

4-20-2017

# Exploring the Predictors of the Spiral of Silence in Online News Discussions

Tai-Yee Wu

University of Connecticut - Storrs, tai-yee.wu@uconn.edu

Follow this and additional works at: <https://opencommons.uconn.edu/dissertations>

---

## Recommended Citation

Wu, Tai-Yee, "Exploring the Predictors of the Spiral of Silence in Online News Discussions" (2017). *Doctoral Dissertations*. 1396.  
<https://opencommons.uconn.edu/dissertations/1396>

# Exploring the Predictors of the Spiral of Silence in Online News Discussions

Tai-Yee Wu, PhD

University of Connecticut, 2017

This study examines the Spiral of Silence (SoS) phenomenon in online news discussions under the mechanism of online news comments about the issue of abortion. The results from 530 participants in the experiment primarily substantiate that individuals' fear of isolation fluctuates by context, supplementing the theoretical gray area left in Noelle-Neumann's original conceptualization. Moreover, the participants' contextual fear of isolation, perceived online anonymity, opinion congruity with other commenters, and issue involvement significantly predict their willingness to post their own views. Yet, neither their dispositional fear of isolation nor the influence of the media-reported poll results emerged as predictors. The research findings offer support for a more comprehensive conceptualization of SoS components operating in cyberspace contexts.

*Keywords:* Spiral of silence, online news comments, fear of isolation, online anonymity, opinion expression, abortion

Exploring the Predictors of the Spiral of Silence in Online News Discussions

Tai-Yee Wu

B.A., Tamkang University, **2003**

M.A., Shih Hsin University, **2006**

A Dissertation

Submitted in Partial Fulfillment of the

Requirements for the Degree of

Doctor of Philosophy

at the

University of Connecticut

2017

Copyright by

Tai-Yee Wu

2017

ii

APPROVAL PAGE

Doctor of Philosophy Dissertation

Exploring the Predictors of the Spiral of Silence in Online News Discussions

Presented by

Tai-Yee Wu, B.A., M.A.

Major Advisor \_\_\_\_\_

David J. Atkin

Associate Advisor \_\_\_\_\_

Carolyn A. Lin

Associate Advisor \_\_\_\_\_

Diana I. Rios

University of Connecticut  
2017

## Acknowledgements

First and foremost, I would like to express my greatest gratitude to my advisor, Dr. David Atkin, for mentoring me throughout my doctoral studies at UConn. This dissertation would not have been done without him. I thank him for his tremendous support for my learning, teaching, and research in the past six years. I am also grateful to have Dr. Carolyn Lin and Dr. Diana Rios as my committee members. I would like to thank Dr. Lin for her infinite kindness and patience in advancing my understanding of research methods and statistical analyses. My appreciation for her time spent on countless hours discussing our projects will never be enough. In this journey of graduate studies, one doesn't get to embrace a breeze or clear skies all the time. That is why I am so glad to have Dr. Rios because her warmest smiles always remind me that the weather will not forever be stormy and rough.

In addition, many, many thanks to my two course supervisors, Dr. Anne Oeldorf-Hirsch and Dr. Ken Lachlan, for serving as readers of my dissertation. I appreciate Dr. Oeldorf-Hirsch's feedback on my work as well as the opportunity to sit in on her class for three semesters in the past to learn everything about teaching Media Effects, which directly inspired the ideas of this dissertation. I am also more than fortunate to receive valuable comments from Dr. Lachlan. Listening to his advice was just like getting immersed into his Research Methods lectures once again.

Moreover, I am grateful for having robust social support from my cohorts in the Department of Communication over these years. Special thanks go to Yue, Hongliang, Yi, Yen-I, Xiaowen, Tong, Christina, Kyle, Melanie, Alex, and Kivy. Furthermore, my Taiwanese friends at UConn are the people who not only give me the most precious time of joy but also help me stand strong in this foreign land since the first day I arrived in Connecticut. My appreciation to every one of them.

Studying abroad is sometimes bitter, sometimes sweet, and sometimes both. Yet, it is always engraved in my mind that this dream would not come true in the first place without the good words from my three references in Taiwan: Dr. Lin-Mei Huang, Dr. Mary Shen, and Dr. Yi-Kuo Wu. I am wholeheartedly thankful for their generous encouragement and their full confidence in me.

Finally, I thank my family for their continuous support that buttresses my pursuit of scholarship overseas. I appreciate chatting with my father via Skype every week to *virtually* sooth my homesickness and actually embrace his unconditional love. I am also grateful to my sister Kathy, who takes care of all my emergent needs and substitutes for my role at home when I'm thousands of miles away. Lastly, I am proud of inheriting my mother's earnest attitude towards learning. I know she would be proud of me in heaven as well.

This dissertation is dedicated to my parents.

## TABLE OF CONTENTS

Chapter 1 Introduction .....	1
1.1. Background .....	1
1.2. Present Study and Research Purposes .....	5
1.3. Organization of the Present Study .....	6
Chapter 2 Literature Review .....	8
2.1 The Spiral of Silence and the Fear of Isolation .....	8
2.2. Anonymity in CMC .....	18
2.3. The Effects of Mass Media on the SoS Phenomenon .....	24
2.4. The Effects of Social Support on the SoS Phenomenon .....	33
2.5. The Effects of Individual Differences on the SoS Phenomenon .....	39
Chapter 3 Research Methods .....	45
3.1. Participants .....	45
3.2. Research Design .....	45
3.3. Research procedure .....	47
3.4. Measurement .....	48
3.5. Sample Characteristics .....	54
3.6. Preliminary Analyses .....	55
Chapter 4 Results .....	61
4.1. Hypothesis Testing and Research Question Analysis .....	61
4.2 The Collective Effects of the Predictors .....	73
Chapter 5 Discussion .....	75
5.1 Implications of the Major Findings .....	75
5.2. Limitations and Future Directions .....	88
5.3. Conclusion .....	89
References .....	93



Appendix 1: Research Stimulus- News Article .....	130
Appendix 2: Research stimulus- Online News Comments.....	131
Appendix 3: Questionnaire .....	137

## LIST OF TABLES

Table 3.6.1. One-Way ANOVA Results with Three Types of Perceived Anonymity as Dependent Variables .....	108
Table 3.6.2. Correlations, Means, and Standard Deviations of Major Predictor Variables .....	109
Table 4.1.1. Multiple Regression Analysis Predicting Contextual Fear of Isolation on Willingness to Express in Online News Discussions .....	110
Table 4.1.2. Multiple Regression Analyses Predicting Minority Status on the Contextual Fear of Isolation and on Willingness to Express in Online News Discussions .....	111
Table 4.1.3. Multiple Regression Analysis Predicting Contextual Fear of Isolation and Trait-like Fear of Isolation on Willingness to Express in Online News Discussions .....	112
Table 4.1.4. Multiple Regression Analysis Predicting Perceived Anonymity on Willingness to Express in Online News Discussions .....	113
Table 4.1.5. Multiple Regression Analysis Predicting Three Types of Perceived Anonymity on Willingness to Express in Online News Discussions .....	114
Table 4.1.6. Multiple Regression Analysis Predicting Perceived Congruity with Media-reported Dominant Opinion on HMP .....	115
Table 4.1.7. Multiple Regression Analysis Predicting Contextual Fear of Isolation and HMP on Willingness to Express in Online News Discussions .....	116
Table 4.1.8. Multiple Regression Analysis Predicting the Moderating effect of Perceived Reference Group Support on the Prediction of Contextual Fear of Isolation on Willingness to Express in Online News Discussions .....	117
Table 4.1.9. Multiple Regression Analysis Predicting Perceived Support from One's Reference Group and Perceiving Immediate Online Support on Willingness to Express in Online News Discussions .....	118
Table 4.1.10. Multiple Regression Analysis Predicting Issue Involvement on Willingness to Express in Online News Discussions .....	119

Table 4.1.11. Multiple Regression Analysis Predicting Online Privacy Concerns on Willingness to Express in Online News Discussions .....	120
Table 4.2.1. Multiple Regression Analysis Predicting Research Predictors on Willingness to Express in Online News Discussions .....	121

## LIST OF FIGURES

Figure 1.1.1. A model of the Spiral of Silence.....	122
Figure 2.5.1. Research Model of This Current Study. ....	123
Figure 3.5.1. The Distribution of the Experimental Conditions. ....	124
Figure 3.5.2. The Distribution of the Participants' Ethnicity. ....	125
Figure 3.5.3. The Distribution of the Participants' Religious Affiliation. ....	126
Figure 3.5.4. The Distribution of the Participants' Attitude towards Abortion. ....	127
Figure 4.1.1. Moderating Effect of Perceived Reference Group Support on the Prediction of Contextual Fear of Isolation on Willingness to Express in Online News Discussions. ....	128
Figure 4.1.2. Mediating Effect of Perceived Immediate Online Support on the Prediction of Opinion Congruity with Other Commenters on Willingness to Express in Online News Discussions. ....	129

## **Chapter 1**

### **Introduction**

#### **1.1. Background**

The phenomenon of the Spiral of Silence (SoS) still generates intense scholarly debate, even decades after it was introduced by Elisabeth Noelle-Neumann in early 1970s. The main idea argues that, driven by the fear of being socially isolated, individuals tend to assess the opinion climate of a topic to estimate the discrepancy between their own opinion and that of the general public. Moreover, when their own opinion is perceived to be deviant from the majority, individuals are prone to withhold it and remain silent in public (Noelle-Neumann, 1974; 1984; 1991). Communication researchers, in particular, reference this phenomenon as mass media play a crucial role in determining opinion climates for various topics (Noelle-Neumann, 1984). Findings in different decades generally substantiate the effects of media in contributing to individuals' decision to suppress their opinion expression in public (e.g., Kim, Kim, & Oh, 2014; Lin & Salwen, 1997; Moy, Domke, & Stamm, 2001; Mutz, 1989).

Another research interest points to the communication contexts where individuals speak out or conceal their opinion. This approach largely stems from the growing popularity of computer-mediated communication (CMC), along with a widespread adoption of the Internet that amplifies the ways for people to be engaged in discussions about public issues. Various studies have investigated the influences of online environments and the characteristics of CMC on the SoS phenomenon. For instance, the lack of physical presence in online forums was found to decrease the participants' fear of isolation, which in turn makes them more willing to speak their minds (Woong Yun & Park, 2011). Research also shows that an online forum participant's perception of opinion climate is affected by both the circulated information in the site and other users' views (Nekmat & Gonzenbach, 2013), implying that the SoS may still occur in cyberspace

when the individual perceives a public opinion that is greatly incongruent with his/hers (Kim et al., 2014).

As social media emerges as a popular online communication forum, researchers have also extended their focus of the SoS on different social networking sites (SNSs) such as Facebook (e.g., Gearhart & Zhang, 2014; Neubaum, & Krämer, 2016) and Twitter (e.g., Miyata, Yamamoto, & Ogawa, 2015). A recent Pew study (Hampton et al., 2014) explored the users' willingness to discuss Edward Snowden's leaks about the U.S. government surveillance of the public on both Facebook and Twitter. The results suggest that these two SNSs did not serve as an alternative platform for the people who were unwilling to comment on this issue in person, as only 0.3% of respondents would post opinions on those sites. Also, those users were less likely to speak out both online and offline when they perceived that their social media peers would disagree with their viewpoint. In other words, these findings reflect that the two core concepts determining the SoS—fear of isolation and perception of opinion climate—also apply to SNS users.

Hampton et al.'s (2014) study draws some implications for SoS research in online contexts. First off, its focus on the social media reaffirms findings suggesting that a variety of online environments can promote conversations on public issues. As public issues are more likely to be exposed and perceived through the reports of news media, a large amount of those online conversations tend to occur in the discussions about news stories. In fact, news discussions have become more common these days with the emergence of "online news comments." This mechanism represents a type of user-generated content that allows individuals to address their thoughts under the online news report they just read. Thus, studying online news comments will provide a more concentrated investigation on the opinion flow—where the SoS may appear—about a public issue. In addition, such individual opinions can be posted on the

comment section of a given online news article or attached to the news that is shared to someone's social media (e.g., Wu & Atkin, 2017). Focusing on this mechanism, therefore, would also provide a broader understanding about the phenomenon of SoS in CMC without being constrained to a particular online platform.

Second, Hampton et al. (2014) reveal that a lack of social support tends to dampen SNS users' willingness to express. This finding resonates the effect of reference group back-ups in reducing the SoS that has been confirmed in the studies on face-to-face (FTF) settings (e.g., Glynn & McLeod, 1984; Glynn & Park, 1997; Moy et al., 2001). Although Noelle-Neumann (1984) downplayed the concept of social support in her original formulation, scholars (McQuail & Windahl, 1993) have identified it as another major factor influencing the phenomenon of the SoS in addition to the role of oneself and the media (see Figure 1.1.1).

----- Insert Figure 1.1.1 about here -----

Social support in the context of online news discussion is more complex. It may come from an individual's reference group, his/her other interpersonal sources, and also a large number of congruous viewpoints posted by other commenters. The latter can be labeled as a form of immediate online support that may in turn provide the individual with an impression of a favorable opinion climate, which then encourages him/her to express. To substantiate the influence of such immediate online support, and compare the effects of different sources of support on the phenomenon of the SoS in cyberspace, a more integrative approach is required.

Third, Hampton et al.'s (2014) evidence of the SoS in social media raises more questions about individuals' willingness to be involved in online news discussions. Since the researchers only examined Facebook and Twitter—two SNSs on which the users, by default, reveal plenty of personally identifiable information (e.g., username and profile pictures)—the findings fail to be generalized to what might happen in more anonymous online platforms such as Reddit.

However, a key characteristic of CMC that promotes more equal participation and unconstrained expression in online interactions involves the reduction of social presence cues (Siegel, Dubrovsky, Kiesler, & McGuire, 1986; Sproull & Kiesler, 1991). By implication, the degree of anonymity that an online environment offers may affect its users' fear of isolation and their willingness to speak out when they are engaged in activities such as news discussions. Studying online news comments helps to uncover these effects as this mechanism is widely applied in diverse platforms, and the degree of anonymity differs from one to another. Some (e.g., Yahoo.com) allow commenters to display a pseudonym attached to their posts, whereas others (e.g., Facebook) reveal the username that is highly associated with the commenter's offline identity. Therefore, incorporating the factor of anonymity will present the examination of the SoS in discussions on public issues—under the mechanism of online news comments—in a fuller light.

More importantly, exploring the influence of anonymity on the SoS in cyberspace brings attention back to the core concept of this classic theory: the fear of isolation. Noelle-Neumann (1984) argued that it is the social nature of human beings that “causes us to fear separation and isolation from our fellows and to want to be respected and liked by them” (p. 41). Although she did not fully explicate the fear of isolation in her original formulation, such fear is regarded as a static trait-like quality of individuals that “manifests itself in behavior across situations” (Hayes, Matthes, & Eveland, 2011, p.442). However, when SoS research was extended to cyberspace, communication contexts (FTF vs. anonymous CMC) were found to moderate the effect of the fear of isolation on one's willingness to express (Ho & McLeod, 2008). This finding implies that the influence of such fear is not the same across different contexts, and, more radically, the degree of such fear could also vary by context. Thus, a contextual fear of isolation may need to be further identified and distinguished from the trait-like fear of isolation. Understanding the role



of this contextual fear of isolation should facilitate the exploration of a new layer of this theory and provide stronger explanations for the SoS phenomenon in a given context, such as online news discussions.

## **1.2. Present Study and Research Purposes**

The present study continues the research focus of the SoS in cyberspace and takes a step further to examine this phenomenon in news discussions with the mechanism of online news comments. Probing this context, where online users post their viewpoints on the public issues reported by news stories, recalls SoS theory founder Noelle-Neumann's investigations on public opinion. To more appropriately apply this theory from its original FTF settings to CMC, one of the major goals of this study is to explicate its core concept: the fear of isolation. Specifically, this study tries to differentiate a contextual fear of isolation from the general, static trait-like fear of isolation suggested in previous work (e.g., Hayes et al., 2011; Noelle-Neumann, 1984) to shed light on the unique qualities of online communication and their impacts. Conceptualizing this contextual fear of being socially isolated is also expected to provide more direct and stronger explanations for one's engagement or disengagement in online news discussions.

The second goal of this study aims to analyze the effects of anonymity on individuals' contextual fear of isolation and, subsequently, their willingness to express in online news discussions. Stepping upon the established findings (e.g., Gearhart & Zhang, 2014; Hampton et al., 2014; Ho & McLeod, 2008; Miyata et al., 2015; Neubaum, & Krämer, 2016; Woong Yun & Park, 2011), this study will empirically manipulate the degrees of online anonymity (high, med, and low) to test the influence of such differences on the phenomenon of the SoS. This manipulation corresponds to the current practice of the online news commentary mechanisms as the degree of anonymity offered varies by medium. It also affords a closer look at the growing

diversity of anonymity in cyberspace and increases the understanding of this concept and its impacts on person perception and online behaviors.

Finally, the third goal of this study is to present a model that integrates the factors of the SoS and their causal relationships in the context of online news discussions. Based on the three aspects identified in McQuail and Windahl's (1993) framework of the SoS, this study investigates the variables that are related to oneself (individual differences), media, and others (social support) in online news discussions. In terms of social support, both the influences from one's reference group (e.g., Glynn & McLeod, 1984) and the perceived immediate online support from other commenters are examined. While approaching the media, this study focuses on one's perceived opinion dominance via the perception of opinion climate shown by news media (e.g., Glynn & Park, 1997) and one's perceived media bias. Furthermore, one's level of topical involvement and online privacy concerns are the two variables revealing individual differences—in addition to the contextual fear of isolation—that this study attempts to explore. This work is expected not only to demonstrate a more comprehensive picture of the causes and effects of the SoS in cyberspace, but also enrich the research literature of this classic theory.

### **1.3. Organization of the Present Study**

This dissertation will consist of five chapters. Following the above introduction of research background and the main goals of this present study, Chapter 2 presents the relevant literature that fortifies the current investigation. In this chapter, the first section summarizes the assumptions, main concepts, and primary empirical findings of the SoS theory (Noelle-Neumann, 1974; 1984; 1991; 1993), leading to the explication of the core concept: the fear of isolation. The next sub-section delves into the concept of anonymity in CMC contexts, focusing particularly on the theoretical approaches and research findings that are related to online social

interaction. Chapter 2's third section outlines the scholarly work of social support under the topic of the SoS, and moves on to incorporate the research of online social support into this review. The fourth section emphasizes the relationship between mass media and individuals' perception of opinion climate argued in the SoS theory, and also covers the studies on the perception of media bias. Lastly, the fifth section focuses on the demographic indicators and two variables—issue involvement and online privacy concerns—that indicate individual differences in the phenomenon of the SoS. Each research hypothesis and question is proposed alongside the relevant concepts as the literature review progresses.

Chapter 3 details the research design and procedure of this study in the first section, followed by a description of the research participants, and an introduction of the measures adopted in this study. The last section of this chapter provides the preliminary results of measurement, including confirmatory factor analyses, reliability tests, variable correlations, and collinearity examinations.

Chapter 4 presents the data analyses and results of this study, which consists of hypothesis testing and research question examinations.

Finally, Chapter 5 addresses theoretical and methodological implications of this study following a summary of the key findings. Research limitations and recommendations for future research are then discussed. This dissertation ends with a summary and conclusion of this investigation on the phenomenon of the SoS in online news discussions.

## Chapter 2

### Literature Review

#### 2.1 The Spiral of Silence and the Fear of Isolation

The SoS theory was developed by German researcher Elisabeth Noelle-Neumann in her studies of public opinion in German political elections (Noelle-Neumann, 1984). She explicated public opinions as the “attitudes or behaviors one *must* express in public if one is not to isolate oneself; in areas of controversy or change, public opinions are those attitudes one *can* express without running the danger of isolating oneself” (Noelle-Neumann, 1984, p.178; italics in the original). In her theory, individuals have the ability not only to sense the opinions of those around them but also estimate the opinion climate—the relative strength of different viewpoints (Noelle-Neumann, 1984; 1991). Thus, individuals tend to keep silent in a public setting when they sense that their views deviate from the majority, and, eventually, all the opinions other than the dominating one become mute completely (Noelle-Neumann, 1984). She characterized this phenomenon as a “spiral of silence.”

The following subsection 2.1.1 summarizes the assumptions, main concepts, and empirical findings of Noelle-Neumann’s work on the SoS theory, and subsection 2.1.2 provides an explication of the core concept: the fear of isolation.

##### 2.1.1. Summary of the theory

Noelle-Neumann (1993, p. 202) addressed four assumptions of the SoS theory:

1. Society threatens deviant individuals with isolation;
2. Individuals experience fear of isolation continuously;
3. Because of this fear of isolation, individuals are constantly trying to assess the climate of opinion;

4. The results of this estimate affect behavior in public, particularly the open expression or concealment of opinions.

Three fundamental elements could be identified from these assumptions: the fear of isolation, the climate of opinion, and the willingness to express. Furthermore, the fear of isolation serves as the core concept in this theory as it “sets the spiral of silence in motion” (Noelle-Neumann, 1984, p. 6). Noelle-Neumann (1984; 1993) argued that the fear of isolation is a human motive for being socially recognized by others, analogous to Solomon Asch’s (1951) research finding that the minority is motivated to yield to the dominating opinion under the pressure of group conformity. However, some radical differences between these two scholarly works are noteworthy (also see Glynn & McLeod, 1985). For instance, Asch focused on group pressure, and his experiments required the participants to fulfill the same task by turns in front of each other. On the other hand, Noelle-Neumann investigated opinion expressions on public issues in a more natural and interpersonal scenario. Therefore, unlike Asch’s observations showing that the minority modifies their judgments to fit in the majority, the SoS theory does not assume an opinion change as a result of the fear of isolation. Rather, it asserts that this motive drives individuals to estimate the climate of opinion. More detailed conceptual discussion about the fear of isolation will be continued in subsection 2.1.2.

The second fundamental element, the climate of opinion, refers to the existence, distribution, and relative strength of different opinions on a public issue in the society. Noelle-Neumann (1974) used the term “climate” to describe the dynamic nature of opinions that, developing with time, some views are dominating and some others are declining. More importantly, Noelle-Neumann argued that individuals have the “quasi-statistical” ability to capture the rise-and-fall of opinions on a public issue, and the result is relatively consistent with the findings from national polls (see Noelle-Neumann, 1984, p.15). This perception of the

opinion climate—through one’s personal observation and media reception—is the crux of her theory for two reasons. First, the perceived opinion climate serves to orient the individuals toward understanding whether their views deviate from the dominating view or not. Second, perceived opinion climate guides the individuals to estimate the risk of being socially isolated if they speak their views out in public.

The quasi-statistical ability is one of the controversies in the SoS theory that draw scholarly critiques. Some researchers (e.g., Berelson, Lazarsfeld, & McPhee, 1954; Fields & Schuman, 1976; Salmon & Kline, 1985) pointed out the evidence of a poor match between individuals’ perceptions of the public opinion and the public’s actual opinion, warning that one’s subjective perception of reality may just be his/her projection of how the reality should be. Such projection effects could result in an even more distortive perception of the opinion climate when the factor of media reception—particularly through the lens of a person’s selective exposure—is also considered. This implies that such a quasi-statistical sense does not provide a precise opinion climate of an issue.

However, tracing back to Noelle-Neumann’s original articulations, it is not how accurate someone’s quasi-statistical ability could reflect the opinion climate in reality that the SoS theory focuses on. Instead, this theory concerns how likely this person tends to withhold his/her view in public due to a fear of being socially isolated when this person perceives his/her view to be less favorable in the opinion climate sensed by his/her quasi-statistical ability. In other words, one benefit of studying the SoS phenomenon is to investigate the behavioral outcome of one’s perceived discrepancy between one’s own opinion and his/her perceived public opinion. An individual’s perception and projection of reality are always more or less distorted, but such distortion does not impede the examination of one’s judgments and the subsequent reactions resulting from that perception and projection. In addition to suspecting the accuracy of human’s

quasi-statistical ability, other critiques recall the impacts of reference groups (e.g., Glynn & McLeod, 1985) and a more complex influence of mass media (e.g., Merten, 1985; Salmon & Kline, 1985) on individuals' perception of the opinion climate that Noelle-Neumann failed to have fully uncovered in her theory. These issues will be further discussed in sections 2.3 and 2.4, respectively.

On the third element of the SoS theory, the willingness to express, Noelle-Neumann assumed that it is determined by one's assessment on the discrepancy between one's own opinion and the perceived public opinion. She hypothesized that an individual is more willing to express his/her view when it is aligned with the dominant opinion. On the contrary, the individual tends to keep silent when his/her view is perceived to be incongruous. Noelle-Neumann (1984) also noted that an opinion can be expressed in multiple ways (e.g., verbally, written language, body language, and the use of objects), although oral communication is most commonly tested for one's willingness to express. Evidence was found in supporting this causal relationship in a large number of her studies, such as a 1972 survey of which a question inquired about the Chancellor of West Germany, Willy Brandt (Noelle-Neumann, 1974; 1984; 1993). The results indicated that, in an opinion climate that favors Brandt, a higher percentage of Brandt's opponents (56%) were unwilling to enter into a conversation about Brandt than Brandt's supporters (42%).

Researchers outside of Germany measured individuals' perceived congruency with the opinion climate to understand its influence on one's willingness to express, but mixed results were found. For example, this influence was supported by Willnat's (1996) study on Hong Kong citizens' opinion expression on the issue of the Sino-British dispute over Hong Kong's political future. However, Moy et al. (2001) found that willingness to express was only influenced when one's opinion was congruous with the opinion climate of one's friends and family. Willnat, Lee

and Detenber's (2002) case study in Singapore revealed that it was the respondents who opposed the majority view that tended to be publicly outspoken about equal rights for homosexuals. These inconsistent findings should not be recognized as intrinsic refutations of Noelle-Neumann's theory. Instead, they indicate that with growing scholarly interests in this phenomenon, more factors (e.g., cultural difference, levels of the opinion climate, and types of topic) that influence the SoS have been identified. In fact, Noelle-Neumann (1974) herself also acknowledged that one's willingness to express is moderated by some demographic differences, including sex, age, occupation, income, and residence. This suggests a more thorough explanation of one's reaction towards the public opinions on an issue, and reminds us that the possible indicators that ought to be considered when applying the SoS theory to a new communication context such as online news discussions.

#### 2.1.2. The fear of isolation: A concept explication

The fear of isolation is the core concept in SoS theory. Noelle-Neumann (1991; 1993) assumed that this fear is fueled by societal conformity pressures that threaten individuals with being alienated from the majority as an undesirable consequence. Furthermore, she argued that one of the forms that practice the threat of social pressure is public opinion. She regarded public opinion as social control, suggesting that public opinion ensures "a sufficient level of consensus within society on the community's values and goals" (Noelle-Neumann, 1993, p. 229). In other words, people who hold a viewpoint deviant from the public opinion on an issue tend to experience a social pressure to conform, or, a threat of isolation.

Noelle-Neumann conducted a study about German public opinion on nuclear energy in 1989. Her results demonstrated that the respondents were aware of the opinion climate, in which the supporters of nuclear energy encountered a strong threat of isolation. This survey included a



scenario of a public meeting, where a speaker advocates nuclear energy and the other one opposes it. The scenario continues with one of the speakers being booed by the audience. The respondents were asked which speaker they thought was booed. The finding shows that the majority of the sample (72%) assumed that it was the advocator of nuclear energy that was heckled by the crowd (Noelle-Neumann, 1991).

In Noelle-Neumann's assumptions, the fear of isolation is the response from individuals to the societal threat of isolation. This contradicts some critical values such as autonomy, liberalism, and democracy, provoking challenges from American scholars when the SoS theory was introduced to the United States. Researchers identified some positive motives for social conformity, alternative to Noelle-Neumann's dreadful implication: fear. For instance, Salmon and Kline (1985) applied bandwagon effects to explain that individuals who assess the opinion climate could be motivated to be aligned with the winner's side or the majority. Glynn and McLeod (1985) also pointed out the need for approval as a motive that influences one's willingness to express. Noelle-Neumann (1985) responded that positive motives and positive sanctions may encourage some conformist behaviors, but they are not sufficient to prompt most members of a community to strive for conformity. On the other hand, she argued that—by referring to American Sociologist Edward Ross's work—it is the negative sanctions (e.g., laws, penalties, and social isolation) that motivate people in general to conform. She also cited Charles Darwin's discussion on the emotion of embarrassment, which indicates that individuals have the social nature to consider how they are perceived by the outside world and desire a favorable impression to prevent themselves being negatively viewed or treated (Noelle-Neumann, 1993).

