

## Are Communication Theories Affected by New Communication Technologies? : A Look at Spiral of Silence Theory

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**ABSTRACT** *Computer technologies and Internet set new standards for interaction and let people explore new horizons in the field of communication. As a consequence, individual's perception of the world surrounding his/herself may be affected. Considering this ever-evolving climate of change, communication theories have to be revisited and efforts of critical thinking should be made by scholars in order to keep theories up-to-date or determine them as not capable of explaining contemporary conjuncture.*

*The purpose of this study is to review previous research studies focused on computer mediated communication and spiral of silence. Results show that spiral of silence may occur despite characteristics of computer mediated communication that can liberate individuals from social sanctions.*

**Keywords:** CMC, Spiral of silence, Communication, Internet

### *İletişim Teorileri İletişim Teknolojilerindeki Yeniliklerden Etkilenmekte midir?: Suskunluk Sarmalı Teorisine Bir Bakış*

**ÖZ** *Bilgisayar teknolojileri ve internet insanlarsı etkileşim için yeni standartlar belirlemiş ve bireylere iletişim alanında yeni ufuklar açmıştır. Bunun sonucunda bireylerin etraflarını çevreleyen dünyayı algısı etkilenmektedir. Bu durmadan değişen çevre gözönüne alındığında iletişim teorilerinin tekrar gözden geçirilmesi ve eleştirel düşünme yaklaşımıyla akademisyenlerce tekrar değerlendirilmesi gerekmektedir. Bu sayede teorilerin günümüz konjonktürünü açıklayabilme kapasitesi de denenmiş olacaktır.*

*Bu çalışmanın amacı suskunluk sarmalı teorisine ve bilgisayar aracılı iletişim ortamlarına odaklanan araştırmaları gözden geçirerek bir literatür çalışması oluşturmaktır. Sonuçlar göstermektedir ki suskunluk sarmalı, bilgisayar aracılı iletişim ortamlarının bireyleri sosyal yaptırımlardan kurtaran yapısına rağmen görülebilmektedir.*

**Anahtar Kelimeler:** Bilgisayar aracılı iletişim, Suskunluk Sarmalı, İletişim, İnternet

## INTRODUCTION

“Computer mediated communication” (CMC) is an important part of everyday life as computer technologies; especially internet begins to predominate individuals’ lives around the world. Computer-mediated communication (CMC) is the communication process in which information is created, exchanged and perceived between humans that occurs through networked electronic devices. Contemporary use of the term includes Internet-based social networking especially based on mobile technologies besides traditional computer mediated formats (e.g., instant messaging, email, chat rooms, online forums). Since a growing population shares opinions through the internet, this specific communication setting is capable of fostering many possibilities of improvement in society including the contribution to deliberative democracy. Conversely, there has not been enough effort in trying to rationalize CMC processes and its effects on individuals.

Being regarded as a bridge between mass and interpersonal communication, spiral of silence theory, originated by Noelle-Neumann (1973) becomes a prominent communication theory. The theory provides a valuable outline for examining how public opinion varies at the individual level. In this respect, this study reviewed previous researches focusing on spiral of silence theory in a CMC setting as well as other related researches.

First, unique characteristics of CMC setting -anonymity, ability to interact against physical distance, reduced involvement obligation etc. - are described in order to depict the regarded context.

Predictably there have been critiques of spiral of silence theory. Debate on the theory was tried to be reviewed on the second section.

After briefly describing the importance of examining actual discussions, results and findings of the research studies were highlighted.

Common perspectives, consistent findings, questionable aspects of the studies and limitations were accentuated in the discussion part.

Finally, an inference based on the literature reviewed was summarized on the conclusion section of the paper.

## UNIQUE CHARACTERISTICS OF COMPUTER-MEDIATED COMMUNICATION

Computer technologies provide individuals with different options other than known ways of communication do. Anonymity, reduced involvement obligation, real time information exchange and ability to interact against physical distance are considered by scholars among the main distinctions of CMC.

