

# Under Surveillance: Examining Facebook’s Spiral of Silence Effects in the Wake of NSA Internet Monitoring

Elizabeth Stoycheff<sup>1</sup>

## Abstract

Since Edward Snowden exposed the National Security Agency’s use of controversial online surveillance programs in 2013, there has been widespread speculation about the potentially deleterious effects of online government monitoring. This study explores how perceptions and justification of surveillance practices may create a chilling effect on democratic discourse by stifling the expression of minority political views. Using a spiral of silence theoretical framework, knowing one is subject to surveillance and accepting such surveillance as necessary act as moderating agents in the relationship between one’s perceived climate of opinion and willingness to voice opinions online. Theoretical and normative implications are discussed.

## Keywords

spiral of silence, surveillance, privacy, public opinion

Public opinion scholars have consistently showed that perception of hostile opinion climates—or when individuals believe their views differ from the majority—significantly chills one’s willingness to publicly disclose political views (for reviews, see Glynn, Hayes, & Shanahan, 1997; Scheufele & Moy, 2000; Shanahan, Glynn, & Hayes, 2007). And recent scholarship has begun to explore how this relationship upholds in online environments. But U.S. Patriot Act provisions that grant the National Security Agency (NSA) the ability to surreptitiously monitor the online activities of U.S. citizens may make online opinion climates especially chilly.

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The vast majority of Americans are aware of the government's online surveillance programs, and 57% believe that monitoring of the general population is unacceptable (Rainie & Madden, 2015). But does awareness and justification of these initiatives alter individuals' willingness to disclose unpopular political beliefs online? This study seeks to contribute to the burgeoning body of spiral of silence scholarship in online environments by examining how perceptions of government surveillance may influence the relationship between one's perceived climate of opinion and willingness to express minority views. Using a subtle priming manipulation embedded in an Internet survey, this study is one of the first to reveal the potential silencing effects attributable to online surveillance. In doing, it shows that knowing one's online activities are subject to government interception and believing these surveillance practices are necessary for national security play important roles in influencing conformist behavior. Results empirically document a chilling effect that, to date, spiral of silence scholars have failed to recognize but will need to confront as surveillance practices pervade online activities.

## **Spiral of Silence**

Since Noelle-Neumann introduced the spiral of silence in 1974, the theory has been extensively tested across contexts using a variety of moral issues and methodological approaches (see Glynn et al., 1997; Scheufele & Moy, 2000; Shanahan et al., 2007, for meta-analyses and reviews). It fundamentally contends that individuals, motivated by fear of isolation, continuously monitor their environments to assess whether their beliefs align with or contradict majority opinion (Noelle-Neumann, 1993). Consequently, perceptions of an incongruent, or hostile, opinion climate reduce individuals' willingness to speak out, leading to a silencing of minority attitudes over time and posing a threat to democratic discourse (Matthes, 2015).

Optimistic that the decentralized nature of the Internet allows for a wider range of views to form accurate perceptions of the opinion climate (Schulz & Roessler, 2012), scholars have begun to test the spiral of silence's core tenets in online environments. Specific attention has been devoted to how individuals use online social networks to gauge public opinion. While offline social networks typically consist of close, like-minded friends and family who may present a more congruent climate of opinion than actually exists (Mutz & Martin, 2001), online networks allow individuals to connect with geographically and politically distant acquaintances, known as "weak ties" (Granovetter, 1973), who introduce heterogeneity into one's social network. The larger and more diverse the network, the more likely it is to offer a more accurate representation of the opinion climate. Those who hold the majority opinion in these large networks are challenged less and retain their dominant position across a large range of issues, which—in theory—could facilitate a suppression of minority opinion on a global scale (Sohn & Geidner, 2015). At the individual level of analysis, cross-sectional survey data show that respondents do believe the opinion climate of online users is representative of the public at large (Kim, Kim, & Oh, 2014), and those who report larger social networks are less willing to publicly voice their opinions (Jang, Lee, & Park, 2014).

A negative relationship has also been consistently observed between one's perceived climate of opinion and willingness to speak out on a variety of online platforms, including online forums (Kim et al., 2014; Yun & Park, 2011); chat rooms (Ho & McLeod, 2008); social networking sites, like Facebook (Fox & Warber, 2015; Gearhart & Zhang, 2014, 2015; Jang et al., 2014); microblogging sites, like Twitter (Miyata, Yamamoto, & Ogawa, 2015); online review sites (Askay, 2015); and others (Valenzuela, Kim, & Gil de Zuniga, 2012). Participants confronted with hostile opinion climates have been equally as unlikely to express their opinions online as they are offline, lending additional evidence that computer-mediated spiral of silence effects may be just as pervasive as those that occur face to face (Liu & Fahmy, 2011). In sum, these initial studies provide little evidence that online contexts significantly liberate the expression of minority opinions or reduce conformist behavior. And the Internet's unique design that allows for government interception and surveillance of dissonant political views may suppress them even further.

## Perceptions of Online Surveillance

In the shift to online environments, scholars have reformed the operationalization of spiral of silence's primary dependent variable: one's willingness to speak out. Study participants are now asked about their likelihood of "posting a comment" or "updating a status" rather than "talking with others" (e.g., Gearhart & Zhang, 2014, 2015; Jang et al., 2014). While these operational variations may seem trivial, they carry significant normative weight. The latter, originally conceptualized form of offline expression taps a transient, ephemeral political act, whereas online, computer-mediated disclosures now have the potential to be permanently stored and achieved into the depths of cyberspace. In today's Internet age, the expression of online opinions leaves digital footprints, inextricably linking individuals to political views they shared weeks, months, and even years prior. In other words, there is a newfound permanency associated with a one-time willingness to speak out online.

