*Full Length Research Paper*

# Exploring the spiral of silence in the virtual world: Individuals' willingness to express personal opinions in online versus offline settings

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**This study extends the understanding of the spiral of silence theory by taking into account the impact of new media on virtual behavior motivation. It explores individuals' willingness to express opinions online and offline and tests how the constructs proposed by the spiral of silence theory work in each setting. Results of a survey (N=503) suggests that when the likelihood of speaking out online increases, the likelihood of speaking out in a real setting also increases, and vice versa. Findings further suggest that the congruency of current opinions with one's own opinions predicts the willingness to speak out offline. Congruency of future opinions, however, failed to predict the likelihood of speaking out offline. Findings also indicated that congruency of future and current opinions did not predict the willingness to speak out in the online setting. Furthermore, while experiencing fear of isolation predicted by the willingness to speak out online, it did not affect offline outspokenness.**

**Key words:** Spiral of silence, opinion-climate online, online environment.

## INTRODUCTION

The spiral of silence theory, which proposes that people will choose to remain silent if they evaluate that their views fall in the minority, matured in a traditional media context (Noelle-Neumann, 1973, 1984). Because the internet has now passed its incubation stage into a part of the mainstream media (Best and Kureger, 2005), the virtual environment offers new communication possibilities and uniqueness (McDevitt et al., 2003; Witschge, 2007) that legitimize the retesting and rechecking of established traditional spiral of silence theory in the virtual setting versus the traditional setting. The literature indicates that experiencing fear of isolation and perceptions of the opinion climate are two key constructs related to this theory, nevertheless, they were not specifically tested in the online discussion context, despite the fact that Internet is used as a public sphere to encourage political issue discussion increasing sharply in recent years (Shah et al., 2008; Tian, 2006); moreover research shows online political discussion has been growing and having a greater influence on public opinion (Price et al., 2006).

As expressing online opinions is perceived to be another dimension of speaking out, and as accessibility of online opinions becomes far more extensive and immediate than opinions and information presented by traditional media, this study is one of the first studies to compare and explore expressions of personal opinions in an online environment versus a traditional environment. Indeed questions of whether the spiral of silence theory operates differently in the offline and online world remains in question. For example, to what degree can the theory be applied to the online setting? How can online expression affect an individual's offline outspokenness? While previous studies found that computer-mediated communication provides an alternative way for interpersonal communication on politics (Hardy and Scheufele, 2005), and facilitates public discussion of political issues (Ho and McLeod, 2008; Li, 2007), these

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studies failed to elaborate on how mediation affects the variables addressed by the spiral of silence model work in the online setting.

This study, therefore, seeks to expand our understanding of the spiral of silence theory in three ways: First, this is one of the first studies that attempts to explore how key variables regarding the spiral of silence theory applies to an online context and selective exposure. It tests the different modes of speaking-out regarding a controversial issue — the legalization of same-sex marriage in offline and online settings. Although limited literature examined whether respondents would be willing to speak out if they were placed in a face-to-face discussion group in one condition and in an online chat room discussion group in the other condition (Ho and McLeod, 2008), results suggested the spiral of silence theory might have different impact on the online world than in the real world. Additional research is needed, however, to better understand how online discussion and Internet chat rooms could create a platform that would or could generate free exchange of opinions and/or new ideas that might eventually lead to problem-solving (Kalyanaraman and Sundar, 2008; Kim, 2006; Bekkers, 2004). Thus the question of whether the spiral of silence works in the same way in offline and online communities merits more attention.

Second, to contribute to research validity, this study explores the correlation between speaking-out in online and offline settings. While previous studies have viewed traditional media as a tool for social control in manipulating the formation of public opinion (Lasorsa, 1991; Price et al., 2005; Salwen and Lin, 1994), they did not take into account that the Internet itself is a marketplace of diverse opinions. Results of this study, therefore, seeks to expand our comprehension and application of the theory by addressing whether the Internet can help individuals counteract the spiral of silence effect and express personal opinions.

## The issue of same-sex marriage

This study focuses on the legalization of same-sex marriage, because this issue has aroused controversial opinions among the public, making it an appropriate issue for this study. Past literature indicates issues that can produce spiral of silence effects are those "that the process of public opinion declares to be pressing, requiring that the issue be brought to the negotiating table. These issues are emotional, value-loaded, and evoke the perception of right and wrong but not exclusively in the sense of good and evil" (Perry and Gonzenbach, 2000: 270).

Indeed, issues regarding gay rights have been controversial for several decades now. Controversy surrounding same sex marriage has been ongoing since the 2000 presidential election campaign (Price et al., 2005). Ferguson (2007: 39) explains that same-sex marriage has "created the greatest controversy among all the public policy questions raised in the last [2004] U.S. presidential election".

Meanwhile, gay marriage was legalized in Massachusetts and several other states such as, Hawaii, California, New York, and Connecticut. The New Hampshire legislature's approval of revisions to a same-sex marriage bill increases the number of state legalizing gay couples wedding to six by June 3, 2009 (Goodnough, 2009). The increase in state constitutional amendments, however, has not ended the controversy; same-sex marriage remains one of the most passionate debates in the United States today, and most people have strong opinions toward same sex marriage (Davis, 2006; Price et al., 2005). California legislators have been struggling with re-banning the issue of same sex marriage with Proposition 8, defining marriage as between only men and women (McKinley, 2008).

The legalization of same-sex marriage is therefore both morally laden and controversial (Crandall and Ayres, 2002). It requires a decision to support or oppose it. In fact, to pass the legislation on same-sex marriage, voters have to cast the ballots for or against the issue, without a compromising choice on the controversy (Davis, 2007: 796).

