predicts the expression of oppositional attitudes generally (as opposed to just one specific measure), I followed the analysis of opposition to government surveillance with similar analyses of respondents' expressed confidence in their governments and confidence in their court systems. Although these latter measures are less straightforwardly examples of "oppositional attitudes" (i.e., a lack of confidence does not *necessarily* imply resistance/antagonism), there's a raft of evidence suggesting that confidence/trust is tied to opposition: For example, an analysis using American National Election Study data found that political trust was associated with support for government institutions (Hetherington, 1998), and another survey found that a lack of trust in government predicted willingness to engage in violence against the state (Murray, 1972).

Answers to certain questions carry a "threat of disclosure" (Tourangeau & Yan, 2007): A respondent may fear consequences ranging from scorn to prosecution if their answer gets out. All World Values Survey respondents receive a commitment of anonymity from their interviewer (see WVSA, 2020, p. 2), but the presence of an additional surveilling party who makes no such guarantee may bring the threat of disclosure into salient relief and stymie respondents' expression of oppositional views.[1] *Control* over one's information and how it's disseminated is an core element of privacy (Solove, 2006; Westin, 1967), and some studies suggest—somewhat ironically—that giving individuals more control over the release and access of their personal information leads them to share it more liberally (Brandimarte et al., 2012). When a WVS respondent's answers to sensitive questions are subject to monitoring by someone other than

[1] Tourangeau and Yan (2007) conducted a small meta-analysis of past studies that attempted to examine the role of bystander presence on survey responses. Results were mixed, although the studies under consideration primarily involved questions about respondents' drug/alcohol use, not attitudes as examined here.

their interviewer, the respondent may have a weakened sense of informational control and, consequently, be more constrained in what they express—particularly when it comes to information that carries a threat of disclosure, such as non-compliant, bear-poking opinions.

Further, the very fact that World Values Survey interviewers make an explicit guarantee of privacy may exacerbate the chilling effect of surveillance: Singer et al. (1992) found in three studies (albeit with small *N*s) that increasingly serious-seeming confidentiality commitments *decreased* participants' willingness to participate in surveys, suggesting that discussion of privacy cued people to focus on potential threats thereto—like listeners-in. ("Don't think of a white bear"/"Don't worry about your privacy.")

## Method

### *World Values Survey, Wave 7, Version 2.0*

The World Values Survey, conducted since 1981, is one of the most extensive global surveys of human values. Data are gathered in waves over the years, and the primary form of data collection is face-to-face interview. The questionnaire is extensive, covering religious, moral, and economic values, perceptions of government and corruption, social well-being, and more. (The questionnaire used in each country is translated into any language that is the primary language for ≥15% of that nation's population.) The exact sampling procedures vary by country (full probability, stratified, random route, etc.), but all samples are nationally representative. The World Values Survey Association's current practice is to only include in published datasets data from countries for which at least 1,200 respondents were sampled.[2] In the present analysis, I used data from the most recent wave of the WVS: Wave 7, Version 2.0, released July 7th, 2021. In its

[2] For countries with <2 million people, samples of at least $N = 1{,}000$ are included.

complete form, this dataset includes 76,897 survey responses gathered from 51 countries between 2017 and 2021.

***Exclusions***

Survey responses for three countries, Australia, New Zealand, and Canada, did not include information about whether interviews were conducted privately or not; respondents from those countries were thus dropped from analysis. Similarly, opposition to government surveillance measures were not available for survey respondents from Egypt, so responses from that country were dropped as well. This brought the sample from 51 countries/76,897 respondents to 47 countries/68,809 respondents. 5,726 respondents from the remaining countries had missing data for at least one of the variables used in the central model of interest (specified below). I excluded those respondents at this point to ensure that the demographic details that follow accurately reflect the sample used in the focal analysis.[3] This left a final sample of 63,083 respondents from 47 nations.

***Demographics***

Interviewers coded each respondent's sex by observation: 51.8% of respondents in the final sample were coded as female (32,657 women, 30,418 men, 8 NA; $M_{age}$ = 42.1 years, $SD_{age}$ = 16.0, $range_{age}$ = [16, 103]). Countries had an average of 1,342 respondents in the cleaned sample, with a range of 636 (Cyprus) to 3,120 (Indonesia). 71% (44,779) of the interviews were conducted in private; 29% (18,304) were conducted with others around who could follow the interview. Countries varied, of course, in the proportion of interviews conducted in private:

[3] The overwhelming majority of WVS interviews are conducted in person, but some are conducted via, for example, telephone. Regardless of survey method, I retained all observations that had a non-missing value for the interview-privacy variable.

$M_{proportion}$ = 0.72, $SD_{proportion}$ = 0.14, with a lower bound on the proportion of private interviews of 0.34 (Indonesia) and an upper bound of 0.96 (Bolivia).

***Measures***

The primary dependent measure of interest is *opposition to government surveillance*, captured by a three-item measure in the WVS-7:

> Do you think that your country's government should or should not have the right to do the following?
>
> 1. Keep people under video surveillance in public areas
> 2. Monitor all e-mails and any other information exchanged on the Internet
> 3. Collect information about anyone living in this country without their knowledge

Participants reported the acceptability of each of the three actions on a scale from 1, *Definitely should have the right*, to 4, *Definitely should not have the right*. I averaged responses to these three items for each respondent and treated that as their opposition to government surveillance, with higher scores reflecting more opposition, $\alpha = 0.76$, 95% confidence interval = [0.76, 0.76]. The key predictor, *interview privacy*, was coded by interviewers based on whether "[t]here were other people around who could follow the interview" (0, not private) or "[t]here were no other people around who could follow the interview" (1, private). The outcome measures for the follow-up analyses—confidence in the courts and confidence in the government—were on four-point scales ranging from 1, *A great deal [of confidence]*, to 4, *None at all*.

### *Design, Control Variables, and Model*

I treated the data as comprising two levels: Individual survey responses (level 1) clustered within countries (level 2). Other formulations are possible: For example, data for Wave 7 of the WVS were gathered over multiple years (2017–2021), so one could consider clustering individuals within years within countries. However, each respondent was only surveyed once—the multiyear timeframe was a function of the scope of the project, not longitudinal data gathering—and I did not have a compelling theoretical reason to expect data that were simply gathered within the same year to be particularly prone to nonindependence. Accordingly, I retained a two-level design and analyzed data with a multilevel model including country random effects.

