

Exploring Spiral of Silence in Digital Social Networking Spaces

Research-in-Progress

Shailesh Palekar

Information Systems School,
Queensland University of Technology
2 George Street, Brisbane, Australia
s.palekar@qut.edu.au

Maura Atapattu

Information Systems School
Queensland University of Technology
2 George Street, Brisbane, Australia
m.atapattu@qut.edu.au

Darshana Sedera

Information Systems School
Queensland University of Technology
2 George Street, Brisbane, Australia
d.sedera@qut.edu.au

Sachithra Lokuge

Information Systems School
Queensland University of Technology
2 George Street, Brisbane, Australia
s.lokuge@qut.edu.au

Abstract

Deep within social media's chaotic deluge of information overloads, hyperactive global masses and voluminous interactions (Mandviwalla and Watson 2014) lie unique social networking spaces where silence trumps noise. Activity in these digital social networking spaces is restrained, anonymity is perceived as good and lesser said is better. Through a longitudinal perspective, this study explores passive participatory behaviors in these spaces through the theoretical lens of 'Spiral of Silence.' Preliminary findings through a single case confer to the theoretical tenets of Spiral of Silence demonstrating that users of these spaces become less participative, less opinionated and less vocal with increasing familiarity and awareness of deterring social and organizational factors. Our data also predicts potential new Spirals of Silence making a sound theoretical contribution.

Keywords: Spiral of Silence, Social Media, Digital Social Networks, Digital Spaces

Introduction

Digital social networking spaces (DSNSs) offered by large digital service providers (e.g. Facebook, LinkedIn, Yammer) offer individuals and organizations new ways of overcoming geographical barriers and managing interpersonal relations, communications and rich collaborations (Kane 2015). Going beyond the identity of information systems (IS) they depict a digital model of the real world that mimics, manipulates and stimulates the reality of social and organizational life (Davis et al. 2009; Saunders et al. 2011). DSNSs can be defined as the sum of individual cognitions and perceptions relating to social experiences of the real world three-dimensional space. This characterization is built on the premise that individuals form representations of digital spaces in a manner similar to their representations of real world spaces (Saunders et al. 2011). DSNSs exemplify that by allowing and supporting a plethora of activities such as communicating, information seeking and sharing, and building social and professional relationships in real time (Rowley and Edmundson-Bird 2013), which previous digital environments did not offer (e.g. static websites - Web 1.0) (Saunders et al. 2011). There are many DSNSs and each have their own culture, norms and practices. Therefore, each digital space is different and has its own users.

We are intrigued by recent studies that show a high occurrence of passive and non-participative user behaviors in DSNSs (Edelmann 2013; Sun et al. 2014). Despite the promise and positive appeal of DSNSs, management practices promoting their use and the inherent need for social bonding, most DSNS users, over time, neither create new content nor actively indulge in activities such as commenting, liking or posting content. For example, Van Mierlo's (2014) study on digital health social networking spaces show that 90% of users only read content, 9% display moderate participation and just 1% actively post or create new content. Usage data from Second Life, a popular digital social space show that many of its users never return or actively participate after their first visit (Saunders et al. 2011). In addition, anecdotal evidence suggests that individuals that move from loosely controlled DSNSs (e.g. Facebook) to closely monitored DSNSs (e.g. Yammer in an organization) exhibit passive participatory behaviors. These examples exemplify the existence of passive usage of different DSNSs. Thus, the objective of this study is to investigate user behaviors in DSNSs.

IS scholars have raised concerns on the difficulties in evaluating DSNSs [also widely referred as virtual spaces in extant literature (Saunders et al. 2011)] due to the entanglement of human behavior and technology (Saunders et al. 2011). Thus, motivated by the juxtaposition of increasing passive behaviors within proliferating and popular DSNSs and calls for fresh and innovate ways for addressing the synthesis of technology and human agency (Orlikowski 2005) in new digital environments, this study constructs new theoretical understanding of the social reality behind passive participatory behaviors in DSNSs.