## Theoretical background: The spiral of silence

Noelle-Neumann's (1977) spiral of silence theory serves as "one of the most influential recent theories of public opinion formation" (Kenamer, 1990: 393). Viewing public opinion as social control (Moy et al., 2001), the spiral of silence theory proposes that the likelihood an individual will express their opinions in public are based on the positive monitoring of the opinion climate and the comparison of their own opinions with the perceived current and future public opinions. If individuals perceive that their opinions are on the majority or on the rise, they might be willing to speak out. However, if they judge that their opinions are on the minority side or are on the decline, they might decide to keep silent or conform to the majority.

The central assumption of the spiral of silence theory is that the society will isolate those individuals who express opinions that deviate from the norm and that individuals will sense that isolation imposed by society (Glynn and McLeod, 1985; Moy et al., 2001). But what kind and to what degree does fear contribute to spiral of silence (or conformity)? More research is needed to address that.

In another Internet study, McDevitt et al. (2003) highlighted a useful distinction in developing a theoretical approach to understanding opinion expression in online

forums. They acknowledged that the lack of explicit opinion expression on the abortion scenario could be interpreted as support of the spiral of silence model, in that participants were not revealing their personally held views as pro-life or pro-choice.

In fact, Noelle-Neumann (1991) poses: "Are individual members of society really threatened with isolation? Do they really fear isolation, and does fear of isolation inform their actions? Could this be the motive for conformity, or are there much better explanations" (p. 260)? For example, Noelle-Neumann assumes that some individuals could lie in a so-called "hard-core" group of individuals that are willing to express their minority opinion regardless of paying the isolation "price" (1993: 170).

Another assumption of the spiral of silence theory is that an individual will positively monitor the public opinion climate at different levels before determining opinion expression strategies. While climate opinion deals with the public opinion in society at large, recent research has suggested that a reference group might represent a micro-climate.

In this study, opinion congruency refers to the broad concept that people in geographically based locations agree with one's stance. For example, the perceived consonance of one's opinion with family and friends, rather than the society at large, predicted the willingness to speak out (Moy et al., 2001).

According to Noelle-Neumann (1991), monitoring not only judges the current climate but also predicts future climate change, as to which opinion will dominate in the end. Certainly, these perceived opinions might not correspond to reality. For example, misperception of a perceived consonance of an individual's opinion with the majority opinion can sometimes encourage him/her to feel comfortable and speak out. By the same token, misperception of a perceived dissonance of an individual's opinion with the majority opinion can sometimes encourage him/her to keep silent (Perry and Gonzenbach, 2000).

In addition, the psychological background of an individual might affect his or her decision whether to speak out. For example, an individual with high communication apprehension would be less willing to express an opinion than another individual with low communication apprehension, especially in an environment with strangers (Crandall and Ayres, 2002). In the case of political attitudes, for example, an individual with strong opinions on an issue, with higher interest in and knowledge of politics (Shamir, 1997: 607) and with concrete attitude strength (Bladassare and Katz, 1996; Shanahan et al., 2004) would be more likely to express his/her political views in public. Furthermore, demographic variables, such as education, gender, race, and political ideology are significant factors related to

expressing individual opinions (Moy et al., 2001).

Drawing upon the above body of literature, this study proposed the following hypothesis:

**H1:** The more a) current, and b) future opinion congruency, the more the likelihood of speaking out in a real environment, after controlling for online outspokenness, opinion congruency (current/future), experiencing fear of online isolation, offline normative perception, political efficacy, sense of social benefit, hardcore and demographic variables of race, gender and education.

## Monitoring the climate of opinion through the mass media

The spiral of silence theory assigns great authority to the mass media in influencing people's monitoring antenna. In other words, the media create the information environment in which they perceive the national climate of opinions (Jeffres et al., 1999). Zaller (1992) explains the media function "to convey information to audience members on the climate of opinion regarding an issue" (Moy et al., 2001: 11).

The media's influence in motivating the public to conform to the heavily covered "public opinion" has been confirmed by previous research. Schmierbach et al. (2005), for example, explain the potential costs of disagreeing with broadly held and broadcast opinions construct pressure for individuals to conform to these mediated opinions.

In terms of the media's influence on the perception of public opinion climate, the literature suggests that as maximized or ubiquitous media attention increases "the likelihood that different publics will be aware of differences of opinion" (Jeffres et al., 1999: 117). In other words, if the coverage or discussion of an issue is sparse, the importance of the media in predicting opinion climate for an individual will decline.

Although the spiral of silence theory assumes that an individual will positively monitor and assess the climate of public opinion, scholars question to what degree he/she can accurately accomplish that goal (Gunther et al., 2001; Hayes, 2007; Wojcieszak, 2008).

Kennamer (1990) suggests that, "unless there is considerable evidence to the contrary, one's assessments of the climate of opinion may not provide strong disconfirmation of one's own position and, therefore, may not threaten one into the fearful silence of Noelle-Neumann hypotheses" (p. 396).[1]

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[1] Indeed, within the traditional media, the cost of accessing and assessing the climate of public opinion is relatively high.

**Online monitoring and speaking-out**

This paper operationalized speaking-out in public as the willingness to express individuals' opinions in offline as well as in online settings. It views expressing online opinions as another dimension of speaking out in public because the Internet has already become a mainstream media outlet that disseminates opinions to a broad public audience in such a way that might subject "individuals to the possibility of real public scrutiny and social sanctions" (Katz and Baldassare, 1992: 222). In fact, one of the most important features of the Internet is its public characteristic. Any online opinion is "just a google search away for the online user" (Singer, 2006: 3).