The primary question of interest is whether participants whose interviews were not conducted in private expressed less opposition to government surveillance than participants whose interviews were conducted in private. The privacy of interviews was not randomly assigned, so establishing absolute causality is outside the scope of this paper. However, the plausibility of causality can be bolstered by adjusting the analysis to rule out some viable alternative explanations for observed effects. World Values Survey interviews are mainly conducted in respondents' homes, and there are potential confounding variables that could simultaneously explain interview privacy and opposition to government surveillance. People *living in crowded homes* may be less likely to be interviewed in private, and those same crowded living conditions may acclimate people to a lack of privacy, reducing their opposition to surveillance generally.[4] To account for this possible confound, I controlled for the number of

[4] Consider results from the Helsinki Privacy Experiment: With consent, researchers outfitted several homes with an array of surveillance equipment—video cameras, microphones, computer loggers, and more. Over the study period of six months, most participants adapted to the constant privacy intrusions, rating the experience as less unpleasant as time wore on (Oulasvirta et al., 2012).

people living in each respondent's home when estimating the predictive effect of interview privacy on opposition to government surveillance. Similarly, respondents' education levels may confound a relationship between interview privacy and opposition to government surveillance: Insofar as education leads to higher income—and therefore to less-crowded, more-private living conditions—it may result in respondents having a greater chance of being interviewed in private; it may also drive increased opposition to government surveillance as people are exposed through the course of education to oppositional attitudes and information about the consequences of civil-liberty curtailment. Accordingly, I controlled for respondent education level (a nine-level categorical variable) in the analysis.

Country-level contextual features may also pose third-variable threats. For example, etiquette norms vary widely country-to-country;[5] norms against, say, social boat-rocking could make people less likely to impose on others to leave the room or otherwise make space for a private interview *and* less likely to express oppositional attitudes. To account for this, I centered interview-privacy indicators (0 = not private; 1 = private) around country-level interview-privacy means (i.e., around the proportion of private interviews for each country), and I included centered individual-level interview-privacy indicators *and* country-level proportions of private interviews as predictors in the model. Accordingly, the coefficient for individual-level interview privacy reflects the pure within-country predictive effect. (Without making this adjustment to the model, it would be difficult to tell whether the coefficient for interview privacy reflected a relationship between country-level proportion of private interviews and opposition to

[5] Case in point: The US "Guide to Official Diplomatic Etiquette," written by a former United States Chief of Protocol, describes a range of behaviors—from winking to making the two-fingered peace sign—that can provoke offense depending on the culture in which one exhibits them (French, 2010).

government surveillance or a relationship between individual-level interview privacy *per se* and opposition.) The resulting model is:

$$SurveillanceOpposition_{ij} = \gamma_{00} + \beta_1 InterviewPrivacy_{ij} + \beta_2 NumberofPeopleinHome_{ij} + \beta_3 RespondentEducationLevel2_{ij} + \ldots + \beta_{10} RespondentEducationLevel9_{ij} + \gamma_{01} ProportionPrivate_j + u_{0j} + e_{ij}$$

Where $u_{0j}$ refers to country random intercepts and $e_{ij}$ refers to individual residuals. Note that education level in these data is categorical with $K = 9$ levels, so the model contains $K$–1 (= 8) education coefficients. A directed acyclic graph displaying the theorized causal relationships between the key predictor, control variables, and outcome of interest is in the Supplement, see Figure S1. As mentioned above, I followed this primary analysis with models examining the relationship between interview privacy and (a) confidence in the courts and (b) confidence in the government; those models include similar controls as the model above, and I discuss their specifications in detail alongside the results of those analyses further below.

## Results

### *Descriptive and Correlational Analyses*

The overall mean for opposition to government surveillance was near the midpoint of the measure: 2.67 (*SD* = 0.90; range [1, 4]), indicating a generally moderate attitude toward government surveillance across the globe (Table 1 and Figure 1). 19% of the variance in opposition to government surveillance sat between (vs. within) countries (ICC = 0.19; a country-by-country breakdown is displayed in the Supplement, see Figure S2).

**Table 1**

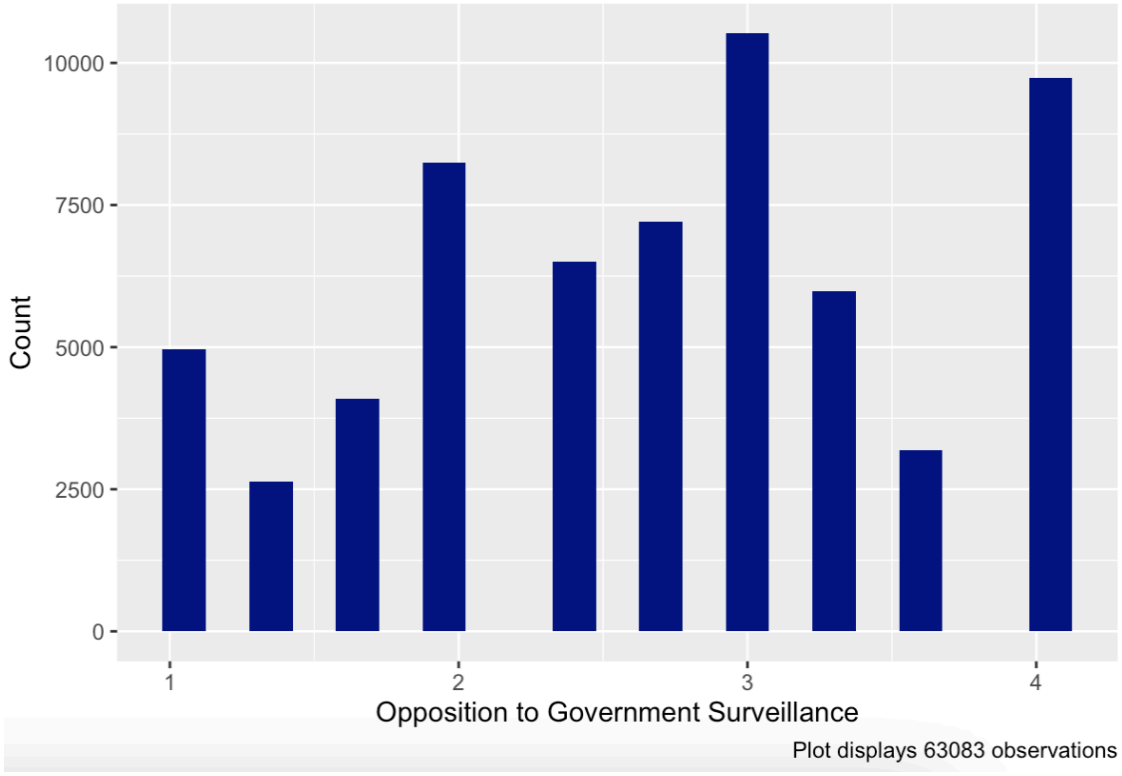
*Descriptive Features of Variables in Core Model*

| Variable | Role | Level | *M* | *SD* | *N* |
|---|---|---|---|---|---|
| Opposition to government surveillance | Outcome | 1 | 2.67 | 0.90 | 63,083 |
| Interview privacy (uncentered) | Predictor | 1 | 0.71 | .45 | 63,083 |
| Number of people living in household | Predictor | 1 | 4.06 | 2.21 | 63,083 |
| Respondent education level | Predictor | 1 | N/A | N/A | 63,083 |
| Proportion of private interviews | Predictor | 2 | 0.72 | 0.14 | 47 unique |

*Note.* Education is an ordinal categorical variable with nine levels coded 0 to 8. 0 = early childhood education/no education; 8 = doctoral or equivalent.