The context in this research-in-progress paper is based on the understanding that enterprises adopt DSNSs such as Yammer for internal collaborations, information sharing, knowledge creation, and encouraging and promoting employee interactions (Kane 2015). However, for achieving positive outcomes organizations expect users to actively participate in the DSNS, which they (i.e. organizations) employ and promote. Recent studies find that contrary to the above, users show passivity in DSNSs when they start becoming increasingly aware and familiar with social and organizational issues (Edelmann 2013; Sun et al. 2014). Passivity can be measured through user intentions for performing diverse activities in DSNSs such as posting, commenting, following or liking content. Similar to the real world where people express themselves through written text or oral speech, users in DSNSs articulate and communicate using written texts and virtual objects such as avatars (McDevitt et al. 2003) as well as emoticons and 'like.'

This paper is scoped to investigate *why* users are susceptible to passivity in an enterprise-bound DSNS and whether their passive behaviors are also exhibited in other DSNSs¹. Specifically, we investigate two research questions: (1) *what factors influence user participation in enterprise-bound DSNSs?* (2) *how do users participate in an enterprise-bound DSNS?* In the process, we advance theoretical understanding of the epistemic and dialogical elements of DSNSs, and the influence of social and organizational elements impacting user participation in DSNSs. In doing so, we apply a key insight of human behavior inspired by a theory in public opinion called *Spiral of Silence* (Noelle-Neumann 1974).

¹This study excludes digital communities such as virtual social worlds (e.g. Second Life) and virtual games, as they are deemed less pervasive and useful in an enterprise setting.

This paper is structured as follows: The next section discusses three prime DSNSs and key factors shaping user behaviors associated with their use. The section following that explains the theoretical tenants of the Spiral of Silence followed by the sections on methodology and the preliminary research findings. The paper concludes with a discussion on the research implications and limitations.

Digital Social Networking Spaces

At an elementary level, digital space can be conceived as perceptual space created by individuals through the manipulation of objects or tools for social interactions (Saunders et al. 2011). This is sensed or sighted at any time and place by the individual wishing to socially interact in a virtual environment (Saunders et al. 2011). In turn, this builds cognitive space, which is conceptualized as “large-scale space beyond the sensory horizon about which information must be mentally organized, stored and recalled” (Couclelis and Gale 1986). This is important in understanding how users build impressions of their experiences and interactions in DSNSs at a functional level. Based on the above, this study proposes three types of DSNSs at the functional level.

(1) *Public-social DSNSs* (e.g. Facebook): These are large digital public spaces where users indulge in social interactions such as posting and sharing news events and issues, listing personal interests and describing life events. These spaces also provide users tools for creating social profiles that incorporate personal photos or public images, messaging and chatting with other users and interacting and affiliating with businesses and other organizations through fan pages.

(2) *Public-professional DSNSs* (e.g. LinkedIn): These are business-oriented social networking spaces that are open to all irrespective of any affiliations to business enterprises. These digital spaces aid users in building connections with other users, which mimic real-world professional relationships. This space offers tools for creating professional profiles, listing historical accounts of industry-led practices, collating past and current employment details, and sharing business or academic related experiences and professional insights. It also provides capabilities for listing as well as searching for jobs and business opportunities. Users affiliate and follow professionals, business enterprises, groups and academic associations based on their interests and objectives. These spaces also support the formation of special interest groups and allow users to endorse the skills and capabilities of other users.

(3) *Enterprise-social DSNSs* (e.g. Yammer): These are enterprise-bound social networking spaces promoted by organizations for inter-personal communications. Entry is restricted to employees of the organization and the space does not permit access to users of similar spaces in other organizations. Users' Internet domain determines access to this space such that it allows only those users whose email addresses relate to the firm promoting the space. Apart from this, these spaces provide general social networking tools similar to public-social DSNSs for communicating, building relationships and sharing information (generally information is enterprise specific relating to the firms' activities) with other users that are colleagues, employees or other stakeholders in the organization.