A virtual community represents any gathering of people on the Internet within which people can communicate virtually (Domingo, 2008; Hagel and Armstrong, 1997). Currently there are thousands of virtual community groups online, including: email-lists, electronic bulletin boards, online chat groups and role-playing domains (Dahlberg, 2001). These virtual community groups are flourishing (Blumenthal,, 2005), making the climate of public discussion optimal within the online context (Hardy and Scheufele, 2005; Ho and McLeod, 2008).

The Internet provides a powerful tool for users to access online opinions. Current literature indicates cyberspace constitutes a place where people can share ideas and opinions. It thus, "potentially allows for more inclusion and participation in the public debate…" especially for "… those groups that have been excluded from the role, either in the media or in other areas of the public sphere" (Witschge, 2007: 130), such as homosexual groups (Yang, 2000) or the other minorities (Muhtaseb and Frey, 2008).

The accessibility of individuals' opinions online is far more extensive and immediate than opinions and information presented by traditional media such as broadcasting and print. On one hand, the enormous volume of information available on the Internet can present opinions from various perspectives on an issue (Domingo, 2008; Talbert, 2007), which might facilitate the accumulation of diverse opinions for users: it is more difficult to selectively expose oneself to sources of information that contribute to diverse perspectives (Mutz and Martin, 2001). On the other hand, the large amount of online information might create information overload. The poll data put forth by weblogs during the 2004 election campaign, for example, presented different outcomes (Blumenthal, 2005), increasing the difficulty in assessing the climate of opinion on horseracing. In this case, the likelihood that individuals developed misperceptions regarding the climate of public opinion increased with the increase in confusing and diverse information.

Furthermore, past studies suggested that online users search for opinions that are likely to be in line with their own beliefs and thoughts (Dahlberg, 2001; Johnson et al., 2008; Stroud, 2008). These sought opinions might thus mislead individuals to perceive that their own opinions lie in the majority, despite the possibility that the actual majority opinion could have been silenced by the mouse. In fact the diversity of opinions online does not suggest a lack of agreement in the online world. On the contrary, one study found that even if online opinions on an issue present diverse perspectives, these opinions eventually converge to form a homogeneous perspective (Wilhelm, 2000). This finding suggests that cyberspace might just be another place to meet rather than being a distinct and separate place from the real world. In other words, people in the online community invest as much effort to maintain their virtual environment as much as they invest effort in their social space (Carter, 2005). Thus, some norms that regulate individuals in the real environment might still serve as tools to regulate their behaviors in the online environment. Individuals might simulate their routine offline behaviors, even if the daunting real world power does not exist online. Rheingold (2000) explains that rather than discarding all the offline setting behavior models, the virtual community presents individuals with a chance to improve what is real rather than totally substituting for the real environment. In the case of expressing opinions in an online setting, the virtual community provides a more liberal marketplace for diverse opinions, but the question arises whether individuals' willingness to speak out might still be regulated by factors similar to those available in an offline setting. While there is a diversity of opinions online, people are more attracted to those perspectives they agree most with Johnson et al. (2008), Mutz and Martin (2001) and Stroud (2008). In other words, while people have considerable choices over what sites to visit and they are likely to practice selective exposure, they are more likely to visit sites that support their points of view (which might also reduce the possibility of spiral of silence effects).

In fact, a Pew Internet study (2005) suggests that for the most part while there is diversity of opinions online, people selectively expose themselves to information to which may make them overestimate that they are in the majority. In other words, the study found that the online world mirrors the offline world. People bring to the Internet the activities, interests, and behaviors that preoccupied them in the real environment.

However, one could argue that the convergence characteristics of online opinion sharing or debate suggest that individuals will likely encounter polarized views online. When issues are first proposed, the climate of public opinion online is diverse and discussion might often be very heated and not at all tolerant. When the issue is debated widely and deeply, however, opinions

might spiral into some dominant opinions, and those opinions might be shared by most of the members of a particular forum. According to the spiral of silence theory, the individuals in the minority group then might choose to keep silent or to conform to the majority opinion.

Based on the above, the following two hypotheses are proposed:

**H2:** The more a) current, and b) future opinion congruency, the more the likelihood of speaking out online, after controlling for offline outspokenness, opinion congruency (current/future), experiencing fear of online isolation, online normative perception, political efficacy, sense of social benefit, hardcore and demographic variables of race, gender and education.

**H3:** The more experiencing fear of online isolation, the less the likelihood of speaking out online, after controlling for opinion congruency (current/future), offline outspokenness, online normative perception, political efficacy, sense of social benefit, hardcore and demographic variables of race, gender and education.

Cialdini et al. (1990) explain the perception of what others are doing and the perceived others' approval or disapproval can all serve as behavior references. A review of the literature suggests that the online setting might increase individuals' willingness to speak out for several reasons:

First, the success of expressing individual opinions online without suffering a negative response, both through individual experience and through observing others' experiences, might reinforce the behavior of speaking-out (See LaRose and Eastin, 2004).
Second, in most cases, the expression of individual opinions online is through text, rather than through direct verbal speech (McDevitt et al., 2003). One might sense more threat when speaking out his/her opinion orally than when presenting opinions in writing (Jeffres et al., 1999).
Third, the spiral of silence theory's social control assumption addresses others in discouraging individuals to speak out their opinion in public. In the virtual community, the redemption of oneself by getting rid of pressures put forth by others online provides a momentum: one that might increase individuals' willingness to speak out. Coyne (1999) wrote that online "you can be yourself, against a duplicitous world in which you have to conform to the expectation of others" (p.4).
Fourth, the accumulation and the convolution of opinions expressed online might also encourage individuals to express their opinions publicly. If individuals cannot accurately compare their opinions with the majority, they might be more likely to misperceive that their opinions are or will be in the majority tracks (Perry and Gonzenbach, 2000).