**Figure 1**

*Histogram of Opposition to Government Surveillance Scores*



Correlations between the variables in advance of running the full multilevel regression model specified above were encouraging given the underlying theory (Table 2): Interview privacy (uncentered) correlated positively with opposition to government surveillance ($r = .08$, $p < .001$). Further, the number of people living in respondents' households was negatively associated with both interview privacy *and* opposition to government surveillance (respective $r$s = -0.07, -0.13; both $p$s < .001). As outlined above, this suggests that home crowdedness could serve as a third variable confounding a relationship between interview privacy and opposition to government surveillance. Respondent education level, another possible confound, is an ordinal categorical variable, so its bivariate relationship with other measures could be evaluated with Spearman's correlation: Education correlated positively with both interview privacy ($\rho = .12$, $p < .001$) and opposition to government surveillance ($\rho = .13$, $p < .001$). Controlling for the number of people living in respondents' homes and for respondent education in regression analyses was therefore advisable. Country-level proportion of private interviews correlated positively with opposition to government surveillance ($r = 0.19$, $p < .001$) and interview privacy ($r = 0.35$, $p < .001$), suggesting a possible country-level contextual effect that could be conflated with an observed relationship at the individual level between interview privacy and opposition to government surveillance. Accordingly, in the regression model that follows, I separated out the between-country effect of proportion of private interviews from the within-country effect of individual interview privacy when predicting opposition to government surveillance so as to avoid capturing in the level-1 interview-privacy coefficient an effect that exists at the level of countries, not individual respondents.

**Table 2**

*Correlations of Variables in Central Model*

| | 1. | 2. | 3. | 4. |
|---|---|---|---|---|
| 1. Opposition to government surveillance | | | | |
| 2. Interview privacy (uncentered) | 0.08 | | | |
| 3. Number of people living in household | -0.13 | -0.07 | | |
| 4. Respondent education | 0.13 | 0.12 | -0.12 | |
| 5. Proportion of private interviews | 0.19 | 0.35 | -0.04 | 0.14 |

*Note.* All correlations are significant at $p < .001$. $N = 63{,}083$. Correlations with respondent education are Spearman's $\rho$, all other correlations are Pearson's $r$.

### *Multilevel Model Results*

Controlling for respondent education level and the number of people living in respondents' homes, the within-country predictive effect of interview privacy on opposition to government surveillance was $\beta = 0.013$, $p = .085$ (Table 3). That is, holding constant home-crowdedness and education, the average predicted opposition to government surveillance score for respondents from a given country whose interviews occur in private is 0.013 units higher than that for respondents from the same country whose interviews occur with prying ears around. The directions of the predictive effects of country-level proportion of private interviews, number of people living in the home, and education level were consonant with the theory I outlined above: The between-country effect of country-level proportion of private interviews was $\beta = 0.803$, $p = .044$, meaning that the predicted average opposition to government surveillance score in a country in which 100% of interviews are private is 0.803 units higher than that of a country in which 0% of interviews are private. These findings are not causal, but this does hint at a possible contextual effect of country. Higher numbers of people living in respondents' homes predicted decreased opposition to government surveillance (holding interview privacy and respondent

education constant), β = -0.004, $p$ = .009—a finding consonant with the notion that home-crowdedness may acclimate people to surveillance. Education level is categorical in these data, so there are eight education coefficients (representing dummy-coded education levels; coefficients compare each level to the lowest holding the other model variables constant). All coefficients but one were positive and traditionally significant; the one negative coefficient was for the difference between the next-to-lowest and lowest education levels, β = -0.004, $p$ = .828.

**Table 3**

*Multilevel Regression Results Predicting Opposition to Government Surveillance*

| | β | SE | *t* | *p* |
|---|---|---|---|---|
| Intercept | 2.034 | 0.286 | 7.109 | < .001 |
| [L1] Interview privacy (country mean–centered) | 0.013 | 0.008 | 1.720 | .085 |
| [L2] Proportion of private interviews (country-level) | 0.803 | 0.389 | 2.067 | .044 |
| [L1] Number of people living in the home | -0.004 | 0.002 | -2.595 | .009 |
| [L1] Primary education | -0.004 | 0.017 | -0.217 | .828 |
| [L1] Lower secondary education | 0.067 | 0.017 | 3.909 | < .001 |
| [L1] Upper secondary education | 0.109 | 0.016 | 6.687 | < .001 |
| [L1] Post-secondary non-tertiary education | 0.137 | 0.019 | 7.159 | < .001 |
| [L1] Short-cycle tertiary education | 0.185 | 0.019 | 9.524 | < .001 |
| [L1] Bachelor or equivalent | 0.169 | 0.017 | 9.787 | < .001 |
| [L1] Master or equivalent | 0.160 | 0.021 | 7.584 | < .001 |
| [L1] Doctoral or equivalent | 0.220 | 0.037 | 5.929 | < .001 |

*Note.* [L#] refers to level of variable in hierarchical data structure.

Individual-level residuals for the multilevel model were not normally distributed, $p_{\text{Lilliefors}}$ < .001, and Levene's test indicated that error variance was not homogeneous across countries, $p$ < .001. In light of this, I bootstrapped the model 5000 times and calculated bias-corrected 95%

confidence intervals around each coefficient. Those results are displayed in Table 4. The conclusions from bootstrapping are consonant with those from the parametric model. The bulk of the effect-size distribution for within-country interview privacy was positive, but the lower bound did just edge over zero: [-0.002, 0.028].