Factors Shaping User Behaviors in DSNSs

(1) Idiocentrism and Social Presence:

In the present-day Internet era, the notion of anonymity and the reduction in observable physical social cues in computer-mediated-communications has encouraged more free, open and lively discussions between individuals that may not share any common social or professional bonds (Ho and McLeod 2008). Users in DSNSs build social networks comprising of friends, colleagues or family, which cuts down hierarchal positions and infuse a feeling of equality and openness. Thus, public-social (e.g. Facebook) and public-professional (e.g. LinkedIn) DSNSs offer a more conducive atmosphere for public debate and discussion. In these DSNSs idiocentric behaviors are largely observed, which refers to attitudes, beliefs, roles or values that focus on individual ability, personal freedom, independent expressions, rational relationships and goals prioritized for the self (Triandis et al. 1995). This attenuates the effects of fear or anxiety and other undesirable “socio-psychological influences” including isolation or sanctions (Ho and McLeod 2008). As the underlying capabilities of DSNSs mature over time and become widely available (Davis et al. 2009), a users' presence in a DSNS evolves to include a sense of being with other users and “interacting in symphony” with them (Davis et al. 2009). This is defined as social presence in a mediated

environment (Biocca et al. 2003) where users get accustomed to the social presence of other users in the same space. Thus, users exiting a public-social or public-professional DSNS and entering an enterprise-social DSNS carry their perceptions of social presence and idiocentric behaviors relating to the contextual conditions affecting them at that point in time (Note: This entry point is not considered in terms of absolute time for all users).

(2) Familiarity and Awareness:

With technology improvements and the induction of new tools and features in DSNSs, users experience higher levels of social presence, both “as a way of being with others (a technology dimension) and a sense of being with others (a social dimension)” (Davis et al. 2009). Familiarity with technology is recognized as an important influencer of technology adoption attitudes and decisions and its continuance (Venkatesh et al. 2003). In addition, familiarity with other users in a DSNS makes the space more heterogeneous than homogeneous, which includes an eclectic mix of majority and minority opinions. This can result in users self-censoring their opinions and views to comply with the diversity of opinions (Allport 1937). For example, as users continue their participation in an enterprise-social DSNS they imbibe a sense of realization that important and sensitive issues have moral and ethical components, which subscribe to social conventions, norms, policies or customary practices of the firm (Noelle-Neumann 1974; Trier 2008). As this awareness and familiarity of in-built controls in DSNSs increases, users become concerned about being critiqued, ridiculed or isolated by other users either in that space or in offline environments (real world) (Wight 2014). This affects the intention of users to continue participating in a DSNS.

(3) Deterrents to User Participation:

Deterrents are defined as things, which prevent or discourage a person from doing something ². In enterprise-social DSNSs (e.g. Yammer), deterrents can be abstract entities such as (i) authority vested by people wielding high influence (e.g. CEOs) (ii) controls or pressures exerted by company policies, regulations or norms (iii) highly imposing or vocal individuals, or (iv) aggressive user attitudes that indulge in bullying, demeaning others, or creating strong psychological pressures to moderate or silence the opinions of other users. On the other hand, deterrents as mechanisms or elements in an environment also seek to preserve and perpetuate social order and social influence for maintaining compliance (Meier and Weldon 1977). This signifies that the perceived deterrents in DSNSs mentioned above can usher a sense of how users should participate in DSNSs, which can potentially discourage users from participating in DSNSs (Kartas and Goode 2012).

Anecdotal evidence suggests that as users become familiar and aware of the above-mentioned factors, they start withdrawing or restricting their activities in DSNSs showing little to no interest in active participation. We employ the theoretical lens of Spiral of Silence to study passive behaviors in DSNSs.

Spiral of Silence

The Spiral of Silence theory observes the phenomenon of diminishing frequency of public opinion due to the fear of nonconformity with the opinion of the majority and the resulting prospects of isolation or sanctions (Matthes et al. 2010; Neuwirth et al. 2007; Noelle-Neumann 1974). We study whether the phenomenon of evaluating prevailing social environments and abstaining from publicly opining or expressing views due to the fear of isolation, critique or contempt can succinctly explain passive participatory behaviors in DSNSs. In doing so, we apply two key constructs of the Spiral of Silence.