Finally, one important feature of the virtual community is that individuals' identities can be anonymous. This selective anonymity would allow individuals to express their true selves, when they might have been unable to do so in a natural setting (Bargh et al., 2002; Hertel et al., 2008). In other words, the belief that other users online cannot identify individuals might liberate online users from communication apprehension.

Based on the above, two additional hypotheses are proposed:

**H4:** Individuals will perceive themselves as less isolated online than offline.

**H5:** Individuals will be more likely to express their opinion online than offline.

Expressing opinions online can benefit the likelihood of expressing opinions in the offline setting. The literature shows that chat-online can help individuals gain confidence in everyday social settings (Campbell et al., 2006). In an offline setting, communication apprehension has been confirmed to be a crucial factor that might prohibit individuals from speaking out in public (Crandall and Ayres, 2002; Lee et al., 2004). In the online setting, people in the minority group sometimes express personal opinion more boldly than those within the majority groups (McDevitt et al., 2003). Thus, the increased confidence gained online might help decrease communication apprehension, and eventually increase the likelihood of individuals speaking out in public. When an individual gets more exposure to online opinions and increasingly express opinions online, speaking out might eventually become a habit. Accordingly, an individual might execute the behavior of speaking out in public, just as what he/she has previously done online. In fact, Li (2007) found that individuals who frequently express defiant opinions on current affairs in public are more likely to express similar opinions online, and vice versa.
Based on the above, the following hypotheses are further proposed:

**H6:** Online outspokenness will be positively related to offline outspokenness.

**H7:** Outspokenness in one scenario will be positively related to outspokenness in other scenarios[2].

**METHODS**

Several researchers have used the survey method to examine variables related to the spiral of silence model (Muhtaseb and Frey,

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[2] Note **H7** was further proposed to further explore the findings of an earlier hypothesis (**H5**).

2008; Neuwirth and Frederick, 2004; Neuwirth et al., 2007; Shanahan et al., 2004; Spencer and Croucher, 2007). While one might suggest the experimental approach as appropriate, in our study it is important to note that online and offline settings were two different contexts and not two different stimuli or manipulations. We therefore conducted a survey based on previous research to test whether and to what degree the spiral of silence model operates differently in the offline and online settings.

The survey was conducted at a Mid-Western public university with an enrollment of about 20,000. To collect the data, a student sample was used because college students are the most active Internet users (Li, 2008). In a recent article in Journal of Communication, Li (2008) justified that while a student sample could not be used to produce generalizable results to the entire population the results could still reveal relationships as well as a random sample from the general population. In fact, Basil et al. (2002) found that results from a random sample of the general population were consistent with those found from a student sample. Thus, if a theory is true in the general population, it should also stand the test through a student population. We therefore expect that with our carefully designed survey questionnaire, this study will produce meaningful data and offer insight to understanding the relationship between speaking-out online and offline settings, and to overall explore how the key variables regarding the spiral of silence theory applies in an online context.

In fall of 2008, the researchers contacted instructors teaching journalism and mass communication classes. If a class was not available, another journalism and mass communication class was selected. For convenience purposes, a total of 10 journalism and mass communication classes participated in this study. A paper-pencil questionnaire was used to collect the data. The questionnaire asked about online activities, personal perceptions, individual opinions toward homosexual behavior, the legalization of same-sex marriage and demographic information. A total of 503 students completed the questionnaire voluntarily by December 2008.

## Measures of key variables

Studies of spiral of silence have typically dealt with train-test measures, which asked respondents to imagine themselves in a scenario, such as a party or traveling in a train compartment where they meet strangers discussing political issues, and ask them how willing they would be to express their opinions that are different from those of strangers (Scheufele and Moy, 2000). Rather than using the train-test measure, however, this study used multiple questions to assess the speaking out variable as proposed by Glynn et al. (1997) by presenting more than one scenario. Further, the items to measure willingness to speak out evolved from a study by Perry and Gonzenbach (2000) to include six scenarios in online and offline settings. Trying to represent a much wider discussion environment, these items included: a party; a meeting; a gay-bar; an online chat-room; a weblog; and gay-web.[3]

## Willingness to speak out online

This measure was operationally defined as the degree to which an

individual is willing to express his/her opinion through the Internet, when this opinion is perceived by him/her to be in the minority. Zhao (2006) argued that users of chat rooms, news groups, listservs typically interact in a many-to-many manner and those communicators are typically strangers. In this study, to assess this variable, respondents were asked, on an 11-point scale, how likely they would be to speak out their opinions in an online chat-room, to paste their individual opinion on another's weblog, and to express their opinions in a homosexual website.  Response categories ranged from 'not likely at all' (0) to 'very likely' (10). The three questions were summed up to form an online outspokenness index. The Cronbach's-α was 0.92.