Although the most astute have warned about U.S. government surveillance programs for years (e.g., Dinev, Hart, & Mullen, 2008; Krueger, 2005; Pikowsky, 2002), the issue was brought to the forefront of public consciousness in 2013 when whistleblower Edward Snowden leaked classified documents from the NSA describing—among other classified activities—a top-secret program known as PRISM. PRISM was originally designed to monitor and collect the online communications of foreign nationals suspected of terrorist involvement, but investigative reporting by the Washington Post and the Guardian suggests the program may be far more invasive. It allows U.S. intelligence agencies to have direct, backdoor access to the servers of popular Internet companies, including Google, Microsoft, Apple, Facebook, Yahoo, YouTube, Skype, and others, introducing the potential for surveillance of Americans without warrants (Greenwald & MacAskill, 2013). Such access enables intelligence agencies to monitor and archive email, chats, search history, file transfers, and other online behaviors with a mere 51% confidence that the target is foreign or an American associated with a person of interest (Lee, 2013). The training materials Snowden

leaked advise analysts that it's "nothing to worry about," if data on unsuspecting U.S. citizens is retained (Lee, 2013).

In addition to PRISM, the NSA uses tools like upstream data collection via fiber-optic cables and malware to extensively track online viewing behaviors and keystrokes (Greenwald, 2014), such that intelligence agencies can "literally watch your ideas form as you type" (Gellman & Poitras, 2013). While the U.S. government maintains that it has not violated law-abiding Americans' online privacy (Neuman, 2013), the surveillance programs are resisted by Internet companies, shrouded in secrecy, and have no third-party accountability apparatus (Greenwald, 2014).

These highly publicized revelations have resonated among the public, such that the vast majority of Americans—87%—are aware that their online actions are subject to government interception, a higher percentage than those who can identify the federal minimum wage (Pew Research Center, 2014; Rainie & Madden, 2015). Brown (2014) cautions that perceptions of such surveillance may reduce the control individuals feel they have over their online disclosures, and initial evidence suggests this may be the case. A 2014 Pew Research survey reported that 86% of respondents were willing to discuss the Snowden PRISM leak in offline settings (a public meeting, family dinner, restaurant with friends), but less than half of those would post about it on Facebook or Twitter. Unwillingness to express online opinions about this subject was strongest among those who felt their friends on social media did not share their views, characteristic of a hostile opinion climate. However, in a survey conducted well before the PRISM leak, respondents who perceived online government monitoring (52% in 2003) and possessed minority opinions were *more* likely to engage in various forms of online political participation (Krueger, 2005). But these results were based on cross-sectional survey data and can only provide correlational, not causal, evidence. In other words, online activists may also be the most likely to perceive surveillance, a hypothesis that is equally as plausible.

## Justifications of Online Surveillance

While most Americans are aware of online government surveillance, they are much more divided on whether they believe such programs are acceptable. Since September 11, 2001, the U.S. government has consistently used rhetorical strategies to justify civil liberty restrictions as vital for national security and public safety (Graber, 2003). Accordingly, only 40% of surveyed Americans believe that surveillance against ordinary U.S. citizens is justified, while upward of 80% believe that it is necessary for individuals suspected of terrorist activity (Rainie & Madden, 2015). And those who approve its blanket use tend to be individuals who are more trusting of government institutions and the intentions of terrorism policy (Reddick, Chatfield, & Jaramillo, 2015). In 2008, sociologist Tamara Dinev and her colleagues administered a two-wave privacy survey, and their results showed that individuals who view online surveillance as justified are likely to comply with the government's requests to disclose sensitive personal information, like purchasing behavior and search histories, to advance the government's objectives.

These findings exemplify a behavioral manifestation of the “nothing to hide” argument often advanced by proponents of Internet surveillance. Those who feel the government is justified in surveillance activities argue their behaviors may be monitored because they are not trying to hide any wrongdoing (Greenwald, 2014; Solove, 2007). But Solove (2007) contends that individuals’ fundamental need for privacy is not necessarily grounded in concealing wrongdoing, but rather in “concealing information about themselves that others might use to their disadvantage” (p. 751). Understood this way, nearly everyone has something to hide. Although they did not characterize them as such, Dinev et al.’s (2008) survey results revealed conformist behavior: Those who believed surveillance was justified adapted their actions to align with the government’s position, by volunteering personal information that the government requested. In a similar vein, individuals may be willing to provide their opinions when they are accepted as the dominant position and know they are under surveillance, but may refrain from expressing minority views. This study explores whether similar conformist behavior arises in one’s willingness to disclose political views among individuals who believe surveillance is present and justified.

## Hypotheses

To further advance the field’s understanding of how the spiral of silence operates in online environments, this study empirically tested the direct and conditional relationships of one’s perceived climate of opinion and government surveillance on his or her willingness to speak out online. First, to replicate the silencing effects of minority viewpoints that have been initially reported in online contexts (Askay, 2015; Fox & Warber, 2015; Gearhart & Zhang, 2014, 2015; Ho & McLeod, 2008; Jang et al., 2014; Kim et al., 2014; Miyata et al., 2015; Yun & Park, 2011), it was hypothesized that a perceived hostile opinion climate would be negatively associated with one’s willingness to speak out online (**H1**).