## Anonymity

Anonymity in online communication can be described as “a condition in which an individual's true identity is unknown.” ([www.microsoft.com/security/glossary.msp](http://www.microsoft.com/security/glossary.msp)) Real names of individuals aren't necessary to interact while communicating online. Rather, Nicknames or aliases are extensively used among online users. Wanta et al. (2000) argued that since individuals' real names are not used, they may not experience the fear of isolation which usually occurs when names are known by other communicators. Fear of social isolation is accepted as a force to suppress minority views in spiral of silence theory. In this context Mcdevitt et al. (2003) asked if anonymity as an option may be a liberating force or not.

Another aspect of the CMC, increasing anonymity is that most of the time discussions do not involve face-to-face communication. Being not seen by other participants, communicating individuals may feel free of social sanctions.

In most of the studies scholars (Wanta et al., 2000; Mcdevitt et al., 2003; Tanner, 2001; Hoet al. 2008; Lee et al. 2004, Gonçalves 2015, Hains et al. 2014) emphasize the benefits of anonymity that extend to message senders. However, a study by Rains (2007) reveals another perspective. Rains (2007) have examined the impact of anonymity on message receivers. While qualifying anonymity as allegedly mitigating status differences, which liberates participants from a fear of retribution and which it easier for individuals to resist group pressures, Rains (2007) contends that an anonymous source may be perceived as less competent or less credible than they would if the message sender was identified. Key findings of his research are in the direction of the hypothesis predicting that anonymous sources will be less credible and influential than identified sources during computer-mediated group interaction. Accordingly, results showed that participants were unable to identify source's expertise, so perceived anonymity was negatively associated with perceptions of source competence.

Wu and Lien (2013) also contends that high level of anonymity and reduced social cue lead to create high degree of cyberbullying behavior among middle school students. Kwak et al. (2015) focus on cyberbullying from a message receiver perspective and contend that in Team Competition Online Games Players are surprisingly not engaged in actively reporting toxic behavior.

Fox et al. (2015) claims that being anonymous may lead to sexist attitudes. Conducting a research on twitter fox et al. contend that anonymous participants reported greater hostile sexism after tweeting than nonanonymous participants. Christie and Dill (2016) suggest that only those participants with high self-esteem, low levels of social anxiousness, or an elevated sense of autonomy evaluated targets more negatively when anonymous rather than identifiable.

It can be interpreted that anonymity, while beneficial to message senders as a liberating quality, may have a negative impact on receiver perception and behavior.

### **Ability to Interact Against Physical Distance**

Computer technology allows individuals to communicate, share opinions with each other and gather intellectually in spite of physical obstacles. Tanner's (2001) study focuses on a fine example of that kind of communication. Back in October 1998 Augusto Pinochet, ex-dictator of Chile was arrested in London. After his arrest and during the trial of Pinochet, Chileans from all around the world discussed the incident on e-mail lists, chat-rooms and web-sites for nearly two years. They created public spaces for debate on the internet Tanner (2001) stated that participants were from at least 40 different countries from Australia to Norway. The main reason for this geographical diversity is due to the fact that many Chileans were in exile. They left their countries during military regime of Augusto Pinochet. Therefore CMC became an opportunity for Chileans to create a political public sphere free from geographical restrictions. As Tanner (2001) accentuates, participants of the debate have appreciated this situation as an advance and a step for the right direction.

### **Reduced Involvement Obligation**

Mcdevitt et al. (2003) claims that mediated communication might reduce individuals' interest to remain involved in the discussion. His claim is based on Erving Goffman's (1966) theory of "involvement obligation" and factors of CMC such as anonymity and physical distance. According to Goffman's theory (1966) while communicating face-to-face (FTF), people are bound by a system of etiquette in order to remain in the conversation. This system obliges them to listen and remember what the other party is saying. Mcdevitt et al. (2003) states that the impact of "high involvement obligation" over discussants might be reduced during computer mediated communication. Especially, this might be the case with short durations in which discussants cannot establish a regular and a normative online conversation (Walther, 1994, p.478). Factors like anonymity and physical distance might contribute to a breakdown in etiquette and establish the potential for low involvement obligation. Study described this phenomenon as 'social loafing' where participants feel no particular motivation to pay attention to the opinion of others. Eveland et al. (2011) asserts that reduced involvement obligation may also lead to hostile behaviour since participants might be less concerned with relationship maintenance, identity development, and goal outcomes.