**Table 4**

*Bootstrapped Multilevel Regression Results Predicting Opposition to Government Surveillance*

| | β | 95% BC-CI |
|---|---|---|
| Intercept | 2.034 | [1.990, 2.078] |
| [L1] Interview privacy (country mean–centered) | 0.013 | [-0.002, 0.028] |
| [L2] Proportion of private interviews (country-level) | 0.803 | [0.762, 0.847] |
| [L1] Number of people living in the home | -0.004 | [-0.008, -0.001] |
| [L1] Primary education | -0.004 | [-0.039, 0.033] |
| [L1] Lower secondary education | 0.067 | [0.031, 0.102] |
| [L1] Upper secondary education | 0.109 | [0.074, 0.143] |
| [L1] Post-secondary non-tertiary education | 0.137 | [0.098, 0.178] |
| [L1] Short-cycle tertiary education | 0.185 | [0.145, 0.226] |
| [L1] Bachelor or equivalent | 0.169 | [0.133, 0.204] |
| [L1] Master or equivalent | 0.160 | [0.118, 0.203] |
| [L1] Doctoral or equivalent | 0.220 | [0.150, 0.288] |

*Note.* [L#] refers to level of variable in hierarchical data structure. BC-CI = bias-corrected confidence interval.

### *Follow-up Analyses of Other Conceptually Relevant Outcome Measures*

The results above provide some evidence of a predictive relationship between interview privacy and the expression of opposition to government surveillance. I argued, however, that a pathway from interview privacy to the expression of oppositional attitudes *generally* is plausible, with opposition to government surveillance serving as a thematically apropos example of an

oppositional attitude as opposed to a uniquely relevant outcome measure. The plausibility of the claim can be bolstered by analyzing the predictive relationship between interview privacy and other WVS measures that, like opposition to government surveillance, one would expect to be subject to privacy-contingent suppression. At least two additional measures in the WVS are relevant for this purpose: Confidence in the courts and confidence in the government. These measures are somewhat less definitively examples of "oppositional attitudes," but questioning those institutions—like questioning surveillance measures that those institutions employ—can carry a threat of disclosure. I expected to find that respondents expressed less confidence in private than when interviews were conducted with others around. Confidence was assessed with the following questions:

> I [the WVS interviewer] am going to name a number of organizations. For each one, could you tell me how much confidence you have in them: is it a great deal of confidence, quite a lot of confidence, not very much confidence or none at all?
>
> - The courts
> - The government

Responses were on four-point scales from 1, *A great deal*, to 4, *None at all* (higher scores indicate less confidence in those institutions). I ran two models for each variable: The first for each was intended to be directly comparable to the focal model predicting opposition to government surveillance, so I included country-centered interview privacy, respondent education level, the number of people living in respondents' homes, and country-level proportion of private interviews as predictors. The second model predicting each confidence measure included all

those just mentioned except for the number of people living in the home: I proposed that home crowdedness may have an "acclimating" effect that influences attitudes toward government surveillance (as well as one's likelihood of receiving a private WVS interview), but there was less reason to believe that a crowded home might have some sort of effect on confidence in the courts/the government, so including it as a control was not obviously pertinent. Respondent education, however, remained a relevant control: Education can affect attitudes (via exposure to oppositional ideas) and interview conditions (via income). I again included random country intercepts in each model to account for the clustered nature of the data.

For transparency: These analyses were not preregistered; however, I decided to include the two confidence measures before running models predicting them or seeing the results therefrom. The WVS questionnaire is extensive, and others may find within it variables they feel are equivalent or better for follow-up analyses. For the curious, the full question set can be found here: https://www.worldvaluessurvey.org/WVSDocumentationWV7.jsp.

**Results.** Receiving a private WVS interview predicted expressing less confidence in the courts and in the government (see Table 5 for confidence in the courts results; see Table 6 for confidence in the government results). Interview-privacy effect sizes for all four of the follow-up models were at least as big as that for the model predicting opposition to government surveillance ($\beta \geq 0.013$; note that responses for all outcome measures—opposition to government surveillance and the institutional confidence measures—were on 1–4 scales), and interview privacy was a traditionally significant predictor in all cases except one ($p = .114$ for the model predicting confidence in the courts from the same controls as in the opposition to government surveillance model; $p$s $\leq .041$ otherwise).

Residuals for all four models were not normally distributed (all $ps_{\text{Lilliefors}} < .001$), nor was error variance for any model homogeneous across countries (all $ps_{\text{Levene's}} < .001$). Accordingly, as with the model predicting opposition to government surveillance, I bootstrapped each of the follow-up models 5000 times and calculated bias-corrected 95% confidence intervals around each coefficient. Bootstrapping results for the models predicting confidence in the courts are in Table 7; bootstrapping results for the models predicting confidence in the government are in Table 8. The bulk of plausible effect sizes for interview privacy was positive in all cases. For the model predicting confidence in the courts from interview privacy and the same controls as in the model predicting opposition to government surveillance, the bias-corrected confidence interval for interview privacy did edge over zero, [-0.002, 0.028], and when excluding home crowdedness as a control, the interval tapped zero, [0.000, 0.032]. The bias-corrected confidence intervals for interview privacy in the models predicting confidence in the government excluded zero in both cases: [0.004, 0.037] when including home crowdedness as a control; [0.007, 0.039] when not.

Observing similar predictive effects of interview privacy across conceptually similar measures is encouraging: If similar results were *not* observed, that would spell trouble for any claim about the relationship between privacy and the expression of "oppositional attitudes" generally. But observing multiple instances of the same pattern builds confidence that the focal result—that linking interview privacy to the expression of opposition to government surveillance—is not merely a function of an idiosyncratically picked outcome measure. These are purely nonexperimental data, so unobserved variables could always, at base, explain observed effects, but finding convergent results for similar measures strengthens the general claim about oppositional attitudes.