Second, the literature reviewed above suggests that when individuals are primed of government surveillance, they will be less likely to disclose political views in general (**H2**), and it will especially dampen one’s willingness to speak out in hostile opinion climates (**H3**). Priming is a psychological process that relies on a “memory-based” model of opinion formation to explain how messages can activate certain mental constructs that are readily available in short-term memory and oversampled when individuals need to form judgments (Domke, Shah, & Wackman, 1998; Hastie & Park, 1986; Iyengar & Kinder, 1987). Priming operates using a network model of memory in which a stimulus (e.g., media content) activates a memory node, or construct, and related nodes through a process known as spreading activation (Roskos-Ewoldsen, Roskos-Ewoldsen, & Dillman Carpentier, 2009). When exposed to content that initiates nodes about U.S. online government surveillance, this construct and others related to it should be made highly accessible to individuals when asked about their willingness to express political opinions. Third, initial research that has examined whether individuals believe such surveillance practices are necessary and justified (e.g., Dinev et al., 2008) indicates that justification of surveillance may serve as an additional

moderator. When individuals perceive surveillance and believe it to be justified, they may be more likely to conform their opinions, by speaking out when they feel they are in the majority, and remaining silent when they are not (H4).

## Method

### *Sample and Design*

To test the aforementioned hypotheses, a priming manipulation was embedded in an online questionnaire about a salient national security issue: the U.S. decision to continue airstrikes against the Islamic State of Iraq and Syria (ISIS). Continued U.S. involvement in Iraq is a controversial, moral issue rooted in the defense against terrorism, the primary justification for online government surveillance under the U.S. Patriot Act. In January 2015, participants ( $N = 255$ ) were recruited by Survey Sampling International (SSI), a commercial survey firm that draws U.S. adult participants from its own online panels, social media, and affiliate partners, but because specific invitations to participate in the study are not sent out, response rates are not calculated. However, to maximize external validity and quality of participants, a quota sampling technique was used to mimic basic demographic distributions (e.g., sex, age, education) of the U.S. population.

The experiment was self-administered via Qualtrics, a leading online survey platform. After consenting to participate in the study, participants were asked to self-report their media use behaviors, political attitudes, and answered a series of questions assessing their personality traits. Then, a subset randomly selected by the Qualtrics software ( $n = 121$ ) was exposed to a message that primed them to perceive their online activities were subject to surveillance by the U.S. government. Next, all participants were presented with a fictional Facebook post about U.S. airstrikes against ISIS in Iraq (see the appendix) and asked to imagine that they came across it in their news feeds. The post contained a photo, headline, and lead paragraph and indicated no prime about whether airstrikes were normatively good or bad, such that it did not attempt to create either a hostile or friendly climate of opinion, as recommended by Scheufele and Moy (2000). Participants were subsequently asked about their willingness to publically express their opinions on this topic, their perceptions of how other Americans felt about this topic, the extent to which they believed online surveillance justified, and demographic information.

### *Measures*

The focal dependent variable, which sought to capture individuals' *willingness to speak out online*, was measured with four items following a hypothetical news post on Facebook about U.S. airstrikes against ISIS. With measures adapted from Gearhart and Zhang (2014), participants were asked to rate their likelihood on 0 to 10 scales of (a) commenting on the post, (b) sharing the post, (c) liking the post, and (d) creating a new post about the same topic ( $M = 4.82$ ,  $SD = 3.12$ , Chronbach's  $\alpha = .91$ ), which were

averaged together. Commenting, sharing, liking, and posting are disclosures of opinion that, via computer-mediated actions, have permanency potential. Although sharing and liking Facebook news posts do not involve commentary, they do function like other forms of participation (e.g., Gearhart & Zhang, 2014; Hayes, Scheufele, & Huges, 2006) as a means of publicly expressing one's beliefs and are susceptible to conforming behaviors.

The predictor variables of interest in this study were exposure to an *online surveillance prime*, participants' perceptions of the *climate of opinion*, and *justification of surveillance*. The online surveillance prime was a manipulation in the study design. Approximately half the participants ( $n = 121$ ) were exposed to the following reminder three times throughout the study that sought to mimic a research study's terms of agreement:

The next section of the survey asks for your honest opinions about some controversial political issues. While we make every attempt to ensure your opinions are kept confidential, it is important to keep in mind that the National Security Agency does monitor the online activities of individual citizens, and these actions are beyond the study's control.

The remainder of participants encountered no message.

To determine whether participants felt their beliefs deviated from majority opinion, they were asked two parallel questions often used by spiral of silence scholars (e.g., Foslyn, 1999; Liu & Fahmy, 2011). On 5-point scales, participants indicated about how strongly they personally opposed or supported the continuation of U.S. airstrikes against ISIS in Iraq, and what they thought "most Americans" believed. An absolute difference of the two items was calculated to produce a measure that represented each individual's perceived climate of opinion, such that a score of 0 represented complete agreement between one's opinion and the majority, while higher scores indicated a more hostile climate surrounding this issue ( $M = 1.65$ ,  $SD = 2.02$ ). Justification of surveillance was measured with items that tapped three core arguments in support of government monitoring: National security, public safety, and law-abiding citizens should have nothing to hide (Greenwald, 2014). Specifically, participants were asked to indicate their level of agreement on 7-point Likert-type scales with the following statements: "Online government surveillance is a necessary part of national security," "The government needs to monitor U.S. citizens online to keep the country safe," and "The government can track my online behavior because I have nothing to hide" ( $M = 4.34$ ,  $SD = 1.54$ , Chronbach's  $\alpha = .81$ ). Strong agreement with these statements was coded high.