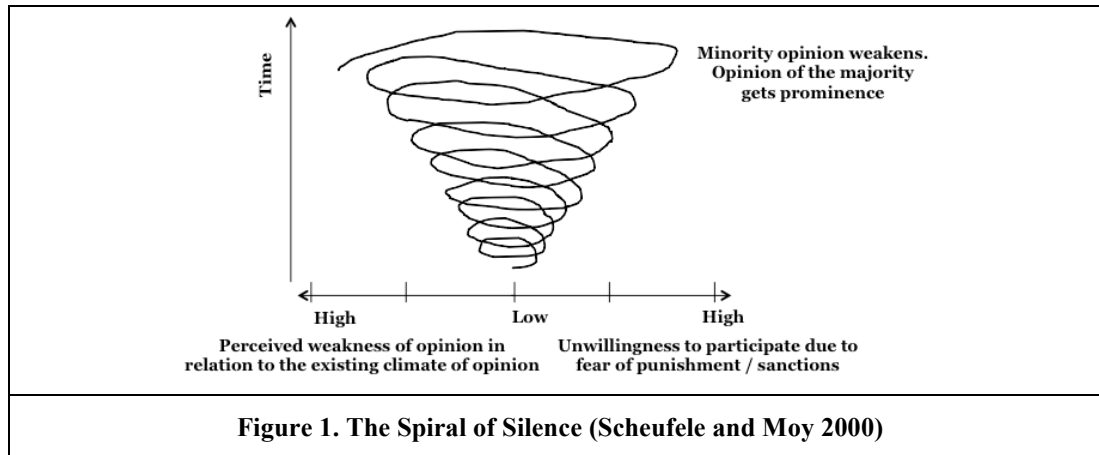
(1) Climate of opinion (Glynn et al. 1997): The willingness of users to freely and openly participate (i.e. express personal views and opinions) in DSNSs is influenced by three factors collectively referred as the climate of opinion. These are opinions expressed by the majority of users, the role of media in shaping perceptions, and familiarity with people (e.g. friends, colleagues) that influence or endorse opinions.

(2) Fear of punishment or sanctions (Noelle-Neumann 1974): Although users are tempered by their perceptions of the climate of opinion, their ability to participate is prompted by the fear of isolation, punishment or sanctions, if they believe that their opinions are likely to be in the minority. This fear is a

² <http://www.oxforddictionaries.com/definition/english/deterrent>

response mechanism for evading criticism, punishment, isolation or ostracism from those supporting or endorsing majority opinions. Judging the climate of opinion and fear of retribution is perceived through a quasi-statistical organ (QSO) (abstracted as a sixth sense) (Hayes 2007; Noelle-Neumann 1974). If users' QSO suggest that their opinions are in the minority, they refrain from participating. The spiraling process is conceived when minority opinions weaken (refer Figure 1).

In addition, this study proposes that the spiral of silence can also be explained through *communication apprehension* (McCroskey 1978), which was originally applied in understanding oral communications. In this study, we define it as the level of fear or anxiety experienced by users of DSNSs in associating with real or anticipated communications (McCroskey 1978). The notion of communication apprehension can be observed through our earlier discussions on idiocentrism and social presence, familiarity and awareness and deterrents as factors shaping user behaviors in DSNSs.



The Spiral of Silence was originally conceived as a macro social theory for explaining public opinion (Noelle-Neumann 1974). Since then, several studies have construed it for investigating interpersonal relationships and group dynamics (Hayes 2007). Researchers argue that the decision to opine is not entirely based on the “perceptions of the opinions of an amorphous public” (Hayes 2007) but rather on the perceptions of opinions of people that an individual is likely to interact on a frequent basis such as with friends, family or colleagues (Glynn et al. 1997). This endorses the validity of our study in which we primarily establish the Spiral of Silence at an individual level by noting how users take cognizance of other familiar users in their vicinity rather than a nebulous group of people unknown to them. Past studies in the domains of public opinion (McDevitt et al. 2003; Scheufle and Moy 2000), communication research (Hayes 2007; Neuwirth et al. 2007) and organizational management (Bowen and Blackmon 2003; Clemente and Roulet 2015) have drawn different conceptualizations and employed various operational measures for studying the Spiral of Silence but have paid scant attention to macroscopic variables for cross-cultural and cross-domain comparisons (Scheufle and Moy 2000). For example, studies have not accounted the morality component through which public opinion largely arises and leads to the formation of the spiral of silence or the availability of time wherein an opinion is suppressed (Scheufle and Moy 2000) because users do not have the time to communicate it. As most of the mentioned studies were undertaken in the pre-Internet era, key constructs of the theory were presumed to be consistent and were not subjected to variations caused by external environmental factors, internal organizational influences, dynamic behavioral attributes or capabilities of new digital technologies. This lent support to the standard Spiral of Silence (refer Figure 1), where the spiraling process is perceived as consistent with the perceived weakness of ones opinions and the number of users unwilling to express their minority views.