### **Real Time Information Exchange**

Individuals are continuously exchanging information by computer mediated communication. Computer technology gives a wide range of possibilities for sharing information in various forms. Users can include hyperlinks to articles or other related sites in their messages so that they can strengthen their arguments. Facts, statistics, audio/visual data and all other types of information can be included in the claims. Such information can be

evidence for an individual or can be an important piece of knowledge that may be hard to obtain for another.

## DEBATE ON THE SPIRAL OF SILENCE THEORY

The spiral of silence theory is one of the most prominent social psychological theories. The concept of the "spiral of silence" is used to describe the dynamics of public opinion at the individual level. The spiral of silence theory states that every individual is subject to the pressure of public opinion. The power of that pressure is derived from our social nature as humans and our fear of being isolated (Wanta et al. 2000). In this model, the mass media have an important legitimating function. It affects individuals' perceptions of public opinion, and leads them to perceive their opinions to be popular. In addition, by gaining public support, it will be easier to express their views than those who believe their opinions are not shared by majority or are losing ground. Over time, this induces a spiraling process in which the perceived minority may become less likely to speak. This process further establishes the perceived majority group as the dominant one. Noelle-Neumann has written: 'Individuals tend to speak up if they perceive themselves to be in the majority side of an issue but to remain silent if they perceive themselves to be in the minority side of an issue' (Noelle-Neumann, 1974, p. 46).

According to Mcdevitt et al. (2003), scholars have promoted the spiral of silence theory as a bridge between macro and individual level processes, as it describes how a person's motivation for opinion expression is a function of his/her surveillance of mass media and other cues about the opinion climate. Beside its prominence in public opinion research, Noelle-Neumann's spiral of silence hypothesis has been the subject of much debate in communication literature.

While defining public opinion as a pressure to conform, Noelle-Neumann and spiral of silence theorists identify three conditions necessary for the spiral of silence to occur. First, individuals are afraid of becoming isolated from their environment. Second, society threatens individuals with isolation, if those individuals' opinion deviates. Third, in order to avoid isolation, individuals constantly observe and check what the "climate of opinion" is. In a computer mediated context it is questionable whether these conditions exist.

Scholars (Lasorsa, 1991; Csikszentmihalyi 1991) are accentuating the little attention paid to the subjects of the research in the spiral of silence studies: the individuals. Individual differences may be an important factor on expressing opinions. For instance, people who are self-confident, extroverted and have strong beliefs upon certain subjects may be more likely to resist group pressures.

Scholars have also criticized the theory for exaggerating the fear of isolation and not considering various social settings (Tsfati, 2003; Kennamer, 1990). Moreover, most of the researches emphasizing the fear of isolation did not involve any discussion including insight into the mediated interpersonal communication. As stated above, characteristics of CMC such

as anonymity and reduced involvement obligation may liberate individuals from social sanctions and reduce their motivation to pay attention to other parties.

Another point concerns the different perspectives about society's negative sanctions on those with minority views. A recent research conducted by Stromer-Galley (2003) examining online discussion spaces have proposed that users of online political discussion spaces appreciate and enjoy the diversity of people and opinions that they encounter online (Stromer-Galley, 2003). Therefore, it may be concluded that people may be enjoying "hearing" different views.