**Table 5**

*Multilevel Regression Results Predicting Confidence in the Courts*

| | β | SE | *t* | *p* |
|---|---|---|---|---|
| **[M1] Same controls as opposition to surveillance model** | | | | |
| Intercept | 1.525 | 0.326 | 4.674 | < .001 |
| [L1] Interview privacy (country mean–centered) | 0.013 | 0.008 | 1.579 | .114 |
| [L2] Proportion of private interviews (country-level) | 1.237 | 0.443 | 2.790 | .008 |
| [L1] Number of people living in the home | -0.012 | 0.002 | -6.703 | < .001 |
| [L1] Primary education | 0.021 | 0.018 | 1.166 | .243 |
| [L1] Lower secondary education | 0.061 | 0.018 | 3.387 | .001 |
| [L1] Upper secondary education | 0.121 | 0.017 | 7.152 | < .001 |
| [L1] Post-secondary non-tertiary education | 0.140 | 0.020 | 6.970 | < .001 |
| [L1] Short-cycle tertiary education | 0.156 | 0.020 | 7.694 | < .001 |
| [L1] Bachelor or equivalent | 0.103 | 0.018 | 5.721 | < .001 |
| [L1] Master or equivalent | 0.097 | 0.022 | 4.377 | < .001 |
| [L1] Doctoral or equivalent | 0.038 | 0.039 | 0.983 | .326 |
| **[M2] Excluding number of people living in home** | | | | |
| Intercept | 1.473 | 0.325 | 4.528 | < .001 |
| [L1] Interview privacy (country mean–centered) | 0.016 | 0.008 | 2.042 | .041 |
| [L2] Proportion of private interviews (country-level) | 1.242 | 0.442 | 2.811 | .007 |
| [L1] Primary education | 0.022 | 0.018 | 1.206 | .228 |
| [L1] Lower secondary education | 0.060 | 0.018 | 3.332 | .001 |
| [L1] Upper secondary education | 0.121 | 0.017 | 7.121 | < .001 |
| [L1] Post-secondary non-tertiary education | 0.140 | 0.020 | 6.972 | < .001 |
| [L1] Short-cycle tertiary education | 0.157 | 0.020 | 7.709 | < .001 |
| [L1] Bachelor or equivalent | 0.104 | 0.018 | 5.784 | < .001 |
| [L1] Master or equivalent | 0.099 | 0.022 | 4.453 | < .001 |
| [L1] Doctoral or equivalent | 0.040 | 0.039 | 1.039 | .299 |

*Note.* [L#] refers to level of variable in hierarchical data structure. $N_{M1}$ and $N_{M2}$ = 61,885.

**Table 6**

*Multilevel Regression Results Predicting Confidence in the Government*

| | β | SE | *t* | *p* |
|---|---|---|---|---|
| **[M1] Same controls as opposition to surveillance model** | | | | |
| Intercept | 1.641 | 0.385 | 4.265 | < .001 |
| [L1] Interview privacy (country mean–centered) | 0.020 | 0.008 | 2.504 | .012 |
| [L2] Proportion of private interviews (country-level) | 1.210 | 0.523 | 2.315 | .025 |
| [L1] Number of people living in the home | -0.009 | 0.002 | -5.275 | < .001 |
| [L1] Primary education | 0.018 | 0.018 | 1.026 | .305 |
| [L1] Lower secondary education | 0.098 | 0.018 | 5.486 | < .001 |
| [L1] Upper secondary education | 0.178 | 0.017 | 10.462 | < .001 |
| [L1] Post-secondary non-tertiary education | 0.238 | 0.020 | 11.853 | < .001 |
| [L1] Short-cycle tertiary education | 0.247 | 0.02 | 12.104 | < .001 |
| [L1] Bachelor or equivalent | 0.223 | 0.018 | 12.362 | < .001 |
| [L1] Master or equivalent | 0.204 | 0.022 | 9.189 | < .001 |
| [L1] Doctoral or equivalent | 0.255 | 0.039 | 6.550 | < .001 |
| **[M2] Excluding number of people living in home** | | | | |
| Intercept | 1.600 | 0.386 | 4.150 | < .001 |
| [L1] Interview privacy (country mean–centered) | 0.023 | 0.008 | 2.866 | .004 |
| [L2] Proportion of private interviews (country-level) | 1.215 | 0.524 | 2.319 | .025 |
| [L1] Primary education | 0.019 | 0.018 | 1.053 | .292 |
| [L1] Lower secondary education | 0.097 | 0.018 | 5.441 | < .001 |
| [L1] Upper secondary education | 0.178 | 0.017 | 10.433 | < .001 |
| [L1] Post-secondary non-tertiary education | 0.238 | 0.020 | 11.852 | < .001 |
| [L1] Short-cycle tertiary education | 0.247 | 0.020 | 12.110 | < .001 |
| [L1] Bachelor or equivalent | 0.224 | 0.018 | 12.406 | < .001 |
| [L1] Master or equivalent | 0.205 | 0.022 | 9.245 | < .001 |
| [L1] Doctoral or equivalent | 0.257 | 0.039 | 6.591 | < .001 |

*Note.* [L#] refers to level of variable in hierarchical data structure. $N_{M1}$ and $N_{M2}$ = 62,049.

**Table 7**

*Bootstrapped Multilevel Regression Results Predicting Confidence in the Courts*

| | β | 95% BC-CI |
|---|---|---|
| **[M1] Same controls as opposition to surveillance model** | | |
| Intercept | 1.525 | [1.479, 1.574] |
| [L1] Interview privacy (country mean–centered) | 0.013 | [-0.002, 0.028] |
| [L2] Proportion of private interviews (country-level) | 1.237 | [1.190, 1.281] |
| [L1] Number of people living in the home | -0.012 | [-0.015, -0.008] |
| [L1] Primary education | 0.021 | [-0.017, 0.059] |
| [L1] Lower secondary education | 0.061 | [0.022, 0.098] |
| [L1] Upper secondary education | 0.121 | [0.085, 0.157] |
| [L1] Post-secondary non-tertiary education | 0.140 | [0.097, 0.182] |
| [L1] Short-cycle tertiary education | 0.156 | [0.114, 0.198] |
| [L1] Bachelor or equivalent | 0.103 | [0.064, 0.141] |
| [L1] Master or equivalent | 0.097 | [0.049, 0.142] |
| [L1] Doctoral or equivalent | 0.038 | [-0.039, 0.119] |
| **[M2] Excluding number of people living in home** | | |
| Intercept | 1.473 | [1.430, 1.520] |
| [L1] Interview privacy (country mean–centered) | 0.016 | [0.000, 0.032] |
| [L2] Proportion of private interviews (country-level) | 1.242 | [1.197, 1.287] |
| [L1] Primary education | 0.022 | [-0.017, 0.060] |
| [L1] Lower secondary education | 0.060 | [0.020, 0.096] |
| [L1] Upper secondary education | 0.121 | [0.084, 0.157] |
| [L1] Post-secondary non-tertiary education | 0.140 | [0.096, 0.181] |
| [L1] Short-cycle tertiary education | 0.157 | [0.114, 0.198] |
| [L1] Bachelor or equivalent | 0.104 | [0.066, 0.141] |
| [L1] Master or equivalent | 0.099 | [0.053, 0.145] |
| [L1] Doctoral or equivalent | 0.040 | [-0.042, 0.113] |

*Note.* [L#] refers to level of variable in hierarchical data structure. $N_{M1}$ and $N_{M2}$ = 61,885. BC-CI = bias-corrected confidence interval.