Given the ubiquity of present-day digital technologies and their deep influences on human behavior, we posit that key constructs are potentially heterogeneous in nature when assessing passive participatory behaviors thus raising the prospects of deviances in passivity in DSNSs at the individual level. In the present Internet era, Liu and Fahmy (2011) employ Spiral of Silence to explore the willingness of individuals to express opinions in digital social environments but limit their study by focusing on descriptive comparisons on the willingness to express opinions on controversial issues in online and

offline settings. Other studies on user behaviors in digital social networking environments (Nonnecke and Preece 2001; Sun et al. 2014) reflect on: (1) identifying user behaviors (Neelen and Fetter 2010; Rau et al. 2008) (2) descriptive accounts and reasons for those behaviors (Bishop 2007; Ganley and Lampe 2009), and (3) recommendations for reducing submissive behaviors (Bishop 2007; Preece et al. 2004). The mentioned studies investigate user behaviors through the following dimensions: (i) personal motivational factors such as goals and needs for online participation (ii) commitments made by individuals (e.g. affective, normative or continuous) (iii) nature of digital social networks (e.g. group identity, reciprocity, usability or reputation), and (iv) expectations of institutional trust in digital social networks (e.g. security, privacy, reliability) (Sun et al. 2014). However, those studies fall short of explaining how such behaviors are formed, do not consider the elements of time, morality, social controls or reference frames for sensing the environment and assume homogeneity of the behavior in all social digital environments. In contrast, our study provides a strong theoretical base for explaining how passive behaviors at the micro level emerge in DSNSs and how they can change or fluctuate even within the same DSNS, in time.

In the IS domain, the issue of passive online behaviors impacted by social and technological factors is largely under-researched. Thus, this paper presents a fascinating opportunity to IS researchers in exploring (1) how the theoretical lens of Spiral of Silence can be applied for explaining the origins of passive participatory behaviors in DSNSs, and (2) how passive behaviors in such spaces can become unstable due to the fluctuating nature of social interactions, differing nature of deterrents and the changing climate of opinion. We apply our understanding of the Spiral of Silence for investigating passive participatory behaviors of users in DSNSs at the micro level. We begin our study by investigating user behavior in enterprise-social DSNSs (ES-DSNSs) using the lens of Spiral of Silence to evidence how passive participatory behaviors are shaped across time and influenced by environmental factors (e.g. deterrents) and individual behavioral traits.

Methodology

A qualitative approach was selected (i) as it is effective in analyzing ‘what’ and ‘how’ questions (Yin 2009), and (ii) as this study aims to achieve a deeper understanding of user participation in DSNSs, understanding experiences and actions of the relevant actors is critical (Benbasat et al. 1987). An interpretive in-depth exploratory single case study method was employed in the preliminary study (Walsham 1993). An exploratory method was selected as prior research on Spiral of Silence has given limited attention to different user behaviors over time and in an online setting such as in DSNSs. As such, our objective is to develop a theory grounded in data. Our data analysis is inspired by the grounded theory approach (Glaser and Strauss 1967).

Case Selection and Data Collection

The approach used in the study can be characterized as a revelatory case study (Yin 2009). Data was collected from a single case organization following the guidelines proposed by (Strauss and Corbin 1998). The case organization EDU³ was selected for three key reasons: (1) EDU launched their enterprise-social digital networking space in 2012, which is considered an exemplary DSNS for organizations in similar industries (2) EDU has a large diversity of individuals using the ES-DSNS, thus enhancing the generalizability of the results and (3) authors of this study have strong engagement and ties with EDU, thus making its selection an insightful case organization for in-depth investigations. Prior to data collection, the following criteria’s were taken into consideration: (1) respondents had created their profiles in the ES-DSNS, and (2) respondents had participated in the ES-DSNS for at least a year. Preliminary data collection consisted of twelve semi-structured interviews conducted between January 2015 and April 2015. All the interviews followed the same case protocol, which included questions about the case organization as well as specific questions regarding the emergence of the theory. Each interview lasted between 1 and 2 hours. All the interviews were conducted face-to-face, in English. In addition, secondary data was collected from the ES-DSNS that was vital for data triangulation purposes.