### **Hypothetical Vs. Actual Discussions**

Hypothetical scenarios are the primary communication settings that are utilized by scholars in the spiral of silence research. Reliance on hypothetical scenarios was criticized as the most glaring shortcoming in spiral of silence researches (Scheufele et al., 2001; Mcdevitt, 2003). For instance, on a typical survey participants are asked about their opinion on a topic and their evaluation of how other people would feel about the issue. After defining the context, participants are asked whether they would be willing to speak out and express their opinion on the given imagined scenario or not. However, Glynn et al. (1997) contend that questions used in survey instruments may not be able to capture the spiral of silence phenomena very well. In accordance with this Glynn et al. have written: 'Hypothetical nature of the situation presented in survey questions may not engender the kinds of psychological states that putatively produce spiral of silence effects' (Glynn et al., 1997, p. 10).

While hypothetical scenarios are not effectively reflecting the actual states experienced. Computer mediated communication has given the opportunity for scholars to rely their research on observations of actual discussions so that they can replace "hypothetical willingness" of survey-based studies with "actual willingness" to speak out.

### **PROMINENT FINDINGS OF RESEARCH STUDIES FOCUSING ON SPIRAL OF SILENCE THEORY DURING COMPUTER MEDIATED COMMUNICATION**

While there are important studies focusing on spiral of silence theory and computer mediated communication, unfortunately there is not enough body of literature underscoring unique characteristics of computer mediated communication and its influence on opinion expression. Theorists have yet to investigate how mediation affects the social psychological processes specified by the spiral of silence theory (Mcdevitt et al. 2003).

It can be concluded that findings derived from several studies are consistent with each other. Despite the differences in cultural settings and ethnic backgrounds (Korean, Chilean and mostly American), results of the existing studies' reveal some important similarities.

The first study that examined the spiral of silence theory in a computer mediated setting is Wanta and Dimitrova's (2000) study. They focused on the discussions in two chatrooms (America On-line Cloakroom and CBS News chatroom) during final 1996 U.S. presidential debate. Those two chatrooms were specifically selected since chatrooms were devoted only to the presidential debate and no other topic was discussed for the time being.

Wanta et al. (2000) claim that fear of isolation, and threat of social sanctions –two of the basic assumptions of the spiral of silence hypothesis- will not be highly determinant in computer mediated settings. They base their claim in two main reasons:

1. Anonymity of the context
2. Differentiation of the internet users from average person.

Wanta et al. describe the internet users as very interested in political issues, and demographically different from the average person (higher socio-economic status, mostly male and well-educated). In other words, those are people with strong personalities who can resist group pressures.

### **Spiral of discontent**

Wanta et al. (2000) base their hypothesis on the claim that spiral of silence would not occur through online discussions. In fact a reversed spiral of silence –spiral of discontent- in which minority side will be more pronounced and discussed than the majority side may take place.

The methodology of this study was based on monitoring two online chatrooms during the final 1996 U.S. debate. Chatrooms were monitored 20 minutes before the start of the debate until 20 minutes after the reports of the polls revealed the winner of the debate.

Within above described methodology, 804 statements derived from two chatrooms were examined. While the overall results are regarded as complicating by the scholars, they did find some support that the spiral of silence may have been at work. They have written: "Results revealed that supporters of the losing side apparently become more silent when they believed that he was doing poorly in the debate." (Wanta et al., 2000, p.19)

Contrary to Wanta et al.'s (2000) findings, Gearhart and Zhang (2015) in their study focusing on SNS (social networking site) contexts found that encountering agreeable political content predicts speaking out, while encountering disagreeable postings stifles opinion expression, supporting the spiral of silence theory in the SNS environment.

### **Enjoying the Diversity of Opinions Expressed**

According to the results of the above mentioned study, the phenomenon previously described as the spiral of discontent was not found at all. Wanta et al. (2000) states that anonymous nature of computer mediated communication clearly did not lead supporters of the minority view to speak up. An explanation for this result was that people might have



enjoyed hearing different views. This proposal is consistent with another study about diversity of political conversations on the internet and user's perspectives. In her research Stromer-Galley (2003) focused on individuals' behaviors during on-line socialization and perspectives on diverse opinions they encounter and have also found that people appreciate the diversity of people and opinions they interact during CMC.