The perspectives from sociology and biology provide justification for the fear of isolation, yet its conceptualization is still problematic. Noelle-Neumann (1984; 1993) defined the fear of isolation as a human motive for assessing the opinion climate of public issues. Moreover, she

assumed that “[i]ndividuals experience fear of isolation continuously” (Noelle-Neumann, 1991, p. 260), implying that this motive is the same to everyone in the society and is stable across situations. However, she admitted that there are some people who belong to the minority but remain willing to speak up. Although their role was largely neglected from her SoS theory, the “Avant-garde” and the “hard core”—Noelle-Neumann (1984, p. 170) labeled them—actually represent the individuals who tend to have a lower level of fear of isolation. It is therefore fair to reason that among those who feel fearful of social isolation, a given individual’s level of fear may not be identical. Applying this approach of individual differences not only more accurately reflects humankind, but it also promotes an understanding of the extent to which fear of isolation motivates one’s estimation of the opinion climate, and, subsequently, affects the SoS phenomenon.

Since the fear of isolation tends to be a function of individual difference, the next question asks whether such fear also fluctuates by situation. Hayes et al. (2011) categorized two research approaches in the SoS literature: one treats the fear of isolation as a stable, trait-like characteristic of individuals, while the other argues that this human motive may vary by context. Noelle-Neumann conceptualized little on this issue in her original formulation, but it can be speculated that she would probably attribute this motive to the stable, trait-like quality of individuals. The most direct evidence underpins her assumptions for the SoS theory, in which she argued that the experience of such fear is incessant (Noelle-Neumann, 1991). To support her arguments, moreover, she demonstrated her research findings that associate the fear of isolation with the SoS on various issues, such as political party affiliation, smoking in the presence of nonsmokers, attitude toward abortion, and nuclear energy (see Noelle-Neumann, 1984; 1991). This indicates that she would argue that such a fear may occur to people across different situations.

It would be more efficient to answer this question by learning how Noelle-Neumann measured the respondents' fear of isolation. However, since she regarded this concept as a part of her assumptions, little evidence, if any, showed that she actually measured it in her studies (Price & Allen, 1990; Shoemaker, Breen, & Stamper, 2000). Although this also suggests that she viewed individuals' experience of such fear as universal and constant, the lack of measurement of the fear of isolation is not merely a methodological issue. This research reveals a weak conceptualization of this core concept that provides vague support without empirical evidence for Noelle-Neumann's presumptive arguments. Also, such lack of measurement impedes a clear, common understanding of this concept at both the conceptual and the operational levels that would serve as the foundation to foster intellectual improvements upon the SoS theory.

The inconsistent measures of the fear of isolation used by researchers for each of their SoS related studies (see Hayes et al., 2011 for a detailed discussion) illustrate a part of the result of such a weak conceptualization. Hayes et al. (2011) recently constructed a trait-oriented scale for the fear of isolation, although numerous studies have measured this concept from the trait-like approach (e.g., Ho & MaLeod, 2008; Moy et al., 2001; Scheufele, Shanahan, & Lee, 2001). On the other hand, some measures are tailored specifically for the purpose of study (e.g., Glynn & Park, 1997; Lin & Salwen, 1997; Nekmat & Gonzenbach, 2013). In Nekmat and Gonzenbach's (2013) study of online forums, for instance, the researchers measured the fear of isolation by asking questions such as "I worry about being isolated if people disagree with me in online conversations" (p. 744). The design of this measure indicated that individuals' fear of isolation is operationalized as a contextual fear that is aroused by either the communication channel or the conversation topic. Even in Noelle-Neumann's own SoS research, the findings of individual studies could only substantiate that the people who withheld their opinions did so due to the fear of being isolated from others in that specific communication context (e.g., a conversation on

political party affiliation with a stranger during a five-hour long train ride).

Despite the fact that there is a substantial amount of research examining the fear of isolation from either the trait-like or the context-based approach, this divergence does not seem to disturb researchers much. This might be because the communication contexts were relatively homogenous before the SoS researchers extended their focus to cyberspace. Both the “field experiments” using hypothetical scenarios (e.g., Noelle-Neumann, 1984; 1993) and the survey research measuring one’s general tendency of the fear of isolation (e.g., Glynn & Park, 1997; Scheufele et al., 2001) ask the respondents about their experience that takes place in a FTF, non-mediated condition. However, when CMC started to be considered in this research topic, the communication contexts became more heterogeneous. Research on the characteristics of CMC including reduced social presence cues (e.g., Siegel et al., 1986; Sproull & Kiesler, 1991), asynchronicity (e.g., Black, Levin, Mehan, & Quinn, 1983), and visual anonymity (e.g., Lea & Spears, 1992) has identified their significant impacts on individuals’ perceptions and interactions online.

Evidence such as “flaming” (Kiesler, Seigel, & McGuire, 1984; Lea, Spears & de Groot, 2001) also shows how human emotions tend to be affected by some characteristics of online contexts and then result in more uninhibited behaviors in cyberspace. In terms of the fear of isolation, Ho and McLeod (2008) substantiated that its influence on one’s willingness to express was moderated by communication contexts. To be specific, the difference in willingness to express between the individuals with a low fear and those with a high fear is smaller in the anonymous CMC condition than that in the FTF condition. Furthermore, the respondents with a high fear in the FTF condition also showed less willingness to express their views than those in the anonymous CMC condition, implying that one’s level of fear of isolation could vary by context. To verify this postulate, more investigations on the fear of isolation from a context-

based approach are indispensable.

The context-based approach and the stable, trait-like approach all explain some crucial facets of the fear of isolation and are not intrinsically incompatible. To attain a more thorough conceptualization of the fear of isolation, including these two approaches may be essential and practical. An example is McCroskey's (1977) conceptualization of communication apprehension (CA)—“an individual's level of fear or anxiety associated with either real or anticipated communication with another person or persons” (p. 78). It was originally constructed in a trait perspective but revised later to encompass both trait and situational views (McCroskey, 1977; 1983). One of the categories branching out of the trait CA is the generalized-context CA (e.g., group discussion, dyadic conversation, and public speaking), which is defined as “a relatively enduring, personality type orientation toward communication in a given type of context” (McCroskey, 1982, p. 147). Adopting this model to the concept of the fear of isolation, a contextual fear of isolation can be constructed for a relatively enduring fear of being socially isolated by others that an individual experiences in a given type of context.

Based on the above arguments, both of the contextual fear of isolation and the static, trait-like fear of isolation represent the fear of isolation in different aspects. Thus, the current study hypothesizes:

H1: The contextual fear of isolation is positively related to the static, trait-like fear of isolation.

In addition, as studies on the SoS phenomenon generally support that the fear of isolation is a negative predictor of one's willingness to express (Glynn & Park, 1997; Ho & McLeod, 2008; Lin & Salwen, 1997; Matthes et al., 2012; Moy et al., 2001; Noelle-Neumann, 1984; 1993; Scheufele et al., 2001), this study posits the second hypothesis:

H2: The contextual fear of isolation negatively predicts willingness to express in online

news discussions.

Moreover, due to a lack of research that simultaneously examines the influences of the static, trait-like fear of isolation and the context-based fear of isolation on the SoS phenomenon, this study addresses the following research question:

RQ1: Is the contextual fear of isolation a stronger predictor of willingness to express in online news discussions than the static, trait-like fear of isolation?

## **2.2. Anonymity in CMC**

Existing theories and studies have provided plentiful definitions of anonymity, indicating the complex nature of this concept. Anonymous (1998)—the pseudonym used by Craig R. Scott—explained anonymity as “the degree to which a communicator perceives the message source is unknown and unspecified” (p. 387). Moreover, he emphasized two important qualities of anonymity. First, anonymity should be regarded as a continuum. That is, the message source may be fully anonymous, fully identified, or anonymous—to some extent—between these two poles. Second, in spite of the external conditions made for anonymity (e.g., a phone app that encrypts one’s actual phone number and manipulates the caller’s voice and tone), the interactants’ perception of such anonymity, or the perceived anonymity, is more influential to their communication behaviors.

Research on CMC generally regards anonymity as an important factor that influences online human interactions. This section reviews the relevant scholarly works on anonymity in CMC from two perspectives. Subsection 2.2.1 delves into the perspective of reduced-social-presence cues that is suggested by researchers at Carnegie-Mellon University (e.g., Kiesler et al., 1984; Sproull & Kiesler, 1986). On the other hand, subsection 2.2.2 examines the findings from the approach of the social identity model of deindividuation effects, or SIDE model (e.g., Lea &

Spears, 1991; Spears & Lea, 1992), to capture more nuances of the construct of anonymity.

### 2.2.1. Reduced social presence cues and anonymity

In their findings that compare CMC to FTF interactions, scholars (e.g., Siegel et al., 1986; Sproull & Kiesler, 1986) argued that the former filter out a variety of crucial social context cues of the individuals involved, such as their appearance, nonverbal behaviors, and geographic locations. The absence of these social context cues increases a user's perceived anonymity of their counterpart in CMC, particularly the physical and visual aspects. Since individuals rely heavily on social context cues to orient and adjust their interaction with each other, such social norms tend to be undermined in the settings where anonymity is highly perceived (Dubrovsky, Kiesler, & Sethna, 1991; Sproull & Kiesler, 1986).

Several social psychological impacts of CMC with reduced social presence cues have been identified in small-group and organizational communication (Kiesler et al., 1984; Lea & Spears, 1991; Spears & Lea, 1992). First, it is argued that CMC users encounter more difficulties to coordinate with each other since only fewer types and amounts of cues can be based on in their message exchange. Second, CMC blurs the unequal status between the superior and the subordinate in FTF interactions, reflecting a decrease in social-normative influence. Studies (e.g., Dubrovsky et al., 1991; Siegel et al., 1986) substantiated that the effect of status inequality on member participation is significantly reduced in the CMC group compared to the FTF group. Third, Kiesler et al. (1984) suggested that a higher level of perceived anonymity tends to cloak the salience of personality and culture clues, fostering individuals' feeling of depersonalization. Finally, such depersonalization results in reduced self-regulation and self-awareness in cyberspace, comparable to the concept of deindividuation that argues the loss of one's individual identity and erosion of social constraints when that person submerge him/herself in a group or

crowd (Festinger, Pepitone, & Newcomb, 1952; Zimbardo, 1969).

A major behavioral outcome caused by these social psychological impacts of perceived anonymity in CMC involves uninhibited expressive behaviors (Siegel et al., 1986; Sproull & Kiesler, 1991). Evidence was found in a substantial number of studies comparing FTF and CMC group discussions (e.g., Kiesler, Zubrow, & Geller, 1985; Siegel et al., 1986; Sproull & Kiesler, 1986). For instance, Sproull and Kiesler's (1986) study on the organization employees' e-mails in the workplace uncovers three types of uninhibited expressions, namely profanity, willingness to deliver negative information, and non-work-related social communication. The profanity and other hostile expressions of strong emotions are also termed as "flaming," which represents one of the deleterious phenomena caused by the influence of perceived anonymity (Lea, O'Shea, Fung, & Spears, 1992). Sproull and Kiesler (1986) showed that the employees in their study recalled seeing flaming in e-mails eight times more than experiencing them in their FTF conversations per month.

However, the uninhibited behaviors are not always negative. Suler (2004) illustrated examples of the "benign disinhibition," such as the exchange of secret emotions and wishes, attributing it partly to perceived anonymity that makes people feel less vulnerable in online self-disclosure. A similar view was also suggested by researchers in their studies on online social support, indicating that participants feel more free to discuss the problems that are rather risky to be shared in FTF contexts (e.g., Walther & Boyd, 2002; Wright, 2000). Moreover, Lea et al. (1992) underscored the factors of group norms and social identity that contribute to the occurrence of flaming. From the perspective of social influence, they argued that flaming is rather context-dependent and relatively uncommon in CMC (see subsection 2.2.2 for more discussion on the SIDE model). Therefore, regardless the valence of messages, it is fair to argue that the findings of uninhibited behaviors demonstrate that perceived anonymity in CMC



encourages individuals' expressions of some, if not all, socially undesirable topics and/or emotions.

Adopting the perspective of reduced-social-presence-cues, Ho and McLeod (2008) compared the phenomenon of the SoS in FTF interaction to that in an anonymous CMC context on the topic of same-sex marriage. The results support the previous findings by showing that the CMC setting predicts a greater level of willingness to express oneself. In addition, the core concept of the SoS theory—the (stable, trait-like) fear of isolation—was found to be a negative predictor. The fear of isolation can be understood as an individual's psychological reaction to the social norm of conformity. We assume the validity of past work indicating that perceived anonymity in CMC increases an individual's sense of deindividuation, which weakens the impacts of social norms and the awareness of self-identity (e.g., Kiesler et al., 1984; Siegel et al., 1986; Sproull & Kiesler, 1986). To wit, one's fear of isolation—at least such fear in this given CMC context—may be reduced.

Thus, integrating the above theoretical implications and previous findings, this study proposes the following hypotheses:

H3: In online news discussions, perceived anonymity negatively predicts the contextual fear of isolation.

H4: Perceived anonymity positively predicts willingness to express in online news discussions.

### 2.2.2. SIDE model and anonymity

The SIDE model also focuses on deindividuation, but scholars (e.g., Lea & Spears, 1991; Spears & Lea, 1992) argued that this social psychological impact of anonymity in CMC may foster group norms and the participants' social identity in online interactions. Based on social

identity theory (Tajfel & Turner, 1986) and self-categorization theory (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987), Spears and Lea (1992) highlighted two contradictory identities that may be elicited in CMC: personal (self) identity and social (group) identity. Due to physical isolation and visual anonymity in CMC, online group members tend to experience a sense of deindividuation and rely on the reduced social context cues (e.g., social categorical information) to interact with each other. Thus, when members perceive more salient cues of the group that they have in common (e.g., having similar interests or concerns), their social identity gets enhanced and the normative behaviors within the group increase. On the other hand, if those members' personal identity is more salient than their social identity (e.g., having a strong opinion that deviates from others'), their individuality is then strengthened and they adhere more firmly to personal norms and standards.

The empirical findings (Lea & Spears, 1991; Spears, Lea, & Lee, 1990) support the SIDE model by revealing that when the participants experience deindividuation, those with a salient group identity demonstrate a greater “group polarization”—a shift towards the group norms from their personal standards—than those who are prone to a salient personal identity. However, the participants undergoing deindividuation did not show more uninhibited behaviors, challenging the Carnegie-Mellon researchers' arguments of a negative behavioral disinhibition caused by anonymity in CMC. Therefore, it is suggested that deindividuation does not absolutely result in the irrational, deleterious behaviors such as flaming. Rather, from the perspective of the SIDE model, flaming can be seen as a special case resulting from deindividuation in which this uninhibited behavior is accepted in the group norms shared with the group members who possess an enhanced social identity (Lea et al., 1992).

The experimental design for testing the SIDE model draws some implications about anonymity in CMC. The scholars (e.g., Lea & Spears, 1991; Spears et al., 1990; Spears & Lea,

1992) accentuated visual anonymity and physical isolation as two elements that contribute to deindividuation. To operationalize it in their studies, two conditions were created. In the deindividuation condition, the participants engaged in CMC were assigned in separate rooms to ensure that they were physically isolated from each other. In the individuation condition, on the other hand, the participants were seated in the same location and faced each other throughout their online discussion. Such presence or co-presence of individuals is termed as “identifiability” (Reicher, Spears, & Postmes, 1995).

Although identifiability is generally applied to contrast visual anonymity in the experiments of the SIDE model, Spears and Lea (1994) further suggested that identifiability and (visual) anonymity are more than merely two sides of the same coin. They argued that the former refers to one’s level of anonymity to others, whereas the latter indicates others’ level of anonymity to oneself. Anonymous (1998) later encompassed these two concepts under the broader construct of anonymity. In his typology, identifiability is “self-anonymity,” while the anonymity labeled by Spears and Lea (1994) can be seen as “other-anonymity.” In spite of the terminological disagreements among scholars, such differentiation reminds the subtleties of anonymity that are especially useful when examining today’s diversified CMC contexts.

For instance, Rössler and Schulz (2014) used self- and other-anonymity as two dimensions in their categorization of online activities. Interaction in anonymous online forums belongs to the quadrant of high self-anonymity and high other-anonymity, while viewing other people’s SNS profiles falls in the quadrant of high self-anonymity and low other-anonymity. Moreover, posting articles on one’s own blog to the public represents an activity in the quadrant of low self-anonymity and high other-anonymity, whereas chatting with a friend on SNSs fits in the quadrant of low self-anonymity and low other-anonymity. Such differentiation between self- and other-anonymity underlines the nuances to be identified when examining an individual’s perceived

anonymity.

In addition to the two types of communicator-oriented anonymity, one's perceived anonymity may also be affected by the degree of anonymity that a CMC medium affords. In the context of online news discussions, the mechanism of online news comments is widely applied in diverse platforms, which provide various degrees of anonymity. Some (e.g., Yahoo.com) allow commenters to display a pseudonym attached to their posts, whereas others (e.g., Facebook) reveal the username that is highly associated with the commenter's offline identity. However, not much research has been done to explore either (a) variance in anonymity in this CMC context, or (b) its effects on the individuals engaged in it.

Therefore, to incorporate the different types of anonymity suggested above into the current examination, this study addresses the following research questions:

RQ2: In online news discussions, what is the relative magnitude of influence among the three types of perceived anonymity (i.e., self-anonymity, other-anonymity, and platform anonymity) on the contextual fear of isolation?

RQ3: What is the relative magnitude of influence among the three types of perceived anonymity (i.e., self-anonymity, other-anonymity, and platform anonymity) on willingness to express in online news discussions?

### **2.3. The Effects of Mass Media on the SoS Phenomenon**

In her SoS theory, Noelle-Neumann (1991; 1993) argued that individuals' fear of isolation is fueled by a societal level of conformity pressure. A dominant form of such pressure is public opinions, and individuals perceive the opinion climates mainly from their direct observations or mass media. In her study on the 1976 federal election opinion polls, the results revealed a significant discrepancy of the perceived winning party between the frequent viewers and the

light viewers of political TV broadcasts. She attributed it to a recent change of the voting climate circulated in mass media that might be neglected by those light viewers. Noelle-Neumann highlighted the significant influences of media—particularly the televised news outlets—on audience impression formation, calling back researchers’ attention to the “powerful effects” of mass media (Noelle-Neumann, 1973). Despite the scholarly debates on her claims of media power, media influence has become a major subject in the examinations of the SoS phenomenon.

This section focuses on the role of mass media in the SoS theory. Subsection 2.3.1 reviews Noelle-Neumann’s arguments of media effects, the scholarly critiques and feedback, and some empirical findings of the media influences on the SoS phenomenon. Furthermore, subsection 2.3.2 introduces another long developed concept, the hostile media perception (HMP), which explains individuals’ perception of media content in the situations where the mediated information goes against their views. Following a summary of its main ideas and the key findings, a potential linkage tying the HMP and the SoS phenomenon is then suggested.

### 2.3.1. Arguments, critiques, and clarifications of the media influences in the SoS theory

Noelle-Neumann comprehensively discussed her arguments on mass media effects in her article “Return to the concept of the powerful media effect” (Noelle-Neumann, 1973). Her viewpoint challenged the limited media effects paradigm in communication research that emphasizes the influences of interpersonal communication and individuals’ selective perception of favored information (McQuail, 2014). Based on the results of content analyses and surveys, she suggested three features of mass media that contribute to the powerful effects: omnipresence, cumulation, and consonance (Noelle-Neumann, 1973). First, omnipresence, or ubiquity, refers to the tremendous capability of mass media that broadcasts the opinion climate of a given issue to the public. It enables individuals to compare the discrepancy between the public opinion and

their own views. Second, cumulation describes the influences of a long-term, repetitive exposure of media content. Applying longitudinal surveys to observe individuals' attitude change on a given public issue, Noelle-Neumann was able to examine the results in association with the movements of the opinion climate reported by mass media. This combination allows researchers to estimate the effects of media cumulation, which the proponents of selective perception theories fail to identify in their one-shot experiments or cross-sectional surveys. Finally, consonance indicates a similar set of news selection criteria and a common process of news production shared by newsrooms of different media that breed an unrealistically congruent view on a given topic. Among these three features, Noelle-Neumann argued that consonance not only represents the foremost power of mass media on the audience's opinion formation, but it also plays a crucial role to reduce the influence of individuals' selective perception.

Noelle-Neumann's arguments of the powerful media effect led to widespread scholarly debates after her SoS theory was translated into English. The consonance phenomenon that she depicted in the news media particularly suffers critiques from U.S. researchers. Some criticisms addressed the national or societal differences of media systems between West Germany and the U.S. (e.g., Glynn & McLeod, 1985; Katz, 1981; Price & Allen, 1990; Salmon & Kline, 1985). They pointed out that media consonance does not reflect the situation in a pluralistic society such as the U.S. Rather, the American mass media consists of different forms and channels that cater to diverse political views (Salmon & Kline, 1985). In this case, therefore, assuming that audiences exposed to different news outlets reporting on a public issue all perceive that a unified mediated opinion climate is intrinsically questionable. Extending from such national or societal differences, some researchers recommended paying additional attention to other social agents that may exert significant influence on individuals' opinion perception in a pluralistic society. It was then that the roles of reference groups and sub-social systems, such as communities, came

into play (e.g., Glynn & McLeod, 1985; Moy et al., 2001; Oshagan, 1996). More discussions about the interpersonal and group influences on the SoS phenomenon are reviewed in section 2.4.

Noelle-Neumann's empirical evidence for the powerful media effects model is also problematic (also see Salmon & Kline, 1985). Some examples of her field tests included only suppositions of the influence of media consonance without statistical support. For instance, on the issue of capital punishment, she noted "[t]he question poses itself why in 1971, with a de facto fifty-fifty distribution of supporters and opponents of capital punishment, a clear relative majority believes that most people are against the death penalty. We may assume that a consonant attitude of the mass media, which are generally opposed to capital punishment, could be the reason" (Noelle-Neumann, 1973, p.96).

Moreover, even if the influence of mass media on individuals' perceived opinion climate was as powerful as she suggested, her survey results did not reveal a unified perception of the public opinion among the participants. In another example on the issue of the treaties with East Germany, Noelle-Neumann's (1984; 1993) findings indicate that, among the supporters of the treaties, the largest portion (49%) thought the majority was in line with their opinions. However, it was also the largest portion of the opponents (57%) that thought the majority went against the treaties.

Furthermore, the case of the 1976 federal election opinion polls (Noelle-Neumann, 1984; 1993) was one of the few examples demonstrating that the media influence was measured. It was operationalized as the frequency of individuals' political TV broadcast exposure, but some potential confounding factors such as the respondents' party affiliation did not seem to be considered. Thus, it is fair to argue that neither the influence of the dominant view broadcasted by mass media on a given issue nor a causal link between the mediated view and individuals'

perception of the opinion climate have been substantially uncovered in Noelle-Neumann's research.

Regardless of the above theoretical and methodological issues, the role of mass media in the SoS phenomenon continues to generate intense scholarly interest. Various approaches have been employed to identify the influences of mass media. One primary path investigates individuals' media use, which consists of their frequency of media exposure and level of media attention. This measure receives some support in predicting one's willingness to express (e.g., Moy et al., 2001; Scheufele et al., 2001). However, when splitting these two components of media use, Lasorsa (1991) found that only the level of attention to the media was predictive of one's political outspokenness. On the other hand, mixed results were shown among the studies testing the prediction of individuals' media exposure (e.g., Matthes, Morrison, & Schemer, 2010; Willnat et al., 2002), implying that this variable may be less adequate in reflecting the influence of mass media. Another approach measures people's perception of the prevailing mediated opinion climate (Lin & Salwen, 1997). The researchers found that individuals were more willing to speak their views in public when they perceived the dominant media climate to be in favor of them. In addition, numerous studies (e.g., Glynn & McLeod, 1985; Lasorsa, 1991; Moy et al., 2002; Willnat, 1996; Willnat et al., 2002) also tried to differentiate the influences of various media channels such as television, newspapers, and magazines. The findings identified some significant results, but failed to point out a common medium that exerts a stronger predictive effect than others. This dynamic is probably due to the differences of communication contexts and topics.

Studies employing these approaches generally reveal the influences of mass media on one's willingness to express, clarifying the role of media in the SoS phenomenon. Although media serves as a crucial indicator of one's opinion expressions, it may be more complex to explain



how the media influences function than simply applying Noelle-Neumann's arguments of the powerful media features. For instance, some of the above research demonstrates the subtle differences between individuals' time spent on media (the frequency of exposure) and their attention paid to media (the level of attention). This nuance indicates that even mass media is ubiquitous, as Noelle-Neumann suggested, its effects tend to be moderated by how long and how much the individuals are engaged in. This suggests that the individuals are more or less active in their media use.

In line with this assumption of the active audience (McQuail, Blumler, & Brown, 1972; Rubin, 2009), it is also likely that individuals selectively expose themselves to some media content but not others. As scholars (e.g., Glynn & McLeod, 1985; Katz, 1981; Salmon & Kline, 1985) argued that in a pluralistic society media contents seldom represent a single view on a public issue, using mass media to shape a homogeneous perception of an opinion climate is nearly impossible. Therefore, individuals' perception of the mediated public opinion is not the one-and-only dominant view determined by the media consonance. Rather, it is the dominant opinion broadcasted by the media that people elect to be exposed to.

Since the SoS theory mainly discusses individuals' willingness to engage in opinion expression as a response to their perceived opinion climate for a public issue, the above clarifications of the media influences do not contradict Noelle-Neumann's assumptions. Moreover, this elective use of media content and the "filtered" perceived opinion dominance provide a valid explanation on why Noelle-Neumann's (1973) example—the treaties with the East—did not reveal a unified opinion climate perceived among the two sides of the participants. It is likely that the supporters and the opponents of the treaties selectively exposed themselves to different media content and then perceived dissimilar opinion climates. Most importantly, these clarifications of the media influences offer empirical evidence for the SoS theory by

demonstrating that individuals are more willing to publicly express their opinion when they perceive a favorable mediated opinion climate (e.g., Lin & Salwen, 1997).

The mechanism of online news comments is a combination of media (reports) and discussion forums (comments). Thus, viewers not only perceive an opinion climate from the comments, but a news article may also influence their perception of what the dominant opinion is. The latter is particularly probable when the article is about the results of an opinion poll. Based on the above clarifications and conceptualization of media influences in the SoS phenomenon, this study posits:

H5: Perceived opinion congruity with the media-reported dominant opinion positively predicts willingness to express in online news discussions.

### 2.3.2. Perceived media biases and hostility

As the SoS theory argues that individuals tend to remain silent when their views deviate from the perceived mediated public opinion, another research perspective focuses on the individuals' perception of the news media in such incongruous situations. According to Vallone, Ross, and Lepper (1985), when individuals are highly involved with an issue—and find that the media coverage contradicts their opinions—they think that media is hostile and biased. This phenomenon is termed the hostile media perception, or HMP. It was first substantiated in the authors' examination of the partisan views of the media coverage of the massacre in Beirut, Lebanon in 1982. Other studies also found support of the HMP phenomenon in a variety of partisan groups (e.g., Christen, Kannaovakun, & Gunther, 2002; Gunther & Schmitt, 2004).

Vallone et al. (1985) identified the cognitive and perceptual mechanisms that activate individuals' HMP. First, cognitively the partisans are driven to believe that the truth is either “largely black or largely white” (p. 584). Therefore, they tend to criticize the credibility and

objectivity of the media coverage when it depicts the truth to be at somewhere in the middle. Then, through a perceptual distortion, both sides of the partisan debate are convinced that the coverage they perceived is highly skewed from the unmediated truth and favoring their counterpart. These two mechanisms not only stimulate the partisans' HMP, but also imply that the HMP may be aroused even when the media coverage is, in fact, neutral.

Although early studies concentrate on partisans' HMP, researchers (Gunther, Christen, Liebhart, & Chia, 2001) later argued that this perception does not only obtain for those highly involved individuals. For instance, Gunther and Christen's (2002) study used a national sample to demonstrate that the HMP was pervasive in the general population for some topics (i.e., the potential health hazards from radon gas and the physician-assisted suicide). Therefore, it is more proper to view the HMP as a continuum in which the people with a higher level of HMP tend to perceive the media coverage opposing their views as more biased than those with lower HMP (Gunther & Chia, 2001; Gunther & Christen, 2002).

Since the HMP describes how individuals attribute the incongruity between their own and the mediated opinions towards an issue, their reactions to such unfavorable media coverage trigger scholarly interests. Researchers found that when media content piques the viewers' negative emotions such as anger, contempt, and resentment, those with higher HMP are motivated to be more willing to engage in various activities that involve discourse (Hwang, Pan, & Sun, 2008). These activities include attending public forums on that issue, volunteering for groups they supported, searching for more relevant information, and talking with people who had a shared or opposing view with them. Similarly, Rojas (2010) argued that the higher HMP Columbians tended to express their opinions in both online and offline public spheres. These results indicate that one's level of HMP predicts that person's willingness or real actions of his/her opinion expression.