Because the dependent variable posed a hypothetical question about one's willingness to speak out on a social networking site, all analyses controlled for participants' frequency of *social media use*, measured on a 7-point scale ranging from *never* to *daily*<sup>2</sup> ( $M = 5.42$ ,  $SD = 2.20$ ). Analyses also controlled for attention to *news about terrorism and national security* on identical scales, which were averaged together ( $M = 5.35$ ,  $SD = 1.60$ , Pearson's  $r = .85$ ).

To further mitigate the likelihood of spurious relationships, a robust battery of political and demographic controls were used. Single, 7-point items inquired about participants' levels of *political interest* ( $M = 4.77$ ,  $SD = 1.76$ ) and *political ideology* ( $M = 3.85$ ,  $SD = 1.65$ ), with greater interest and conservatism coded high. The study captured participants' *political knowledge* with multiple-choice civics questions that asked them to correctly identify the political party that holds a majority of seats in the U.S. House of Representatives (Republican Party), the percent of votes needed for U.S. Congress to override a Presidential veto (66.6%), the number of justices that serve on the U.S. Supreme Court (9), and the right protected by the Fourth Amendment to the U.S. Constitution (freedom from search and seizure). Correct answers were coded as 1 and summed into a 0 to 4 scale, with 4 representing high political knowledge ( $M = 1.79$ ,  $SD = 1.21$ ).

Because the issue presented in the hypothetical scenario directly involved the subject of terrorism, participants were asked also about the *likelihood of a new terrorist attack* in the U.S. in the next few months, on a 7-point scale with greater likelihood coded high ( $M = 3.98$ ,  $SD = 1.64$ ). Hayes, Glynn, and Shanahan's (2005) eight-item, *willingness to self-censor* scale ( $M = 4.82$ ,  $SD = 3.12$ , Chronbach's  $\alpha = .82$ ) was measured to control for individuals' predisposed tendencies to withhold their opinions. Finally, participants self-reported their *age*, *sex*, *level of formal education* on an 8-point scale, and *annual income* on a 9-point scale. Fifty-four percent of the sample was female, with a median age of 43. Mean level of education was just short of an associate's degree ( $M = 4.86$ ,  $SD = 1.52$ ), and the sample had an average 2014 household annual income of approximately US\$50,000 ( $M = 5.02$ ,  $SD = 2.14$ ). The quota-matching technique used by this study produced a sample that generally resembled the U.S. general population, as the 2014 U.S. Census Bureau estimates the population to be 51% female, have a median age of 37, nearly 40% have completed at least an associate's degree, and earns an annual household income of US\$52,000.

## Results

To first examine **H1** and **H2** that predicted negative direct effects of participants' climate of opinion and exposure to a surveillance prime on one's willingness to speak out online, an ordinary least square (OLS) regression model was fitted with these three variables alongside all political and demographic controls. This initial model explained 32% of the variance in willingness to speak out online, and one's climate of opinion produced a significant negative effect ( $\beta = -.18$ ,  $p < .05$ ). As hypothesized in **H1**, the greater the distance between a participant's opinion and perceived majority opinion, the less likely he or she was to speak out online. Exposure to the surveillance prime did not produce a similar significant effect, resulting in the rejection of **H2**. However, participants who felt an impending terrorist attack was likely ( $\beta = .32$ ,  $p < .01$ ) and self-reported high political interest ( $\beta = .54$ ,  $p < .001$ ) were likely to speak out. To further explore the conditional effect that government surveillance may have on one's willingness to speak out, the surveillance prime interaction term was added to this existing model. However, it explained no additional variance and was statistically insignificant, leading to the rejection of **H3**. The results of these models can be found in Table 1.



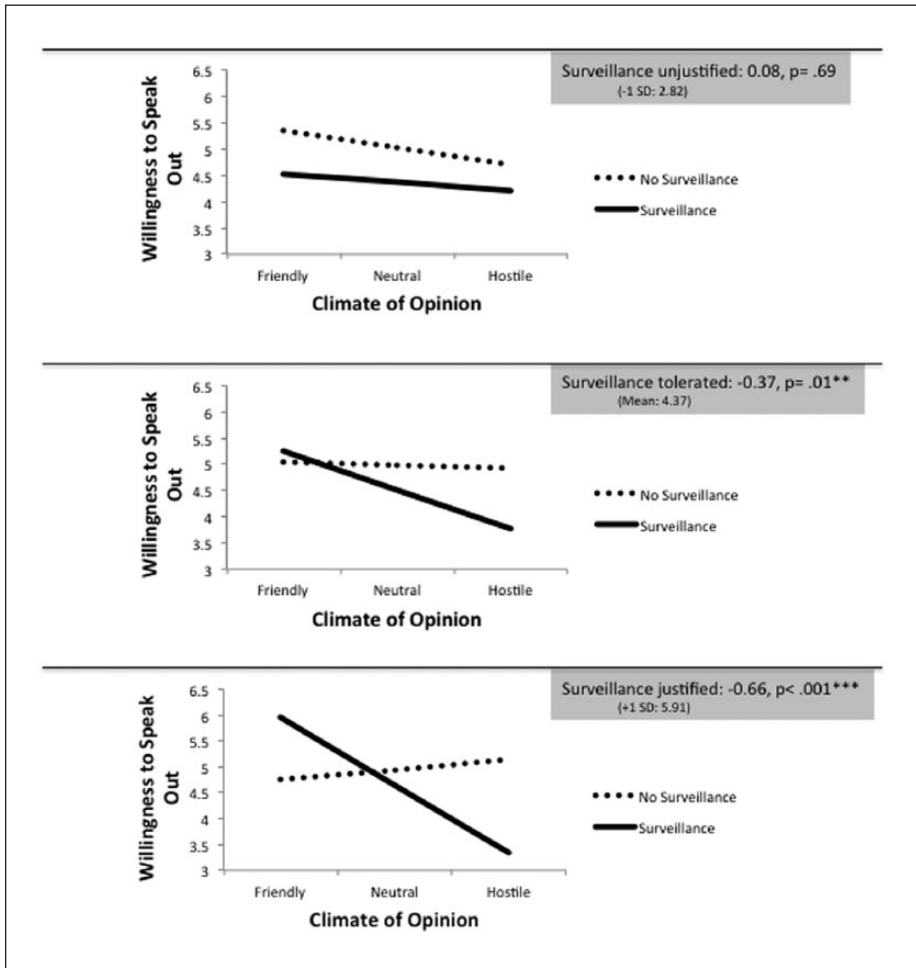
**Table 1.** OLS Regression Models Predicting One's Willingness to Speak Out Online.