## Willingness to speak out offline

This variable was operationally defined as the degree to which an individual is willing to express his/her opinion offline, when this opinion is perceived by him/her to be in the minority. Based on previous studies (Baldassare and Katz, 1996; Glynn et al., 1997), to assess this variable, respondents were asked, on an 11-point scale, how likely they would be to speak out their opinions among their friends at a party and in a meeting with strangers, and at a gay-bar. Regarding response categories, rather than simply seeking a "yes" or "no" answer, the categories ranged from 'not likely at all' (0) to 'very likely' (10).  The three questions were summed up to form an offline outspokenness index, with a Cronbach-α of 0.78.

## Future opinion-climate congruency

This measure was developed by Moy et al. (2001) who asked whether individuals believed an opinion supporting a policy will decline, incline or stay the same. To measure this variable accurately, respondents were asked to assess the percentage of people they think will support the legalization of same-sex marriage two years from now at their 1) university; 2) the state they live in; and 3) the United States in general, a measure previously used by Perry and Gonzenbach (2000). The data were then summed up and divided by three. It was used to compare each respondent's future opinions to calculate an accurate future opinion congruency measure (the larger the number, the less the congruency). For example, if the respondent predicted the future (2 years later) approval rating of same-sex-marriage legalization is 40%, and his/her own future approval rating of same-sex-marriage legalization score is 5, the future opinion climate congruency index would be ABS (40/10-5)= 1. The absolute-value form of the index means that 1 and -1 has the same value in terms of opinion congruency. In other words, they would have the same distance from the perfect opinion climate congruency (0).[4]

## Current opinion-climate congruency

To assess this variable, Adapting from Moy and associates (2001) and Perry and Gonzenbach (2000), respondents were asked to assess the percentage of people they think currently support the legalization of same-sex marriage at their: 1) university; 2) the state

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[3] In a large socio-sexual study, Tikkanen and Ross (2000) explored the type of men visiting Internet gay chat rooms. While their study found gay chat rooms attracted younger men, men who identified themselves as bisexuals, they also found a small percentage of these men reported they were heterosexual males.

[4] This measuring strategy implies that the congruency construct only has a distance value, without a directional concern, making it more valid as it better complies with the assumption of the OLS regression model.

they live in; and 3) the United States in general. The data were then summed up and divided by three to calculate an accurate current opinion congruency measure that ranged from 'perfect congruency' (0) to 'least congruency (10). The index is calculated in the same way as the future opinion climate congruency index.

### Experiencing fear of offline isolation

Borrowing from Moy et al. (2001), respondents were asked about their fear of experiencing isolation if people disagreed with their opinions in a real environment. The response categories ranged from 'not likely at all' (0) to 'very likely' (10).

### Experiencing fear of online isolation

To assess this, variable respondents were asked about their fear of experiencing isolation if others disagreed with their opinions online, a measure based on a previous study by Moy and associates (2001). The variable was measured by asking two questions regarding "chatting online" and "posting opinions online" if people disagreed with their opinions online. Response categories again ranged from 'not likely at all' (0) to 'very likely' (10). The two questions were summed up and averaged to form a fear of experiencing online isolation index. The Cronbach's–α was 0.95[5].

### Offline normative perception

This variable was defined as the perceived influence from others in the immediate real discussion environment. It was measured using an 11-point scale statement: "When discussing political issues with strangers in a meeting, I will be concerned about what others might think of me". Response categories ranged from "strongly disagree" (0) to "strongly agree" (10).

### Online normative perception

This variable was defined as the perceived influence from others in the immediate online discussion environment. It was measured using an 11-point scale statement: "When discussing political issues with strangers online, I will be concerned about what others might think of me". Response categories again ranged from "strongly disagree" (0) to "strongly agree" (10).

### Political information efficacy

This variable was defined as the perceived confidence in understanding political issues. Borrowed from the measure by Sweetser and Kaid (2008), three 11-point Likert-scale questions asked how respondents perceived themselves to be: Better informed about political issues than others; have a good understanding of the important issues facing the country; and whether they are well qualified to participate in political affairs. The three questions were summed up to form a political efficacy index. The reliability of the index was 0.84.

### Sense of social benefit

It was defined as an individual's intention to contribute to issue cognition. This variable was measured using two 11-point-Likert-scale statements: I will express my opinion if I think it will help others better understand the same-sex marriage issue; and Presenting the information I monopolize makes me happy. The Cronbach's–α was 0.65.[6]

### Hardcore

This variable was defined as the degree to which an individual will always disclose his/her own opinion publically. It was measured with two items asking whether a respondent: always present a strong opinion toward a political issue; and always present a special argument that others cannot override. The two were summed up to form a hard-core index, with a Cronbach's–α of 0.64.

### Demographic variables

A set of background questions used for descriptive and comparison purposes were used. They included race, gender, age, and political affiliation. Those surveyed were also asked about their political ideology on an 11-point scale that ranged from 'very conservative' to 'very liberal.'

### Data analysis

The data were analyzed in three stages. First, a regression analysis examined factors related to offline and online outspokenness (hypotheses 1 through 3 and hypothesis 6). Because this study would not evaluate the interaction effects of independent and controlling variables, all variables were entered in a single block rather than entered hierarchically. Second, T-tests were used to investigate differences between responses on outspokenness-related perceptions and behaviors in online and offline settings (hypotheses 4 and 5). Finally, Pearson correlations were used to assess outspokenness of individual opinions on the legalization of same-sex marriage within different scenarios (hypothesis 7) as well as further testing the relationship between offline and online outspokenness (hypothesis 6).

## FINDINGS

A total of 503 respondents took part in the survey. Demographically, more than 7 in 10 of the respondents reported they were white. The average age of the respondents was 20 years and females were slightly underrepresented than males (48.2 to 50.8%). In terms of political affiliation, more than one-third (34.8%) of the respondents reported they viewed themselves as Independents. Approximately four in ten (43.9%) reported they were Democrats and 20.3% indicated they viewed themselves as Republicans.