³ The selected case is referred by a pseudo-name due to the confidentiality agreements signed between the case organization and the affiliated university of the authors.

Data Analysis

The data collection and analysis was intertwined (Glaser and Strauss 1967). After each interview, two researchers took analytical notes pertaining to what was learned. On the basis of these notes, new interview questions were added to see if the next informant could confirm, further explain, or deny the emergent themes. Using theoretical sampling, new informants were chosen so as to either confirm or challenge the emerging patterns in the data. As this is a research-in-progress paper, the data collection has not reached a theoretical saturation state. Thus, this paper reports preliminary findings of the study.

The analysis steps involved open coding, axial coding, and selective coding (Strauss and Corbin 1998). The open coding involved generating codes from the data, the axial coding involved organizing the codes into categories, and the selective coding involved linking the categories to develop an integrative framework. It is noted that, in line with the tenets of grounded theory methodology (e.g. Glaser 1978), the study's theoretical sensitivity enabled the emergence of ideas and the formulation of a coherent framework based on the subjects' point of view, rather than the forcing of a particular theoretical view onto a focal phenomenon (Corbin and Strauss 1990).

Preliminary Findings

The results of our initial investigations reveal: (1) users create different orientations of their participatory behaviors in a DSNS based on four factors influencing the climate of opinion in the DSNS viz. environment, user roles, interactions and deterrents (2) the climate of opinion in ES-DSNSs is influenced by reference frames and allocentric behaviors (3) users consider the fear of being negatively judged more important than punishment (4) personality traits, cultural dissimilarities and linguistic differences form an important aspect of users' communication apprehension, and (5) users consider the availability of time an important factor in prioritizing their participation in DSNSs. The above findings are detailed below. (Note: Due to page length restrictions, limited quotes denoted by Q1, Q2.. are provided).

Factors Influencing Climate of Opinion in DSNSs

(i) Environment: Public-social DSNSs are perceived as open spaces allowing users to maintain anonymity, freely articulate their identity and connections and connect with others through self-generated content or that elicited by others. In comparison, ES-DSNS is sensed as an organization-controlled space (Q1: *"Facebook environment is about friends."* Q2: *"I feel free to comment and say anything to others on Facebook. They are my friends."* Q3: *"Yammer is a professional environment. You cannot say whatever you feel."* Q4: *"Cracking a joke in Yammer is not appropriate."*)

(ii) User roles: Users interact in DSNSs for professional and social purposes by assuming user roles such as friends, professionals or family based on the type of DSNS they use (Q5: *"I post a lot on Facebook. It is fun. I have lots of friends. The difference here is (comparing Yammer) this (Yammer) is in my work place and I work here."* Q6: *"There is no categorization on Facebook. It's the same playing field. But on Yammer, there are few people who are experts and we are PhD students."* Q7: *"Yammer is kind of professional thing. If you are professional in what you are doing, then you can post stuff (on Yammer)"*).

(iii) Interactions: Users interact differently in diverse DSNSs. For example, interactions on Facebook facilitate conversations of a social nature that includes personal life experiences while on LinkedIn they relate to professional issues comprising commercial entities (e.g. markets) (Q8: *"On Yammer, it's about promoting the articles published or conferences attended."* Q9: *"I was posting thought-leading type statements on Yammer. I felt it would be useful in a range of (academic) areas"*).

(iv) Deterrents: Users engage in specific ways based on the prevailing structure of authority, controls and monitors existing in different DSNSs. For example, organizational authority and regulations (e.g. policies) take precedence over the discretion and free will of employees to use Yammer. In comparison, participation on Facebook is perceived as control-free, which does not infringe ones freedom of speech and expression (Q10: *"In Yammer the hierarchal nature of the organization is visible. There are supervisors and other people. So I am a bit careful"*).