	Model 1	Model 2	Model 3
<b>Direct effects</b>			
Constant	-0.75 (1.60)	-0.88 (1.61)	-0.18 (1.72)
Age	-0.03 (0.01)*	-0.3 (0.01)*	-0.03 (0.01)*
Sex	-0.00 (0.37)	0.00 (0.37)	-0.08 (0.37)
Education	0.08 (0.12)	0.09 (0.12)	0.09 (0.12)
Income	-0.11 (0.09)	-0.11 (0.09)	-0.13 (0.09)
Social media use	0.35 (0.09)***	0.36 (0.09)***	0.36 (0.09)***
Attention to terrorism news	0.24 (0.14)	0.24 (0.14)	0.22 (0.15)
Willingness to self-censor	-0.03 (0.18)	-0.03 (0.17)	0.03 (0.17)
Political knowledge	-0.17 (0.16)	-0.15 (0.16)	-0.11 (0.17)
Political interest	0.54 (0.14)***	0.53 (0.14)***	0.50 (0.14)***
Terrorist attack likelihood	0.32 (0.12)**	0.32 (0.12)**	0.35 (0.12)**
Political ideology	-0.16 (0.11)	0.15 (0.11)	0.17 (0.11)
Surveillance prime	-0.27 (0.51)	-0.01 (0.58)	-2.33 (1.49)
Climate of opinion	-0.18 (0.09)*	-0.12 (0.11)	-0.41 (0.22)†
Justified surveillance	—	—	-0.16 (0.22)
<b>Conditional effects</b>			
Surveillance prime × Climate of opinion	—	-0.18 (0.18)	0.85 (0.39)*
Climate of opinion × Justified surveillance	—	—	0.09 (0.05)
Surveillance prime × Justified surveillance	—	—	0.55 (0.31)†
Climate of opinion × Surveillance prime × Justified surveillance	—	—	-0.27 (0.09)**

Note. OLS = ordinary least square.

† $p < .10$ . \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

From these first two analyses, it appears that knowing the government may be monitoring one's online activities does not directly nor conditionally affect his or her willingness to speak out. However, **H4** predicted that exposure to a surveillance prime may influence the climate of opinion through another conditional variable: participants' perceptions of whether surveillance is justified. A final moderated moderation analysis used Hayes' (2013) PROCESS macro, Model 3, to fit an OLS regression with a three-way interaction term comprised of participants' climate of opinion, justifications of surveillance, and exposure to a surveillance prime. All aforementioned political and demographic controls were again included, and the model used 5,000 bootstrap samples. This model explained 35% of the variance in an individuals' willingness to self-censor, and the three-way interaction term was statistically significant ( $\beta = -.27$ ,  $p < .01$ ), in support of **H4**. As visualized in Figure 1, the negative relationship between perceived climate of opinion and willingness to speak out is



**Figure 1.** Three-way interaction predicting one's willingness to speak out online.

strengthened when individuals' perceive surveillance and believe that such surveillance is justified. However, there was no significant conditional effect on willingness to speak out when individuals believe surveillance is present and unjustified, or when they are not reminded of online government surveillance. In other words, when individuals think they are being monitored and disapprove of such surveillance practices, they are equally as unlikely to voice opinions in friendly opinion climates as they are in hostile ones. Conforming to speak out when one is the majority and silencing when one is not appears strongest when it is coupled with perceived surveillance and a belief that this surveillance is justified.

## Discussion

### *Limitations*

This study attempted to circumvent some of the limitations of previous research by not superimposing a manipulated climate of opinion (Scheufele & Moy, 2000), while still executing control over a variable to determine the casual effects of surveillance (Krueger, 2005; Rainie & Madden, 2015), but the design was not without its own shortcomings. Participants' justifications of surveillance and their willingness to speak out online were not controlled by the researcher, and as such are open to the possibility of being jointly influenced by some third, unaccounted for variable. Future experimental work should continue to identify any additional antecedent influences that may potentially impact the relationships delineated here.