**Table 8**

*Bootstrapped Multilevel Regression Results Predicting Confidence in the Government*

| | β | 95% BC-CI |
|---|---|---|
| **[M1] Same controls as opposition to surveillance model** | | |
| Intercept | 1.641 | [1.594, 1.691] |
| [L1] Interview privacy (country mean–centered) | 0.020 | [0.004, 0.037] |
| [L2] Proportion of private interviews (country-level) | 1.210 | [1.167, 1.256] |
| [L1] Number of people living in the home | -0.009 | [-0.013, -0.005] |
| [L1] Primary education | 0.018 | [-0.021, 0.055] |
| [L1] Lower secondary education | 0.098 | [0.060, 0.136] |
| [L1] Upper secondary education | 0.178 | [0.142, 0.214] |
| [L1] Post-secondary non-tertiary education | 0.238 | [0.195, 0.279] |
| [L1] Short-cycle tertiary education | 0.247 | [0.204, 0.287] |
| [L1] Bachelor or equivalent | 0.223 | [0.185, 0.262] |
| [L1] Master or equivalent | 0.204 | [0.159, 0.250] |
| [L1] Doctoral or equivalent | 0.255 | [0.175, 0.336] |
| **[M2] Excluding number of people living in home** | | |
| Intercept | 1.600 | [1.557, 1.646] |
| [L1] Interview privacy (country mean–centered) | 0.023 | [0.007, 0.039] |
| [L2] Proportion of private interviews (country-level) | 1.215 | [1.168, 1.260] |
| [L1] Primary education | 0.019 | [-0.019, 0.057] |
| [L1] Lower secondary education | 0.097 | [0.060, 0.136] |
| [L1] Upper secondary education | 0.178 | [0.141, 0.214] |
| [L1] Post-secondary non-tertiary education | 0.238 | [0.194, 0.280] |
| [L1] Short-cycle tertiary education | 0.247 | [0.204, 0.290] |
| [L1] Bachelor or equivalent | 0.224 | [0.184, 0.260] |
| [L1] Master or equivalent | 0.205 | [0.160, 0.249] |
| [L1] Doctoral or equivalent | 0.257 | [0.177, 0.334] |

*Note.* [L#] refers to level of variable in hierarchical data structure. $N_{M1}$ and $N_{M2}$ = 62,049. BC-CI = bias-corrected confidence interval.

## Discussion

Even after controlling for relevant confounds, the privacy of World Values Survey respondents' interviews positively predicted the degree of opposition to government surveillance that they expressed. Given past experimental work on how *government* surveillance chills expression (e.g., Stoycheff, 2016; Stoycheff et al., 2019), the direction of the predictive effect of *casual* surveillance is not altogether surprising. The importance, however, of drawing only tentative conclusions about the relationship from these results on their own is highlighted by the bootstrap analysis, which indicated a plausible effect-size range of [-0.002, 0.028]. One can imagine, however, how useful such an effect—if borne out by more–causally convincing research—could be to those inclined to curtail civil liberties: A modest imposition of surveillance is introduced and, by itself, drives reduced expression of opposition thereto; a slightly greater imposition is soon introduced—and speech in opposition to it is further chilled; and so on and so forth toward a rather Orwellian state of affairs. Surveil an inch; surveil a mile.

The results of the central analysis—the model predicting opposition to government surveillance—were bolstered by analyses of conceptually similar measures: Respondents expressed less confidence in the courts and in the government when in private than when others could track their answers. That is, respondents were more critical of those powerful institutions when their responses were protected from eavesdropping ears.

These findings are, of course, not causal, and they do not speak to a mechanism that explains the relationship between interview privacy and expression. But past research provides a foundation for sane speculation. Several studies suggest that loss of control (real or perceived) over one's information—how it's collected, disseminated, used, etc.—drives increased privacy concern (e.g., Brandimarte et al., 2013; Hoadley et al., 2009; Xu, 2007). The presence of

listeners-in during World Values Survey interviews may reduce respondents' sense of informational control; if so, their privacy concern would plausibly ramp up, leading to more cautious responding, especially when the responses in question might invite repercussions were they to get out (Tourangeau & Yan, 2007).

Research on the psychological consequences of surveillance has often understandably focused on surveillance by powerful entities—governments, corporations, and the like. The results here, however, extend traditional behavioral research on surveillance by examining the predictive associates of *casual* threats to privacy. Future work might involve direct tests of causality, as well as investigations of what emboldens people to express oppositional attitudes in spite of surveillance. How can communities coordinate their opposition to combat surveillance's chilling effects en masse? The analysis could also be extended by examining differences in the predictive effect of interview privacy across difference interview types (face-to-face, telephone, and so on).

This study is far from definitive, but it has its strengths. It is massively generalizable; participants were recruited from more than 45 countries. Further, the 60,000+ respondents render issues of statistical power largely immaterial, and the consonance of results across multiple conceptually relevant outcome measures is encouraging. It's important to highlight, however, the study's weaknesses and the tentativeness of the conclusions I take from it. The effect size of interview privacy predicting opposition to government surveillance was quite small—$\beta = 0.013$—and interview-privacy effect sizes in the follow-up models predicting confidence in the courts and confidence in the government (also on 1–4 scales) were similar (0.013–0.023). The nonexperimental nature of the data also imposes strict limitations on what it's viable to conclude from the study. No pattern of results here justifies a causal claim. Even though I've included

relevant controls in the models, there is no realistic way of ruling out every possible confound. These results would certainly be sensible if the relationship was causal, but making such a claim here would, ultimately, be consequent-affirming indulgence. Finally, the predictive effect of central interest (that of within-country interview privacy on opposition to government surveillance, controlling for respondent education and home-crowdedness) was not traditionally significant ($p = .085$; but note Gelman & Stern, 2006), and this result was seconded by the bootstrap analysis, which indicated a plausible effect-size range that did capture zero (albeit barely). These are not limitations to be ignored. However: Given that a WVS interview being marked "not private" does not mean "an interview conducted in front of a panel of Stasi agents" but instead simply means "an interview given with any auxiliary ears present," it is striking that mild privacy incursions such as the presence of a cousin or colleague predicted reduced expression of opposition to government surveillance in these data.

## References


Brandimarte, L., Acquisti, A., & Loewenstein, G. (2013). Misplaced confidences: Privacy and the control paradox. *Social Psychological and Personality Science*, *4*(3), 340–347. https://doi.org/10.1177/1948550612455931

Cohen, J. E. (2000). Examined lives: Informational privacy and the subject as object. *Stanford Law Review*, *52*(5), 1373–1438. https://doi.org/10.2307/1229517

Fouad, I., Bielova, N., Legout, A., & Sarafijanovic-Djukic, N. (2020). Missed by filter lists: Detecting unknown third-party trackers with invisible pixels. *Proceedings on Privacy Enhancing Technologies, 2020*(2), 499–518. https://doi.org/10.2478/popets-2020-0038

Fowler, G. A. (2019, June 21). Goodbye, Chrome: Google's Web browser has become spy software. *The Washington Post.* https://www.washingtonpost.com/technology/2019/06/21/google-chrome-has-become-surveillance-software-its-time-switch/

Freedom House. (2020). *Freedom in the world 2020*. https://freedomhouse.org/sites/default/files/2020-02/FIW_2020_REPORT_BOOKLET_Final.pdf

French, M. M. (2010). *United States protocol: The guide to official diplomatic etiquette*. Rowman & Littlefield.