Applying the HMP to the study of public opinion, this concept would become an interesting contrast to Noelle-Neumann's SoS theory (Schulz & Rössler, 2012). That is, when individuals perceive their opinions to be deviant from the mediated public opinion, these two scholarly thoughts suggest divergent predictions. On the one hand, the SoS theory argues that these individuals are prone to withhold their opinions and remain silent if they have a higher level of fear of isolation. On the other hand, the HMP proposes that those people tend to speak out when they feel the mediated opinion is highly hostile or biased. In other words, the HMP depicts audiences' resistance towards the unfavorable media information, indicating that the individuals with opposing views may not always stay silent in the end. Each of these two contradicting predictions identifies the factor that mediates the influences of mass media on individuals' opinion expression. Yet, rarely has research explored the potential connections between individuals' level of HMP and the fear of isolation (both the stable, trait-like and the context-based approaches). Given the complexity of media effects in association with person perception, incorporating the concept of HMP into the examination of the SoS phenomenon may foster a more comprehensive understanding of individuals' reactions to the perceived public opinion.

Drawn by the established findings and the above conceptual implications, this study proposes the following hypotheses and research questions:

H6: Perceived opinion congruity with the media-reported dominant opinion negatively predicts perceived media hostility and bias (i.e., HMP).

H7: Perceived media hostility and bias (HMP) positively predicts willingness to express in online news discussions.

RQ4: What is the relationship between the stable, trait-like fear of isolation and perceived media hostility and bias (HMP)?

RQ5: What is the relationship between perceived media hostility and bias (HMP), the

contextual fear of isolation, and willingness to express in online news discussions?

## **2.4. The Effects of Social Support on the SoS Phenomenon**

Noelle-Neumann (1984; 1993) considered mass media a primary source for individuals to perceive opinion climates. To expand this theoretical formulation, some researchers (e.g., Glynn & McLeod, 1985; Oshagan, 1996; Salmon & Kline, 1985) also explored the influences of individuals' social circle (e.g., reference groups and communities) that affect their perception of public opinion and willingness to express. Such interpersonal and group-based social influences can be a double-edged sword. On the one hand, they become social support that encourages an individual to speak out when the person's view is congruent with others in his/her social circle (e.g., Dalisay, Hmielowski, Kushin, & Yamamoto, 2012). On the other hand, when that person is holding a deviant opinion, the lack of social support may aggravate one's fear of isolation (e.g., Glynn & Park, 1997). To date, there has been a substantial amount of research on the factor of social support in the SoS literature, demonstrating a remarkable aspect that U.S. scholars have demonstrate in the research of this European theory.

To extend the investigations of the SoS to online news discussions, the conceptualization of social support should be more sophisticated. In addition to one's reference group and other interpersonal resources, such support may also come from other online users. The following subsection 2.4.1 examines the SoS studies from the aspect of social support, and subsection 2.4.2 incorporates the literature of online social support into the current study.

### **2.4.1. Social influence and social support in the SoS literature**

In Noelle-Neumann's original formulation of the SoS, she did touch on the factor of social support in some of her studies. For example, on the topic of "smoking in the presence of

nonsmokers,” one of her “train tests” included the presence of an aggressive person with similar views in the scenario. The result indicates that the individuals who perceived to have a comrade tend to be more willing to enter the conversation than those who did not (see Noelle-Neumann, 1984, p. 44-47). In spite of such evidence, the theoretical arguments of the SoS do not consider the effects of social support. It was not until the U.S. researchers joined in the examinations of the SoS that the factor of social support received a growing attention. The effects of social support, however, are primarily focused indirectly from the inquiry of interpersonal and group influences on the phenomenon of the SoS (e.g., Glynn & McLeod, 1985; Glynn & Park, 1997; Moy et al., 2001; Oshagan, 1996).

Salmon and Kline (1985) pointed out several research perspectives that undergird such influences on individuals’ opinions. For instance, attraction—including interpersonal and group based forms—has been found to influence on one’s attitude formulation and opinion change in literature of social influence (e.g., Kelman, 1961; Newcomb, 1953). Also, the two-step flow model (Katz & Lazarsfeld, 1955) demonstrates that it is opinion leaders that affect individuals’ decisions—by interpersonal communication—rather than a direct impact of mass media. Furthermore, Krassa (1988) argued that individuals’ social networks influence their perception of opinion climates and how they weigh each opinion. In other words, a perceived dominant opinion in one’s reference group—even it does not represent the majority’s voice in the society—tends to affect his/her opinion expression.

Glynn and Park (1997) compared the influences of reference group and generalized townspeople in their study of Canadian citizens’ opinion expression on the environmental issues in six national parks. Their results indicate that both the fear of being isolated from their self-defined reference group and that from general town members negatively predicted the respondents’ opinion expression, but the former caused a greater effect. Similarly, Moy et al.

(2001) also found that the influences of three different opinion climates—among friends and family, residents of the city, and residents of the state—were all predictive of opinion expression about affirmative action policies in Washington State. However, after controlling for demographics, political ideology, media use, and issue importance, the researchers found that the individuals' willingness to express was only predicted by a perceived congruent opinion climate among their friends and family. Moy et al. drew two implications from their findings. First, the opinion climate that individuals perceive consists of multiple types. Some are relative "micro-climates" that reflect the dominant opinions in one's surroundings, such as the climate within one's reference group; some are in a more macro level that cover the public opinions from a larger base, such as the public opinion reported from national news media (e.g., Lin & Salwen, 1997). Second, it is the dominant opinion perceived in the micro-climates—generated from one's reference group members—that most powerfully influence one's willingness to express.

Oshagan's (1996) study investigated the differences between two levels of the opinion climates on the issue of capital punishment. The micro-climate is among the reference group that consists of five respondents' close friends, while the macro-climate is a national survey that represents the societal majority. His results suggest that only the influence of individuals' reference group predicts their expression on this issue. More interestingly, it was the individuals whose opinions went against the perceived opinion of the societal majority—but came in line with that of their reference group—which showed the most willingness to express their views. Oshagan's findings counter-argue Noelle-Neumann's societal perspective on conformity pressure, indicating a more dominant type of social influence when the role of reference group was made salient to individuals. This evidence also implies a justification to include the influence of one's reference group when examining the SoS phenomenon.

Both Moy et al. (2001) and Oshagan (1996) suggested that a perceived opinion congruity

with one's reference group fosters that person's willingness to express his/her view. This causal effect can be further explained by the concept of social support. Although definitions of social support vary in the literature (see Wortman & Dunkel-Schetter, 1987), a more communication-oriented approach describes it as interpersonal transactions that involve positive affections, affirmative expressions, and/or direct assistance in one's social networks (Kahn & Antonucci, 1980). Among these transactions of social support, an individual is most likely to experience affirmation from their reference group when their views are aligned. On the SoS phenomenon, a meta-analysis (Glynn, Hayes, & Shanahan, 1997) indicates a small but positive and significant effect of perceived opinion support on willingness to express. Similar results were also found in Dalisay et al.'s (2012) study on the public opinion on the U.S. military buildup in Guam, substantiating that perceived (social) support for individuals' opinions—a composite measure of support from the family, friends, and majority of Guam—positively predicts their willingness to speak out.

Based on the above dynamics defining the influences of reference group and perceived social support, this study posits:

H8: Perceived support from one's reference group positively predicts willingness to express in online news discussions.

Moreover, to further understand the relationship between the social support from one's reference group and the contextual fear of isolation in the phenomenon of the SoS in online news discussions, this study poses the following research question:

RQ6: Is the effect of the contextual fear of isolation on willingness to express moderated by perceived support from one's reference group?

#### 2.4.2. Online social support



Research has shown that social support also exists in online interactions since CMC becomes prevalent (e.g., Eastin & LaRose, 2005; Shaw & Gant, 2002; Tichon & Shapiro, 2003). Common categories of social support in FTF communication include informational, emotional, self-esteem (or appraisal), tangible aid (or instrumental), and social network support (Cutrona & Suhr, 1992; Langford, Bowsher, Maloney, & Lillis, 1997). These types of support are also found in cyberspace. For instance, in a study on the computer bulletin board “Support Network” for people with disabilities, Braithwaite, Waldron, and Finn (1999) identified all kinds of social support from the messages exchanged between the members. In particular, over seventy percent of the supportive messages consisted of information and emotional exchanges, while self-esteem support also contributed nearly twenty percent of the total.

As social support is getting more available on the Internet, it also demonstrates several new features in contrast to the traditional, FTF social support. Walther and Boyd’s (2002) summarized that online social support tends to be exchanged among people who do not know each other nor communicate in offline contexts. In addition, most online social support is exchanged via direct conversations of common interests or concerns without requiring an established relationship between individuals. Therefore, the primary connection between the supporters and receivers lies only on a common affiliation on the given issue rather than multiple matters. Although new forms of online communication keep emerging, this summary highlights that online social support may occur among strangers. Moreover, such support is more issue-driven and issue-focused, which tends to strengthen the sense of affiliation between the individuals involved.

Online social support takes place across various venues, such as online communities, public discussion boards and forums, instant messaging, virtual worlds, and SNSs (High & Solomon, 2008). Each venue facilitates the supportive exchanges in relatively dissimilar ways. For

instance, online communities usually provide their members with multiple communication tools (e.g., forum messages, listservs, and e-mails), in which the social support may be shared (King, 1994). Moreover, online communities promote weak-tie relationships between the recurring members (Walther & Boyd, 2002) and breeds a higher level of community satisfaction (Wright, 2000). On the other hand, High and Solomon (2008) argued that public discussion boards offer less detailed and informative support, but individuals can still experience affirmation of self-worth and/or emotional comforts from the posts and feedback addressed by the like-minded users. This implies that a perceived similarity, or homophily, between the provider and receiver also plays a key role in online social support.

Researchers suggest different typologies for homophily. For example, Lazarsfeld and Merton (1954) categorized two types of homophily: status homophily and value homophily. The former indicates the similarities of socio-demographic and acquired characteristics, such as race, education, and religion; whereas the latter refers to the similarities of individuals' internal states, including values, beliefs, and attitudes. Likewise, McCroskey and Richmond (1996) developed a scale of perceived homophily that includes the dimensions of background homophily and attitude homophily. In the topic of online social support, studies have found that both types of homophily are related to the level of perceived emotional support (e.g., Campbell & Wright, 2002; Wright, 2000; Wright, 2012). Because CMC occurs mainly in the environments with reduced social presence cues, and online social support relies primarily on text-based messages (Walther & Boyd, 2002), it can be argued that individuals' perceived homophily of others is also largely influenced by the content of their messages.

In addition, perceived opinion congruity in the SoS literature is analogous to perceived homophily, especially to the type of value homophily (Merton, 1954) or attitude homophily (McCroskey & Richmond, 1996). Therefore, in the context of online news discussions under the

mechanism of online news comments, an individual may experience social support from other commenters when that person finds that his/her opinion is congruent with those commenters' posts. To distinguish such support from that derived from one's reference group, the former can be labeled as an immediate online social support. This study then posits:

H9: Perceived opinion congruity with other commenters positively predicts perceived immediate online support.

Furthermore, on the basis of previous findings about the influence of perceived social support on the SoS phenomenon (e.g., Dalisay et al., 2012; Glynn et al., 1997), this study hypothesizes:

H10: Perceived immediate online support positively predicts willingness to express in online news discussions.

Due to the fact that such immediate online support has not yet received an extensive scholarly attention, the influence of such support on the SoS phenomenon in online news discussions requires more exploration. Therefore, this study asks the following two research questions:

RQ7: Is the effect of the contextual fear of isolation on willingness to express moderated by perceived immediate online support?

RQ8: Which type of perceived social support is more predictive of willingness to express in online news discussions?

## **2.5. The Effects of Individual Differences on the SoS Phenomenon**

In addition to the factors of mass media and interpersonal- or group-based social support, Noelle-Neumann (1984; 1993) also suggested that individual differences play a role in the SoS phenomenon. She identified several demographic differences, arguing that females, the elderly,

those lower on socioeconomic status, farmers, and villagers tend to show less willingness to be engaged in discussions on controversial issues in public. Following this implication, researchers generally included various demographic indicators such as sex, education, and race in their SoS studies as control variables. Although the indicators in their models are not identical, the results (e.g., Glynn & Park, 1997; Ho, Chen, & Sim, 2013; Scheufele et al., 2001) commonly reveal relatively small effects ( $\beta = .01$  to  $.14$ ) in comparison with the major variables such as the fear of isolation ( $\beta = .11$  to  $.32$ ).

Given that the SoS theory examines one's opinion expressions on public issues, some scholars also paid attention to the individual differences that are affected by the focal issue or topic (e.g., Glynn & McLeod, 19984; Lin & Salwen, 1997; Willnat, 1996). Since nearly none of the SoS studies touch on the same public issue, the following subsection 2.5.1 concentrates on the factor of issue involvement. Moreover, scholars investigated various factors driven by their individual research interests, such as the effect of neighborliness on the social support in the military community (Dalisay et al., 2012). As this study focuses on the SoS phenomenon in online news discussions, an extensively scrutinized concept in CMC research—privacy concerns (e.g., Buchanan, Paine, Joinson, & Reips, 2007; Lewis, Kaufman, & Christakis, 2008; Taddicken, 2014)—is also discussed in subsection 2.5.2.

### 2.5.1. Issue involvement

The SoS literature probes the individual differences affected by the focal issue from various aspects. A cluster of these variables comprises people's issue-related knowledge (e.g., Kim et al., 2014; Salmon & Neuwirth, 1990; Willnat, 1996), interest (e.g., Dalisay, 2012; Lasorsa, 1991), perceived importance (e.g., Matthes et al., 2010; Moy et al., 2001; Oshagan, 1996), and attitude certainty (e.g., Glynn & Park, 1997; Lasorsa, 1991; Matthes et al., 2010). A more encompassing

factor measures individuals' issue involvement (e.g., Ho et al., 2013; Jeffres, Neuendorf, Bracken, & Atkin, 2009; Louis, Duck, Terry, & Lalonde, 2010). Zaichkowsky (1985) defined involvement as "a person's perceived relevance of the object based on inherent needs, values, and interests" (p.342). In the persuasion literature, individuals' level of involvement influences the way they process the related information (Chaiken, 1987; Eagly & Chaiken, 1984; Dardis & Shen, 2008). Furthermore, in marketing research, product involvement has been found to be predictive of one's attitude towards that product and the purchase intention (e.g., Kim, Haley, & Koo, 2009).

In the SoS literature, similar terms labeled to estimate the individuals' issue involvement include "knowledge" (e.g., Jeffres, Neuendorf, Bracken, & Atkin, 2009), "personal concern" (Salmon & Neuwirth, 1990) and "perceived issue salience" (e.g., Ho et al., 2013; Willnat, 2002). Kim et al. (2014) also combined (perceived) issue importance and issue interest as the issue involvement in their study. Regardless of these differences, the results generally indicate that individuals' involvement in the given issue predicts their willingness to express in public (e.g., Ho et al., 2013; Kim et al., 2014; Louis et al., 2010; Salmon & Neuwirth, 1990; Willnat et al., 2002). In other words, the people who are more involved in the topic—such as showing more interest in it—are more willing to be engaged in the conversation on this topic and express their views. Therefore, this study posits:

H11: Issue involvement positively predicts willingness to express in online news discussions.

However, because individual differences are often regarded as control variables or covariates, the relationship between individuals' issue involvement and their fear of isolation is rarely examined. The findings from the HMP research may provide implications for this relationship, given that issue involvement has been identified as a main indicator of an

individuals' level of HMP of the media coverage (Choi, Watt, & Lynch, 2006; Christen, Kannaovakun, & Gunther, 2002; Perloff, 1989; Vallone et al., 1985). To be more specific, as people have greater involvement in an issue, they tend to show more skepticism towards the mass-mediated messages about that issue and consider them as more biased. Thus, for those highly involved individuals who hold a minor view—since they tend to have more knowledge and personal opinions on that issue—they may feel less fearful to be socially isolated in revealing their views in online discussions. In addition, a higher anonymous context may also foster one's willingness to express. Based on the above findings, this study proposes the following hypotheses:

H12: The influence of perceived opinion congruity with the mediated dominant opinion on the perceived media hostility and bias (HMP) is moderated by issue involvement.

H13: The influences of perceived anonymity (self-anonymity, other-anonymity, and platform anonymity) on the contextual fear of isolation are moderated by issue involvement.

### 2.5.2. Privacy concerns in CMC

Privacy-related issues have received a growing attention as individuals get increasing chances to be engaged in online interactions. Researchers (Yao, Rice, & Wallis, 2007) found that people's online privacy concerns are mainly driven by their psychological need for privacy. Westin (1967) categorized four states of privacy that individuals tend to pursue, namely the freedom from being observed by others (solitude), the freedom from being identified and monitored in public places and for public acts (anonymity), the seclusion of being in small groups that may achieve a close, relaxed, and frank relationship (intimacy), and the barriers to prevent unwanted disclosure (reserve). In CMC, risks of violating these four states of privacy do not seem to be highly avoidable, especially in the contexts that require, allow and/or encourage

self-disclosure.

Online self-disclosure is one of the research topics that tie closely to people's privacy concerns. Taddicken (2014) summarized several problematic aspects that hinder the users to manage their privacy in their social web. For instance, users can not fully identify the components of the audience that have the access to their personal information. Also, due to the heterogeneity of the potential audience, the content of an individual's self-disclosure may not be uniformly proper to every viewer. In addition, there are emerging technological applications and instruments that facilitate third parties to store, pass along, re-make, and/or distribute the content of one's self-disclosure for other unauthorized and unexpected purposes. Research has found a negative correlation between individuals' privacy concerns—or the perceived privacy risks—and their willingness to disclose (Myerscough, Lowe, & Alpert, 2006; Taddicken, 2014; Youn, 2005).

By definition, self-disclosure generally refers to the revelation of messages which are considered inner, private, and intimate that people intend to conceal or think that may cause serious consequences on their lives (DeVito, 2003; Pearson, West, & Turner, 1995). Although personal opinions on public issues may be less secretive or confidential, they largely reflect one's own values, beliefs, and attitudes. These types of information also encounter the same privacy risks and possibly engender undesirable consequences if being disclosed to the wrong or irrelevant individuals. The individuals who perceive themselves as holding a view deviant from the majority may particularly feel vulnerable to such risks.

Little attention has been paid on individuals' privacy concerns in the SoS studies, regardless of the research contexts are set online or offline. Theoretical implications and empirical findings suggest that individuals' privacy concerns may be related to their perceived anonymity and their willingness to express, prompting curiosity on the connection of privacy concerns and the fear of isolation. Privacy is more relevant to the SoS phenomenon in cyberspace for two different

reasons. On the one hand, individuals' privacy concerns may prevent them from articulating their viewpoints in a disadvantageous position to go against the majority in the online news discussions, especially when they are more identifiable. This implies that individuals' privacy concerns and their fear of isolation may also be correlated. On the other hand, unlike FTF conversations that are generally fleeting and untraceable, one's online posts are easily documented, retrieved, and circulated. Even though individuals may not feel socially attached to those occasional online news discussions, their privacy concerns may influence their willingness to express out their opinions in such communication contexts. This tends to suggest that, in addition to their fear of isolation, individuals' privacy concerns may be a parallel influence that reduces their willingness to express on the Internet. Therefore, exploring the relationship between individuals' privacy concerns and their fear of isolation would provide further understanding of the SoS phenomenon in cyberspace.

According to the above findings and implications, this study posits the following hypotheses and research question:

H14: Privacy concerns negatively predict willingness to express in online news discussions.

H15: The influences of perceived anonymity (self-anonymity, other-anonymity, and platform anonymity) on the contextual fear of isolation are moderated by privacy concerns.

RQ9: What is the relationship between privacy concerns and the contextual fear of isolation?

The hypotheses and research questions can be summarized in an integrated model, presented below in Figure 2.5.1.

----- Insert Figure 2.5.1 about here -----



## **Chapter 3**

### **Research Methods**

#### **3.1. Participants**

This study recruited students who were enrolled in a large introductory level course that meets a general education requirement across different majors at the University of Connecticut. According to a recent survey on the demographics of the U.S. Internet users (Pew Research Center, 2017a), people in the age group between 18 and 29 showed the highest percentage of Internet use (99%) when compared to other older groups. Moreover, on educational attainment, 94% of the respondents in the level of “some college” and 98% in the level of “college graduate” reported that they were Internet users. Given that young adults and people with college or higher level of education are two major groups of the Internet users, and college students are generally active in a variety of Internet activities, a sample of college students is valid for the current study.

An announcement for this study was posted on the course website with the assistance of the course instructor. The announcement included a brief introduction about this study and invited the students to fill out an online questionnaire posted on “Qualtrics.com,” which offers built-in data privacy and security protection. The students were also informed that they would receive research credit for their participation. Moreover, the announcement contained an information sheet that provided the study procedure and other standard IRB criteria. After reviewing the information about this study, the willing participants could use the hyperlink attached below the information sheet to access the online questionnaire.

#### **3.2. Research Design**

This study uses “abortion” as the public issue to test the online SoS phenomenon. The viewpoints of abortion in the U.S. have long divided into two opposing sides, and the percentage

of the supporters for each side has been relatively steady over the past few years. According to recent statistics from Pew Research Center (2017b), over the past five years (i.e., 2012 to 2016), the percentage of the public who agreed that abortion should be legal in all or most cases was between 51 and 57%, while the percentage of those who considered abortion illegal in all or most cases was between 39 and 43%. Moreover, a Gallup poll (Gallup.com, 2016) suggested an even split between the U.S. adults who identified themselves as pro-choice (47%) and those who identified as pro-life (46%) in 2016. In addition to this contrast among the general public, the views of abortion also differ by religiosity. The Pew Research Center (2017b) showed that 69% of white evangelical Protestants regarded having an abortion as morally wrong, but only 30% of White mainline Protestants held the same view. Also, 42% of Catholics agreed with the same opinion. Furthermore, the results of another Gallup poll (Gallup.com, 2015) also identified a gender gap appears in recent years, as females were more likely (54%) than males (46%) to be pro-choice.

The above opinion polls indicate that the issue of abortion remains rather controversial, which renders it an ideal subject for SoS research. Moreover, this issue-specific polarization was affirmed in previous SoS research (e.g., Bergen, 1986; Donsbach & Stevenson, 1984; Gearhart & Zhang, 2015; Salmon & Neuwirth, 1990), fortifying the appropriateness of using this issue for the current study.

To test the hypotheses and research questions proposed in the literature review, this study employed a 3x2 experimental design in which the stimulus was manipulated in terms of the degree of context anonymity and the valence of other commenters' posts. The participants were exposed to a news article about a recent poll on the issue of abortion. Attached to the article were three posts of comments on the news article. The manipulation of context anonymity consisted of three degrees. In the high degree of anonymity, the participants were instructed that they may

post their comments with any username they put in or remain anonymous. In the medium degree of anonymity, the participants were instructed that they may post their comments by signing in one of their social media accounts (e.g., Facebook, Twitter, Yahoo, and Google +). However, with their post, the participants were allowed to display a username which is unrelated to their account name. In the low degree of anonymity, the participants were instructed that they may post their comments by signing in one of their social media accounts (e.g., Facebook, Twitter, Yahoo, and Google +), and their account name will be shown on their post as their username. Moreover, the valence of other commenters' posts was manipulated as either pro-choice or pro-life. The pro-choice comments were three posts that all advocate abortion rights, while the pro-life comments included three posts that go against abortion rights.

To sum up, the participants were randomly assigned to one of the six conditions, namely low anonymity/ pro-choice comments, med anonymity/ pro-choice comments, high anonymity/ pro-choice comments, low anonymity/ pro-life comments, med anonymity/ pro-life comments, and high anonymity/ pro-life comments.

### **3.3. Research procedure**

The participants began answering the online questionnaire by indicating their demographic information including their biological sex, ethnicity, and religious affiliation. Next, they were asked to respond to a series of questions that measure their trait-like fear of isolation, moral values, online privacy concerns, issue involvement, attitude towards the issue of abortion, and perceived support from reference group (i.e., family and friends) regarding their opinion on the issue of abortion.

Then, the participants were instructed to read a news article about a recent poll addressing abortion (see Appendix 1). This article was followed by a series of questions checking the

manipulation for the news article and measuring the participants' perceived opinion congruity with the media content, their perceived media hostility and bias, and their willingness to share this article on their social networking sites.

By clicking to the next page, the respondents were randomly assigned to one of the six experimental conditions. They were then instructed to read the online news comments (see Appendix 2) attached to the news article. After being exposed to the research stimulus, the participants were asked a few questions related to the comments as a manipulation check. Moreover, a series of questions were followed to measure their perceived anonymity, perceived opinion congruity with the commenters, perceived potential support from the commenters, their willingness to give a thumbs-up or a thumbs-down to each comment, their contextual fear of isolation, and, eventually, their willingness to post their own comments. The participants completed the whole process by submitting their online questionnaires (see Appendix 3 for details).

### **3.4. Measurement**

#### **The fear of isolation**

One of the major goals of this study aims to differentiate a contextual fear of isolation from the general, static trait-like fear of isolation, and in turn compare the influences of each fear on one's willingness to express in online news discussions. To measure the participants' stable, trait-like fear of isolation, this study adopted the six-item scale developed by Scheufele et al. (2001) and further revised by Ho and McLeod (2008). This scale includes the following items: (1) *I worry about being isolated if people disagree with me*; (2) *I avoid telling other people what I think when there's a risk they'll avoid me if they knew my opinion*; (3) *I do not enjoy getting into arguments*; (4) *Arguing over controversial issues improves my intelligence* (reverse coded); (5) *I*

*enjoy a good argument over a controversial issue* (reverse coded); and (6) *I try to avoid getting into arguments*. These items were measured in a 7-point Likert format, ranging from 1 (strongly disagree) to 7 (strongly agree).

Furthermore, to measure the participants' perceived fear of isolation in their assigned online discussion condition, their contextual fear of isolation was measured by the same framework of the above scale with some item descriptions adapted to fit this study's focal communication context. The items are as follow: (1) *In this online news discussion, I worry about being isolated if people disagree with me*; (2) *In this online news discussion, I avoid telling other people what I think when there's a risk they'll avoid me if they knew my opinion*; (3) *In this online news discussion, I do not enjoy getting into arguments*; (4) *In this online news discussion, arguing over controversial issues improves my intelligence* (reverse coded); (5) *In this online news discussion, I enjoy a good argument over a controversial issue* (reverse coded); and (6) *In this online news discussion, I try to avoid getting into arguments*. These items were measured in a 7-point Likert format, ranging from 1 (strongly disagree) to 7 (strongly agree).

#### Perceived anonymity

This study identifies three different types of anonymity that individuals tend to perceive in CMC, namely self-anonymity, other-anonymity, and platform anonymity. Thus, on the basis of the item created by Qian and Scott's (2007) in studying blog users' perceived anonymity, this study developed the following three items: (1) *To what extent do you think this comment section is anonymous* (for perceived platform anonymity)? (2) *To what extent do you think the commenters who posted their comments are anonymous* (for perceived other-anonymity)? (3) *If you would like to post your comment, to what extent do you think you are anonymous* (for perceived self-anonymity)? These items were measured in a 7-point semantic differential scale, ranging from 1 (totally identifiable) to 7 (totally anonymous).

### Perceived opinion congruity

This study measured two types of individuals' level of perceived opinion congruity. In terms of the opinion congruity with the media-reported dominant opinion, the respondents were asked by the following item: *To what extent do you think your opinion is congruent with the poll results reported in this news article?* Moreover, on the congruity with other commenters' opinions, the participants will be asked: *To what extent do you think the commenters expressed the same opinions as you hold on the issue of abortion?* These two items were adapted from previous studies (Glynn & Park, 1997; Moy et al., 2001) and measured on a 7-point Likert format, ranging from 1 (none) to 7 (all).

### Perceived media hostility and bias (Hostile media perception, HMP)

Previous studies did not measure respondents' HMP in a consistent way (e.g., Gunther et al., 2001; Hwang, et al., 2008; Vallone et al., 1985). One of the major assessments was a two-part question model in that it first asked the individuals' personal opinion on a given issue and then asked the overall biases of the media slant of that issue they perceived (Choi et al., 2006; Gunther et al., 2001; Gunther & Chia, 2001; Gunther & Christen, 2002). Subsequently, the respondents' level of HMP was calculated in two steps: (a) subtracting the scores of individuals' perceived overall media biases from the scores of their personal opinion, and (b) reversing coding scores for opponent groups. Treating this variable as a within group difference, the present study simplified the measure's design by asking the participants' perceived overall media bias from the news article they are exposed to. The questions included: (1) *The news coverage about this issue is biased;* (2) *The poll results about this issue are biased;* (3) *The journalist responsible for this news article is biased.* Each question was followed by a 7-point Likert format from 1 (strongly disagree) to 7 (strongly agree).