User Perceptions of the Climate of Opinion in DSNSs

(i) **Reference frames:** Users process, organize and interpret information based on appropriate reference frames, which shape participatory behaviors in DSNSs. Opinions and judgments of other users, particularly authoritative people in ES-DSNSs, provide the most powerful frame of reference (Q11: “*I got involved in Yammer because my supervisor was asking me to share something on Yammer to promote ourselves, as our Head wanted that.*” Q12: “*I will look at what others are saying about the same thing. I will look at whether the thing I am going to tell makes any unnecessary conflicts or whether others are willing to listen to my opinions*”).

(ii) **Allocentric behaviors:** In ES-DSNSs, users center their behaviors on the collective tendencies of other users in the space. They define their actions in relation to the group that they belong and participate according to the groups’ orientation of the space (Q13: “*We are students (participating on Yammer). I saw that not all are using it the same way. I saw not many people are participating. The general feeling was then why should I use it*”).

Fear of being Negatively Judged in DSNSs

Unlike in the standard Spiral of Silence, the fear of punishment or sanctions by the majority of people is not supported by our data. Rather, users of ES-DSNSs are highly concerned by how others, especially superiors or experts in the space interpret their personalities, which in turn is based on how they (i.e. users) participate and express opinions. This leads to passive participation in ES-DSNSs (Q14: “*I would wait for another person to share something like me and maybe then I would support them. I won’t be the person that initiates it.*” Q15: “*(If I post), people might think, she is teaching but her English is not very well (good). That is a big fear for me - a negative feeling of being judged. So I don’t want to involve myself (on Yammer).*” Q16: “*I am afraid of losing my image, as the people I work with (may) think I don’t know some things*”).

Personality Traits, Cultural Dissimilarities and Linguistic Differences

Due to the omnipresence of DSNSs, users comprise of diverse nationalities and cultures. Thus, personality and linguistic differences impact participation negatively in DSNSs. Users hesitate in creating content as they question their linguistic capabilities and cultural identities by comparing them with other users in the DSNS (Q17: “*(It) is very easy to say (write) in my (own) language. English pushes me back. I do not feel confident (on Yammer).*” Q18: “*I am little bit shy to share things (on Yammer). It’s my personality. I will not comment on sensitive issues or things I don’t know. It’s the same for any platform*”).

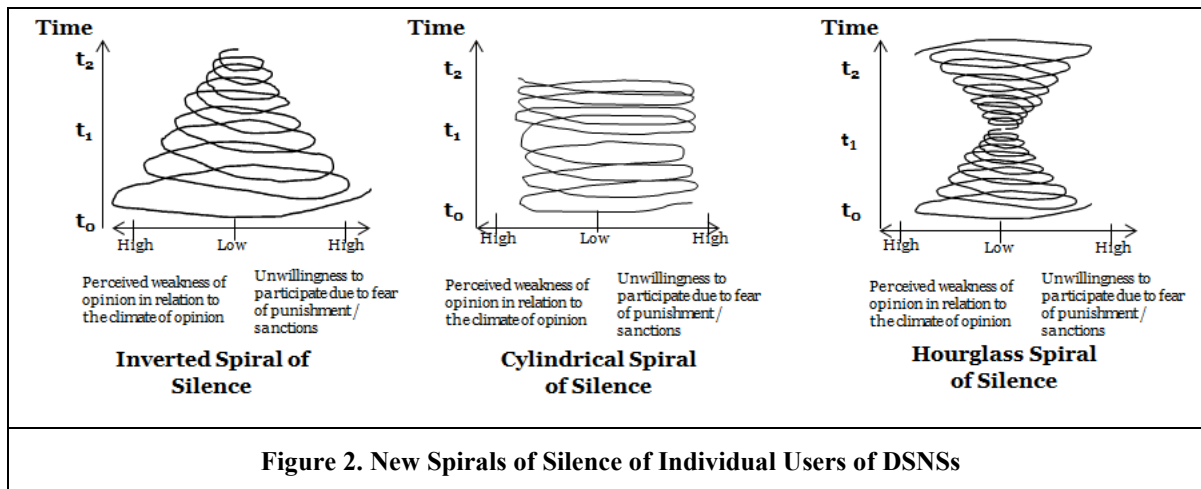
Value Proposition of DSNSs and Time Availability

The deluge of online media offering information, daily tasks, and other activities inundate a users time for prioritizing online social engagements. So, although users may be members of DSNSs, they refrain from active participation by prioritizing their engagement in a specific DSNS based on its value proposition and the time available at their disposal (Q19: “*I make a decision now as to how valuable it is to play with Yammer right now.*” Q20: “*There is not enough stuff on Yammer to hold my interest and time*”).