Gellman, B., & Poitras, L. (2013, June 7). U.S., British intelligence mining data from nine U.S. Internet companies in broad secret program. *The Washington Post*. https://www.washingtonpost.com/investigations/us-intelligence-mining-data-from-nine-us-internet-companies-in-broad-secret-program/2013/06/06/3a0c0da8-cebf-11e2-8845-d970ccb04497_story.html

Gelman, A., & Stern, H. (2006). The difference between “significant” and “not significant” is not itself statistically significant. *The American Statistician, 60*(4)*,* 328–331. https://doi.org/10.1198/000313006X152649

Greenwald, G. (2014). *No place to hide: Edward Snowden, the NSA, and the U.S. surveillance state*. Metropolitan Books.

Greenwald, G., & MacAskill, E. (2013, June 7). NSA Prism program taps in to user data of Apple, Google and others. *The Guardian*. https://www.theguardian.com/world/2013/jun/06/us-tech-giants-nsa-data

Haerpfer, C., Inglehart, R., Moreno, A., Welzel, C., Kizilova, K., Diez-Medrano J., Lagos, M., Norris, P., Ponarin, E., & Puranen, B. et al. (Eds.). (2021). *World Values Survey: Round seven - Country-pooled datafile* (Version 2.0.0) [Data set]. JD Systems Institute & WVSA Secretariat. Retrieved July 31, 2021, from https://doi.org/10.14281/18241.13

Hetherington, M. J. (1998). The political relevance of political trust. *American Political Science Review*, *92*(4), 791–808. https://doi.org/10.2307/2586304

Hoadley, C. M., Xu, H., Lee, J. J., & Rosson, M. B. (2010). Privacy as information access and illusory control: The case of the Facebook News Feed privacy outcry. *Electronic Commerce Research and Applications*, *9*(1), 50–60. https://doi.org/10.1016/j.elerap.2009.05.001

Lynskey, D. (2019, October 9). 'Alexa, are you invading my privacy?' – the dark side of our voice assistants. *The Guardian*. https://www.theguardian.com/technology/2019/oct/09/alexa-are-you-invading-my-privacy-the-dark-side-of-our-voice-assistants

Muller, E. N. (1972). A test of a partial theory of potential for political violence. *American Political Science Review*, *66*(3), 928–959. https://doi.org/10.2307/1957487

Oulasvirta, A., Pihlajamaa, A., Perkiö, J., Ray, D., Vähäkangas, T., Hasu, T., Vainio, N., & Myllymäki, P. (2012). Long-term effects of ubiquitous surveillance in the home. *Proceedings of the 2012 ACM Conference on Ubiquitous Computing*, 41–50. https://doi.org/10.1145/2370216.2370224

Pew Research Center Factank (Pew). (2017, December 12). Nearly half of Americans use digital voice assistants, mostly on their smartphones. *Pew Research Center*. https://www.pewresearch.org/fact-tank/2017/12/12/nearly-half-of-americans-use-digital-voice-assistants-mostly-on-their-smartphones/

Qiang, X. (2019). The road to digital unfreedom: President Xi's surveillance state. *Journal of Democracy, 30*(1), 53–67. https://doi.org/10.1353/jod.2019.0004

Statcounter. (2021). Browser market share worldwide. Retrieved July 30, 2021, from https://gs.statcounter.com/browser-market-share#monthly-202107-202107-bar

Singer, E., Hippler, H. J., & Schwarz, N. (1992). Confidentiality assurances in surveys: Reassurance or threat? *International Journal of Public Opinion Research*, *4*(3), 256–268. https://doi.org/10.1093/ijpor/4.3.256

Solove, D. J. (2006). A taxonomy of privacy. *University of Pennsylvania Law Review*, *154*(3), 477–560.

Stoycheff, E. (2016). Under surveillance: Examining Facebook's spiral of silence effects in the wake of NSA internet monitoring. *Journalism & Mass Communication Quarterly*, *93*(2), 296–311. https://doi.org/10.1177/1077699016630255

Stoycheff, E., Liu, J., Xu, K., & Wibowo, K. (2019). Privacy and the Panopticon: Online mass surveillance's deterrence and chilling effects. *New Media & Society, 21*(3), 602–619. https://doi.org/10.1177/1461444818801317

Tourangeau, R., & Yan, T. (2007). Sensitive questions in surveys. *Psychological Bulletin, 133*(5), 859–883. https://doi.org/10.1037/0033-2909.133.5.859

Westin, A. R. (1967). *Privacy and freedom*. Atheneum.

World Values Survey Association (WVSA). (2020). *2017–2021 World Values Survey Wave 7 master survey questionnaire*. https://www.worldvaluessurvey.org/WVSDocumentationWV7.jsp