### Perceived social support

This study suggests two sources that individuals may perceive social support from: their reference group (i.e., family and friends) and a potentially immediate support of other commenters' opinion posts. Adapting the relevant measures from previous studies (Glynn & Park, 1997; Moy et al., 2001), this study asked the respondents about their perceived social support: (1) *To what extent do you think your family would support your opinion on the issue of abortion?* (2) *To what extent do you think your friends would support your opinion on the issue of abortion?* And (3) *To what extent do you think other commenters would support your opinion on the issue of abortion?* Each item was followed by a 7-point Likert format from 1 (none) to 7 (all).

#### Issue involvement

To measure the participants' involvement in the issue of abortion, this study employed a self-generated scale that incorporates some items used in previous studies (Kim et al., 2014; Willnat et al., 2002; Zaichkowsky, 1985). The items include: (1) *This is an important issue*; (2) *I am familiar with this issue*; (3) *I am interested in this issue*; (4) *I think about this issue all the time*; (5) *This issue is of concern to me*; (6) *This issue is relevant to me*; (7) *This issue matters to me*; (8) *I think this is a salient issue in society*; (9) *I would like to discuss this issue with someone else*; (10) *This issue is significant to me*. These items were followed by a 7-point Likert format from 1 (strongly disagree) to 7 (strongly agree).

#### Online privacy concerns

To measure the respondents' privacy concerns with CMC, this study applied Taddicken's (2010) "Adapted Scale for Online Privacy Concern and Protection for Use on the Internet" (APCP), which was originally created by Buchanan, Paine, Joinson, and Reips (2007). The scale includes 17 items, namely: (1) *In general, how concerned are you about your privacy while using the Internet?* (2) *Are you concerned about online organizations not being who they claim*

*they are? (3) Are you concerned that you are asked for too much personal information when you register or make online purchases? (4) Are you concerned about online identity theft? (5) Are you concerned about people online not being who they say they are? (6) Are you concerned about people you do not know obtaining personal information about you from your online activities? (7) Are you concerned that personal content that you store securely in the Internet (e.g. photos) can be viewed by others? (8) Are you concerned that information about you could be found on an old computer? (9) Are you concerned about who might access your medical records electronically? (10) Are you concerned that an email you send may be read by someone other than the person to whom you sent it? (11) Are you concerned that an email you send someone may be inappropriately forwarded to others? (12) Are you concerned that an email you send someone may be printed out in a place where others can see it? (13) Are you concerned that a computer virus could send out emails in your name? (14) Are you concerned about emails you receive not being from whom they claim to be? (15) Are you concerned that an email containing a seemingly legitimate address may be fraudulent? (16) Are you concerned that if you use your credit card to buy something on the Internet, your credit card number will be obtained/intercepted by someone else? (17) Are you concerned that if you use your credit card to buy something on the Internet, your card will be mischarged?* These items were followed by a 7-point Likert format from 1 (not at all) to 7 (very much).

#### Willingness to express in online news discussions

The dependent variable in this study is individuals' willingness of opinion expression in online news discussions. The respondents were asked the following question adapted from previous SoS studies (Ho et al., 2013; Lin & Salwen, 1997; Moy et al., 2001): *How willingly would you post your opinion on this comment section?* The question was measured on a 7-point Likert format, ranging from 1 (very unwillingly) to 7 (very willingly).



### Control variables

To align to the previous studies on the SoS, this study measured the participants' biological sex, ethnicity, religious affiliation, and moral values as control variables. The question of biological sex was: "What is your biological sex?" The choices included "Male," "Female," and "Other (please specify)." In addition, the question of ethnicity was: "How would you describe your ethnicity?" The choices included: "Caucasian," "African American," "Hispanic," "Asian American," "Native American," "Asian-Pacific Islander," and "Other or multiple (please specify)." Moreover, the question of religious affiliation was: "How would you describe your religious preference?" The choices were: "Protestant," "Christian," "Catholic," "Jewish," "Mormon," "Muslim," "Not religious," and "Other or multiple (please specify)." Finally, the short version of the Ethical Values Assessment (EVA) developed by Padilla-Walker and Jensen (2015) were used to measure the participants' moral values. This scale consists of three dimensions (i.e., autonomy, community, and divinity), which contains four items respectively. These 12 items were followed by a 7-point Likert format, ranging from 1 (strongly disagree) to 7 (strongly agree).

### Other demographic variable

The participants' attitude towards the issue of abortion was also measured in order to understand the distribution of pro-choice and pro-life individuals in this sample. This variable was tapped by the single question: *What is your general attitude towards the issue of abortion?* Adapted from the Gallup poll's (2015) questionnaire, this question was followed by the choices including "Illegal in all circumstances," "Illegal in most circumstances," "Legal in most circumstances," "Legal in all circumstances," and "Neutral." This result was also used to check the respondents' perceived opinion congruity with the news article and with other commenters. The respondents who check either of the first two choices will be further classified as pro-life,

while those who check either the third or the fourth choice will be labeled as pro-choice. The participants who choose “Neutral” will be regarded as neutral.

### 3.5. Sample Characteristics

The data collection for this study was conducted in November, 2015. Six hundred and seventeen participants were recruited, and the sample yielded 530 valid responses. To break down the experimental conditions, 17.2% were randomly assigned to low anonymity/ pro-choice comments (n = 91), 16.8% were in med anonymity/ pro-choice comments (n = 89), 16.4% were in high anonymity/ pro-choice comments (n = 87), 17.2% were assigned to low anonymity/ pro-life comments (n = 91), 16.0% were in med anonymity/ pro-life comments (n = 85), and 16.4% were in high anonymity/ pro-life comments (n = 87). See Figure 3.5.1.

----- Insert Figure 3.5.1 about here -----

Of all the participants, 49.8% are male (n = 264) and 50.2% are female (n = 266). In addition, the racial breakdown reflects 66.6% Caucasian (n = 353), 9.6% Asian American (n = 51), 7.5% African American (n = 40), 6.2% Hispanic (n = 33), and 10.0% other or mixed heritages (n = 53). See Figure 3.5.2. In terms of religious affiliation, furthermore, 29.4% are Catholic (n = 156), 24.5% are Christian (n = 130), 4.5% are Protestant (n = 24), and 6.8% affiliate with other religions (n = 36), and 30.2% of the respondents are not religious (n = 160). See Figure 3.5.3.

----- Insert Figure 3.5.2 about here -----

----- Insert Figure 3.5.3 about here -----

With regard to the attitude towards abortion, nearly 70% of the participants thought that abortion is legal either in all circumstances (30.6%; n = 162) or in most circumstances (38.5%; n = 204). On the other hand, slightly over 15% of the individuals expressed that abortion is illegal

either in all circumstances (4.2%,  $n = 22$ ) or in most circumstances (11.3%,  $n = 60$ ). Finally, 15.5% held their attitude towards abortion as neutral ( $n = 82$ ). See Figure 3.5.4.

----- Insert Figure 3.5.4 about here -----

### 3.6. Preliminary Analyses

Several preliminary analyses on the dataset were conducted before moving on to inferential statistics to test the hypotheses and answer the questions proposed in Chapter 2. First, factor analysis and/or reliability tests were performed on each measure. The mean and standard deviation of each measure was also presented. Second, manipulation checks on the research stimuli (3 degrees of anonymity and 2 valences of comments) were conducted to ensure the manipulations designed for this study are valid. Finally, the issue of multicollinearity was detected in preventing the distortion of findings resulted from predictor variables.

#### 3.6.1. Factor analyses and reliability tests

**The fear of isolation.** First, a confirmatory factor analysis (CFA) model including the 12 items measuring the trait-like and the contextual fear of isolation as a single factor was tested. The results suggested that this single factor model did not represent the sample data well due to relatively poor model fit:  $\chi^2 = 253.21$ ,  $df = 30$ ,  $CMIN/DF = 8.44$ ,  $p = .000$ ;  $CFI = .912$ ;  $RMSEA = .119$ . As the measure of the contextual fear of isolation consists of the same items revised from Ho and McLeod's (2008) uni-dimensional measure and specified for testing the fear of isolation in the context of online news discussions, another CFA model structuring the items of the trait-like fear of isolation and the items of the contextual fear of isolation as two factors was further conducted. The results revealed a relatively good model fit:  $\chi^2 = 69.13$ ,  $df = 29$ ,  $CMIN/DF = 2.38$ ,  $p = .000$ ;  $CFI = .984$ ;  $RMSEA = .051$ . This two-factor model solution indicates substantial

factorial validity for the measures of the trait-like fear of isolation and the contextual fear of isolation, and also supports this study's argument that both the trait-like and the contextual fear of isolation explain some crucial facets of this concept.

Furthermore, two CFA models were conducted to ascertain the validity of the factor structure of the trait-like fear of isolation and the contextual fear of isolation respectively. The goodness of fit indices indicated that the former measure had a good model fit:  $\chi^2 = 8.64$ ,  $df = 5$ ,  $CMIN/DF = 1.73$ ,  $p = .124$ ; CFI = .996; RMSEA = .037, while the model fit of the latter measure was moderately good:  $\chi^2 = 17.61$ ,  $df = 5$ ,  $CMIN/DF = 3.52$ ,  $p = .003$ ; CFI = .989; RMSEA = .069.

In addition, the reliability tests for the trait-like fear of isolation ( $M = 3.90$ ,  $SD = .92$ ) and the contextual fear of isolation ( $M = 3.85$ ,  $SD = .95$ ) both attained an acceptable reached a Cronbach's coefficient of .71.

**Perceived anonymity.** The variable of perceived anonymity ( $M = 3.37$ ,  $SD = 1.52$ ) was measured by three items for three different types of anonymity: self-anonymity ( $M = 3.45$ ,  $SD = 1.66$ ), other-anonymity ( $M = 3.31$ ,  $SD = 1.65$ ), and platform anonymity ( $M = 3.35$ ,  $SD = 1.68$ ). The reliability (Cronbach's  $\alpha$  value) for this measure is .90.

**Perceived media hostility and bias (HMP).** This measure ( $M = 3.83$ ,  $SD = 1.03$ ) consisted of three items that asked the participants' perception of bias regarding the news coverage ( $M = 4.07$ ,  $SD = 1.26$ ), the poll results ( $M = 3.62$ ,  $SD = 1.22$ ), and the journalist responsible for this news article ( $M = 3.81$ ,  $SD = 1.22$ ). The reliability (Cronbach's  $\alpha$  value) for this measure is .78.

**Perceived opinion congruity.** This study measured two types of individuals' level of perceived opinion congruity, namely the perceived opinion congruity with the media-reported dominant opinion ( $M = 4.32$ ,  $SD = 1.22$ ) and the perceived opinion congruity with other commenters ( $M = 3.41$ ,  $SD = 1.80$ ).

**Perceived social support.** This study measured two sources that individuals may perceive social support from: their reference group ( $M = 4.79$ ,  $SD = 1.21$ ) and immediate support of other commenters' opinion posts ( $M = 3.45$ ,  $SD = 1.93$ ).

**Issue involvement.** A CFA procedure indicated a relatively good model fit for all the items in this measure:  $\chi^2 = 58.15$ ,  $df = 21$ ,  $CMIN/DF = 2.77$ ,  $p < .001$ ; CFI = .988; RMSEA = .058. In addition, the Cronbach's  $\alpha$  value for the reliability of this measure ( $M = 4.43$ ,  $SD = 1.13$ ) was .91.

**Online privacy concerns.** CFA output indicated a relatively good model fit for all of the items in this scale:  $\chi^2 = 295.38$ ,  $df = 89$ ,  $CMIN/DF = 3.32$ ,  $p < .001$ ; CFI = .975; RMSEA = .066. Moreover, the reliability test showed that the Cronbach's  $\alpha$  value was .96 for this scale ( $M = 3.75$ ,  $SD = 1.30$ ).

**Moral values.** Padilla-Walker and Jensen's (2015) short version of the Ethical Values Assessment (EVA) was used to measure the participants' moral values as a control variable in this study. CFA findings indicated a relatively good model fit for the items in each dimension (i.e., autonomy, community, and divinity):  $\chi^2 = 73.63$ ,  $df = 40$ ,  $CMIN/DF = 1.84$ ,  $p = .001$ ; CFI = .995; RMSEA = .040). Moreover, the Cronbach's  $\alpha$  value for the reliability test of this scale ( $M = 5.51$ ,  $SD = .84$ ) was .91.

**Willingness to express.** The mean and standard deviation for the single item measuring the participants' willingness to post comments were  $M = 2.94$ ,  $SD = 1.63$ .

### 3.6.2. Manipulation checks

The participants were also asked additional questions to ensure the effectiveness of the manipulations designed for this study.

**The news report.** Two items measured on a yes-or-no format were presented to check the

manipulation of the news report: (1) *The poll reported in this news article indicates that 50% of Americans are “pro-choice” on abortion, while 44% of which are “pro-life”* and (2) *According to the poll of 2015, 46% of the female respondents and 54% of the male respondents identified themselves as pro-choice on abortion.* According to the article, the answer to the first item is “yes,” and the answer to the second is “no.”

Descriptive analyses showed that the majority (item 1: 86.6% and item 2: 85.8%) provided correct answers to the questions. Furthermore, Chi-square tests also indicated that each item was correctly answered with statistical significance: Item 1 ( $\chi^2 = 284.04$ ,  $df = 1$ ,  $p < .001$ ); and item 2 ( $\chi^2 = 272.46$ ,  $df = 1$ ,  $p < .001$ ).

**Context anonymity.** The three items measuring the participants’ perceived anonymity (i.e., self, other, and platform) were used to check the effectiveness of the manipulation of context anonymity. Analysis of variance (ANOVA) tests showed significant differences among the low/med/high anonymity conditions of perceived self-anonymity ( $F(2, 527) = 52.92$ ,  $p < .001$ ), the three conditions of perceived other-anonymity ( $F(2, 527) = 107.57$ ,  $p < .001$ ), and the three conditions of perceived platform anonymity ( $F(2, 527) = 106.03$ ,  $p < .001$ ). Post hoc test using Sheffe approach also indicated significant differences ( $p < .05$ ) between each condition of the three different sub-types of perceived anonymity (see Table 3.6.1).

----- Insert Table 3.6.1 about here -----

**Valences of comments.** Finally, to check the valence of comments, the participants were asked the following two questions measured on a yes-or-no format: (1) *Overall, these three online news comments share a similar viewpoint on abortion,*” and (2) *Overall, these three comments support abortion rights.* The answer to the first question is “Yes,” regardless which condition that the respondents were assigned to. Descriptive analysis showed that the majority (77.4%) provided the correct answer, and Chi-square test indicated that this item was correctly

answered with statistical significance ( $\chi^2 = 158.68$ ,  $df = 1$ ,  $p < .001$ ). In terms of the second question, those who were assigned to “pro-choice” conditions were expected to answer “Yes,” whereas those who were in the “pro-life” conditions were expected to answer “No.” Descriptive analysis indicated that the majority of each condition provided the correct answer (“Pro-choice” conditions: 85%; “Pro-life” conditions: 90.5%), and Chi-square test also revealed that this item was correctly answered with statistical significance ( $\chi^2 = 302.93$ ,  $df = 1$ ,  $p < .001$ ).

Based on the above results, the manipulations designed for the current study were effective.

### 3.6.3. Detection of multicollinearity

Multicollinearity occurs when high intercorrelations appear among predictor variables, causing misleading results that may distort a real finding (Leech, Barret, & Morgan, 2015). To detect the occurrence of multicollinearity, Pearson correlations between major predictor variables—including trait-like fear of isolation, contextual fear of isolation, perceived anonymity, perceived opinion congruity with media, perceived opinion congruity with the commenters, perceived media hostility and biases (HMP), perceived reference group support, perceived immediate online support, issue involvement, and online privacy concerns—were first conducted. The correlation matrix (see Table 3.6.2) indicated that two correlation coefficient  $r$  values reached .50, suggesting a higher likelihood of collinearity. They are the correlation between the trait-like fear of isolation and the contextual fear of isolation ( $r = .54$ ) and the correlation between opinion congruity with the commenters and the perceived immediate online support ( $r = .87$ ). The former is the correlation of two types of fear of isolation that are theoretically related. Since the measure of contextual fear of isolation was adapted from the measure of trait-like fear of isolation, the substantial correlation of these two variables was not surprising. On the other hand, the latter raises more concerns regarding the collinearity issue

between the variables of perceived opinion congruity with the commenters and the perceived immediate online support.

----- Insert Table 3.6.2 about here -----

Second, collinearity diagnostics under the function of linear regression in SPSS were then employed to test the potential collinearity among the above predictor variables. Each of the predictor variables was entered into a multiple regression model as the dependent variable at a time, while the rest predictors were set as independent variables. A collinearity issue would emerge when the tolerance value of an independent variable is lower than  $1 - R^2$  value of the multiple regression model (Leech, et al., 2015). The results showed that the tolerance values of the independent variables in each model were all greater than the  $1 - R^2$  value of the model. For instance, the  $R^2$  value of the model with perceived immediate online support as the dependent variable was .755, and the tolerance value of perceived opinion congruity with the commenters was .968, which was greater than the  $1 - R^2$  value (.245) of the model. Therefore, the results suggested that it was less likely to have multicollinearity problems between the predictor variables in this study.



## Chapter 4

### Results

#### 4.1. Hypothesis Testing and Research Question Analysis

Hypothesis 1 predicted that the contextual fear of isolation is positively related to the static, trait-like fear of isolation. Pearson correlation coefficient showed a strong, significant relationship ( $r = .54, p < .001$ ) between the two types of fear of isolation. Therefore, H1 is supported.

Hypothesis 2 stated that the contextual fear of isolation negatively predicts willingness to express in online news discussions. A hierarchical multiple regression was first conducted to test this hypothesis with sex, ethnicity, religious affiliation, and moral values as control variables. Since the first three variables were measured in categorical scales, they were then dummy coded into continuous variables to fit into the regression tests. The value of sex was recoded as Male = 1 and Female = 0.

For the recoding of ethnicity, a one-way ANOVA was first tested to understand the difference of willingness to express in online news discussions among different ethnic groups. The results indicated a significant difference ( $F(5, 524) = 4.51, p < .001$ ) among the groups. A post Hoc test using LSD approach further revealed significant differences between Caucasian and several other groups such as African American ( $M_{Difference} = -.90, p = .001$ ), Asian American ( $M_{Difference} = -.61, p = .012$ ), and other and mixed heritage ( $M_{Difference} = -.84, p = .005$ ). Therefore, the variable of ethnicity was then recoded as Caucasian (66.6%) = 1 and Non-Caucasian (33.4%) = 0.

Finally, for religious affiliation, a one-way ANOVA was tested, and the results indicated a significant difference of willingness to express in online news discussions ( $F(5, 524) = 3.85, p = .002$ ) among different religious affiliation groups. A post Hoc test using LSD approach further

revealed significant differences between the Non-religious and Catholic categories ( $M_{Difference} = -.41, p = .024$ ) as well as Non-religious and Other ( $M_{Difference} = -.74, p = .013$ ). The affiliates of the “Other” religions also demonstrated significantly higher willingness to express than all other groups, including Protestant ( $M_{Difference} = 1.21, p = .004$ ), Christian ( $M_{Difference} = .89, p = .003$ ), Catholic ( $M_{Difference} = 1.15, p < .001$ ), and Jewish ( $M_{Difference} = 1.33, p = .002$ ). Yet, it is noteworthy that only 36 respondents identified themselves within this category and their affiliated religions varied greatly (e.g., Buddhism, Muslim, Hinduism, and agnosticism). Their willingness to express in online news discussions also showed a relatively high variance (3.39), compared to Protestant (1.82), Christian (2.53), Catholic (2.59), Jewish (1.82), and the Non-religious (2.62). Therefore, to more clearly reflect the above differences, the variable of religious affiliation was further recoded as Religious (69.8%) = 1 and Non-religious (30.2%) = 0.

The result of hierarchical multiple regression after controlling for the effects of sex, ethnicity, religious affiliation, and moral values indicated that the contextual fear of isolation negatively predicted willingness to express in online news discussions ( $\beta = -.33, p < .001$ ; see Table 4.1.1). Thus, H2 is supported.

----- Insert Table 4.1.1 about here -----

Additionally, to reflect the main idea of the SoS theory—individuals’ willingness to express decreases when they find their opinions deviate from the majority, it is necessary to consider whether the participants fell within the minority status when predicting the effect of the contextual fear of isolation on willingness to express. To further identify the participants’ minority status, their attitude towards abortion was first re-categorized into three groups: Legal (69.1%,  $n = 366$ ), neutral (15.5%,  $n = 82$ ), and illegal (15.5%,  $n = 82$ ). Then, the participants’ re-categorized attitude towards abortion was cross-checked with their assigned experimental conditions regarding the valence of other commenters’ posts (i.e., pro-life vs. pro-choice).

For the participants who were assigned to the condition against their attitude towards abortion, their minority status was then coded as 1 (i.e., those who thought abortion was illegal yet was assigned to the “pro-choice” conditions, and those who thought abortion was legal yet was assigned to the “pro-life” conditions). On the contrary, the participants whose assigned condition aligned to their attitude towards abortion were coded as -1 for their minority status (e.g., those who thought abortion was illegal and was assigned to the “pro-life” conditions, and those who thought abortion was legal and was assigned to the “pro-choice” conditions). The participants whose attitude towards abortion was categorized as neutral were coded as 0. Descriptive analysis demonstrated that 43.6% ( $n = 231$ ) were the minority in their assigned condition, 40.9% ( $n = 217$ ) were with the majority, and 15.5% ( $n = 82$ ) were neutral.

Hierarchical multiple regression tests controlling for the same variables (i.e., sex, ethnicity, religious affiliation, and moral values) were then conducted to investigate the relationships between minority status, the contextual fear of isolation, and willingness to express online. The results demonstrated that minority status also had a significant, direct effect on willingness to express ( $\beta = -.13, p = .002$ ) but not on the contextual fear of isolation ( $\beta = .05, p = .297$ ; see Table 4.1.2).

----- Insert Table 4.1.2 about here -----

Also, to further test whether minority status had an indirect effect on willingness to express that was mediated by the contextual fear of isolation, a mediation test using Andrew Hayes’s PROCESS Procedure for SPSS was conducted. The results showed that the indirect effect was not significant ( $\beta = -.03, CI = [-.08, .02]$ ). The findings indicate that both minority status and the contextual fear of isolation were negative predictors on the willingness to express in online news discussions, but the participants’ level of contextual fear of isolation was not affected by their minority status. In other words, these two predictors affect the willingness of express

independently. The above additional analyses again substantiate that the effect of the contextual fear of isolation on willingness to express (H2) attained significance.

Moreover, RQ 1 tried to uncover whether the contextual fear of isolation serves as a stronger predictor of willingness to express in online news discussions than the static, trait-like fear of isolation. After controlling for the effects of sex, ethnicity, religious affiliation, and moral values, the trait-like fear of isolation was also found to be a negative predictor of willingness to express in online news discussions ( $\beta = -.12, p = .006$ ). Yet, the effect size was smaller than that of the contextual fear of isolation ( $\beta = -.33, p < .001$ ) discovered in the hierarchical multiple regression test for H2.

Furthermore, another hierarchical multiple regression was conducted to include both types of fear of isolation as predictors in the same model. The results showed that, after controlling for the same variables, only the contextual fear of isolation remained as a significant predictor of willingness to express ( $\beta = -.37, p < .001$ ; see Table 4.1.3). Based on the above analyses, the contextual fear of isolation is confirmed to be more predictive of the online SoS phenomenon than the trait-like fear of isolation.

----- Insert Table 4.1.3 about here -----

Hypotheses 3 and 4, and RQs 2 and 3 investigated the influence of perceived anonymity in the process of the spiral of silence in online news discussions. To test H3—perceived anonymity negatively predicts the contextual fear of isolation—a hierarchical multiple regression controlling for sex, ethnicity, religious affiliation, and moral values was conducted. The results showed that perceived anonymity failed to be a significant predictor of the contextual fear of isolation ( $\beta = .07, p = .110$ ). Therefore, H3 is not supported.

To further uncover the relationships between the contextual fear of isolation and the three types of perceived anonymity (i.e., self-anonymity, other-anonymity, and platform anonymity),

RQ 2 asked about the relative magnitude of influence among the three types of perceived anonymity on the contextual fear of isolation. A hierarchical multiple regression controlling for the same variables mentioned above indicated that platform anonymity ( $M = 3.35$ ,  $SD = 1.68$ ) had the largest effect size ( $\beta = .13$ ,  $p = .113$ ) than other-anonymity ( $M = 3.31$ ,  $SD = 1.65$ ;  $\beta = -.06$ ,  $p = .492$ ) and self-anonymity ( $M = 3.45$ ,  $SD = 1.66$ ;  $\beta = .01$ ,  $p = .920$ ). However, consistent with the result of H3, none of the three types of perceived anonymity significantly predicted the contextual fear of isolation (Adjusted  $R^2 = .003$ ) and the magnitudes of these three types of perceived anonymity on the contextual fear of isolation ranged from small to trivial.

On the other hand, H4 hypothesized that perceived anonymity positively predicts willingness to express in online news discussions. The result of hierarchical multiple regression after controlling the same variables mentioned above confirmed that perceived anonymity was a significant predictor of willingness to express in online news discussions ( $\beta = .13$ ,  $p = .002$ ). The finding thus suggests that H4 is supported (see Table 4.1.4).

----- Insert Table 4.1.4 about here -----

Research Question 3 further delved into the relative magnitudes of influence among perceived self-anonymity, other-anonymity, and platform anonymity on willingness to express in online news discussions. A hierarchical multiple regression controlling for the same variables mentioned above demonstrated that other-anonymity ( $M = 3.30$ ,  $SD = 1.65$ ) was marginally predictive of willingness to express in online news discussions ( $\beta = .16$ ,  $p = .052$ ). However, platform anonymity ( $M = 3.35$ ,  $SD = 1.68$ ) and self-anonymity ( $M = 3.45$ ,  $SD = 1.66$ ) showed the effect sizes (platform anonymity:  $\beta = -.03$ ,  $p = .743$ ; self-anonymity:  $\beta = .004$ ,  $p = .951$ ) that were relatively negligible. See Table 4.1.5.

----- Insert Table 4.1.5 about here -----

Hypothesis 5, 6, and 7, and RQ 4 and 5 focused on the effects of the factors related to mass

media on the online SoS phenomenon. Hypothesis 5 stated that perceived opinion congruity with the media-reported dominant opinion positively predicts willingness to express in online news discussions. The result of a hierarchical multiple regression—after controlling for the same variables mentioned above—showed that the effect size was small and the prediction was not significant ( $\beta = .02, p = .647$ ). Hence, the finding fails to support H5.

On the other hand, H6 argued that perceived opinion congruity with the media-reported dominant opinion negatively predicts perceived media hostility and bias (i.e., HMP). Hierarchical multiple regression tests controlling for the same variables demonstrated that opinion congruity with media was a negative predictor of HMP ( $\beta = -.13, p = .004$ ). Therefore, H6 is supported. Also, among the control variables, religion ( $\beta = .12, p = .013$ ) and moral values ( $\beta = -.11, p = .017$ ) significantly predict HMP as well (see Table 4.1.6).

----- Insert Table 4.1.6 about here -----

Furthermore, H7 stated that perceived media hostility and bias (HMP) positively predicts willingness to express in online news discussions. After controlling for the same variables, the results of hierarchical multiple regression test showed that the relationship was not significant ( $\beta = .06, p = .171$ ). Thus, H7 is not supported.

To answer RQ4 about the relationship between the stable, trait-like fear of isolation and HMP, a Pearson correlation test was conducted. The result indicated that these two variables had a negative but weak relationship, as the coefficient was small and did not reach statistical significance ( $r = -.04, p = .197$ ).

Finally, to further explore this set of variables, RQ5 queried the relationship between HMP, the contextual fear of isolation, and willingness to express in online news discussions. To answer this question, a Pearson correlation test was first conducted to test the relationship between HMP and the contextual fear of isolation. The correlation coefficient turned out to be small and not

significant ( $r = .01, p = .434$ ). Next, a hierarchical multiple regression using both HMP and the contextual fear of isolation as predictors and controlling for the same variables was used to test the effects on willingness to express. The finding demonstrated that only the contextual fear of isolation significantly predicted willingness to express ( $\beta = -.33, p < .001$ ), not HMP ( $\beta = .06, p = .114$ ). See Table 4.1.7.