Our data also suggests that an individual’s spiral of silence is susceptible to change in the same DSNS. This is because users employ a more reasoned approach for predicting future behaviors, which are non-confrontational, logical, solution oriented and controlled (Q21: “*In time, I will be a senior person in the school. I (will be) interested in initiating conversations, as I will have opinions about more general things. New people will look at you (me) and listen*”). This differs from the quasi-statistical organ that past researchers have associated with the standard Spiral of Silence. In addition, new and ubiquitous technologies are likely to spur both, idiocentric and allocentric behaviors as a responsive adaptive mechanism to ally with future use of DSNSs.

In addition to the above, our preliminary data predicts potential new Spirals of Silence of users (Refer Figure 2) relevant to the contextual conditions during the time of DSNS use. We term these new spirals as (1) *Inverted Spiral of Silence*: passivity alters into progressive active participation over time (2) *Cylindrical Spiral of Silence*: passivity remains reasonably consistent in a DSNS or across DSNSs, and (3) *Hourglass Spiral of Silence*: passivity is sporadically interrupted by active participatory behaviors. These observations were made on the use of the terms that provided diametrically opposing views of user engagement in DSNSs. For example, the researchers coded user responses where they used the terms

“high” and “low” engagements with contextual conditions. Though the current stage of the study does not determine the conditions conclusively, some conditions alluded in the interviews relate to factors influencing user behaviors in DSNSs mentioned above. However, this on-going study investigates the empirical evidence of the contextual conditions. It is also recognized that the time stamping of the diagrams in Figure 2 (i.e. t_0 , t_1 and t_2) is not in absolute terms, but relevant to the contextual conditions. For example, the distance between t_0 , t_1 and t_2 may be different in each user’s spiral. Also, the starting point of each spiral does not indicate the first exposure to DSNS, but rather reveals the introduction to a contextual condition.



Conclusions

This study investigates how users behave differently in different DSNSs due to differing social and organizational factors. At the outset, this research-in-progress paper took the example of an ES-DSNS and established the notion of a digital space to depict how user behavior in the space is influenced by social and organizational factors. As such, this study investigated user behaviors of DSNSs through the theoretical lens of the Spiral of Silence. Preliminary findings presented in this paper were derived through a single case study using an in-depth interpretive and explorative method of data analysis. The preliminary findings confer to the ‘Spiral of Silence’ as per its theoretical arguments and demonstrate that users become less participative, less opinionated and less vocal with familiarity and awareness of deterring social and organizational factors. In addition to the standard cascading Spiral of Silence, this study predicts potential new Spirals of Silence making a sound theoretical contribution.

This study has implications for both research and practice. Implications of the study for research are (1) delineating the notion of digital space, types of DSNSs and the generic boundaries of such spaces contribute to a cumulative tradition of research, and (2) the discovery of alternative Spirals of Silence contributes to the expansion of the original theory. For practitioners such as CIOs, policymakers in organizations, and strategic level executives, this paper highlights different types of user engagements and how such differing engagements are influenced by factors such as for example, the environment of ES-DSNSs, roles individuals play within a network, types of interactions, role of other users and the authority, structures and governing mechanisms. As such, ongoing and future work of this research intends to provide possible actionable insights for practitioners on how they could better utilize ES-DSNSs for knowledge and interpersonal collaborations and innovations. This paper also expands the body of knowledge under the ‘Social Media and Digital Collaborations’ track of this conference by highlighting a novel yet critical perspective of social media and the ensuing tripartite entanglement of technology, individual and organization. This exploratory study is based on a single case, which prevented us from generalizing the findings, which our future work will address. Though the current paper does not, there is potential to analyze data using the demographics of participants and the behaviors of users in various DSNSs discussed therein.

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