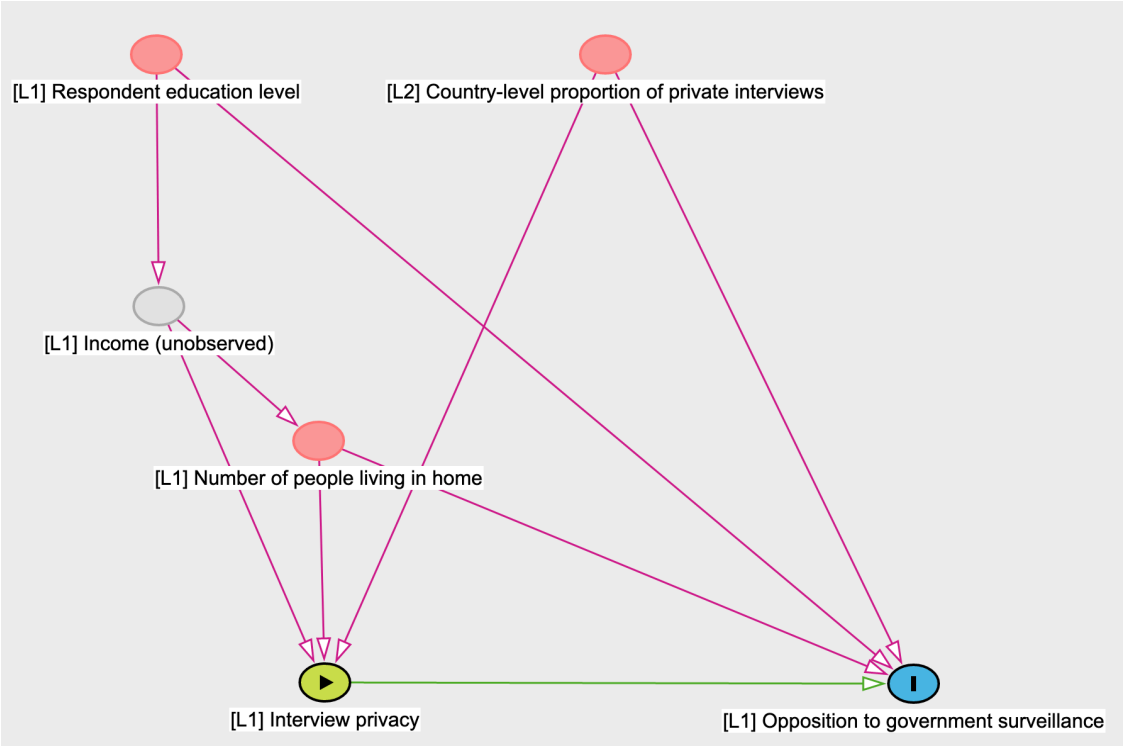
Xu, H. (2007). The effects of self-construal and perceived control on privacy concerns. *Proceedings of 28th Annual International Conference on Information Systems*, Montréal, Canada.

Zuboff, S. (2019). *The age of surveillance capitalism: The fight for a human future at the new frontier of power*. Profile.

## Supplement

**Figure S1**

*Directed Acyclic Graph of Central Causal Model*



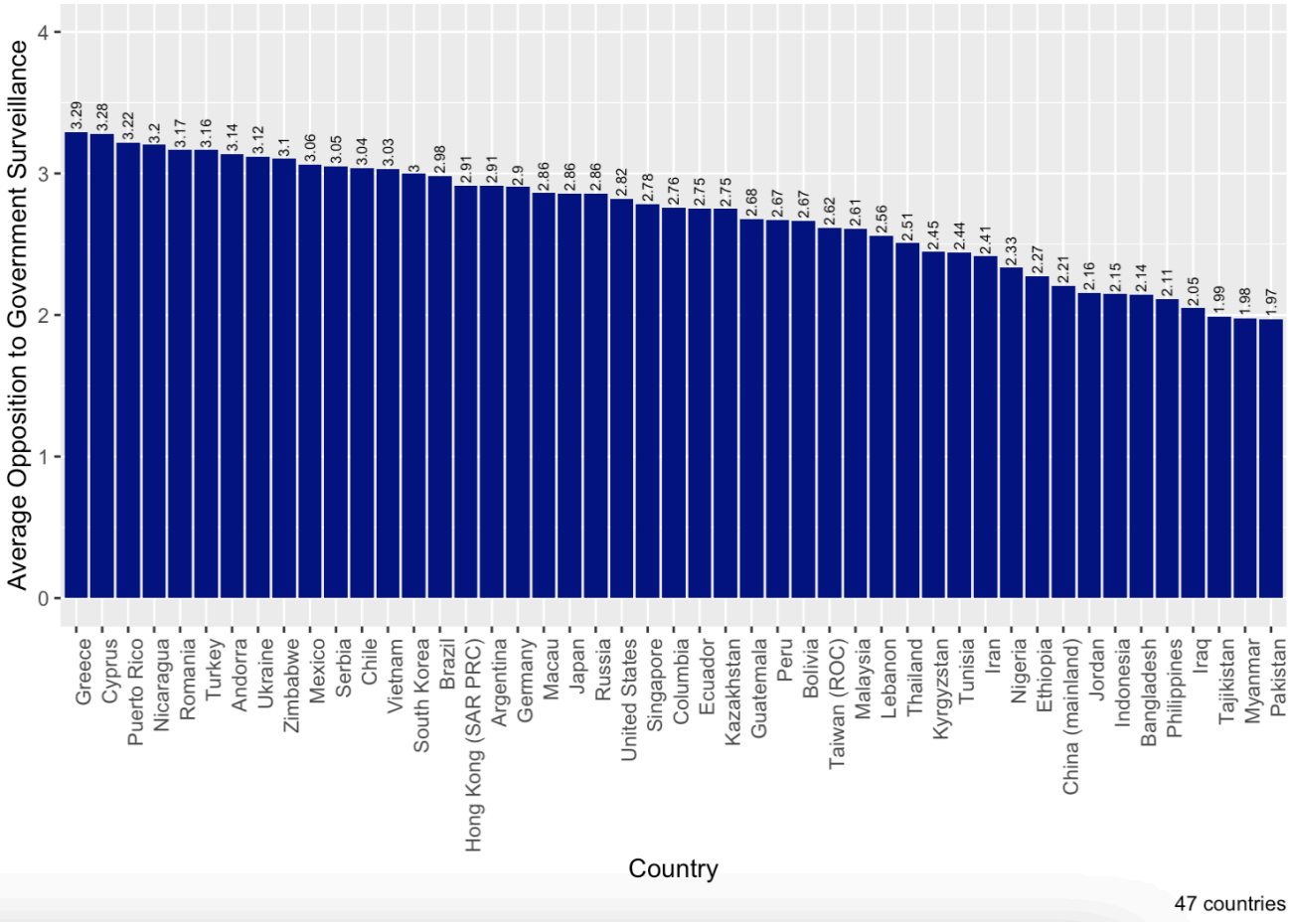

Exposure | Confounder | Outcome

*Note.* In the model above, respondent education level affects interview privacy through both an education→income→interview privacy pathway and an education→income→number of people in home→interview privacy pathway. This is due to the fact that the effect of education on income doesn't just result in the ability to move to a less crowded residence or delay childbirth (thereby decreasing the number of people in the home); it can also increase one's likelihood of receiving a private interview independent of the number of people living the home because of the possibility of, say, purchasing/renting a larger residence and/or a residence with a higher ratio of rooms to people (thereby increasing the chance of receiving a private interview without changing the number of people living in the home). Assuming that the directional effects in the model are

correct, (a) controlling for respondent education level and the number of people living in the home and (b) centering individual-level interview privacy and including country-level proportion of private interviews in the model allows for an estimation of the within-country effect of interview privacy on opposition to government surveillance.

**Figure S2**

*Average Opposition to Government Surveillance by Country*




*Note.* Values not carried to two decimal places are trailed by zeroes (e.g., 2 = 2.00; 3.5 = 3.50).