----- Insert Table 4.1.7 about here -----

Hypothesis 8 and RQ 6 investigated the effects of perceived support from one's reference group. The former stated that perceived support from one's reference group positively predicts willingness to express in online news discussions. A hierarchical multiple regression controlling for the same variables mentioned above was conducted. The results indicated that the predictive effect of perceived support from one's reference group on willingness to express was not significant ( $\beta = .03, p = .464$ ), failing to support H8.

Additional test was also conducted to further understand whether the participants' minority status moderates the influence of their perceived reference group support on their willingness to express online. Andrew Hayes's PROCESS Procedure for SPSS was employed to test the moderation effect. The results again showed that only minority status was a significant predictor ( $\beta = -.22, p = .003$ ), whereas perceived reference group support failed to attain significance ( $\beta = .05, p = .441$ ). Moreover, the moderating effect was not found significant in predicting willingness to express online ( $\beta = -.07, p = .297$ ).

With regard to RQ6—if the effect of the contextual fear of isolation on willingness to express is moderated by perceived support from one's reference group, the contextual fear of isolation and perceived reference group support were first standardized and then multiplied as a new variable to test the queried moderating effect. Next, A hierarchical multiple regression was conducted by entering the control variables in the first block, the contextual fear of isolation and

perceived reference group support in the second block, and the moderating variable of the contextual fear of isolation and perceived reference group support in the third block. The results show that only the contextual fear of isolation had a direct effect on willingness to express ( $\beta = -.33, p < .001$ ), as perceived reference group support did not. However, the interaction of contextual fear of isolation and perceived reference group support on the dependent variable was significant ( $\beta = -.14, p < .001$ ; see Table 4.1.8).

----- Insert Table 4.1.8 about here -----

Figure 4.1.1 further demonstrates that among the individuals who have a lower level of contextual fear of isolation, those who also perceive more reference group support regarding the issue of abortion tended to be more willing to express their opinion, compared to those who perceive less reference group support. Yet, there was a reverse tendency happening to the individuals who have a higher level of contextual fear of isolation. Among them, those who perceive more reference group support showed less willingness to express their opinion than those who perceive lower reference group support. Therefore, to answer RQ6, perceived support from one's reference group was found to be a moderator of the effect of the contextual fear of isolation on willingness to express.

----- Insert Figure 4.1.1 about here -----

Hypothesis 9 and 10, and RQ7 and 8 queried the effects of online commenters' opinions on the SoS phenomenon in news discussions. The hypotheses together suggested a causal process in which perceived opinion congruity with other commenters positively predicts perceived immediate online support (H9), which in turn predicts willingness to express in online news discussions (H10). A mediation test using Andrew Hayes's PROCESS Procedure for SPSS was conducted by entering perceived opinion congruity with other commenters as the independent variable, willingness to express as the dependent variable, perceived immediate online support as



mediator, and sex, ethnicity, religious affiliation, and moral values as control variables.

The result first showed that perceived opinion congruity with other commenters had a significant, direct effect on perceived immediate online support ( $\beta = .88, p < .001$ ) and on willingness to express online ( $\beta = .18, p < .001$ ). See Figure 4.1.2 (a). Second, when perceived immediate online support was considered along with perceived opinion congruity with other commenters in predicting willingness to express online, the former was a significant predictor ( $\beta = .22, p = .012$ ), but the latter became not significant ( $\beta = -.005, p = .95$ ). See Figure 4.1.2 (b). Moreover, the indirect effect of perceived opinion congruity with other commenters on willingness to express—mediated by perceived immediate online support—was significant ( $\beta = .17, CI = [.02, .30]$ ). These findings indicated that perceived immediate online support fully mediates the prediction of perceived opinion congruity with other commenters on willingness to express in online news discussions. See Figure 4.1.2 (c). Thus, H9 and H10 are supported.

----- Insert Figure 4.1.2 about here -----

Moreover, RQ7 asked if the effect of the contextual fear of isolation on willingness to express is moderated by perceived immediate online support. The variable of perceived immediate online support was first standardized and multiplied by the standardized variable of the contextual fear of isolation as a new moderator variable. Next, a hierarchical multiple regression was conducted by entering the control variables in the first block, the contextual fear of isolation and perceived immediate online support in the second block, and the moderating variable of the contextual fear of isolation and perceived immediate online support in the third block. The result indicated that after controlling for sex, ethnicity, religion affiliation, and moral values, both the contextual fear of isolation ( $\beta = -.33, p < .001$ ) and perceived immediate online support ( $\beta = .20, p < .001$ ) have a direct effect on willingness to express. However, the moderating effect was not found to be significant ( $\beta = .03, p = .423$ ). In other words, perceived

immediate online support did not moderate the effect of the contextual fear of isolation on willingness to express.

Also, to answer RQ 8—which type of perceived social support is more predictive of the willingness to express in online news discussions—a hierarchical multiple regression was conducted. The control variables were entered in the first block, and both perceived support from one’s reference group and perceived immediate online support were entered in the second block. The results indicate that perceived immediate online support is a significant predictor ( $\beta = .21, p < .001$ ), but perceived support from one’s reference group was not ( $\beta = .03, p = .445$ ). See Table 4.1.9.

----- Insert Table 4.1.9 about here -----

Additional tests to understand whether the participants’ minority status moderates the influence of their perceived immediate online support on their willingness to express online were also performed. The results of a moderation test using Andrew Hayes’s PROCESS Procedure for SPSS indicate that only perceived immediate online support was a significant predictor ( $\beta = .20, p < .001$ ) but minority status was not ( $\beta = .04, p = .674$ ). Moreover, the interaction of minority status and perceived immediate online support is not significantly predictive of willingness to express online ( $\beta = -.01, p = .901$ ).

Hypotheses 11, 12, and 13 investigated the influences of issue involvement on online SoS phenomenon. First, H11 posited that issue involvement positively predicts willingness to express in online news discussions. The result of hierarchical multiple regression—after controlling for sex, ethnicity, religion affiliation, and moral values-- indicated that issue involvement significantly predicted willingness to express online ( $\beta = .22, p < .001$ ). Thus, H11 is supported (see Table 4.1.10).

----- Insert Table 4.1.10 about here -----

Moreover, H12 predicted that the influence of perceived opinion congruity with the mediated dominant opinion on the perceived media hostility and bias (HMP) is moderated by issue involvement. Issue involvement and perceived opinion congruity with the mediated dominant opinion were first standardized and then multiplied as a new variable to test the queried moderating effect. Next, a hierarchical multiple regression was conducted by entering the control variables in the first block, issue involvement and perceived opinion congruity with the mediated dominant opinion in the second block, and the moderating variable in the third block. The results again confirmed that perceived opinion congruity with the mediated dominant opinion had a direct effect on HMP ( $\beta = -.13, p = .004$ ). Yet, issue involvement did not have a significant direct effect on HMP ( $\beta = .01, p = .896$ ), nor moderate the effect of perceived opinion congruity on HMP ( $\beta = .04, p = .417$ ). Therefore, H12 is not supported.

Hypothesis 13 predicted that the influences of perceived anonymity (self-anonymity, other-anonymity, and platform anonymity) on the contextual fear of isolation are moderated by issue involvement. Two sets of hierarchical multiple regression analyses were conducted to test this hypothesis. First, perceived anonymity (as a composite variable that includes self-anonymity, other-anonymity, and platform anonymity) was standardized and then multiplied by the standardized variable of issue involvement to be a new variable testing the queried moderating effect. Next, a hierarchical multiple regression was conducted by entering the control variables in the first block, issue involvement and perceived anonymity in the second block, and the moderating variable in the third block. The result demonstrated that issue involvement was a significant predictor that negatively predicted the contextual fear of isolation ( $\beta = -.19, p < .001$ ), but failed to be a moderator that influenced the relationship between perceived anonymity and the contextual fear of isolation ( $\beta = -.03, p = .516$ ).

The second set of hierarchical multiple regressions broke down the perceived anonymity in

to three types: self-anonymity, other-anonymity, and platform anonymity. Each type of anonymity was standardized and then multiplied by the standardized variable of issue involvement to be new variables testing the queried moderating effects. Then, a hierarchical multiple regression was conducted by entering the control variables in the first block, issue involvement and each type of perceived anonymity in the second block, and the moderating variables in the third block. The result again showed that issue involvement had a direct effect on the contextual fear of isolation, but was not a moderator that influenced any of the three types of perceived anonymity on the contextual fear of isolation (self-anonymity:  $\beta = -.03, p = .679$ ; other-anonymity:  $\beta = .05, p = .619$ ; platform anonymity:  $\beta = -.05, p = .590$ ). To sum up, H13 fails to be supported.

Hypothesis 14, 15 and Research Question 9 investigated the influence of online privacy concerns. H14 predicted that privacy concerns would decrease the willingness to express in online news discussions. After controlling for sex, ethnicity, religion affiliation, and moral values, the results of hierarchical multiple regression demonstrated that privacy concerns significantly predicted one's willingness to express ( $\beta = .12, p = .006$ ). Yet, the prediction was positive rather than negative (see Table 4.1.11). Therefore, H14 fails to be supported.

----- Insert Table 4.1.11 about here -----

Moreover, H15 predicted that the influence of perceived anonymity (self-anonymity, other-anonymity, and platform anonymity) on the contextual fear of isolation are moderated by privacy concerns. Two sets of hierarchical multiple regressions were conducted. First, the variable of privacy concerns was standardized and then multiplied by the standardized variable of perceived anonymity (as a composite variable that includes self-anonymity, other-anonymity, and platform anonymity). Next, a hierarchical multiple regression was conducted by entering the control variables in the first block, privacy concerns and perceived anonymity in the second block, and

the moderating variable in the third block. The results demonstrated that neither privacy concerns ( $\beta = .03, p = .556$ ) nor perceived anonymity ( $\beta = .07, p = .123$ ) had a significant, direct effect on the contextual fear of isolation. Also, the moderating effect was small and not significant ( $\beta = -.06, p = .215$ ).

The second set of hierarchical multiple regressions broke down the perceived anonymity in to three types: self-anonymity, other-anonymity, and platform anonymity. The standardized variable of privacy concerns was multiplied by each standardized type of anonymity variable to create new variables in the test of the queried moderating effects. A hierarchical multiple regression was then conducted by entering the control variables in the first block, privacy concerns and each type of perceived anonymity in the second block, and the moderating variables in the third block. The results again showed that none of the subtypes of anonymity—in addition to privacy concerns—had a direct effect on the contextual fear of isolation (self-anonymity:  $\beta = .01, p = .91$ ; other-anonymity:  $\beta = -.07, p = .46$ ; platform anonymity:  $\beta = .13, p = .11$ ). Privacy concern was either not a moderator that influenced any of the three types of perceived anonymity on the contextual fear of isolation (self-anonymity:  $\beta < .01, p = .99$ ; other-anonymity:  $\beta = .03, p = .77$ ; platform anonymity:  $\beta = -.09, p = .26$ ). Thus, H15 fails to receive support.

Furthermore, to answer RQ 9 about the relationship between privacy concerns and the contextual fear of isolation, hierarchical multiple regression was conducted. After controlling for sex, ethnicity, religion affiliation, and moral values, the results demonstrated that privacy concerns positively predicted the contextual fear of isolation, but the effect size was small and not significant ( $\beta = .03, p = .473$ ).

## 4.2 The Collective Effects of the Predictors

Based on the results of hypothesis testing and the analyses for research questions, the factors that individually have a significant predictive effect on willingness to express in online news discussions—after controlling for the effects of sex, ethnicity, religious affiliation, and moral values—include the trait-like fear of isolation, the contextual fear of isolation, perceived anonymity, perceived immediate online support, and issue involvement. To understand the collective effects explained by the above predictors, further hierarchical multiple regression analyses were conducted. The four control variables were entered in the first block, the trait-like fear of isolation and issue involvement were entered next, and perceived anonymity, the contextual fear of isolation, and perceived immediate online support were entered in the third block.

The effects of these predictors together explained 23% of the variance ( $F(9, 520) = 18.07, p < .001$ ). To be more specific, contextual fear of isolation was found to be the strongest predictor ( $\beta = -.34, p < .001$ ), followed by perceived immediate online support ( $\beta = .18, p < .001$ ) and perceived anonymity ( $\beta = .13, p = .001$ ). Moreover, issue involvement remained a significant predictor ( $\beta = .16, p < .001$ ), even when the variables in the third block were added in the model. On the other hand, the trait-like fear of isolation was a significant predictor ( $\beta = -.09, p = .028$ ) only when the control variables were excluded, but no longer predictive ( $\beta = .07, p = .164$ ) when the third-block variables were added in the model. Lastly, among the control variables, ethnicity ( $\beta = -.19, p < .001$ ) and moral values ( $\beta = -.13, p = .007$ ) again revealed significant, predictive effects on willingness to express online. See Table 4.2.1.

----- Insert Table 4.2.1 about here -----

## Chapter 5

### Discussion

#### 5.1 Implications of the Major Findings

The present study examines the SoS phenomenon in online news discussions under the mechanism of online news comments on the issue of abortion. Extending from the established scholarly achievements over four decades (e.g., Glynn & McLeod, 1985; Hampton et al., 2014; Hayes et al., 2011; Ho & McLeod, 2008; Noelle-Neumann, 1974; 1984; Salmon & Kline, 1985; Scheufele et al., 2001), this study specifically investigates the application of the SoS theory to the emerging communication context in five aspects, namely the core concept—the fear of isolation, the influences of various degrees of anonymity in CMC, the impacts of mass media related factors, the effects of different types of social support, and the effects of individual differences. Results from statistical analyses demonstrate mixed support for the hypotheses as well as profound answers to the research questions. To elaborate on the major findings, the following subsection 5.1.1 focuses on their theoretical implications, whereas the subsection 5.1.2 provides the implications regarding methodology.

##### 5.1.1. Theoretical implications

**The fear of isolation.** The research findings make a substantial step forward regarding the conceptualization of the fear of isolation. In her original formulation of the SoS theory, Noelle-Neumann (1984; 1993) only assumed that individuals experience the fear of isolation continuously but did not explicate whether one's level of such a fear remains stable across different situations or may vary by external factors such as the communication context. This gray area leads to split research perspectives regarding the fear of isolation as either a dispositional or a contextual quality of individuals, resulting in inconsistent instruments developed for measuring

this core concept in the SoS literature. This study tried to settle the controversy by measuring both the participants' dispositional and contextual fear of isolation. On the one hand, the result substantiates a high correlation between these two variables. On the other hand, the contextual fear of isolation is found to be a strong, negative predictor of an individual's willingness to post comments in an online news comment section, whereas the predictive effect of one's stable, trait-like fear of isolation then turns out to be negligible. Therefore, the empirical evidence demonstrates that both the dispositional and the contextual approaches explain some crucial facets of the fear of isolation, yet the context-based fear appears to be more explanatory of people's unwillingness to express their opinions in that specific context.

As these findings indicate that one's fear of isolation is not free from the influence of communication contexts, the level of such a fear is also not likely to be constant. This study thus helps clarify the gray area left in Noelle-Neumann's attribution of this core concept. To supplement her original assumptions, it is more appropriate to argue that although an individual continuously experiences the fear of isolation across situations, the level of such fear may be reduced or escalated under the influence of the given communication context. Methodologically, moreover, the discrepancy in the predictive effects between the dispositional and the contextual fear validates previous SoS studies that operationalized the participants' fear of isolation as the fear in the focal communication context (e.g., Glynn & Park, 1997; Lin & Salwen, 1997; Nekmat & Gonzenbach, 2013). It also suggests the weakness of solely applying the trait-like approach of the fear of isolation to predict individuals' SoS tendency in a specific context or situation. In an era where individuals interact with each other in a variety of communication platforms, the influence of communication contexts on the SoS phenomenon emerges as a more practical issue than it was decades ago, when the researchers mainly focused on homogeneous, face-to-face scenarios. Validating the contextual fear of isolation and its effect not only strengthens the



conceptual basis of the SoS theory but also—for this study in particular—provides a more direct and stronger explanation for one's willingness to be engaged or disengaged in online news discussions.

**Perceived online anonymity.** In addition, this study reveals the influence of anonymity—a major characteristic of online communication contexts—on individuals' willingness to post comments regarding the issue of abortion. Previous findings have drawn implications about the potential of anonymous CMC in diminishing the SoS phenomenon, compared to FTF interactions (e.g., Ho & McLeod, 2008) or to the SNSs in which the personal identity is disclosed (e.g., Hampton et al., 2014). This study operationalizes online anonymity as the unidentifiability of individuals' information about their social media accounts, which if disclosed, can be used to trace a variety of their online activities in history as well as the information about their off-line identity and past activities. By manipulating three degrees of anonymity, this study further substantiates the predicted relationship involving online anonymity on willingness to express in online news discussions. Although there was not enough evidence to more subtly identify the effects differentiated by one's perceptions of self-, other-, and platform-anonymity, the results confirmed an overall effect of anonymity in CMC that lessens the SoS phenomenon.

However, the role of online anonymity should be explained with caution. While this study substantiates that perceived online anonymity fosters willingness to post comments, the findings did not support the negative prediction of online anonymity on contextual fear of isolation, which in turn affects willingness to express one's opinion. Rather, contextual fear of isolation and perceived anonymity tend to be two distinctive factors influencing the SoS phenomenon online. In other words, the willingness of posting comments promoted by online anonymity does not reflect the sense of deindividuation, which—argued by the Carnegie-Mellon University scholars (e.g., Kiesler et al., 1984; Sproull & Kiesler, 1986)—would decrease the impacts of

social norms and conformity on the users. Instead, the results reveal that the social-normative influences (i.e., the fear of social isolation) on individuals may remain tenacious in cyberspace, regardless how deindividualized one feels due to perceived anonymity. Thus, online anonymity may be successful in reducing one's social presence cues, but not the perceived pressure of social sanctions.

The influence of anonymity did not warrant sufficient attention in the SoS literature until this theory was extended from offline to online context. Yet, studies (e.g., Ho & McLeod, 2008; Luarn & Hsieh, 2014) regarding the effect of online anonymity on the SoS phenomenon remain preliminary. In particular, more research investigating different degrees of anonymity and one's perceived anonymity is required to reflect the continuous nature of this concept as well as highlight the perceptual effects of being anonymous (Anonymous, 1998). The findings of this study thus verify the influence of this technological factor with greater sensitivity towards one's willingness to express their opinions and further compare the magnitude of this influence and other predictors. That is, one's perceived online anonymity substantially promotes the likelihood to post comments regarding abortion, although the effect size is not as large as one's issue involvement or perceived immediate online support from other commenters. To broaden the generalizability of the SoS theory in different online contexts, this study therefore suggests that influence of perceived anonymity needs to be considered as a substantial indicator of willingness to express one's opinion.

**The effects of social support.** Furthermore, this study contributes to the understanding of the effects of social influence in the SoS literature. With the American scholarly pursuits focused on validating the effect of social support from one's reference group (e.g., friends and family) on the SoS phenomenon, this study delves into the relationships among individuals' perceived reference group support, contextual fear of isolation, and willingness to express. In contrast to

the previous findings (e.g., Moy et al., 2001; Oshagan, 1996), however, perceived reference group support failed to directly predict one's willingness to engage in opinion expression in online news discussions. Instead, this variable was found to be a moderator of the effect of the participants' contextual fear of isolation on their willingness to express. That is, among the individuals who have a lower level of contextual fear of isolation, those who also have greater reference group support tended to be willing to express opinions even more, compared to those who with less reference group support. On the other hand, for the individuals with a higher level of contextual fear of isolation, having greater social support from family and friends did not enable them to be more willing to express their opinions online.

The above results improve the understanding of the influence of reference group on the SoS phenomenon in two respects. First, extending from the existing SoS research on social influence that only investigates the main effects of the reference group support and the fear of isolation (e.g., Moy et al., 2001; Oshagan, 1996), this study also examines the interaction effect of these two factors. The results thus further demonstrate the limited extent to which the reference group support may help decrease one's SoS tendency. Second, extending the research focus of SoS from offline to online, this study also suggests that the influence of reference group support on the SoS phenomenon in cyberspace is not as significant as such influence in a non-mediated context.

In addition to the reference group support, this study also identifies a new source of social influence—the immediate online support that individuals perceive from other commenters. The results confirm that individuals' perceived opinion congruity with other commenters' posts about abortion predicts their perceived immediate online support from the commenters, which in turn predicts their willingness to post their own opinions. This newly identified source of support exemplifies the affordability of emotional support in online discussion settings that individuals

may experience from the perceived homophily of other commenters' background or attitude (Campbell & Wright, 2002; High & Solomon, 2008; Wright, 2012), underlining a major characteristic of online social support that the support is driven by a common interest shared between the supporters and the receivers rather than an established relationship between them (Walther & Boyd, 2002). As a large number of SoS studies verifying the effect of reference group support focus on non-mediated communication contexts (e.g., Moy et al., 2001; Oshagan, 1996), such rather homogenous scenarios of the SoS phenomenon did not promote discoveries of other potential sources of social influence. This study introduces the immediate online social support from other commenters as another branch of social influence that occurs in cyberspace, expanding the understanding of social influence in the SoS literature.

As the participants' willingness to express is directly affected by their perceived immediate online support but not by their perceived reference group support, the results indicate that the former is a stronger social influence on the individuals in online news discussions. While Moy et al. (2001) characterized the "micro-climates" as the opinion climates within one's reference group and the "macro-climates" as the climates from a larger base of individuals (e.g., people in the society in general), this new identified source of support from other commenters does not fit in either of these two labels well. Therefore, to draw a distinction between the immediate online support from other commenters and the support from one's family and friends, the former can be seen as the "nearby" support, whereas the latter tends to be relatively distant. The findings thus suggest the more instantaneous the support is perceived by individuals at a given moment, the greater the influence it exerts. Such immediate online support from other commenters—that is, strangers—even outweighs the support from the individuals' friends and family in influencing the individuals' willingness of opinion articulation, indicating that the more influential social support does not always come from one's strong-tie relationships.

The not significant effect of reference group support may also be due to the nature of the issue that this study addresses. As abortion is less likely to be brought up in a casual conversation between friends or among family members, it may be hard for individuals to gauge the amount of support they would have from their reference group. On the other hand, when this issue is in the spotlight of an online news discussion, the congruous opinions from other commenters represent the most immediate and observable social support. This type of support may thus become more influential in backing up the like-minded individuals to voice out online.

To sum up, by including this online commenter support into examination, this study multiplies the sources of social influence discussed in the SoS research. The source of influence from other online users has become more prevalent as there are more online platforms (e.g., Facebook, Twitter, Reddit, and so on) emerging to enable individuals to make their comments to a post as well as view comments made by others. Furthermore, this social influence in the form of online social support is a double-edged sword. On the one hand, a discussion thread with a favorable opinion climate encourages individuals to jump on board and make their own comments. On the other hand, it is where the SoS phenomenon may occur when the individuals perceive less immediate online support from the discussion thread of a post for them to articulate their opposing views. As they remain silent and withhold their views, the discussion thread that consists of massive one-sided perspectives tend to produce an impression—which is actually more or less biased—that those comments represent the voice of the majority. When important social issues are discussed in cyberspace with biased dominant public opinions, not only a false impression of a social consensus tends to dissemble the existing conflicts in reality but the alternative voices are likely to be prevented from more meaningful conversations in the society.

**The effects of individual differences.** Other findings also demonstrate the effects of individual differences and mass media related variables on the online SoS phenomenon in

cyberspace with mixed results. First, the individuals' issue involvement regarding abortion is found to be a positive predictor of their willingness to express in online news discussions, aligning with the results from previous studies (e.g., Ho et al., 2013; Kim et al., 2014; Louis et al., 2010; Salmon & Neuwirth, 1990; Willnat et al., 2002). Also, this study verifies that the individuals' issue involvement negatively predicts their contextual fear of isolation. The results together explain that as people get more involved in the issue of abortion, they become less fearful of social isolation and, therefore, are more willing to join into the discussion about abortion.

Second, in terms of the participants' online privacy concerns, this study fails to substantiate the relationships among this factor, the perceived anonymity, their contextual fear of isolation, and their willingness to express in online news discussions. The results mainly suggest that the individuals' psychological need for personal information privacy and their fear of being social isolated in the online discussion settings may not have much in common. In addition, the individuals' online privacy concerns are found to positively predict their willingness of opinion expression, contradicting what this study originally hypothesized. The positive association also contrasts the previous findings of a negative correlation between individuals' perceived privacy risks and their willingness to disclose (e.g., Myerscough, et al., 2006; Youn, 2005). This unexpected result probably echoes Taddicken's (2014) argument that the Internet users' concerns about online privacy are not quite reflected on their behaviors in cyberspace. In other words, even though online users agree with the importance of online privacy they may not be wary of the potential risks in their actual Internet use. It is also likely that the relationship between the individuals' online privacy concerns and their willingness to express may be confounded by some third variables such as their efficacy for Internet use (e.g., Yao et al., 2007). As the effect of online privacy concerns on the SoS phenomenon found in this study draws more questions than

conclusions, the potential confounding factors and their influences on this prediction are worth further exploring.

**The effects of mass media.** Finally, the findings reveal that the effects of mass media on the online SoS phenomenon are rather trivial. This study examines the SoS phenomenon in online news comments, which not only highlight a major characteristic of CMC that converges multiple sources of messages (i.e., the messages from the news media and the netizens) but also demonstrates how traditional mass media content is integrated into cyberspace (i.e., in the form of “online news reports”). Although the results show that the participants’ opinion congruity with the media report about an opinion poll on abortion significantly decreases their perceived media biases and hostility, neither the former nor the latter variable subsequently predicts the participants’ willingness of opinion expression. The relationships between individuals’ hostility media perception and their trait-like and contextual fear of isolation are also found not significant.

By adopting a multi-aspect research framework of the SoS (McQuail & Windahl, 1993), this study suggests that the media report of an opinion poll is much less influential for the SoS phenomenon in online news discussions, compared to the individuals’ fear of isolation in this specific context, their perception of others’ comments and the social influence resulting from those comments (i.e., online social support), the feature of the online mechanism (i.e., anonymity), and the individual difference in issue involvement. Tracking the long scholarly debates regarding the role of mass media in the SoS literature, Noelle-Neumann (1973; 1984; 1993) emphasized that mass media is a powerful influence on public opinion when the SoS theory was developed. Yet, empirical studies later identified that the media influence only partially explains the individuals’ willingness of opinion expression when other aspects such as the social influence from their reference group are also considered (e.g., Moy et al., 2001;

Oshagan, 1996). In the age where the Internet converges the emerging and traditional media platform—as well as multiple sources of information for its users—this study further argues that the reports from mass media are rather negligible in shaping an opinion climate for the individuals to estimate the risks and benefits of articulating their own viewpoints.

### 5.1.2. Methodological implications

This study employed an experimental design to test the proposed research hypotheses and questions. Although surveys have been widely adopted in the SoS research since this foreign theory was imported to the U.S. (e.g., Hampton et al., 2014; Lasorsa, 1991; Willnat et al., 2002), this study chose the method that is actually in line with Noelle-Neumann's (1984; 1993) technique originally used for her SoS investigations—the “train test.” Noelle-Neumann (1993) categorized her train test as a method of “field experiment” in contrast to the experiments conducted in laboratories. This technique is a mixture of experimental and survey designs, as it compares the outcomes between experimental and control groups but collects data via interviews in natural settings to enable a higher level of external validity and a more representative sample of the general populations.

Despite some slight modifications occasionally done for fitting the train test in different focal issues, this technique mainly includes the following steps. First, the participants are either assigned to the experimental group or the control group. Second, the participants in the experimental group are instructed to fulfill a sentence-completion task as treatment, in which they see a conversation of two people on a sketch. The Person A addresses a strong personal view on the focal issue (e.g., “smoking in the presence of nonsmokers”) in two sentences, and the Person B responds with a sentence beginning with: “Well, I...”. The participants are then asked to complete the sentence with their own words and thoughts. According to Noelle-



Neumann (1993), this task would serve as a potential “threat of social isolation” to the participants whose opinion goes against the Person A. Then, both groups of participants are interviewed to estimate what the dominant opinion in society regarding that focal issue may be. Next, proceeding to the core of this design, all of the participants are asked to imagine that they are on a five-hour train ride, and someone in their compartment initiates a conversation about the focal issue with a strong personal viewpoint. They are then asked, “would you want to join in this conversation, or would you not think it worth your while?”