### **Homophily Perspective vs. Diversity Perspective**

According to Stromer-Galley (2003), there are two sides of the debate about social effects of the computer mediated communication. First perspective –homophily perspective- argues that, when an individual goes online he/she is likely to interact with like-minded individuals. There are concerns regarding that kind of behavior. Sunstein (2001) contend that fragmentation of people into interest groups during computer mediated communication may carry the danger of radicalizing and developing extreme ideas such as terrorism. While not supporting this idea of radicalizing, Stromer-Galley (2003) comments that if the homophily perspective is correct, a limited range of perspectives and solutions to problems will be present in internet as a result.

The opposing perspective –diversity perspective- claims that individuals from diverse backgrounds goes online for the purpose of debating, sharing information and opinions. Price, Cappela, Nir(2002) emphasize the importance of diversity since it introduces a range of opinions, needs, value and perspectives, the sum of which may produce better solutions.

The method of the study was chosen as in-depth interviews with users of political discussion spaces in order to obtain a broader perspective. Stromer-Galley conducted interviews at the end of 2001 and beginning of 2002, with people who participated in online political discussions. Overall, 69 people were interviewed during the research.

According to the results, participants rarely mentioned perceptions consistent with homophily perspective. Instead, participants indicated that an important reason for why they seek individuals with similar perspective was because they cannot interact with like-minded people during offline socialization. For example, going online and interacting with individuals with similar perspectives can be refreshing for liberal people living in a conservative society. Another reason why interviewees hold homophily perspective is that they can gather arguments and evidence to reinforce their own ideas. If they feel that they are minority during offline interaction, they can easily go online and seek for support.

### **Never Sleeping Society**

Stromer-Galley (2003) reported that people who participated in this research overwhelmingly expressed views consistent with diversity perspective. Overall, the more common perspective was that there are diverse people and ranges of opinions expressed on a broad set of issues (Stromer-Galley, 2003) The most pronounced reason for interviewees going online for interacting was that they can access to public, most importantly to a heterogeneous group of people regardless of time and the day of the week.



Results reveal that participants perceive the whole context of communication diverse in two aspects:

1. Geographical Remoteness

The interviewees assume the people with whom they talk are from another country or at least from another part of the country, therefore being different from them. This is mostly because opposing side is coming from a different social, cultural and demographical background.

2. Intellectual Differences

During computer mediated communication individuals are continuously sharing a wide range of opinions and information. Interviewees perceive the people online as diverse and the opinions shared are varied. Some of the comments of the interviewees are as followed:

“It does not get boring , you see many different points of view and you see many people that have the same points of view as yourself”

“I did get a more accurate picture of just how diverse people’s opinions are”

“I gain an insight into what other people from all walks of life have in their minds. I would never run into these people in real life, and if I did, they wouldn’t be open to telling me what I think. On a message board, people seem to say what they feel.”

“I like the way that it allows everyone, worldwide, a forum to address their issues. It shows everyone’s point of view. Not just yours” (Stromer-Galley, 2003, p.12-13)

### Consequences of Diversity

Throughout the interviews some consequences of diversity emerge. Most of the mentioned consequences can be evaluated as positive. Research content that “gaining knowledge” was the most articulated consequence of diversity. It is due to the fact that technological possibilities of computer mediated communication allow individuals to exchange any format of information without time limitation. Besides sharing information without limitation CMC is also an ideal way of sharing knowledge and news that does not capture the attention of mass media (Stromer-Galley, 2003, p.66).

Another consequence is the opportunity of getting a sense of public opinion. With diverse opinions and values that are expressed throughout CMC, participants may have realized that the public is not a solid voice but a variety of different voices in an array of perspectives. This situation may affect behaviours of individuals in perceiving other individuals without prejudice. Therefore it can be proposed that democracy may benefit on CMC.

Alongside the positive consequences of diversity, participants of the research also expressed negative consequences. One of the main negative consequences is interacting with people who are holding racist, extreme or backwards views.

## **Moderation Effect**

One of the most prominent phenomenon referred in the researches is the effect of moderation. The notion of moderation is referring to the moderation in the perceptions of individuals during opinion expression. Scholars holding this perspective claim that both majority and minority opinion holders are more moderate in their views in computer mediated communication compared to face-to-face communication.