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[5] Because reliability measure of this index was relatively high, two questions were sufficient to form the *perceptions of virtual isolation* index.

[6] The Cronbach's alpha for that index was .65, which is slightly below the standard .7 reliability level. However, because that index included only two questions, we felt it was acceptable.

**Table 1.** Regression analysis results examining factors related to offline outspokenness (N=503).

| Independent variable | β | t | p |
|---|---|---|---|
| Willingness to speak out online | 0.73 | 23.12 | 0.00 |
| Current opinion-climate congruency | 0.12 | 2.85 | 0.00 |
| Future opinion-climate congruency | 0.06 | 1.50 | 0.13 |
| Experiencing fear of online isolation | -0.02 | -0.72 | 0.47 |
| Offline normative perception | -0.43 | -1.49 | 0.14 |
| Political information efficacy | 0.04 | 1.09 | 0.28 |
| Sense of social benefit | 0.08 | 2.49 | 0.01 |
| Hardcore | 0.08 | 2.08 | 0.04 |
| Race | -0.02 | -0.69 | 0.49 |
| Gender | 0.45 | 1.59 | 0.11 |
| Education | 0.01 | 0.17 | 0.87 |

Adjusted $R^2$=0.68; F=77.06 (p<0.001).

Our first hypothesis (H1a) that predicted a positive relationship between perceived opinion congruency, and the likelihood of speaking out opinions in public, was strongly supported (β = 0.12, p<0.01). As shown in Table 1, after controlling for online outspokenness, future opinion congruency, fear of perceived online isolation, offline normative perception, political efficacy, sense of social benefit (the individual's intention to contribute to issue cognition), hardcore (the individual's intention to always disclose his/her own opinion publically) and demographic variables, results showed when respondents perceived their opinions being congruent with the majority, they were more likely to speak out their opinions in public regarding the same-sex marriage issue. Table 1 also details regression analysis results examining the relationship between future opinion congruency, and the likelihood of speaking out opinions in public, after controlling for other variables. As shown the second part of the first hypothesis (H1b), on the other hand, was not supported (β = 0.06, p>0.05).

However, the degree of hardcore attribution (β = 0.08, p<0.05) and the sense of social benefit (β =0.08, p<0.05) were two additional variables that predicted speaking out regarding the legalization of same-sex marriage offline. In other words, individuals who were more likely to disclose their opinions publically, and individuals who were more likely to feel they could contribute to issue cognition, were more likely to speak out their opinions regarding the same-sex marriage issue offline.

The hypothesis that predicted online outspokenness will be positively related to offline outspokenness (H6), was strongly supported by regression and Pearson correlation analyses (β =0.73, p<0.01) and (r =0.78, p<0.01). After controlling for other variables, the online outspokenness index was one of the strongest variables predicting offline-outspokenness (Table 1). The more individuals spoke out online, the more likely they were to speak out in an offline setting. In other words, when the likelihood of speaking out online increased, the likelihood of speaking out in a real setting also significantly increased.

Testing the spiral of silence theory in the online setting, we hypothesized the more opinion congruency, the more the likelihood of speaking out online after controlling for offline outspokenness, fear of experienced online isolation, online normative perception, political efficacy, sense of social benefit, hardcore and demographic variables of race, gender and education (H2). As shown in Table 2, both the current opinion-climate congruency index and the future opinion-climate congruency index did not predict online outspokenness, after controlling for other variables (β =-0.04, p >0.05 and β =0.01, p >0.05 respectively). These findings do not support hypotheses 2a and 2b (Table 2). In terms of motivating individuals to express their personal opinions then, results suggest that while future opinion congruency works similarly offline and online, current opinion congruency works differently in the real environment than in the online setting.

Table 2 also details regression analysis results examining the relationship between experiencing fear of online isolation, and the likelihood of speaking out opinions online, after controlling for other variables (H3).Interestingly, while experiencing fear of offline isolation was not related to speaking out in the real environment (Table 1), in an online setting, the greater the experience with fear of online isolation, the less the likelihood of speaking out online (β =-0.06, p<0.05). Thus, hypothesis 4 was supported (Table 2).Three additional variables further predicted speaking out toward the legalization of same-sex marriage online. The sense of social benefit (β =0.19, p<0.05) and political efficacy (β =0.13, p<0.05) predicted online outspokenness.In other words, individuals who were more likely to feel they could contribute to issue cognition were more likely to speak out their opinions regarding the same-sex marriage issue online.[7] Dissimilar to the offline setting, individuals who

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[7] Similar to the offline setting, demographic variables of race, gender, and education were not significant factors in influencing individuals' outspokenness behaviors online, after controlling for other variables.

**Table 2.** Regression analysis results examining factors related to online outspokenness ($n$=503).

| Independent variable | $\beta$ | $t$ | $p$ |
|---|---|---|---|
| Willingness to speak out offline | 0.76 | 23.81 | 0.00 |
| Current opinion-climate congruency | -0.04 | -0.90 | 0.37 |
| Future opinion-climate congruency | 0.01 | 0.32 | 0.75 |
| Experiencing fear of online isolation | -0.06 | -2.00 | 0.04 |
| Online normative perception | -0.04 | -1.37 | 0.17 |
| Political information efficacy | 0.09 | 2.44 | 0.02 |
| Sense of social benefit | 0.19 | 6.28 | 0.00 |
| Hardcore | 0.06 | 1.38 | 0.17 |
| Race | 0.01 | 0.01 | 0.93 |
| Gender | 0.01 | 0.23 | 0.82 |
| Education | -0.02 | -0.59 | 0.56 |

Adjusted $R^2$=0.67; F=81.72 (p<0.001).