Based on the results, Noelle-Neumann (1984; 1993) found that for the participants in the experimental group who perceived the threat of social isolation from the sentence-completion task (i.e., the “Person A” addressed an opinion which is against the participants’), they were less likely to partake in the conversation on the train. On the other hand, for those who received the treatment and held the viewpoint congruent with the “Person A” in the same task, they then expressed a higher level of willingness to join into the discussion in the train compartment. In other words, the findings generally support the SoS theory.

After nearly four decades since Noelle-Neumann’s design of the train test, the prevalent accessibility of the Internet and the efficient distribution of online questionnaires make field experiments more feasible and manageable. Specifically, the participants are free to fill out the questionnaires using their own electronic devices at any time and place, as long as the Internet is connected. Such flexibility reinforces Noelle-Neumann’s intention of collecting data in a natural setting where the respondents’ reactions are more real and genuine. In addition, the function of randomization built in the online research software ensures a random assignment of the participants and allows relatively equalized number of responses for each condition (see Figure 3.5.1), alleviating the threat of selection biases that commonly occur in the experiments without rigorous laboratory controls. The above features supported by online research tools augment the

strengths of field experiments, which promote this study to follow Noelle-Neumann's model in its research design.

Moreover, as a major goal of this study is to verify the influence of different degrees of anonymity provided by online news comment sections on individuals' SoS tendency, experimental approaches appear to be more suitable than survey methods. Although the SoS theory does not suggest any research method more intrinsically desirable, the survey-based and the experimental studies have demonstrated their respective strengths in the literature. That is, the former excels in contributing fruitful understanding regarding individuals' willingness of opinion expression in association with their relatively natural behaviors (e.g., the SNSs use; Hampton et al., 2014) and attitudes (e.g., perceived importance of the issue; Moy et al., 2001), whereas the latter enables variable manipulations to provide profound evidence on the factors that affect one's willingness of opinion expression (e.g., Gearhart & Zhang, 2014; Ho & McLeod, 2008; Hwang, Kim, & Huh, 2014; Neubaum, & Krämer, 2016; Woong Yun & Park, 2011). Given that this study aims to observe the participants' responses in the conditions that they may not usually get involved in their real life, an experiment turned out to be more ideal to achieve the research goal.

The adoption of an experimental design also spares this study scholarly doubts on methodological legitimacy regarding employing surveys in the SoS research. Salmon and Glynn (1996) pointed out that when investigating the SoS phenomenon about a given issue, the survey interview itself may be an unwanted interference that discourage the people holding an opinion deviant from the majority to participate in the study and express their opposing view to a stranger (i.e., the researcher). Despite the fact that not all of the experiments are free from suffering such a weakness, this scholarly concern reminds the importance of reducing the researcher interference as well as ensuring anonymous responses particularly in the SoS research. With the

use of online research tools for data collection, this study was able to eliminate the chance of a direct interaction between the researcher and the participants and warrant a high level of respondent anonymity.

Furthermore, a few modifications of Noelle-Neumann's original train test were made to increase this study's external validity. The hypothetical scenario of a conversation on a five-hour train ride has not only been criticized as a less common experience to the U.S. respondents (Salmon & Glynn, 1996), but is also essentially subject to individual participants' imagination. Since this study investigates the SoS phenomenon in online news discussions under the mechanism of online news comments, the comments threads themselves demonstrate a communication context that is both realistic and familiar to the research participants. Thus, this study replaced the train-ride scenario with three pieces of online news comments on the issue of abortion before testing the viewers' willingness of opinion expression. Also, to simplify the procedure, the sentence-completion task in Noelle-Neumann's original design was removed. Instead, this study manipulated the valence of the three online news comments to be either pro-life or pro-choice in the experimental design. Therefore, for the participants assigned to the conditions in which the three comments expressed the opinions on abortion opposing their own opinion (i.e., the pro-life participants viewing the pro-choice comments and the pro-choice participants viewing the pro-life comments), those comments would serve as a threat of social isolation—which shares the same purpose with Noelle-Neumann's (1993) original idea. With the above changes in the research design, the participants were expected to be brought to a setting closer to their real-life experiences of reading online news comments.

Finally, as this study examines the SoS phenomenon in online news discussions, the research design using web questionnaires enabled the research stimuli (i.e., the simulated online news article and the attached comments) to be presented in a higher degree of authenticity. This

application demonstrates that online experiments can in fact enhance the external validity—which used to be a major issue of experimental designs in general—of research, especially for the studies focusing on online communication.

To sum up, this study adopts Noelle-Neumann's (1984; 1993) model of field experiment in its research design. The strengths of this research method have been improved further, owing to the advanced features that online research tools afford. With proper modifications of her train test, this study also overcomes the weaknesses of this research technique and turns online field experiment into a better fit.

## **5.2. Limitations and Future Directions**

This study analyzes the factors influencing the SoS phenomenon in online news discussions with a sample of college students. According to the statistics regarding the demography of U.S. Internet users (Pew Research Center, 2017a), this sample is valid, as college students fall in the age group ("between 18 and 29") and the educational levels ("some college" and "college graduate") that show the highest percentage of Internet use. However, it would be unsurprising to see the online news commenters with more diverse demographic backgrounds, since this mechanism of news discussion is widely applied in various online platforms and the barriers to posting comments online are relatively low. Therefore, future research may replicate the main findings from this study by using a broader sample of multiple populations, such as the subscribers of [nytimes.com](http://nytimes.com) (The New York Times) or Yahoo news readers. The results are expected to draw more substantial conclusions that represent the online news discussion participants.

Moreover, this study employs a cross-sectional research design to test the predictors of the SoS phenomenon in online news discussions. By simplifying the research scale as well as the

course of data collection, this study did not consider the changes of an opinion flow over time that may recast the opinion climate of a public issue and in turn influence the individuals' willingness of opinion expression. To highlight the dynamic nature of the SoS (e.g., Glynn & McLeod, 1984), future studies may thus attempt to conduct observations in multiple time periods. The results will help capture more nuances of the process in which the individuals decide to post their comments on a public issue online.

Lastly, this study only measures the participants' willingness to post their own opinion in online news comments as an indicator of the individuals' SoS tendency in public. Although posting comments straightforwardly demonstrates one's opinion expression in cyberspace, various functions—such as sharing a post and the thumbs-up and thumbs-down buttons—also allow online users to reveal their value and attitude regarding an issue to some extent. Expressing opinions via these avenues are less direct and blunt than posting a comment, but individuals with a deviant voice may take advantage of these alternative ways to subtly “speak out” instead of remaining silent. Therefore, future studies on the SoS phenomenon in cyberspace may also focus on the influences of the fear of isolation, online anonymity, and perceived opinion climate on using these alternative avenues for expressing opinions as well as compare user willingness of engaging in each avenue. This approach of “active audience” will help further delve into the strategies for individuals to articulate their voice under a favorable and unfavorable opinion climate, bringing the understanding of individuals' participation in online discussions to a fuller light.

### **5.3. Conclusion**

Although SoS theory represents one of the penitential mass communication theories, it has generated considerable theoretical debate. Following the discoveries of the effects of

interpersonal influence contributed by the U.S. scholars to supplement the original theory (e.g., Glynn & Park, 1997; Krassa, 1988; Moy et al., 2001; Oshagan, 1996), this study explicated the core concept—the fear of isolation—for a more fundamental understanding of the nature and the extent of this emotional impact on individuals’ opinion expression in public. Based on Hayes et al.’s (2011) summation of two existing scholarly perspectives regarding this concept—as either a trait-like or a state quality—this study further clarified the grey area left in Noelle-Neumann’s (1991; 1993) formulation by validating that the magnitude of one’s fear of isolation varies by communication context. The finding thus strengthens the conceptualization of the SoS theory and suggests a better approach to measure the fear of isolation and explore its relationships with other variables in future empirical studies.

Extending the SoS research from offline contexts to online news discussions, this study also identifies the effects of contextual fear of isolation, online anonymity, social influences, mass media, and issue involvement on the SoS phenomenon in an integrative manner. Study results reveal that the contextual fear of isolation and the perceived anonymity of online news comment section serve as two substantial factors that affect individuals’ willingness to post their own opinions. Although these two factors were not found to be correlated, failing to replicate the Carnegie-Mellon University scholars’ prediction of online anonymity on uninhibited emotional expressions (e.g., Kiesler et al., 1984; Sproull & Kiesler, 1986), this finding sheds light on individuals’ physical and informational unidentifiability afforded by online anonymity that promotes their willingness to express an opinion. Since individuals’ concerns about their identity disclosure tend to be another important factor in the SoS phenomenon, online anonymity deserves more extensive exploration.

Moreover, while the opinion climate shaped by other commenters also contributes to the individuals’ intention of opinion expression, the predictive effects of the climates derived from

one's reference group and the media reports are found to be relatively limited. These results update our understanding about the influence of perceived opinion climate on one's SoS tendency in this Information Age, where people have access to more message sources for the public opinion of a given issue. Specifically, the traditional sources of influence (i.e., interpersonal and mass media) lose their existing advantage to the online fellow commenters in supporting individuals to voice out their own opinions in cyberspace. This immediate online social support indicates the power of influence from weak-tie relationships and helps explain why the like-minded views are easily cultivated in online discussions.

From the perspective of public opinion research, furthermore, this study draws an alternative approach in investigating the uses and effects of online news comments. As a communication context that mainly invites online users to express viewpoints about current events happening in the larger society, the mechanism of online news comments and the opinion climate it shapes serve as an indicator of the public opinion of a given issue. On the basis of the SoS theory, this study points out the internal and external factors that influence individuals' willingness to post comments. These factors suggest the potential causes of a biased opinion climate regarding an issue that could be falsely represented as the majority view. Since public opinion not only reflects the reality but also constructs it, the false impression of a majority view may result in misled attitudes and actions at both the individual and the societal level. Extending from well-discussed topics such as uncivil use (e.g., Brooks & Lutton, 2015; Loke, 2013; Silva, 2013) and user motives (e.g., Springer, Engelmann & Pfaffinger, 2015; Wu & Atkin, 2017), therefore, researchers of online news comments may shift to undertake more examinations on reader perception and interpretation of the opinions posted in this mechanism to further understand the influences of the public opinion circulated in cyberspace.

Finally, with regard to the practice of online news comment sections, this study suggests a

higher degree of user anonymity as a major incentive to embrace more diverse voices about a news event. Although online news media these days are more prone to limit such anonymity by allowing only registered, logged-in users to post comments for reducing uncivil uses such as swearing and trolling, these platforms should be aware of the perceived risks of identity disclosure that easily dampen some individuals' willingness to post their opinions. In fact, the providers of online news comment sections may consider affording multiple news discussion avenues with various degrees of user anonymity to warrant the diversity as well as the quality of opinion expression. In other words, in addition to the current design of user-specified comment posting function, online news media can increase the features for anonymous opinion expression such as anonymous emoji "reactions" to the news articles and anonymous rating of the comments. After all, it is wise to balance between the user anonymity and responsibility in cyberspace to continually protect the precious asset of the freedom of speech that this country has proudly held for centuries.



## References

- Anonymous. (1998). To reveal or not to reveal: A theoretical model of anonymous communication. *Communication Theory*, 8(4), 381-407.
- Armstrong, J. S. (1967). Derivation of theory by means of factor analysis or Tom Swift and his electric factor analysis machine. *The American Statistician*, 21(5), 17-21.
- Asch, S. E. (1951). Effects of group pressure upon the modification and distortion of judgments. In H. Guetzkow (Ed.), *Groups, leadership, and men: Research in human relations* (pp. 222-236). Pittsburgh: Carnegie Press.
- Berelson, B., Lazarsfeld, P., & McPhee, W. N. (1954). *Voting*. Chicago: University of Chicago Press.
- Bergen, L. (1986, May). *Testing the spiral of silence theory with opinions on abortion*. Paper presented at the 36th Annual Conference of the International Communication Association, Chicago, IL.
- Black, S. D., Levin, J. A., Mehan, H., & Quinn, C. N. (1983). Real and non-real time interaction: Unraveling multiple threads of discourse. *Discourse Processes*, 6(1), 59-75.
- Braithwaite, D. O., Waldron, V. R., & Finn, J. (1999). Communication of social support in computer-mediated groups for people with disabilities. *Health Communication*, 11(2), 123-151.
- Brooks, A. W., Lutton, B. (2015). Debating the Cincinnati Streetcar: Examining the civility of participants on online news sites. *Kentucky Journal of Communication*, 34, 4-18.
- Buchanan, T., Paine, C., Joinson, A. N., & Reips, U.-D. (2007). Development of measures of online privacy concern and protection for use on the internet. *Journal of the American Society for Information Science and Technology*, 58(2), 157-165.

- Buchanan, T., Paine, C., Joinson, A. N., & Reips, U.-D. (2007). Development of measures of online privacy concern and protection for use on the internet. *Journal of the American Society for Information Science and Technology*, 58(2), 157–165.
- Byrne, B. M. (2010). *Structural equation modeling with AMOS: Basic concepts, applications, and programming (2nd ed.)*. New York: Routledge/Taylor & Francis Group.
- Campbell, K., & Wright, K. B. (2002). On-line support groups: An investigation of relationships among source credibility, dimensions of relational communication, and perceptions of emotional support. *Communication Research Reports*, 19(2), 183-193.
- Chaiken, S. (1987). The heuristic model of persuasion. In M. P. Zanna, J. M. Olson, & C. P. Herman (Eds.), *Social influence: The Ontario symposium, Vol. 5* (pp. 3-39). Hillsdale, NJ: Lawrence Erlbaum.
- Choi, J. H., Watt, J. H., & Lynch, M. (2006). Perceptions of news credibility about the war in Iraq: Why war opponents perceived the Internet as the most credible medium. *Journal of Computer-Mediated Communication*, 12(1), 209–229.
- Christen, C. T., Kannaovakun, P., & Gunther, A. C. (2002). Hostile media perceptions: Partisan assessments of press and public during the 1997 United Parcel Service strike. *Political Communication*, 19(4), 423-436.
- Dalisay, F., Hmielowski, J. D., Kushin, M. J., & Yamamoto, M. (2012). Social capital and the spiral of silence. *International Journal of Public Opinion Research*, 24(3), 325-345.
- Dardis, F. E., & Shen, F. (2008). The influence of evidence type and product involvement on message-framing effects in advertising. *Journal of Consumer Behaviour*, 7(3), 222-238.
- DeVito, J. A. (2003). *Human communication: The basic course (9th ed.)*. Boston, Allyn & Bacon.

- Donsbach, W., & Stevenson, R. L. (1984, May). *Challenges, problems and empirical evidence of the theory of the spiral of silence*. Paper presented at the 34<sup>th</sup> Annual Conference of the International Communication Association, San Francisco, CA.
- Dubrovsky, V. J., Kiesler, S., & Sethna, B. N. (1991). The equalization phenomenon: Status effects in computer-mediated and face-to-face decision-making groups. *Human-Computer Interaction*, 6(2), 119-146.
- Eagly, A. H., & Chaiken, S. (1984). Cognitive theories of persuasion. In L. Berkowitz (Ed.), *Advances in experimental social psychology*, Vol. 17 (pp. 267-359). NY: Academic Press.
- Eastin, M. S., & LaRose, R. (2005). Alt. support: modeling social support online. *Computers in Human Behavior*, 21(6), 977-992.
- Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological methods*, 4(3), 272-299.
- Festinger, L., Pepitone, A., & Newcomb, T. (1952). Some consequences of de-individuation in a group. *The Journal of Abnormal and Social Psychology*, 47(2S), 382-389.
- Fields, J. M., & Schuman, H. (1976). Public beliefs about the beliefs of the public. *Public Opinion Quarterly*, 40(4), 427-448.
- Gallup.com. (2015). Americans choose "Pro-Choice" for first time in seven years. [http://www.gallup.com/poll/183434/americans-choose-pro-choice-first-time-seven-years.aspx?g\\_source=abortion&g\\_medium=search&g\\_campaign=tiles](http://www.gallup.com/poll/183434/americans-choose-pro-choice-first-time-seven-years.aspx?g_source=abortion&g_medium=search&g_campaign=tiles). Retrieved October 2, 2015.
- Gallup.com. (2016). Americans' attitudes toward abortion unchanged. [http://www.gallup.com/poll/191834/americans-attitudes-toward-abortion-unchanged.aspx?g\\_source=position2&g\\_medium=related&g\\_campaign=tiles](http://www.gallup.com/poll/191834/americans-attitudes-toward-abortion-unchanged.aspx?g_source=position2&g_medium=related&g_campaign=tiles). Retrieved

March 29, 2017.

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(1), 18-36.

doi:10.1177/0894439313504261

Gearhart, S., & Zhang, W. (2015). Same spiral, different day? Testing the spiral of silence across issue types. *Communication Research*. Advance online publication.

doi:10.1177/0093650215616456

Glynn, C. J., & McLeod, J. M. (1984). Public opinion du jour: An examination of the spiral of silence. *Public Opinion Quarterly*, 48(4), 731-740.

Glynn, C. J., & McLeod, J. M. (1985). Implications of the spiral of silence theory for communication and public opinion research. In K. R. Sanders, K. L. Kaid, & Nimmo, D. (Eds.), *Political communication yearbook 1984* (pp. 43-65). Carbondale and Edwardsville: Southern Illinois University Press.

Glynn, C. J., & Park, E. (1997). Reference groups, opinion intensity, and public opinion expression. *International Journal of Public Opinion Research*, 9(3), 213-232.

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.

Gunther, A. C., & Chia, S. C. (2001). Predicting pluralistic ignorance: The hostile media perception and its consequences. *Journalism and Mass Communication Quarterly*, 78(4), 688-701.

Gunther, A. C., & Christen, C. T. (2002). Projection or persuasive press? Contrary effects of personal opinion and perceived news coverage on estimates of public opinion. *Journal of Communication*, 52(1), 177-195.

- Gunther, A. C., Christen, C. T., Liebhart, J. L., & Chia, S. C. (2001). Congenial public, contrary press, and biased estimates of the climate of opinion. *Public Opinion Quarterly*, 65(3), 295-320.
- Hampton, K.N., Rainie, L., Lu, W., Dwyer, M., Shin, I., & Purcell, K. (2014). "Social Media and the 'Spiral of Silence'." Pew Research Center, Washington, DC. Available at <http://www.pewinternet.org/2014/08/26/social-media-and-the-spiral-of-silence/>
- Hayes, A. F., Matthes, J., & Eveland, W. P. (2011). Stimulating the quasi-statistical organ: Fear of social isolation motivates the quest for knowledge of the opinion climate. *Communication Research*, 40(4) 439-462.
- Hayes, A. F., Shanahan, J., & Glynn, C. J. (2001). Willingness to express one's opinion in a realistic situation as a function of perceived support for that opinion. *International Journal of Public Opinion Research*, 13(1), 45-58.
- High, A. C., & Solomon, D. H. (2008, November). Locating computer-mediated social support within online communication environments. Paper presented at the National Communication Association conference, San Diego, California.
- Ho, S. S., & McLeod, D. M. (2008). Social-psychological influences on opinion expression in face-to-face and computer-mediated communication. *Communication Research*, 35(2), 190-207.
- Ho, S. S., Chen, V. H. H., & Sim, C. C. (2013). The spiral of silence: examining how cultural predispositions, news attention, and opinion congruency relate to opinion expression. *Asian Journal of Communication*, 23(2), 113-134.
- Hollenbaugh, E. E., & Everett, M. K. (2013). The effects of anonymity on self-disclosure in blogs: An application of the online disinhibition effect. *Journal of Computer-Mediated Communication*, 18(3), 283-302.

- Hwang, H., Kim, Y., & Huh, C. U. (2014). Seeing is believing: Effects of uncivil online debate on political polarization and expectations of deliberation. *Journal of Broadcasting & Electronic Media*, 58(4), 621-633. doi:10.1080/08838151.2014.966365
- Hwang, H., Pan, Z., & Sun, Y. (2008). Influence of hostile media perception on willingness to engage in discursive activities: An examination of mediating role of media indignation. *Media Psychology*, 11, 76-97.
- Jeffres, L. W., Neuendorf, K., Bracken, C. C., & Atkin, D. J. (2009). Untangling spirals of silence in a presidential election. *Journal of Media Sociology*, 1(1/2), 81-115.
- Kahn, R. L., & Antonucci, T. C. (1980). Convoys over the life course: Attachment, roles, and social support. In P. B. Baltes & O. G. Brim (Eds.), *Life-span development and behavior*, Vol 3 (pp. 253-286). New York: Academic Press.
- Katz, E., & Lazarsfeld, P. F. (1955). *Personal influence: The part played by people in the flow of mass communications*. Glencoe, IL: The Free Press of Glencoe.
- Kelman, H. C. (1961). Processes of opinion change. *Public opinion quarterly*, 25(1), 57-78.
- Kiesler, S., Seigel, J., & McGuire, T. W. (1984). Social psychological aspects of computer-mediated communication. *American Psychologist*, 39(10), 1123-1134.
- Kiesler, S., Zubrow, D., Moses, A. M., & Geller, V. (1985). Affect in computer-mediated communication: An experiment in synchronous terminal-to-terminal discussion. *Human-Computer Interaction*, 1(1), 77-104.
- 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(5), 713-732.
- Kim, S., Haley, E., & Koo, G. Y. (2009). Comparison of the paths from consumer involvement types to ad responses between corporate advertising and product advertising. *Journal of*

*Advertising*, 38(3), 67-80.

King, S. (1994). Analysis of electronic support groups for recovering addicts. *Interpersonal Computing and Technology: An Electronic Journal for the 21st Century*, 2, 47-56.

Krassa, M. A. (1988). Social groups, selective perception, and behavioral contagion in public opinion. *Social Networks*, 10(2), 109-136.

Lasorsa, D. L. (1991). Political outspokenness: Factors working against the spiral of silence. *Journalism & Mass Communication Quarterly*, 68(1-2), 131-140.

Lazarsfeld, P. F., & Merton, R. K. (1954). Friendship as a social process: A substantive and methodological analysis. *Freedom and control in modern society*, 18(1), 18-66.

Lea, M., Spears, R., & de Groot, D. (2001). Knowing me, knowing you: Anonymity effects on social identity processes within groups. *Personality and Social Psychology Bulletin*, 27(5), 526-537.

Lea, M., & Spears, R. (1991). Computer-mediated communication, de-individuation and group decision-making. *International Journal of Man-Machine Studies*, 34(2), 283-301.

Lea, M., & Spears, R. (1992). Paralanguage and social perception in computer-mediated communication. *Journal of Organizational Computing and Electronic Commerce*, 2(3-4), 321-341.

Lea, M., O'Shea, T., Fung, P., & Spears, R. (1992). "Flaming" in computer-mediated communication: Observations, explanations, implications. In M. Lea (Ed.), *Contexts of computer-mediated communication* (pp. 89-112). London: Harvester-Wheatsheaf.

Leech, N. L., Barret, K. C., & Morgan, G. A. (2015). *IBM SPSS for intermediate statistics: Use and interpretation*, 5<sup>th</sup> ed. New York, NY: Routledge.

Lewis, K., Kaufman, J., & Christakis, N. (2008). The taste for privacy: An analysis of college student privacy settings in an online social network. *Journal of Computer-Mediated*

*Communication*, 14(1), 79–100.

Lin, C. A., & Salwen, M. B. (1997). Predicting the spiral of silence on a controversial public issue. *Howard Journal of Communications*, 8(1), 129-141.

Loke, J. (2013). Readers' debate a local murder trial: "Race" in the online public sphere. *Communication, Culture & Critique*, 6, 179-200.

Louis, W. R., Duck, J. M., Terry, D. J., & Lalonde, R. N. (2010). Speaking out on immigration policy in Australia: Identity threat and the interplay of own opinion and public opinion. *Journal of Social Issues*, 66(4), 653-672.

Luarn, P., & Hsieh, A. Y. (2014). Speech or silence: The effect of user anonymity and member familiarity on the willingness to express opinions in virtual communities. *Online Information Review*, 38(7), 881-895.

Matthes, J., Hayes, A. F., Rojas, H., Shen, F., Min, S. J., & Dylko, I. B. (2012). Exemplifying a dispositional approach to cross-cultural spiral of silence research: Fear of social isolation and the inclination to self-censor. *International Journal of Public Opinion Research*, 24(3), 287-305.

Matthes, J., Morrison, K. R., & Schemer, C. (2010). A spiral of silence for some: Attitude certainty and the expression of political minority opinions. *Communication Research*, 37(6), 774-800.

McCroskey, J. C. (1977). Oral communication apprehension: A summary of recent theory and research. *Human Communication Research*, 4, 78-96.

McCroskey, J. C. (1982). Oral communication apprehension: A reconceptualization. *Communication yearbook*, 6(6), 136-170.

McCroskey, J. C. (1983). The communication apprehension perspective. *Communication*, 12(1), 1-25.



- McCroskey, J. C., & Richmond, V. P. (1996). *Fundamentals of human communication: An interpersonal perspective*. Prospect Heights, IL: Waveland.
- McQuail, D. (2014). Paradigm shifts in the study of media effects. In W. Donsbach, C. T. Salmon, & Y. Tsfaty (Eds.), *The spiral of silence: New perspectives on communication and public opinion* (pp.35-43). New York: Routledge.
- McQuail, D., & Windahl, S. (1993). *Communication models 2<sup>nd</sup> ed.* New York: Longman.
- McQuail, D., Blumler, J. G., & Brown, J. R. (1972). The television audience: A revised perspective. In D. McQuail (Ed.), *Sociology of mass communication* (pp. 135-165). Middlesex, England: Penguin.
- Merten, K. (1985). Some silence in the spiral of silence. In K. R. Sanders, K. L. Kaid, & Nimmo, D. (Eds.), *Political communication yearbook 1984* (pp. 31-42). Carbondale and Edwardsville: Southern Illinois University Press.
- 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(9), 1129-1141. doi:10.1177/0002764215580618
- Moy, P., Domke, D., & Stamm, K. (2001). The spiral of silence and public opinion on affirmative action. *Journalism & Mass Communication Quarterly*, 78(1), 7-25.
- Mutz, D. C. (1989). The influence of perceptions of media influence: Third person effects and the public expression of opinions. *International Journal of Public Opinion Research*, 1(1), 3-23.
- Myerscough, S., Lowe, B., & Alpert, F. (2008). Willingness to provide personal information online: The role of perceived privacy risk, privacy statements and brand strength. *Journal of Website Promotion*, 2(1-2), 115-140.
- Nekmat, E., & Gonzenbach, W. J. (2013). Multiple Opinion Climates in Online Forums Role of

- Website Source Reference and Within-Forum Opinion Congruency. *Journalism & Mass Communication Quarterly*, 90(4), 736-756.
- Neubaum, G., & Krämer, N. C. (2016). Monitoring the opinion of the crowd: Psychological mechanisms underlying public opinion perceptions on social media. *Media Psychology*. Advance online publication. doi:10.1080/15213269.2016.1211539
- Newcomb, T. M. (1953). An approach to the study of communicative acts. *Psychological Review*, 60(6), 393-404.
- Noelle-Neumann, E. (1973). Return to the concept of the powerful mass media. *Studies of Broadcasting*, 9, 67-112.
- Noelle-Neumann, E. (1974). The spiral of silence: A theory of public opinion. *Journal of communication*, 24(2), 43-51.
- Noelle-Neumann, E. (1984). *The spiral of silence: Public opinion, our social skin*. Chicago: University of Chicago Press.
- Noelle-Neumann, E. (1985). The spiral of silence: A response. In K. R. Sanders, K. L. Kaid, & Nimmo, D. (Eds.), *Political communication yearbook 1984* (pp. 66-94). Carbondale and Edwardsville: Southern Illinois University Press.
- Noelle-Neumann, E. (1991). The theory of public opinion: The Concept of the spiral of silence. In Anderson, J. A. (Eds.), *Communication yearbook 14* (pp. 256-287). Newbury Park, CA: Sage.
- Noelle-Neumann, E. (1993). *The spiral of silence: Public opinion, our social skin* (2nd ed.). Chicago: University of Chicago Press.
- Oshagan, H. (1996). Reference group influence on opinion expression. *International Journal of Public Opinion Research*, 8(4), 335-354.