The surveillance prime statement that was presented to a subset of the sample was artificial, and individuals are unlikely to encounter such an overt prime in their daily online activities. However, they do frequently confront terms of agreement and privacy statements that abound on social media and other websites that similarly prime the understanding that one's data are subject to government interception and surveillance. Mainstream media's barrage of online news stories about cybersecurity and Edward Snowden are also likely to prime such considerations. The prime used here sought to isolate the belief that one's online behavior was subject to government surveillance without introducing any confounds that other primes, like news content, may impose. But to ensure greater external validity moving forward, future research could attempt to achieve a similar priming effect by exposing participants to news issues that either relate directly to government surveillance, like Edward Snowden, the NSA, or online privacy as compared to those who encounter a further removed moral issue, like Obamacare or gay marriage.

Because this study exposed all participants to news about terrorism, which has an implicit association with online surveillance, the sample as a whole may have elevated considerations about this issue, and future research may see greater variability between treatment and control groups when using a less congruent topic. The sample was also comprised of online panelists, who may have volunteered to participate because they possess an inherent interest in politics or other self-selection bias. Although they were matched to mirror U.S. demographics, these individuals may also be more likely than the general population to express their opinions via the Internet or process messages about surveillance differently. More work with a representative sample is needed before any widespread generalizations are attempted.

### *Implications*

This study provided an important first look at how perceptions of surveillance may contribute to an online spiral of silence. The absence of a significant direct relationship between perceived surveillance and speaking out in general implies the effect is more nuanced than a blanket silencing that some (e.g., Brown, 2014; Hampton

et al., 2014) have suggested. Instead, it attenuates the relationship between the opinion climate and voicing opinions except among a small number of participants who believe surveillance is not justified. Those who firmly believe that the government's monitoring programs are unacceptable decide whether to share their views entirely independently of both perceived surveillance and the opinion climate. In other words, this group of individuals was not affected by the surveillance prime. Although not directly measured, the individuals who comprise this group may very well be members of the avant-garde who are highly educated and vocal about their views regardless of circumstances, and individuals who are so turned off by surveillance that they are unwilling to ever share political beliefs online. In support of this speculation, a post hoc OLS regression predicting unjustified surveillance attitudes revealed that greater political knowledge ( $\beta = .30, p < .001$ ) and low willingness to self-censor ( $\beta = -.16, p < .10$ ) were significant and marginally significant predictors.<sup>3</sup> Future studies should further explore the characteristics of individuals who hold these beliefs and identify the reasons why they are less susceptible to surveillance's silencing effects.

For the remainder—and majority—of participants, being primed of government surveillance significantly reduced the likelihood of speaking out in hostile opinion climates. These findings introduce important theoretical and normative consequences. Theoretically, it adds a new layer of chilling effects to the spiral of silence. This is the first study to provide empirical evidence that the government's online surveillance programs may threaten the disclosure of minority views and contribute to the reinforcement of majority opinion. Noelle-Neumann (1974) and the scholars who have followed her have relied on an individual's fear of social isolation as the underlying mechanism to explain silencing effects. But the results from this study suggest there may be an additional mechanism that contributes to this process: one's fear of isolation from authority or government. Fear of isolation, as traditionally measured, taps an individual's concern of being alienated from other members of society, but does not address fear of alienation or prosecution from the government. Csikszentmihalyi (1991) argues that social isolation is a minimal concern compared to material sanctions that government is capable of enacting, like losing one's job or instigating legal consequences. Further research is needed to explore other potential theoretical mechanisms for why individuals fail to disclose minority views now that perceived surveillance has been identified as a moderating agent.

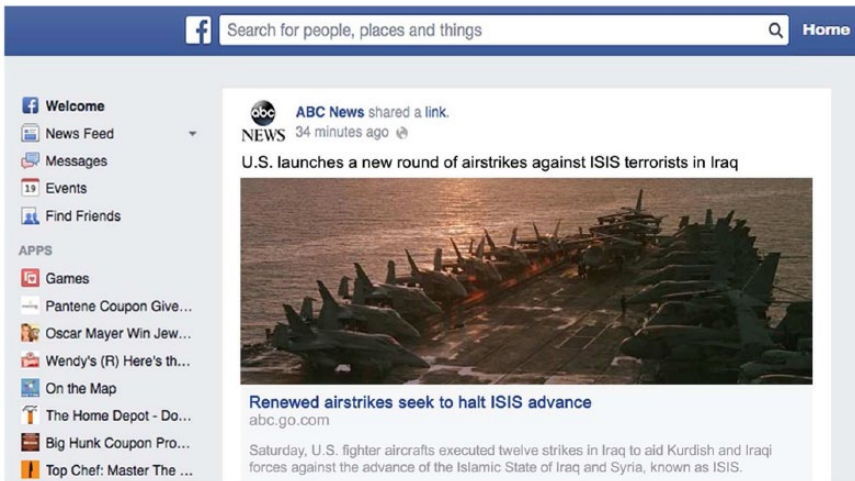
Normatively, these results provide important considerations for policymakers as they seek to renew, revise, and draft additional provisions that continue to allow bulk online data collection and mass surveillance practices. Interestingly, the participants in this study who were the most susceptible to conformist behavior were those who supported these controversial surveillance policies. These individuals expressed that surveillance was necessary for maintaining national security and they have nothing to hide. However, when these individuals perceive they are being monitored, they readily conform their behavior—expressing opinions when they are in the majority, and suppressing them when they're not. Similar to Dinev et al.'s (2008) results, those holding the dominant opinion eagerly volunteered their ideas

(over 6 on a 7-point scale), but the “nothing to hide” group seemed to experience some degree of dissonance when their views were in the minority, as they were inclined to “hide” them.