Mcdevitt et al.'s study (2003) is the first study proposing that moderation may occur through CMC. They suggest that spiral of silence may possibly alter into a spiral of moderation. While highlighting three main assumptions (motivations for surveillance, accurate opinion assessment, belief in the ability of the majority to impose sanctions) of spiral of silence theory and effects of CMC, scholars propose reasons for their claim.

- **Motivations For Surveillance**

According to Mcdevitt et al. while communicating online, reduced involvement obligation may trigger “social loafing” (Latane et al., 1979, p.828) in which participants feel no particular motivation to pay attention to the opinion of others.

- **Accurate Opinion Assessment**

Researches qualify computer mediation as a potential obstacle to the accurate opinion assessment. Anonymity, absence of non-verbal communication, decreased social cues are among the reasons backing this claim. With respect to this perspective Mcdevitt et al. (2003) content that extreme opinions possibly become muted in online settings and therefore may appear more moderate than actual. Low involvement obligation was another reason reputed since it might lead to half-hearted participation among users and affecting “micro” opinion climate of that group to be perceived as more moderate.

Obscure identities were presented as another reason for moderation. Mcdevitt et al. (2003) based his claim to Tajfel's (1978) social identification theory. In this perspective out-group traits are perceived as stereotypically extreme. Categorization plays an important role in defining who is in-group and who is out-group. Mcdevitt et al. (2003) content that reduced social cues may lead people to categorize other individuals without sufficient information. They have stated: “A possible result is the perception that participants are more moderate, and more similar to each other, than they really are”. (Mcdevitt et al., 2003, p.458)

- **Belief in the Ability of the Majority to Impose Sanctions**

Unique characteristics of the computer mediated communication stated at the beginning of this paper constitute the basis for the belief of social pressure in computer mediated communication. Lack of physical presence, normative cues and obscure group hierarchy may lead individuals to have minimal motivation for opinion expression. Mcdevitt et al. (2003) suggest opinion climate in this respect will not provoke hardcore opinions.

48 undergraduate students were randomly matched into groups of 6 where they were communicating face-to-face or computer mediated. Abortion was chosen as the topic of discussion. This research differentiates from prior studies by being focused on social issues.

Initial findings of this research suggest that CMC groups were more moderate than face-to-face groups. Further analysis of the findings show that while participants were not declaring their side on the issue of abortion, both majority and minority opinion holders were willing to express their opinions about the topic. These findings are contrary to the claim that low level of involvement obligation leads to inaccurate opinion surveillance.

Most intriguing finding of the research is that subjects in the minority tended to speak up more compared to those in the majority. Researchers affiliate this situation to the relative lack of social intimidation for the minority side and social-loafing response for the majority side.

Ho and McLeod (2008) also accentuate the effect of moderation in their studies. They content that, due to the absence of nonverbal cues, the intensity and hence the extremity of that expression may become ambiguous to the others in the discussion. They have written: "the identical viewpoint may be perceived by others as more moderate in the CMC context than in the face-to-face context."

Wanta et al. (2000) also based lack of "spiral of discontent" to the effect of moderation. They proposed that anonymous nature of CMC did not lead minority supporters to speak up and emphasize the consistency with Mcdevitt et al.'s findings.

## **Depersonalization**

A recent study claims that depersonalization lead people focus into social self-identity rather than personal self-identity. Lee (2006) proposes that physical isolation and visual anonymity of CMC may obscure interpersonal differences and depersonalize self-perception and perception of other participants. When group membership becomes more salient than distinctive characteristics of personal identity, conformity to the group norms in CMC may increase (Lee 2006). This perspective is consistent with the approach emphasizing the effect of moderation in CMC. Based on the results of his research, Lee contents that depersonalization diluted with-in group differences and fostered perceived homogeneity.