- Padilla-Walker, L. M., & Jensen, L. A. (2015). Validation of the long-and short-form of the Ethical Values Assessment (EVA): A questionnaire measuring the three ethics approach to moral psychology. *International Journal of Behavioral Development*, doi:10.1177/0165025415587534.
- Pearson, J. C., West, R. L., & Turner, L. H. (1995). *Gender & communication (3<sup>rd</sup> Ed.)*. Guilford, CT: Brown & Benchmark.
- Perloff, R. M. (1989). Ego-involvement and the third-person effect of televised news coverage. *Communication Research*, 16(2), 236-262.
- Pew Research Center. (2017a). Internet/ broadband fact sheet. <http://www.pewinternet.org/fact-sheet/internet-broadband/>. Retrieved March 29, 2017.
- Pew Research Center. (2017b). Public Opinion on Abortion: Views on abortion, 1995-2016. <http://www.pewforum.org/2017/01/11/public-opinion-on-abortion-2/#views-about-abortion-2016-a-detailed-look>. Retrieved March 29, 2017.
- Preedy, V. R., & Watson, R. R. (2009). *Handbook of disease burdens and quality of life Measures*. New York, NY: Springer.
- Price, V., & Allen, S. (1990). Opinion spirals, silent and otherwise: Applying small-group research to public opinion phenomena. *Communication Research*, 17(3), 369-392.
- Qian, H., & Scott, C. R. (2007). Anonymity and self-disclosure on weblogs. *Journal of Computer-Mediated Communication*, 12(4), 1428-1451.
- Rojas, H. (2010). "Corrective" actions in the public sphere: How perceptions of media and media effects share political behaviors. *International Journal of Public Opinion Research*, 22(3), 343-362.
- Rössler, P.; & Schulz, A. (2014). Public opinion expression in online environments. In W. Donsbach, C. T. Salmon, & Y. Tsifti (Eds.), *The spiral of silence: New perspectives on*

- communication and public opinion* (pp.101-118). New York: Routledge.
- Rubin, A. M. (2009). Uses-and-gratifications perspective on media effects. In J. Bryant, & M. B. Oliver, (Eds.), *Media effects: Advanced in theory and research 3<sup>rd</sup> ed.* (pp. 165-184). New York, NY: Routledge.
- Salmon, C. T., & Glynn, C. J. (1996). Spiral of silence: Communication and public opinion as social control. In M. Salwen & D.W. Stacks (Eds.), *An integrated approach to communication*, (pp. 165-180). Mahwah, NJ: Lawrence Erlbaum Associates.
- Salmon, C. T., & Kline, F. G. (1985). The spiral of silence ten years later: An examination and evaluation. In K. R. Sanders, K. L. Kaid, & Nimmo, D. (Eds.), *Political communication yearbook 1984* (pp. 3-30). Carbondale and Edwardsville: Southern Illinois University Press.
- Salmon, C. T., & Neuwirth, K. (1990). Perceptions of opinion “climates” and willingness to discuss the issue of abortion. *Journalism & Mass Communication Quarterly*, 67(3), 567-577.
- Scheufele, D.A., Shanahan, J., & Lee, E. (2001). Real talk: Manipulating the dependent variable in spiral of silence research. *Communication Research*, 28(3), 304-324.
- Schulz, A., & Rössler, 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 environments. *International Journal of Public Opinion Research*, 24(3), 346-367.
- Shaw, L. H., & Gant, L. M. (2002). In defense of the Internet: The relationship between Internet communication and depression, loneliness, self-esteem, and perceived social support. *CyberPsychology & Behavior*, 5(2), 157-171.
- Shoemaker, P. J., Breen, M., & Stamper, M. (2000). Fear of social isolation: Testing an assumption from the spiral of silence. *IRISH communication review*, 8, 65-78.

- Siegel, J., Dubrovsky, V., Kiesler, S., & McGuire, T. W. (1986). Group processes in computer-mediated communication. *Organizational behavior and human decision processes*, 37(2), 157-187.
- Silva, M.T. Da. (2013). Online forums, audience participation and modes of political discussion: Readers' comments on the Brazilian presidential election as a case study. *Communication & Society/ Comunicación y Sociedad*, 26(4), 175-193.
- Spears, R., & Lea, M. (1992). *Social influence and the influence of the 'social' in computer-mediated communication*. In M. Lea (Ed.), *Contexts of computer-mediated communication* (pp. 30-65). London: Harvester-Wheatsheaf.
- Spears, R., & Lea, M. (1994). Panacea or panopticon? The hidden power in computer-mediated communication. *Communication Research*, 21(4), 427-459.
- Spears, R., Lea, M., & Lee, S. (1990). De-individuation and group polarization in computer-mediated communication. *British Journal of Social Psychology*, 29(2), 121-134.
- Springer, N., Engelmann, I., & Pfaffinger, C. (2015). User comments: Motives and inhibitors to write and read. *Information, Communication & Society*, 18(7), 798-815.
- Sproull, L., & Kiesler, S. (1986). Reducing social context cues: Electronic mail in organizational communication. *Management Science*, 32(11), 1492-1512.
- Sproull, L., & Kiesler, S. (1991). Computers, networks and work. *Scientific American*, 265(3), 116-123.
- Suler, J. (2004). The online disinhibition effect. *Cyberpsychology & Behavior*, 7(3), 321-326.
- Taddicken, M. (2014). The "privacy paradox" in the social web: The impact of privacy concerns, individual characteristics, and the perceived social relevance on different forms of self-disclosure. *Journal of Computer-Mediated Communication*, 19(2), 248-273.
- Tajfel, H., & Turner, J. C. (1986). The social identity theory of intergroup behaviour. In S.

- Worchel & W. G. Austin (Eds.), *Psychology of Intergroup Relations* (pp. 7-24). Chicago: Nelson-Hall.
- Tichon, J. G., & Shapiro, M. (2003). The process of sharing social support in cyberspace. *CyberPsychology & Behavior*, 6(2), 161-170.
- Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). *Rediscovering the social group: A self-categorization theory*. Oxford: Blackwell.
- Vallone, R. P., Ross, L., & Lepper, M. R. (1985). The hostile media phenomenon: Biased perception and perceptions of media bias in coverage of the Beirut massacre. *Journal of Personality and Social Psychology*, 49(3), 577-585.
- Walther, J. B., & Boyd, S. (2002). Attraction to computer-mediated social support. In C. A. Lin , & D. J. Atkin (Eds.), *Communication technology and society: Audience adoption and uses* (pp. 153-188). Cresskill, NJ: Hampton.
- Westin, A. F. (1967). *Privacy and freedom*. New York: Atheneum.
- Willnat, L. (1996). Mass media and political outspokenness in Hong Kong: Linking the third-person effect and the spiral of silence. *International Journal of Public Opinion Research*, 8(2), 187-212.
- Willnat, L., Lee, W., & Detenber, B. H. (2002). Individual-level Predictors of Public Outspokenness: A Test of the Spiral of Silence Theory in Singapore. *International Journal of Public Opinion Research*, 14(4), 391-412.
- Woong Yun, G., & Park, S. Y. (2011). Selective posting: Willingness to post a message online. *Journal of Computer-Mediated Communication*, 16(2), 201-227.
- Wortman, C. B., & Dunkel-Schetter, C. (1987). Conceptual and methodological issues in the study of social support. In A. Baum & J. E. Singer (Eds.), *Handbook of psychology and health: Stress, Vol. 5* (pp. 63-108). Hillsdale: Lawrence Erlbaum Associates.

- Wright, K. B. (2000). Perceptions of on-line support providers: An examination of perceived homophily, source credibility, communication and social support within on-line support groups. *Communication Quarterly*, 48(1), 44–59.
- Wright, K. B. (2012). Emotional support and perceived stress among college students using Facebook. com: An exploration of the relationship between source perceptions and emotional support. *Communication Research Reports*, 29(3), 175-184.
- Wu, T.-Y., & Atkin, D. (2017). Online news discussions: Exploring the role of user personality and motivations for posting comments on news. *Journalism & Mass Communication Quarterly*, 94(1), 61-80. doi:10.1177/1077699016655754.
- Yao, M. Z., Rice, R. E., & Wallis, K. (2007). Predicting user concerns about online privacy. *Journal of the American Society for Information Science and Technology*, 58(5), 710-722.
- Youn, S. (2005). Teenagers' perceptions of online privacy and coping behaviors: a risk–benefit appraisal approach. *Journal of Broadcasting & Electronic Media*, 49(1), 86-110.
- Zaichkowsky, J. L. (1985). Measuring the involvement construct. *Journal of Consumer Research*, 12(3), 341-352.
- Zimbardo, P. G. (1969). The human choice: Individuation, reason, and order versus deindividuation, impulse, and chaos. In W. J. Arnold & D. Levine (Eds.), *Nebraska symposium on motivation*, vol. 17 (pp. 237-307). Lincoln, NA: University of Nebraska press.

Table 3.6.1.

*One-Way ANOVA Results with Three Types of Perceived Anonymity as Dependent Variables*

Types of Anonymity	n	M	SE	MS	<i>F</i>	<i>p</i>	Partial $\eta^2$
Self-anonymity	530	3.45	.07	121.58	52.92	.000	.17
Low anonymity	182	2.81	.12				
Med anonymity	174	3.17	.11				
High anonymity	174	4.39	.11				
Other-anonymity	530	3.31	.07	209.20	107.57	.000	.29
Low anonymity	182	2.43	.10				
Med anonymity	174	3.01	.11				
High anonymity	174	4.53	.10				
Platform anonymity	530	3.35	.07	214.48	106.03	.000	.29
Low anonymity	182	2.47	.12				
Med anonymity	174	3.03	.11				
High anonymity	174	4.60	.11				



Table 3.6.2.

*Correlations, Means, and Standard Deviations of Major Predictor Variables*

	1	2	3	4	5	6	7	8	9	10
1. Trait-like fear of isolation	--									
2. Contextual fear of isolation	.54**	--								
3. Perceived Anonymity	.10*	.06	--							
4. Opinion congruity with media	-.01	-.03	.04	--						
5. Opinion congruity with commenters	.05	-.01	.14**	.05	--					
6. HMP	-.04	.01	.08	-.14**	.06	--				
7. Reference support	-.04	-.06	-.06	.26**	-.02	.12**	--			
8. Immediate online support	.03	-.03	.13**	.06	.87**	.04	-.01	--		
9. Issue involvement	-.06	-.15**	-.07	.21**	.03	-.04	.19**	.05	--	
10. Online privacy concerns	.07	.02	.08	-.03	.09*	.13**	-.07	.06	.12**	--
<i>M</i>	3.90	3.85	3.37	4.32	3.42	3.83	4.79	3.45	4.43	3.75
<i>SD</i>	.92	.95	1.52	1.22	1.81	1.03	1.21	1.93	1.13	1.30

\*  $p < .05$ ; \*\*  $p < .01$

Table 4.1.1.

*Multiple Regression Analysis Predicting Contextual Fear of Isolation on Willingness to Express in Online News Discussions*

Predictor	$\beta$	$\Delta R^2$
Block 1		.05***
Sex (Male)	.02	
Ethnicity (Caucasian)	-.19***	
Religion (Religious)	.01	
Moral values	-.13**	
Block 2		.11***
Contextual fear of isolation	-.33***	
Total $R^2$		.15***

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

Table 4.1.2.

*Multiple Regression Analyses Predicting Minority Status on the Contextual Fear of Isolation and on Willingness to Express in Online News Discussions*

Predictor	Contextual fear of isolation		Willingness to express	
	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$
Block 1		.01		.04**
Sex (Male)	-.06		.02	
Ethnicity (Caucasian)	.07		-.19***	
Religion (Religious)	-.01		.01	
Moral values	.02		-.13**	
Block 2		.00		.02**
Minority status	.05		-.13**	
Total $R^2$		.001		.06***

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

Table 4.1.3.

*Multiple Regression Analysis Predicting Contextual Fear of Isolation and Trait-like Fear of Isolation on Willingness to Express in Online News Discussions*

Predictor	$\beta$	$\Delta R^2$
Block 1		.05***
Sex (Male)	.02	
Ethnicity (Caucasian)	-.19***	
Religion (Religious)	.01	
Moral values	-.13**	
Block 2		.11***
Trait-like fear of isolation	.08	
Contextual fear of isolation	-.37***	
Total R <sup>2</sup>		.15***

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

Table 4.1.4.

*Multiple Regression Analysis Predicting Perceived Anonymity on Willingness to Express in Online News Discussions*

Predictor	$\beta$	$\Delta R^2$
Block 1		.05***
Sex (Male)	.02	
Ethnicity (Caucasian)	-.19***	
Religion (Religious)	.01	
Moral values	-.13**	
Block 2		.02**
Perceived anonymity	.13**	
Total R <sup>2</sup>		.06***

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

Table 4.1.5.

*Multiple Regression Analysis Predicting Three Types of Perceived Anonymity on Willingness to Express in Online News Discussions*

Predictor	$\beta$	$\Delta R^2$
Block 1		.05***
Sex (Male)	.02	
Ethnicity (Caucasian)	-.19***	
Religion (Religious)	.01	
Moral values	-.13**	
Block 2		.02**
Self-anonymity	.004	
Other-anonymity	.16†	
Platform anonymity	-.03	
Total R <sup>2</sup>		.06***

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

Table 4.1.6.

*Multiple Regression Analysis Predicting Perceived Congruity with Media-reported Dominant Opinion on HMP*

Predictor	$\beta$	$\Delta R^2$
Block 1		.02*
Sex (Male)	.03	
Ethnicity (Caucasian)	-.07	
Religion (Religious)	.12*	
Moral values	-.12*	
Block 2		.02**
Media opinion congruity	-.13**	
Total R <sup>2</sup>		.03**

\*  $p < .05$ ; \*\*  $p < .01$

Table 4.1.7.

*Multiple Regression Analysis Predicting Contextual Fear of Isolation and HMP on Willingness to Express in Online News Discussions*

Predictor	$\beta$	$\Delta R^2$
Block 1		.05***
Sex (Male)	.02	
Ethnicity (Caucasian)	-.19***	
Religion (Religious)	.01	
Moral values	-.13**	
Block 2		.11***
Contextual fear of isolation	-.33***	
HMP	.06	
Total R <sup>2</sup>		.15***

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$



Table 4.1.8.

*Multiple Regression Analysis Predicting the Moderating effect of Perceived Reference Group Support on the Prediction of Contextual Fear of Isolation on Willingness to Express in Online News Discussions*

Predictor	$\beta$	$\Delta R^2$
Block 1		.05***
Sex (Male)	.02	
Ethnicity (Caucasian)	-.19***	
Religion (Religious)	.01	
Moral values	-.13**	
Block 2		.11***
Contextual fear of isolation	-.33***	
Reference group support	.01	
Block 3		.02***
Contextual fear of isolation x Reference group support	-.14***	
Total R <sup>2</sup>		.18***

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

Table 4.1.9.

*Multiple Regression Analysis Predicting Perceived Support from One's Reference Group and Perceiving Immediate Online Support on Willingness to Express in Online News Discussions*

Predictor	$\beta$	$\Delta R^2$
Block 1		.05***
Sex (Male)	.02	
Ethnicity (Caucasian)	-.19***	
Religion (Religious)	.01	
Moral values	-.13**	
Block 2		.05***
Reference group support	.03	
Immediate online support	.21***	
Total R <sup>2</sup>		.09***

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

Table 4.1.10.

*Multiple Regression Analysis Predicting Issue Involvement on Willingness to Express in Online News Discussions*

Predictor	$\beta$	$\Delta R^2$
Block 1		.05***
Sex (Male)	.02	
Ethnicity (Caucasian)	-.19***	
Religion (Religious)	.01	
Moral values	-.13**	
Block 2		.04***
Issue involvement	.22***	
Total $R^2$		.09***

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

Table 4.1.11.

*Multiple Regression Analysis Predicting Online Privacy Concerns on Willingness to Express in Online News Discussions*

Predictor	$\beta$	$\Delta R^2$
Block 1		.05***
Sex (Male)	.02	
Ethnicity (Caucasian)	-.19***	
Religion (Religious)	.01	
Moral values	-.13**	
Block 2		.01**
Online privacy concerns	.12**	
Total R <sup>2</sup>		.06***

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

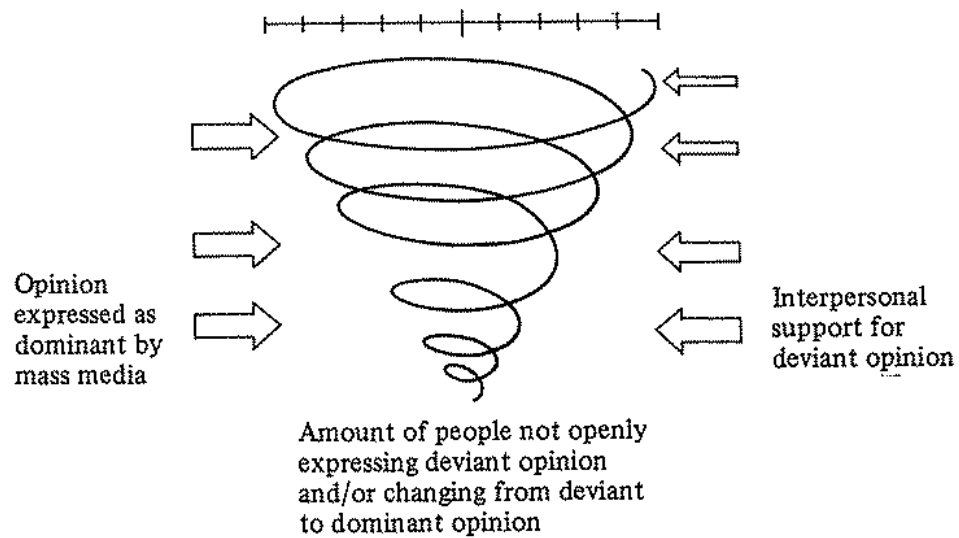
Table 4.2.1.

*Multiple Regression Analysis Predicting Research Predictors on Willingness to Express in Online News Discussions*

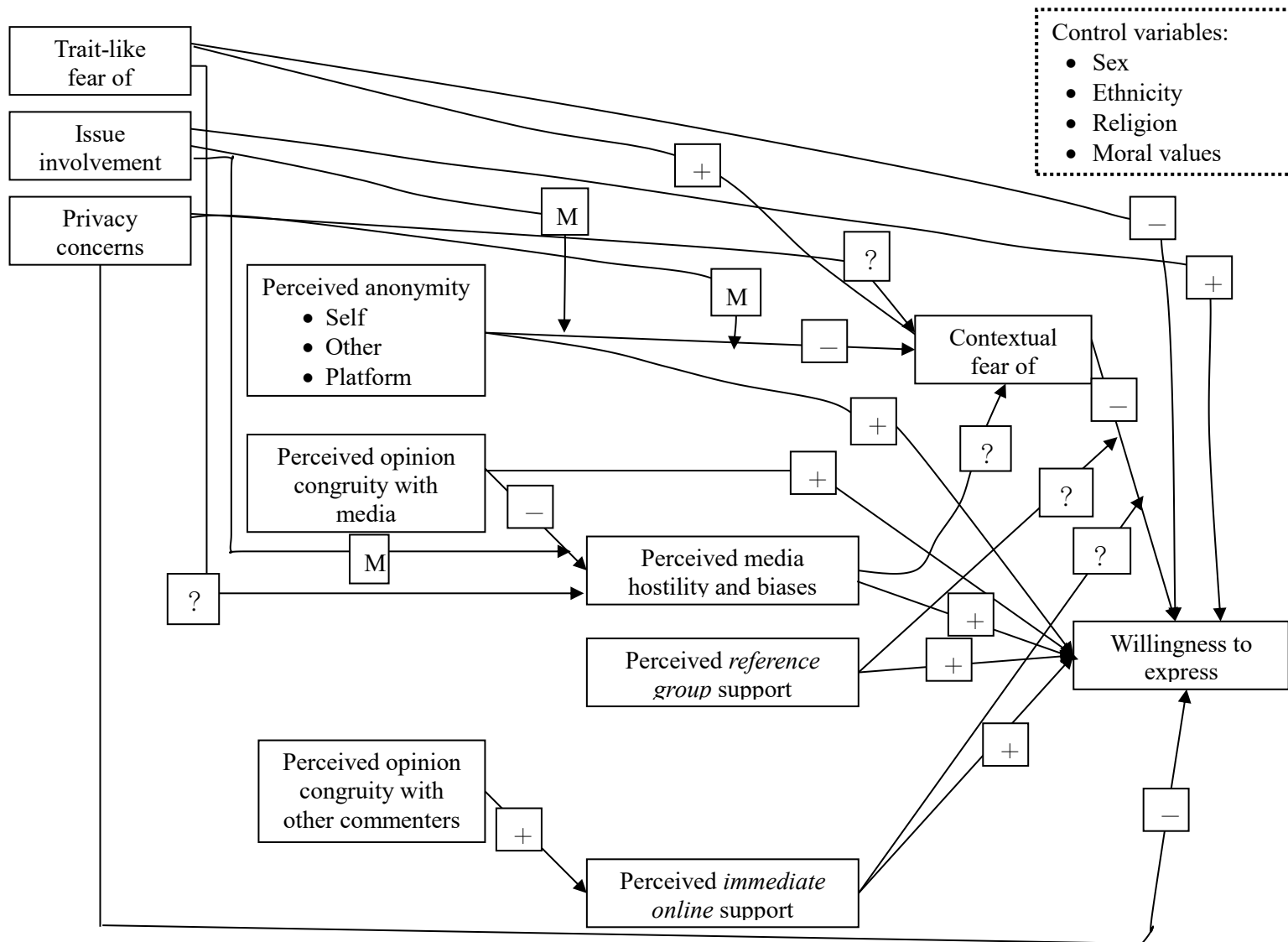
Predictor	$\beta$	$\Delta R^2$
Block 1		.05***
Sex (Male)	.02	
Ethnicity (Caucasian)	-.19***	
Religion (Religious)	.01	
Moral values	-.13**	
Block 2		.05***
Trait-like fear of isolation	-.09*	
Issue involvement	.21***	
Block 3		.14***
Perceived anonymity	.13**	
Contextual fear of isolation	-.34***	
Immediate online support	.18***	
Total R <sup>2</sup>		.23***

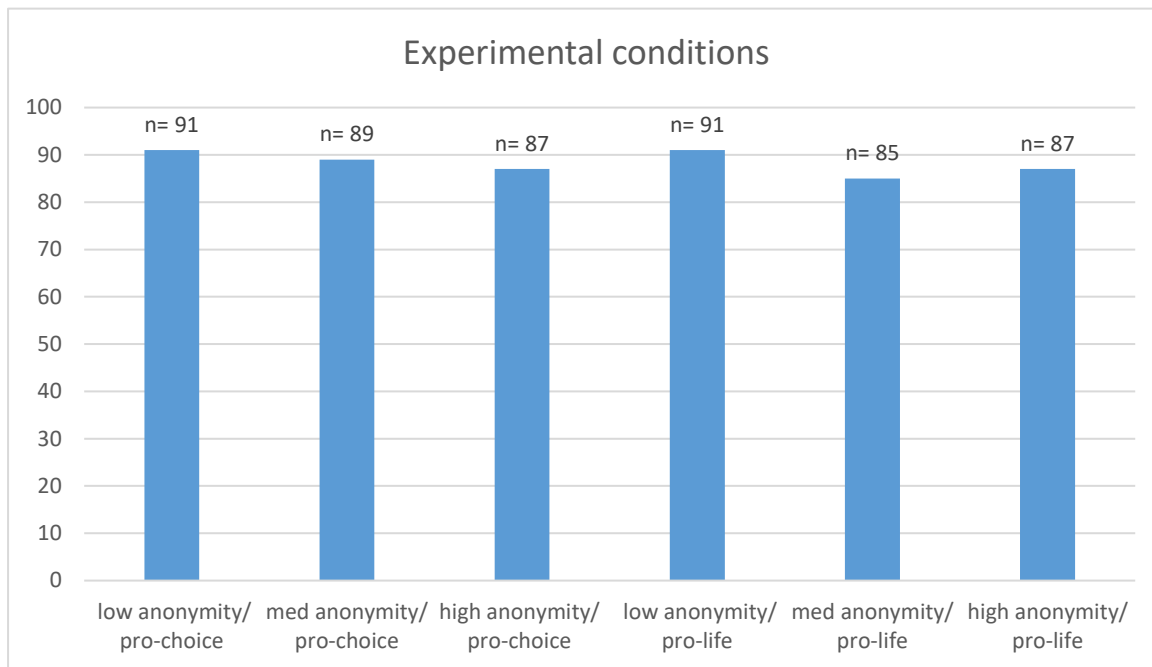
\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

Figure 1.1.1. A model of the Spiral of Silence. Reprinted from D. McQuail and S. Windahl, 1993, *Communication models 2<sup>nd</sup> ed.*, pp. 117. Copyright 1993 by Longman.



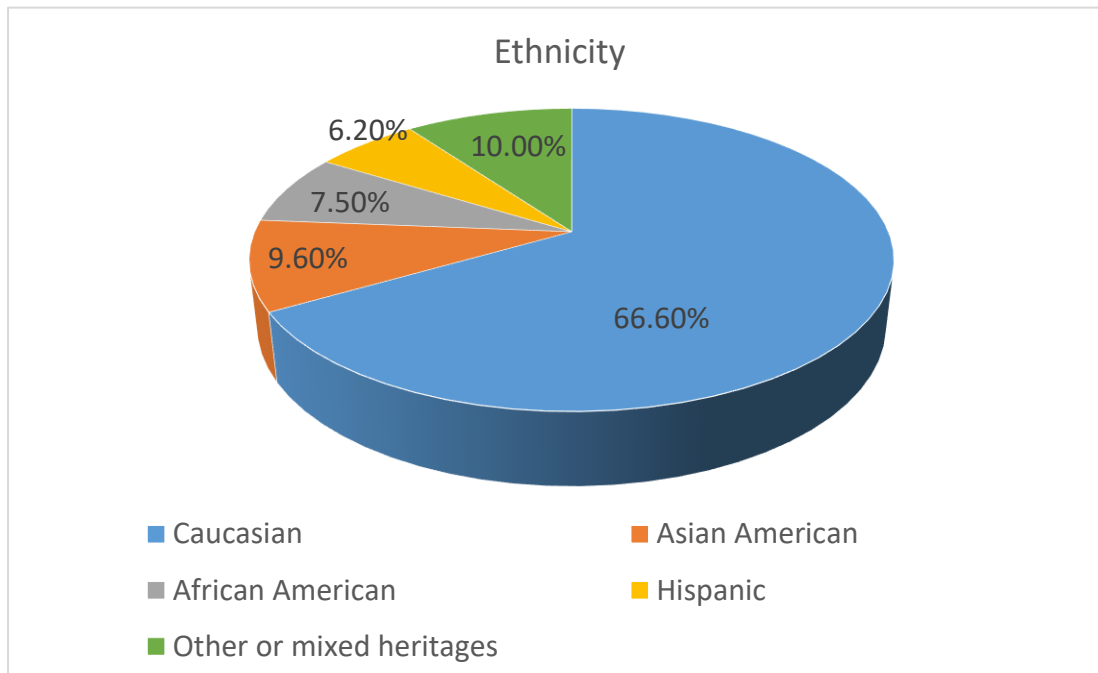
*Figure 2.5.1.* Research Model of This Current Study. “+”= hypothesized positive prediction or correlation; “−”= hypothesized negative prediction; “M”= hypothesized moderator effect; “?”= research question.