The secrecy that has surrounded the government’s online surveillance programs has led to unverified speculation about their potential negative ramifications (e.g., Brown, 2014; Greenwald, 2014), but, to date, there has been very little evidence that documents deleterious effects. While proponents of such programs argue surveillance is essential for maintaining national security, more vetting and transparency is needed as this study shows it can contribute to the silencing of minority views that provide the bedrock of democratic discourse. Communication scholars and policymakers alike should continue to investigate how surveillance—both by government and commercial enterprises—shapes how individuals use the Internet to interact, discuss political issues, and seek new information.

## Appendix

Presented below is the Facebook post participants were exposed to and subsequently asked about their likelihood of commenting, sharing, liking, and creating a new post about the same topic had the post appeared in their own Facebook feeds.



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## Notes

1. “Most Americans” were chosen as the reference group because sharing, commenting, and liking news posts are activities viewable by the public at large, not just an individual’s network. While a more specific reference group, like Facebook users, may have some advantages, it also may have created confusion about whether “Most Facebook users” were friends of the participant, which Noelle-Neumann (1993) cautions against. And a Pew Research Report (Duggan, Ellison, Lampe, Lenhart, & Madden, 2015) from this time shows that a majority of Americans now do use Facebook.
2. Of the 255 participants in the sample, 31 reported never using social media. All analyses were replicated with an  $n = 224$ , omitting these participants who reported never using social media, and all significant results were upheld.
3. In the post hoc analysis, the dependent variable, justification of surveillance, was reverse coded for greater ease in interpretation. Model covariates included age, sex, education, income, willingness to self-censor, political knowledge, political ideology, political interest, attention to terrorism news, and likelihood of an imminent terrorist attack.

## References

- Askay, D. A. (2015). Silence in the crowd: The spiral of silence contributing to the positive bias of opinions in an online review system. *New Media & Society, 17*, 1811-1829. doi:10.1177/1461444814535190
- Brown, I. (2014). Social media surveillance. *The International Encyclopedia of Digital Communication and Society*. Advance online publication. doi:10.1002/9781118767771.wbiedcs122
- Csikszentmihalyi, M. (1991). Reflections on the “spiral of silence.” *Communication Yearbook, 14*, 288-297.
- Dinev, T., Hart, P., & Mullen, M. R. (2008). Internet privacy concerns and beliefs about government surveillance: An empirical investigation. *Journal of Strategic Information Systems, 17*, 214-233.
- Domke, D., Shah, D. V., & Wackman, D. B. (1998). Media priming effects: Accessibility, association, and activation. *International Journal of Public Opinion Research, 10*, 51-74.
- Duggan, M., Ellison, N. B., Lampe, C., Lenhart, A., & Madden, M. (2015, January 9). *Social media update 2014: Demographics of key social networking platforms*. Retrieved from <http://www.pewinternet.org/2015/01/09/social-media-update-2014/>
- Foslyn, M. R. (1999). Perceiving public opinion of political figures: Examining the link between individual and collective opinion. *International Journal of Public Opinion Research, 11*, 213-232.
- Fox, J., & Warber, K. M. (2015). Queer identity management and political self-expression on social networking sites: A co-cultural approach to the spiral of silence. *Journal of Communication, 65*, 79-100.
- Gearhart, S., & Zhang, W. (2014). Gay bullying and online opinion expression: Testing spiral of silence in the social media environment. *Social Science Computer Review, 32*, 18-36.
- Gearhart, S., & Zhang, W. (2015). “Was it something I said?” “No, it was something you posted!” A study of the spiral of silence theory in social media contexts. *Cyberpsychology, Behavior, and Social Networking, 18*, 208-213.
- Gellman, B., & Poitras, L. (2013, June 7). US, British intelligence mining data from nine US Internet companies in broad secret program. *The Washington Post*, p. 6.
- Glynn, C. J., Hayes, A. F., & Shanahan, J. (1997). Perceived support for one’s opinions and willingness to speak out: A meta-analysis of survey studies on the “spiral of silence.” *Public Opinion Quarterly, 61*, 452-463.