**Table 3.** Paired-sample $t$-test results regarding outspokenness related to experience, perceptions and behaviors in online and offline settings ($N$=503),

| | | Mean difference | $t$ | $p$ |
|---|---|---|---|---|
| Pair1 | Experiencing fear of offline isolation<br>Experiencing fear of online isolation | 1.77 | 12.96 | 0.00 |
| Pair2 | Offline outspokenness<br>Online outspokenness | 0.23 | 0.83 | 0.40 |
| Pair3 | Party outspokenness<br>Chat-room outspokenness | 0.41 | 2.92 | 0.00 |
| Pair4 | Gay-bars outspokenness<br>Gay-websites outspokenness | 0.06 | 0.49 | 0.61 |
| Pair5 | Meeting outspokenness<br>Weblog outspokenness | -0.23 | -1.79 | 0.07 |

were more likely to have more confidence in understanding political issues, were more likely to speak out their opinions online.

To compare outspokenness-related behaviors in the offline and online settings, paired-samples T-tests were administered. As shown in Table 3, when the two sets of questions regarding experience with feeling isolated online versus offline were compared (H4), respondents were significantly more likely to report experiencing less isolated online (M= 2.67) than in a real environment (M= 4.44). The mean difference was statistically significant (t =12.96, p < 0.001). This finding, therefore, supports H4.

In comparing speaking out in a virtual setting versus speaking out in a real environment (H5), only one of the four-paired responses had a larger mean for online outspokenness (Table 3). Here, the mean was slightly larger -- but not statistically significant -- for speaking out in a weblog than for speaking out during a meeting. Overall, results showed no significant differences in the four scenarios analyzed, suggesting that individuals tend to express their opinions in a similar way in both settings, as suggested by previous research (that is, Pew Internet, 2005). These findings do not support H5. Thus it is not at all surprising that the last hypothesis that predicted that outspokenness in one scenario would be positively related to outspokenness in other scenarios (H7) was fully supported. In all scenarios examined (a party; a meeting; a gay-bar; an online chat-room; a weblog; and gay-web) individuals would use the two forums alternatively to express their opinions toward the gay-marriage issue. As detailed in Table 4, all correlation coefficients were statistically significant at the 0.01 level.

**Table 4.** Pearson correlation coefficients regarding online/offline outspokenness (*N*=503).

|              | 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    |
|--------------|------|------|------|------|------|------|------|------|
| 1. Party     | 1.0  |      |      |      |      |      |      |      |
| 2. Meeting   | 0.53 | 1.00 |      |      |      |      |      |      |
| 3. Gay-bar   | 0.46 | 0.65 | 1.00 |      |      |      |      |      |
| 4. Chat-room | 0.58 | 0.59 | 0.62 | 1.00 |      |      |      |      |
| 5. Weblog    | 0.53 | 0.65 | 0.65 | 0.89 | 1.00 |      |      |      |
| 6. Gay-web   | 0.43 | 0.62 | 0.77 | 0.72 | 0.79 | 1.00 |      |      |
| 7. Online    | 0.55 | 0.67 | 0.74 | 0.93 | 0.96 | 0.90 | 1.00 |      |
| 8. Offline   | 0.79 | 0.86 | 0.85 | 0.72 | 0.74 | 0.74 | 0.78 | 1.00 |

All correlation coefficients are significant at the 0.01 level.

These findings then suggest that when individuals are more likely to speak out their opinions on an issue in one setting, they will also be more likely to speak out these opinions in other environments.

## DISCUSSION

This study sought to expand our understanding of the spiral of silence theory by exploring and testing the different modes of speaking-out regarding the legalization of same-sex marriage issue in offline and online settings.

The focus on the Internet and the influence of new media on opinions deserves special attention for good reasons. The United States and other countries worldwide have already moved into a "digital democracy" era in which the Internet is playing a more crucial role in making the political agenda accessible to the public through the web (Solop, 2001). Accordingly, in recent years individuals have increasingly depended on the Internet to seek political information (Johnson and Kaye, 2000; Kaye and Johnson, 2002) and to search for references to form their own opinions. Therefore, it has become important to understand whether the multi-platforms features of the Internet can help individuals counteract the spiral of silence effect and express personal opinions.

Regarding experiencing fear of isolation on the Internet, for example, results of this study showed that respondents were significantly more likely to report feeling less isolated online than in a real environment (H4). In other words, compared to a real setting, people might feel less isolated online if they are in the minority opinion groups. One possible explanation is that, while Stromer-Galley (2003) reported a number of heterogeneous groups online, more studies suggest that online groups share a common political perspective on issues (Mutz, 2006; Pew Research, 2005). Furthermore, it is easy to quit from an online discussion without the pressure of complying with the majority group.

Despite this decrease in experiencing fear of online isolation, however, our findings suggested that experiencing fear of online isolation is related to speaking-out in a virtual setting (H3).[8] Although there is less social control and less experienced isolation sensed on the Internet, possible criticisms and negative responses from others online might discourage individuals to express their own opinions, especially if the online community holds a dominant opinion that disagrees with their views. It is possible that individuals would be less likely to express their opinions online when challenging opinions are likely to be present on the web, especially when these opinions could be considered extreme by the online community. That said however, some spiral of silence studies have found that while people are indeed reluctant to express views if they feel they are in a clear minority, if there is an immediate reference group willing to speak up for them they feel emboldened (Neuwirth and Frederick, 2004). One might be encouraged by one peer to speak out personal opinions, even if he/she has the lone opinion toward an issue.