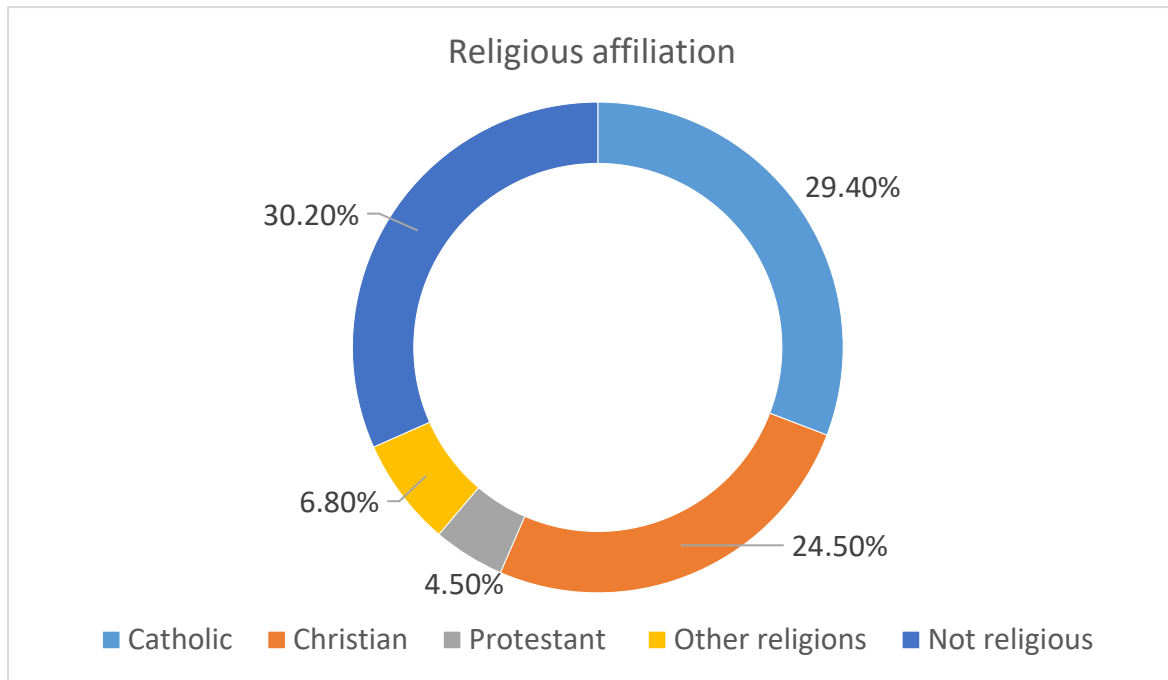
*Figure 3.5.1. The Distribution of the Experimental Conditions.*



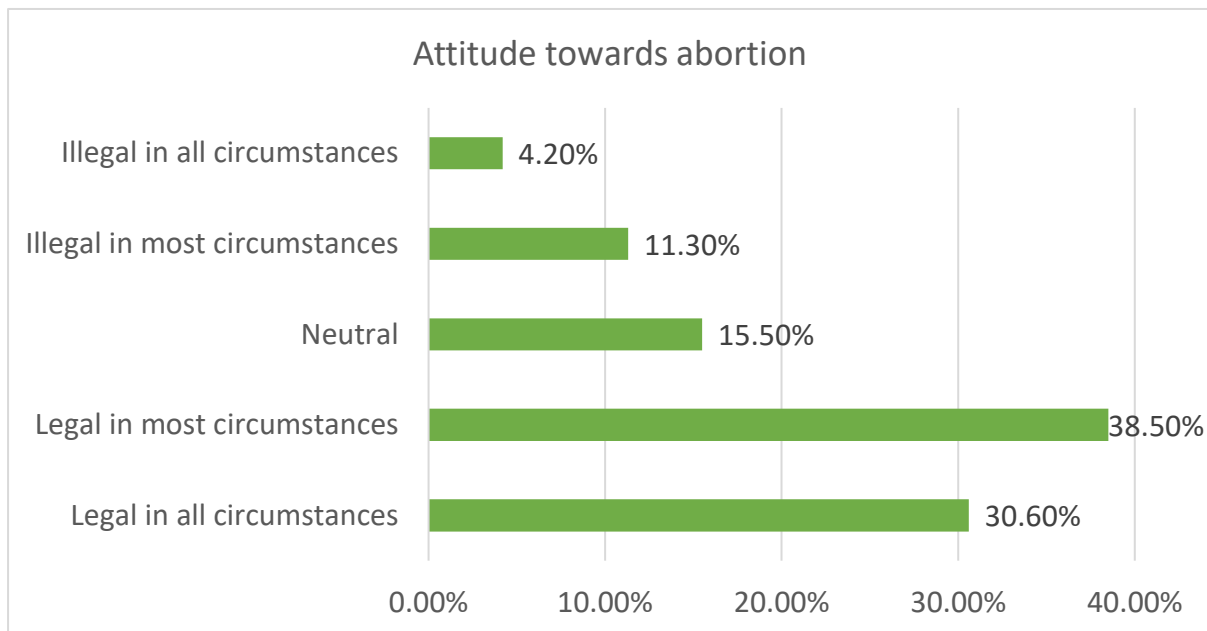
*Figure 3.5.2. The Distribution of the Participants' Ethnicity.*



*Figure 3.5.3. The Distribution of the Participants' Religious Affiliation.*



*Figure 3.5.4. The Distribution of the Participants' Attitude towards Abortion.*



*Figure 4.1.1. Moderating Effect of Perceived Reference Group Support on the Prediction of Contextual Fear of Isolation on Willingness to Express in Online News Discussions.*

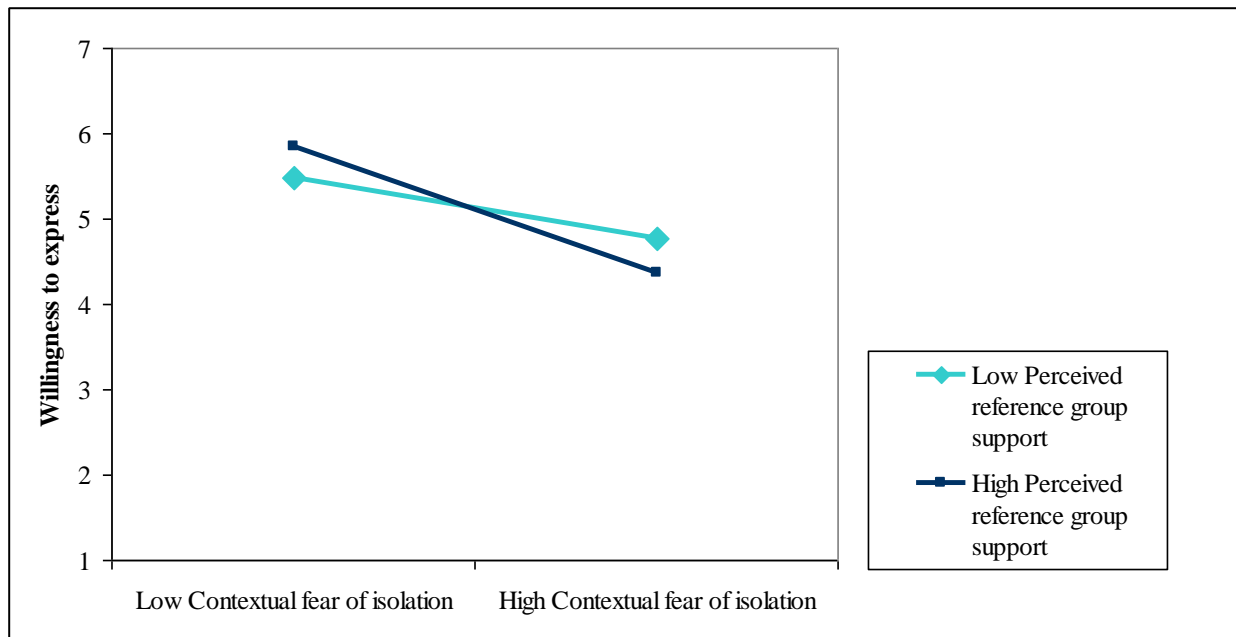
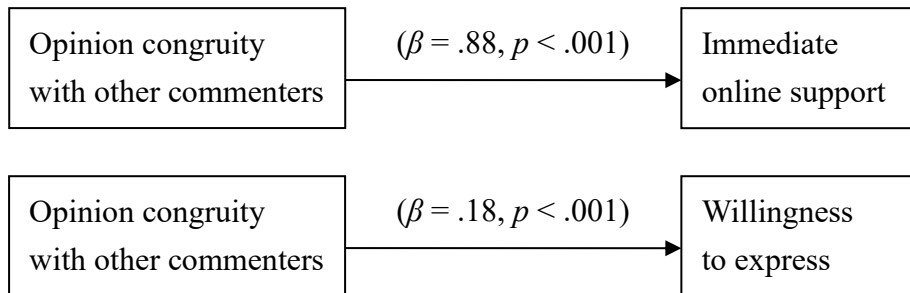
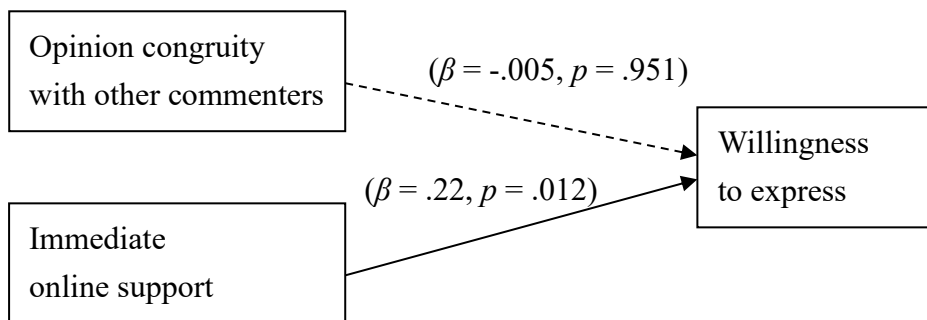


Figure 4.1.2. Mediating Effect of Perceived Immediate Online Support on the Prediction of Opinion Congruity with Other Commenters on Willingness to Express in Online News Discussions.

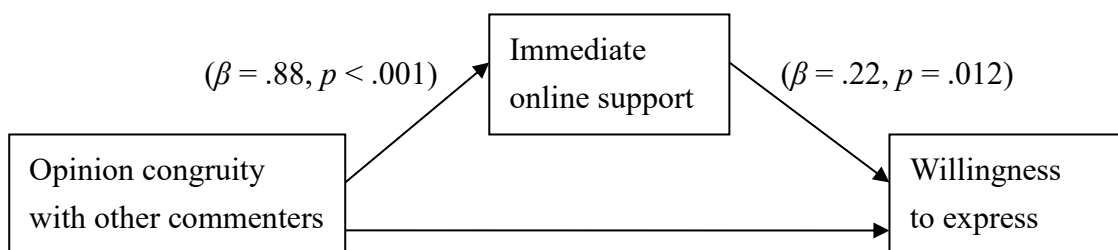
(a)



(b)



(c)



Total effect of opinion congruity with other commenters on willingness to express online:

$$\beta = .16, p < .001$$

Indirect effect of opinion congruity with other commenters on willingness to express online:  $\beta = .17, CI = [.02, .30]$ .

**Appendix 1: Research Stimulus- News Article**

# Americans Choose "Pro-Choice" for First Time in Seven Years

Associated Press

By Mike Barrett and Karen Cohen

Posted: 05/30/2015 11:40 AM EDT | Edited: 05/30/2015 12:21 PM EDT

PRINCETON, N.J. (Associated Press) -- Half of Americans consider themselves "pro-choice" on abortion, surpassing the 44% who identify as "pro-life." This latest result based on Gallup's May 6-10 Values and Beliefs poll 2015 suggests that this is the first time since 2008 that the pro-choice position has had a statistically significant lead in Americans' abortion views.

Gallup began tracking Americans' identification as "pro-choice" or "pro-life" at least annually in 2001. For most of the past five years (2010-2014), Americans have been fairly evenly divided in their association with the two abortion labels.

While Gallup does not define the pro-choice and pro-life terms for Americans, their answers to a separate question about the legality of abortion indicate that those favoring the pro-choice label generally support broad abortion rights, while pro-life adherents mostly favor limited or no abortion rights.

The recent increase in the pro-choice side has occurred almost equally among men and women. However, for men, this has not compensated for the larger drop in their identification as pro-choice in 2012. As a result, a gender gap has emerged over the last three years. In the poll of 2015, women (54%) were more likely than men (46%) to identify themselves as pro-choice on abortion. This contrasts with 2001 through 2011, when there was virtually no gender gap. On a longer-term basis, a higher percentage of women today than in 2001 (49%) call themselves pro-choice, while men's identification (46%) is about the same.

Furthermore, the biggest change by age since 2001 is that middle-aged and older Americans are more likely to be pro-choice today, while the percentage of young adults (18 to 34 years) who identify with the term is about the same (between 53% and 55%).

---

Results for this Gallup poll are based on telephone interviews conducted May 6-10, 2015, with a random sample of 1,024 adults, aged 18 and older, living in all 50 U.S. states and the District of Columbia. For results based on the total sample of national adults, the margin of sampling error is  $\pm 4$  percentage points at the 95% confidence level. All reported margins of sampling error include computed design effects for weighting.

## Appendix 2: Research stimulus- Online News Comments

### Condition 1: High anonymity/ Pro-choice

Leave a comment...

*(Create a username or stay anonymous)*

POST

Anonymous • 1 day ago



Legal abortion has support because we recognize the value of the woman dealing with pregnancy, we have collective memory of the horrors of illegal abortion and don't wish that upon anyone. I am not proud of my abortion. But I am grateful that I had the option to have a legal, safe abortion. I am grateful that I had a chance at the life I wanted. And after giving birth, there is no way I could ever give a baby up for adoption.

Anonymous • 1 day ago



How can anyone say that abortion is wrong because murder should not be legal. Well isn't that what our death penalty is ,when they manage to get it right and actually kill an inmate who may or may not be guilty. This is an actual grown human being enduring the suffering ,not a fetus who isn't mature enough to feel what an adult feels. And abortion is not dismembering a fetus who can't survive on it's own. I hate to think of life without a choice for a pregnant woman.

gloc • 2 days ago



I do not feel that any religious group should have an impact or voice on this issue. A religious group does not have a legal vote, nor should any religious group's beliefs govern the entire population. There are many non religious, and non-Christian people in the USA and they should not have their rights infringed or limited by any religious group. Also the only people who should be able to vote on this issue are women, as they are the ONLY ones impacted. Men cannot get pregnant and therefore they should not have a voice in this matter. Whether a woman chooses to terminate a pregnancy should be her decision and not limited by any government entity. The government has no right or reason to limit a woman's choice.

## Condition 2: Med anonymity/ Pro-choice

Leave a comment...






*(Sign in your social media account. You may display a different username on your post.)*

**POST**

Sam • [Twitter](#) • 1 day ago



Legal abortion has support because we recognize the value of the woman dealing with pregnancy, we have collective memory of the horrors of illegal abortion and don't wish that upon anyone. I am not proud of my abortion. But I am grateful that I had the option to have a legal, safe abortion. I am grateful that I had a chance at the life I wanted.

And after giving birth, there is no way I could ever give a baby up for adoption.

Mike Fromerth • [Google +](#) • 1 day ago



How can anyone say that abortion is wrong because murder should not be legal. Well isn't that what our death penalty is ,when they manage to get it right and actually kill an inmate who may or may not be guilty. This is an actual grown human being enduring the suffering ,not a fetus who isn't mature enough to feel what an adult feels. And abortion is not dismembering a fetus who can't survive on it's own. I hate to think of life without a choice for a pregnant woman.

gloc • [Facebook](#) • 2 days ago





I do not feel that any religious group should have an impact or voice on this issue. A religious group does not have a legal vote, nor should any religious group's beliefs govern the entire population. There are many non religious, and non-Christian people in the USA and they should not have their rights infringed or limited by any religious group. Also the only people who should be able to vote on this issue are women, as they are the ONLY ones impacted. Men cannot get pregnant and therefore they should not have a voice in this matter. Whether a woman chooses to terminate a pregnancy should be her decision and not limited by any government entity. The government has no right or reason to limit a woman's choice.



## Condition 3: Low anonymity/ Pro-choice

Leave a comment...

    Sign in your social media account.  
Your account name will be shown on your post.

POST

Sam Weathers • [Twitter](#) • 1 day ago



Legal abortion has support because we recognize the value of the woman dealing with pregnancy, we have collective memory of the horrors of illegal abortion and don't wish that upon anyone. I am not proud of my abortion. But I am grateful that I had the option to have a legal, safe abortion. I am grateful that I had a chance at the life I wanted.

And after giving birth, there is no way I could ever give a baby up for adoption.

Mike Fromerth • [Google +](#) • 1 day ago



How can anyone say that abortion is wrong because murder should not be legal. Well isn't that what our death penalty is ,when they manage to get it right and actually kill an inmate who may or may not be guilty. This is an actual grown human being enduring the suffering ,not a fetus who isn't mature enough to feel what an adult feels. And abortion is not dismembering a fetus who can't survive on it's own. I hate to think of life without a choice for a pregnant woman.

Sidney Ikemen • [Facebook](#) • 2 days ago



I do not feel that any religious group should have an impact or voice on this issue. A religious group does not have a legal vote, nor should any religious group's beliefs govern the entire population. There are many non religious, and non-Christian people in the USA and they should not have their rights infringed or limited by any religious group. Also the only people who should be able to vote on this issue are women, as they are the ONLY ones impacted. Men cannot get pregnant and therefore they should not have a voice in this matter. Whether a woman chooses to terminate a pregnancy should be her decision and not limited by any government entity. The government has no right or reason to limit a woman's choice.

## Condition 4: High anonymity/ Pro-life

Leave a comment...

(Create a username or stay anonymous)

POST

Anonymous • 1 day ago



I can't imagine any rational thinking person that would not understand a embryo is living and until it is disturbed by an abortionist; it will grow to be come a human life. Killing it is murder. It does not matter if it is one week or sixty years; a sperm and egg fertilized and growing is still a human being. What is done to it is the same outcome...common sense. Therefore, in our terms today, it IS murder when you kill it.

Anonymous • 1 day ago



Over 2000 human hearts are destroyed with sharp objects and powerful suction devices every day in the USA. The issue will not go away because this violence is not a "none-of-our business," personal autonomy issue, it is a policy of lethal action against a large subset of humanity. I am speaking in a scientific sense, not a religious one. Any policy that says one part of the human family is not worthy to be alive in the morning, is an elitist one, and is thus un-American.

gloc • 2 days ago



Personally I'm pro-life. I believe and this is coming from a spiritually point of view; God would not let a woman get prego if he didn't want that child to grow up and make a change. All the fetus that the woman are killing, how do you know that baby wasn't going to grow up and make this world a better place. I understand when people say that if a child is raped and get implanted with a baby but you never know why it happen. And also the main reason woman have abortion is because they didn't want it to happen and don't want to step up and be the responsible one. So i say lets stop Abortion and make it illegal!!!

## Condition 5: Med anonymity/ Pro-life

Leave a comment...

(Sign in your social media account. You may display a different username on your post.)

**POST**

Sam • [Twitter](#) • 1 day ago



I can't imagine any rational thinking person that would not understand a embryo is living and until it is disturbed by an abortionist; it will grow to be come a human life. Killing it is murder. It does not matter if it is one week or sixty years; a sperm and egg fertilized and growing is still a human being. What is done to it is the same outcome...common sense. Therefore, in our terms today, it IS murder when you kill it.

Mike Fromerth • [Google +](#) • 1 day ago



Over 2000 human hearts are destroyed with sharp objects and powerful suction devices every day in the USA. The issue will not go away because this violence is not a "none-of-our business," personal autonomy issue, it is a policy of lethal action against a large subset of humanity. I am speaking in a scientific sense, not a religious one. Any policy that says one part of the human family is not worthy to be alive in the morning, is an elitist one, and is thus un-American.

gloc • [Facebook](#) • 2 days ago



Personally I'm pro-life. I believe and this is coming from a spiritually point of view; God would not let a woman get prego if he didn't want that child to grow up and make a change. All the fetus that the woman are killing, how do you know that baby wasn't going to grow up and make this world a better place. I understand when people say that if a child is raped and get implanted with a baby but you never know why it happen. And also the main reason woman have abortion is because they didn't want it to happen and don't want to step up and be the responsible one. So i say lets stop Abortion and make it illegal!!!

## Condition 6: Low anonymity/ Pro-life

Leave a comment...

    Sign in your social media account.  
Your account name will be shown on your post.

POST

Sam Weathers • [Twitter](#) • 1 day ago



I can't imagine any rational thinking person that would not understand a embryo is living and until it is disturbed by an abortionist; it will grow to be come a human life. Killing it is murder. It does not matter if it is one week or sixty years; a sperm and egg fertilized and growing is still a human being. What is done to it is the same outcome...common sense. Therefore, in our terms today, it IS murder when you kill it.

Mike Fromerth • [Google +](#) • 1 day ago



Over 2000 human hearts are destroyed with sharp objects and powerful suction devices every day in the USA. The issue will not go away because this violence is not a "none-of-our business," personal autonomy issue, it is a policy of lethal action against a large subset of humanity. I am speaking in a scientific sense, not a religious one. Any policy that says one part of the human family is not worthy to be alive in the morning, is an elitist one, and is thus un-American.

Sidney Ikemen • [Facebook](#) • 2 days ago



Personally I'm pro-life. I believe and this is coming from a spiritually point of view; God would not let a woman get prego if he didn't want that child to grow up and make a change. All the fetus that the woman are killing, how do you know that baby wasn't going to grow up and make this world a better place. I understand when people say that if a child is raped and get implanted with a baby but you never know why it happen. And also the main reason woman have abortion is because they didn't want it to happen and don't want to step up and be the responsible one. So i say lets stop Abortion and make it illegal!!!

**Appendix 3: Questionnaire**

Questions	Format
--- Page 1 ---	
1. What is your biological sex?	Male Female Other (please specify): _____
2. How would you describe your ethnicity?	Caucasian Hispanic African American Native American Asian American Asian-Pacific Islander Other or mixed heritage (please specify): _____
3. How would you describe your religious affiliation?	Protestant Christian Catholic Jewish Mormon Not religious Other (please specify): _____
--- Page 2 ---	
<b>Trait-like fear of isolation</b> (6 items; Ho & McLeod, 2008; Scheufele et al., 2001)  <i>For each of the following questions, please check the phrase that best describes you.</i> 4. I worry about being isolated if people disagree with me. 5. I avoid telling other people what I think when there's a risk they'll avoid me if they knew my opinion. 6. I do not enjoy getting into arguments. 7. Arguing over controversial issues improves my intelligence.	1 (Strongly disagree) to 7 (Strongly agree)

8. I enjoy a good argument over a controversial issue. 9. I try to avoid getting into arguments.	
--- Page 3 ---	
<p><b>Moral values</b>          (12 items; Padilla-Walker &amp; Jensen, 2015)</p> <p><i>For each of the following questions, please check the phrase that best describes you.</i></p> <p>10. I should take responsibility for myself.          11. I should try to achieve my personal goals.          12. I should be fair to other individuals.          13. I should respect other individuals' rights.          14. I should take care of my family.          15. I should be cooperative.          16. I should know my place or role in a group.          17. I should strive for social harmony.          18. I should aim for spiritual salvation.          19. I should aim to live a holy life.          20. I should follow God's law.          21. I should strive for spiritual purity.</p>	1 (Strongly disagree) to 7 (Strongly agree)
--- Page 4 ---	
<p><b>Privacy concerns</b>          (17 items; Taddicken, 2010)</p> <p><i>For each of the following questions, please check the phrase that best describes you.</i></p> <p>22. In general, how concerned are you about your privacy while using the Internet?          23. Are you concerned about online organizations not being who they claim they are?          24. Are you concerned that you are asked for too much personal information when you register or make online purchases?          25. Are you concerned about online identity theft?</p>	1 (Not at all) to 7 (Completely)

<p>26. Are you concerned about people online not being who they say they are?</p> <p>27. Are you concerned about people you do not know obtaining personal information about you from your online activities?</p> <p>28. Are you concerned that personal content that you store securely in the Internet (e.g. photos) can be viewed by others?</p> <p>29. Are you concerned that information about you could be found on an old computer?</p> <p>30. Are you concerned about who might access your medical records electronically?</p> <p>31. Are you concerned that an email you send may be read by someone other than the person to whom you sent it?</p> <p>32. Are you concerned that an email you send someone may be inappropriately forwarded to others?</p> <p>33. Are you concerned that an email you send someone may be printed out in a place where others can see it?</p> <p>34. Are you concerned that a computer virus could send out emails in your name?</p> <p>35. Are you concerned about emails you receive not being from whom they claim to be?</p> <p>36. Are you concerned that an email containing a seemingly legitimate address may be fraudulent?</p> <p>37. Are you concerned that if you use your credit card to buy something on the Internet, your credit card number will be obtained/intercepted by someone else?</p> <p>38. Are you concerned that if you use your credit card to buy something on the Internet, your card will be mischarged?</p>	
<p style="text-align: center;">--- Page 5 ---</p>	
<p><b>Issue involvement</b> (10 items; Kim et al., 2014; Willnat et al., 2002; Zaichkowsky, 1985)</p>	

<p><i>For each of the following questions, please check the phrase that best describes you on the <b><u>issue of abortion</u></b>.</i></p> <p>39. This is an important issue.</p> <p>40. I am familiar with this issue.</p> <p>41. I am interested in this issue.</p> <p>42. I think about this issue all the time.</p> <p>43. This issue is of concern to me.</p> <p>44. This issue is relevant to me.</p> <p>45. This issue matters to me.</p> <p>46. I think this is a salient issue in society.</p> <p>47. I would like to discuss this issue with someone else.</p> <p>48. This issue is significant to me.</p>	<p>1 (Strongly disagree) to 7 (Strongly agree)</p>
<p>49. What is your general attitude towards <b><u>abortion</u></b>?</p>	<p>Illegal in all circumstances Illegal in most circumstances Legal in most circumstances Legal in all circumstances Neutral</p>
<p><b>Perceived social support from reference group</b> (2 item; Glynn &amp; Park, 1997; Moy et al., 2001)</p> <p>50. To what extent do you think your family would support your opinion on the issue of abortion?</p> <p>51. To what extent do you think your friends would support your opinion on the issue of abortion?</p>	<p>1 (Not at all) to 7 (Completely)</p>
<p>--- Page 6 ---</p>	
<p>Please read the following news article. [Show the news article]</p>	
<p><b>Manipulation check for the news article:</b> <i>Please answer the following questions.</i></p> <p>52. The poll reported in this news article indicates that 50% of Americans are “pro-choice” on abortion, while 44% of which are “pro-life”.</p> <p>53. According to the poll of 2015, 46% of the female respondents and 54% of the male respondents identified themselves as pro-choice on abortion.</p>	<p>Yes/ No</p>



<p><b>Perceived opinion congruity with the media content</b> (1 item; Glynn &amp; Park, 1997; Moy et al., 2001)</p> <p>54. To what extent do you think your opinion is congruent with the poll results reported in this news article?</p>	<p>1 (Not at all) to 7 (Completely)</p>
<p><b>Perceived media hostility and bias</b> (3 items; self-generated)</p> <p><i>For each of the following questions, please check the phrase that best describes you.</i></p> <p>55. The news coverage about this issue is biased.</p> <p>56. The poll results about this issue are biased.</p> <p>57. The journalist responsible for this news article is biased.</p>	<p>1 (Strongly disagree) to 7 (Strongly agree)</p>
<p>--- Page 7---</p>	
<p>Please read the following comments that were attached to the news article you previously read. [Show the online news comments]</p>	
<p><b>Manipulation check for the online news comments:</b> <b>-- The valence and inter-congruity of the online news comments</b></p> <p><i>Please Answer the following questions:</i></p> <p>58. Overall, these three online news comments share a similar viewpoint on abortion.</p> <p>59. Overall, these three comments support abortion rights.</p>	<p>Yes/ No</p>

<p><b>Manipulation check for the online news comments:</b>  <b>--Perceived anonymity</b>  (3 items; Qian &amp; Scott, 2007)</p> <p><i>For each of the following questions, please check the phrase that best describes you.</i></p> <p>60. To what extent do you think this comment section is anonymous?</p> <p>61. To what extent do you think the commenters who posted their comments are anonymous?</p> <p>62. If you would like to post your comment, to what extent do you think you are anonymous?</p>	<p>1 (Totally identifiable) to  7 (Totally anonymous)</p>
<p><b>Perceived opinion congruity with the commenters</b>  (1 item; Glynn &amp; Park, 1997; Moy et al., 2001)</p> <p>63. To what extent do you think these commenters expressed the same opinions as you hold on the issue of abortion?</p>	<p>1 (Not at all) to 7 (Completely)</p>
<p><b>Perceived social support from the commenters</b>  (1 item; Glynn &amp; Park, 1997; Moy et al., 2001)</p> <p>64. To what extent do you think these commenters would support your opinion on the issue of abortion?</p>	<p>1 (Not at all) to 7 (Completely)</p>
<p>--- Page 8 ---</p>	
<p><b>Contextual fear of isolation</b>  (6 items; Ho &amp; McLeod, 2008; Scheufele et al., 2001)</p> <p><i>For each of the following questions, please check the phrase that best describes you.</i></p> <p>65. In this online news discussion, I worry about being isolated if people disagree with me.</p> <p>66. In this online news discussion, I avoid telling other people what I think when there's a risk they'll avoid me if they knew my opinion.</p> <p>67. In this online news discussion, I do not enjoy getting</p>	<p>1 (Strongly disagree) to  7 (Strongly agree)</p>

<p>into arguments.</p> <p>68. In this online news discussion, arguing over controversial issues improves my intelligence.</p> <p>69. In this online news discussion, I enjoy a good argument over a controversial issue.</p> <p>70. In this online news discussion, I try to avoid getting into arguments.</p>	
--- Page 9 ---	
<p><b>Willingness to express in online news discussions</b> (1 item; Ho et al., 2013 ; Lin &amp; Salwen, 1997; Moy et al., 2001)</p> <p><i>For the following question, please check the phrase that best describes you.</i></p> <p>71. How willingly would you post your opinion on this comment section?</p>	<p>1 (Very unwillingly) to 7 (Very willingly)</p>