- Graber, D. (2003). Styles of image management during crises: Justifying press censorship. *Discourse & Society, 14*, 539-557.
- Granovetter, M. S. (1973). The strength of weak ties. *American Journal of Sociology, 78*, 1360-1380.
- Greenwald, G. (2014). *No place to hide: Edward Snowden, the NSA, and the U.S. Surveillance State*. New York, NY: Metropolitan Books.
- Greenwald, G., & MacAskill, E. (2013, June 7). NSA prism program taps in to user data of Apple, Google and others. *The Guardian*. Retrieved from <http://www.alleanzaperinternet.it/wp-content/uploads/2013/06/guardian.pdf>
- Hampton, K., Rainie, L., Lu, W., Dwyer, M., Shin, I., & Purcell, K. (2014). *Pew research Internet project: Social media and the "spiral of silence."* Retrieved from <http://1percent.info/wp-content/uploads/2014/12/2014-Social-Media-and-the-Spiral-of-Silence.pdf>
- Hastie, R., & Park, B. (1986). The relationship between memory and judgment depends on whether the judgment task is memory-based or on-line. *Psychological Review, 93*, 258-268. doi:10.1037//0033-295X.93.3.258
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York, NY: The Guilford Press.
- Hayes, A. F., Glynn, C. J., & Shanahan, J. (2005). Willingness to self-censor: A construct and measurement tool for public opinion research. *International Journal of Public Opinion Research, 17*, 298-323.
- Hayes, A. F., Scheufele, D. A., & Huges, M. E. (2006). Nonparticipation as self-censorship: Publicly observable political activity in a polarized opinion climate. *Political Behavior, 28*, 259-283.
- Ho, S. S., & McLeod, D. M. (2008). Social-psychological influences on opinion expression in face-to-face and computer-mediated communication. *Communication Research, 35*, 190-207.
- Iyengar, S., & Kinder, D. (1987). *News that matters: Television and American opinion*. Chicago, IL: University of Chicago Press.
- Jang, S. M., Lee, H., & Jin, P. Y. (2014). The more friends, the less political talk? Predictors of Facebook discussions among college students. *Cyberpsychology, Behavior, and Social Networking, 17*, 271-275.
- Kim, S.-H., Kim, H., & Oh, S.-H. (2014). Talking about Genetically Modified (GM) foods in South Korea: The role of the Internet in the spiral of silence process. *Mass Communication and Society, 17*, 713-732.
- Krueger, B. S. (2005). Government surveillance and political participation on the Internet. *Social Science Review, 23*, 439-452.
- Lee, T. B. (2013, June 12). Here's everything we know about PRISM to date. *The Washington Post*. Retrieved from <http://www.washingtonpost.com/blogs/wonkblog/wp/2013/06/12/heres-everything-we-know-about-prism-to-date/>
- Liu, X., & Fahmy, S. (2011). Exploring the spiral of silence in the virtual world: Individuals' willingness to express personal opinions in online versus offline settings. *Journal of Media and Communication Studies, 3*(2), 45-57.
- Matthes, J. (2015). Observing the "spiral" in the spiral of silence. *International Journal of Public Opinion Research, 27*, 155-176.
- Miyata, K., Yamamoto, H., & Ogawa, Y. (2015). What affects the spiral of silence and the hard core on Twitter? An analysis of the nuclear power issue in Japan. *American Behavioral Scientist, 59*, 1129-1141.
- Mutz, D. C., & Martin, P. S. (2001). Facilitating communication across lines of political difference: The role of mass media. *American Political Science Review, 95*, 97-114.

- Neuman, S. (2013, June 9). Bush-era NSA chief defends PRISM, phone metadata collection. *NPR*. Retrieved from <http://www.npr.org/sections/thetwo-way/2013/06/09/190092800/bush-era-nsa-chief-defends-prism-phone-meta-data-collection>
- Noelle-Neumann, E. (1974). The spiral of silence a theory of public opinion. *Journal of Communication*, 24(2), 43-51.
- Noelle-Neumann, E. (1993). *The spiral of silence: Public opinion—Our social skin* (2nd ed.). Chicago, IL: University of Chicago Press.
- Pew Research Center. (2014, October 2). *From ISIS to unemployment: What do Americans know?* Retrieved from <http://www.people-press.org/2014/10/02/from-isis-to-unemployment-what-do-americans-know/>
- Pikowsky, R. (2002). An overview of the law of electronic surveillance post September 11, 2001. *Law Library Journal*, 94, 601-620.
- Rainie, L., & Madden, M. (2015, March 16). *Americans' privacy strategies post-Snowden*. Pew Research Center, Internet Science and Tech. Retrieved from <http://www.pewinternet.org/2015/03/16/americans-privacy-strategies-post-snowden/>
- Reddick, C. G., Chatfield, A. T., & Jaramillo, P. A. (2015). Public opinion on National Security Agency surveillance programs: A multi-method approach. *Government Information Quarterly*, 32, 129-141.
- Roskos-Ewoldsen, D. R., Roskos-Ewoldsen, B., & Dillman Carpentier, F. (2009). Media priming: An updated synthesis. In J. Bryant & M. B. Oliver (Eds.), *Media effects: Advances in theory and research* (pp. 74-93). New York, NY: Routledge.
- Scheufele, D. A., & Moy, P. (2000). Twenty-five years of the spiral of silence: A conceptual review and empirical outlook. *International Journal of Public Opinion Research*, 12, 3-28.
- Schulz, A., & Roesser, P. (2012). The spiral of silence and the internet: Selection of online content and the perception of the public opinion climate in computer-mediated communication environment. *International Journal of Public Opinion Research*, 24, 346-367.
- Shanahan, J., Glynn, C., & Hayes, A. (2007). The spiral of silence: A meta-analysis and its impact. In R. W. Preiss, B. M. Gayle, N. Burrell, M. Allen, & J. Bryant (Eds.), *Mass media effects: Advances through meta-analysis* (pp. 415-427). Mahwah, NJ: Lawrence Erlbaum.
- Sohn, D., & Geidner, N. (2015). Collective dynamics of the spiral of silence: The role of ego-network size. *International Journal of Public Opinion Research*. Advance online publication. doi:10.1093/ijpor/edv005
- Solove, D. J. (2007). "I've got nothing to hide" and other misunderstandings of privacy. *San Diego Law Review*, 44, 745-772.
- U.S. Census Bureau. (2014). Available from <http://www.census.gov>
- Valenzuela, S., Kim, Y., Gil de & Zuniga, H. (2012). Social networks that matter: Exploring the role of political discussion for online political participation. *International Journal of Public Opinion Research*, 24, 163-184.
- Yun, G. W., & Park, S.-Y. (2011). Selective posting: Willingness to a post a message online. *Journal of Computer-Mediated Communication*, 16, 201-227.

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