It is thus not surprising that the data further showed a lack of support for the hypothesis that predicted individuals would be more likely to speak out their opinions online compared to an offline setting (H5). Indeed this is also in line with previous research (Ho and McLeod, 2008) that suggested the possibility that the spiral of silence theory might not be as effective in the virtual environment world as it does in the real world. An online discussion might have some similar features as

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[8] Interestingly, however, the data analysis showed that fear of offline isolation failed to predict speaking-out in a real environment (table 1), suggesting that outspokenness might be related to several variables rather than the lone *fear* trait in a real setting. This argument is congruent with Price and Allen (1990) who noted there might not be a widespread fear of isolation that predicts the keeping-silent intention. In other words, while fear of isolation might be the dominant factor in intimidating the likelihood of expressing one's opinion in public in one case, it can fail to wield its effects in another case in the offline setting.

that of an offline one, suggesting that citizens might not be more likely to express their opinions online, as optimistically predicted. One possible explanation is that habits cannot be changed easily: one is more likely to replicate a behavior style formed in one environment and repeat it frequently without considering the change to his/her surrounding environment. In fact, this study indicated that outspokenness in one scenario was positively related to outspokenness in other scenarios (H7) and when the likelihood of speaking out online increased, the likelihood of speaking out in a real setting also increased, and vice versa (H6). So what does this all mean? In the online community, where there are fewer physical constraints and concrete punishment concerns, every opinion has the possibility of being attacked and suppressed. Consequently individuals may select to remain silent. And as our findings suggest, individuals are not more likely to express opinions in online versus offline settings and when people perceive fear of online isolation, they are less likely to express their opinions online. Rather, there are other variables, such as the fear of suppression and attack, which may smother individuals' expressions in an online setting.

Regarding the impact of perceived future and current opinions offline, while our results indicated that the congruency of current opinions with one's own opinions predicted the willingness to speak out offline (H1a), findings suggested future opinion congruency (H1b), might fail to have a similar impact. Findings also showed congruency of future and current opinions might fail to work in an online setting (H2a and H2b). One plausible explanation is that participating in a highly controversial political issue discussion and expressing personal opinions require information about that issue, and most individuals as Verba and associates (1995) explain, do not have the incentive to explore the necessary resources, making the accurate assessment of future opinions more difficult. For the congruency of future opinions with one's own opinions in a real setting, for example, it is more difficult to seek valid information, especially for controversial issues on which the climate of opinion may vary over time. This difficulty of monitoring future climate may undermine this factor's moderation effect on outspokenness. Furthermore, these effects noted could be related to how we measured the congruency of opinion variables. In this study, the climate of opinions were the estimated percentages of respondents approving the legalization of same-sex marriage at their 1) university; 2) the state they live in; and 3) the United States in general. Opinions in these offline settings, therefore, may have laid outside the direct monitoring of the online community, causing individuals to perceive a minimal effect on online behaviors.

Previous research studied posting online from an information contribution perspective, without taking into account that expressing opinions online is also a form of contribution. Our findings suggested that individuals who were stubborn and likely to disclose opinions publically, were also likely to speak out their opinions regarding the same-sex marriage issue in both online and offline settings. Rather, there are other variables, such as the fear of suppression and attack, which may smother individuals' expressions in an online setting.

Further, as confirmed by previous studies, the sense of social benefit was positively related to information contribution. The data analysis suggested this contribution could predict the willingness to speak out. Overall, individuals who were likely to feel they could contribute to a more profound issue cognition the public, were likely to speak out their opinions regarding the same-sex marriage issue both in online and in offline settings. When these individuals believed that expressing their opinions would help others better understand an issue, the motivation to monitor the climate of opinion and conform to others' opinions receded, influencing their determination to express their views in public. Thus, what this study suggests is that positive engagement of political discussion online predicts more real-setting political discussion. Therefore, by increasingly providing Internet service to the public and encouraging them to express their opinions virtually, we might increase offline political engagement.

In this exploratory study, a clear limitation is that all participants were university students. However, regardless of the quality of the sample, the question arises as to whether our sample limited its generalizablity. Despite the sample limitation, the relatively and specific measures used in this questionnaire was not available in large national datasets. In this study then, there was a tradeoff between the generalizability offered by large-scale samples and the validity of measures we obtained in this sample. However, as mentioned earlier, past studies found that results from a random sample of the general population were consistent with those found from a student sample (Basil et al., 2002), suggesting that if a theory is supported in the general population, it should also stand the test through a student population. In addition, because this study did not intend to specifically measure public opinion but focused primarily on testing individuals' willingness to express opinions online versus offline, we feel the quality of measurements in our questionnaire contributed heavily to the overall validity of our dataset.

Obviously, this study does not show an exhaustive picture of the many ways individuals could be affected. However, findings of this study clearly highlight several research directions that could be addressed particularly as communication scholars continue to include the internet into their scientific pursuits. Future studies could

for example, use experimental techniques to test individual's accuracy of assessing public opinion and to examine the degree to which opinion-climate monitored online could help fortify or disperse experience with fear of isolation and speaking-out in public. More attention is clearly warranted to address the impact of the Internet on the public. Perhaps a combination of cultivation theory and the spiral of silence model might best explain how the use of the Internet as a democratic tool could be evaluated over the long term.

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