## Online Discussions in Korea

Lee, Choi and Lee (2004) conducted a study focusing on online bulletin board postings about the 2002 Korean Presidential election. The purpose of their study was applying spiral of silence hypothesis to the online discussion with the topic of 2002 Korean presidential elections. This study is prominent due to its geographical diversity and technological infrastructure of Korea. More than 10 million households had broadband internet access, meaning six out of 10 people could use internet in Korea in 2002 (Only %18.94 of the total households had access to internet in Turkey in 2007). On the basis of those data it can be concluded that Korea is one of the most wired countries in the world.

After examining 148 online postings with 9 poll data and 402 media stories in order not to ignore the effects of mass media, researchers emphasize that no evidence of spiral of silence was found with cross-sectional approach. However, when examined longitudinally participants showed some significant spiral of silence occurrences. Researchers affiliate this situation to the sensitivity of the online users to the over-time change of media coverage of presidential candidates. Lee et al. (2004) propose that sustainability of the media coverage had great impact on participants. Another important finding of this research is revealing the power of broadcasting and progressive media over the online users compared to the newspapers and conservative media.

## DISCUSSION

The purpose of this study was to review and highlight findings of previous researches focusing on CMC and examine the effects of this revolutionary communication context with respect to a prominent communication theory: The spiral of silence. The results of the reviewed studies are not fully consistent with each other. Nonetheless, findings provide strong support for a reverse spiral of silence phenomenon where minority speakers will speak up more than majority speakers.

One remarkable finding comes from the studies examining actual discussions (Want et al., 2000; Mcdevitt, 2003; Lee et al., 2004). These studies came up with results that posit the occurrence of spiral of silence phenomenon although the margin between majority and minority sides in willingness to speak up are not explicit as in face-to-face communication. Being able to examine actual discussions is an important opportunity granted by computer technologies since hypothetical situations cannot reproduce social psychological states experienced in interpersonal settings. A recent study by Ho et al. base their studies on hypothetical scenarios and found significant differences of willingness to speak between CMC and FTF discussion setting. While having the opportunity to survey, save, examine and analyze actual discussions, employing hypothetical scenarios as the method of investigation may raise questions about the accuracy and validity of a study.

Another significant variable affecting the results may be the duration of online conversations. Initial cross-sectional analyses conducted by existing studies have mostly

revealed low or no presence of spiral of silence. In contrast, longitudinal analyses demonstrated results supporting the spiral of silence theory. Sensitivity of online users to the over-time changes of media coverage and possibility of sustaining actual group interaction over time as well as developing normative expectations for “proper” social behavior may be proposed as reasons for occurrence of spiral of silence phenomenon during longitudinal analyses.

A common point of the studies that may be subject to criticism may be the socio-economical and demographic profiles of participants. Online users in those studies were described as politically interested, having strong convictions on discussed issues and demographically different from the average person (higher socio-economic status, well educated and predominantly male). This profile can be valid for an era when access to the internet was limited due to the economical and educational limitations. As a consequence, people with higher socio-economic status might have benefited from the internet more. By the year 2008 economical limitations on access to the internet were diminished and computer literacy is not a privilege.

Regarding those changes, current online user profile may question previous studies' validity, since this change may affect the results.

Limitations to examine comprehensively what online users are thinking and how their opinions are changing is a common shortcoming of the existing studies. Future research is needed in order to have comprehensive results.

## CONCLUSION

Computer technology is progressing rapidly and changing the behaviors of technology users. What remained same in this ever changing context is the need of individuals to be social. This need will continue to have numerous effects on individuals both in minority and majority sides of issues. Among all, The spiral of silence theory is one of the theories aiming to rationalize the effects of socialization as well as individuals' behaviors.

This study reviewed researches focused on spiral of silence theory based on computer mediated discussion. Although anonymity, low involvement obligation and other characteristics of CMC are reducing the social pressures upon minority sides it can be concluded that spiral of silence may occur in CMC especially when it is longitudinally analyzed.

Mediated context is predominating our communication and changing codes of interaction between individuals. CMC may become the most important context to democratize the society we are living in.

Therefore, Future studies concentrating on CMC are extensively needed.

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