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Agreement and Group Attraction in Face-to-Face and Computer-Mediated Group Discussions

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AGREEMENT AND GROUP ATTRACTION
IN FACE-TO-FACE AND COMPUTER-MEDIATED
GROUP DISCUSSIONS

A Thesis

Presented to

The Faculty of Department of Communication

Western Kentucky University

Bowling Green, Kentucky

In Partial Fulfillment

Of the Requirements for the Degree

Master of Arts in Communication

By

Krishnamurti Murniadi

August 2008

AGREEMENT AND GROUP ATTRACTION
IN FACE-TO-FACE AND COMPUTER-MEDIATED
GROUP DISCUSSIONS

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TABLE OF CONTENTS

Title Page.....	i
Signature Page.....	ii
Acknowledgments.....	iii
Table of Contents.....	iv
Abstract.....	vi
Chapter 1 Introduction.....	1
Significance of Problem.....	5
Chapter 2 Review of Literature and Hypotheses.....	6
Gender as Social Identity.....	6
Gender Compositions as Independent Variable.....	9
Anonymity in CMC.....	10
Cues-Filtered-Out Perspective.....	10
Social Identity Model of Deindividuation Effects.....	11
In-Group Agreement	17
In-Group Attraction and Hypotheses III and IV.....	19
Hypotheses.....	22
Hypothesis 1A.....	22
Hypothesis 1B.....	22
Hypothesis 2A.....	22
Hypothesis 2B.....	22
Hypothesis 2C.....	22

	Hypothesis 3A.....	23
	Hypothesis 3B.....	23
	Hypothesis 4A.....	24
	Hypothesis 4B.....	24
	Hypothesis 4C.....	24
Chapter 3	Methodology.....	25
	Participants.....	25
	Measurements.....	26
	Reliability of Scales.....	26
	Activating Gender Identity.....	27
	Procedures.....	29
Chapter 4	Results.....	31
	Confirming the Validity of the Scales.....	31
	Testing the Role of Gender Identity on Opinion.....	34
	Gender Identity among Males regarding Opinion.....	37
	Gender Identity among Females regarding Opinion.....	39
	Hypotheses.....	40
	Hypothesis 1A.....	40
	Hypothesis 1B.....	42
	Hypothesis 2A.....	44
	Hypothesis 2B.....	45
	Hypothesis 2C.....	47
	Hypothesis 3A.....	48
	Hypothesis 3B.....	48

	Hypothesis 4A.....	49
	Hypothesis 4B.....	50
	Hypothesis 4C.....	50
Chapter 5	Discussion and Conclusion.....	52
	Validity of the Scales.....	53
	Activation of Gender Identity.....	53
	Level of Agreement.....	55
	Level of Group Attraction.....	57
	Limitations.....	59
	Future Directions.....	60
	Conclusion.....	60
	Appendix A.....	61
	Appendix B.....	62
	Appendix C.....	63
	Appendix D.....	68
	References.....	69

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Topics within small-group communication have been explored in many contexts, such as work group, organizational meeting, or online network. This area of discipline is considered crucial because this type of communication assimilates interpersonal relations within a social setting. Two elements that largely affect small-group communication dynamics are anonymity and social identity. This research invokes previous research in anonymity and social identity within small-group communication pertaining to the level of agreement and the level of group attraction through a series of experiments.

Anonymity in small-group communication context is defined as a condition where the group members are not identifiable. To create anonymity among group members, this study utilized the benefit of a chat room in computer-mediated communication (CMC), which allows group members to participate in group discussion anonymously without the fear of being judged. It is argued that groups communicating synchronously via CMC would have a higher agreement than those communicating face-to-face (FtF) because the anonymity in CMC eliminates all of visual cues and therefore, unites all group members. It is also argued that members in groups in FtF are more likely to be interpersonally

attracted than those in CMC. Thus, members communicating via FtF would have larger cumulative group attraction than those in CMC.

Meanwhile, social identity in small-group communication context is defined as the tendency of a group member to associate with fellow members who share similarities with him or her and hold prejudice against members who are different than him or her. The element of social identity that was being activated in this study was the gender identity. This was done through using a gender-related case, an opinion scale, and distributing participants into groups of different gender compositions. It is argued that single-gender groups would have higher level of agreement and group attraction than mixed-gender groups.

The experiment assigned participants into six different groups. The groups communicated via FtF or via CMC. In each setting, there were male-only groups, female-only groups, and mixed-gender groups.

The only statistically significant result from the experiments suggested that in CMC, female-only groups had a higher level of agreement than mixed-gender groups. However, there were also differences of mean agreement between female-only groups in FtF and female only groups in CMC. Those communicating via CMC had higher agreement. In terms of level of group attraction, there was not any significant result in any condition.

This finding suggests that in CMC, groups that are exclusively females are more conducive than other gender compositions in reaching agreement. Meanwhile, the lack of significance in group attraction between FtF and CMC suggests that people have become more familiar with anonymous CMC settings allowing them to substitute the available textual cues for visual cues.

Chapter 1

INTRODUCTION

With the advent of computer technology, it is becoming more common for us to receive messages in our personal computer from an unidentifiable source. This condition, where the sender of the message is not identifiable is defined as anonymity (Marx, 1999). According to Marx (1999), anonymity is fundamentally social, involving "an audience of at least one person" (p. 100). The issue of anonymity is exceptionally privileged in Computer-mediated communication (CMC). This is because CMC has the capacity to facilitate anonymity by creating a state where the sources of messages can withhold their personal information such as name, gender, age, race, height, or status.

As a powerful tool of communication, CMC also comes in many forms; it can be interpersonal communication in the form of e-mails, or small group communication in the form of chat room discussions. For the last few decades, scholars from various disciplines have used various methodological approaches to explore the nature of CMC, and how it impacts our life as individuals or as members of society.

CMC provides a high-speed information exchange and processing service that can reduce the effects of geographic, temporal, and size constraints on group communication. The interconnection between personal computers in CMC can sustain strong, intermediate, and weak ties that provide necessary information by connecting individuals within and between organizations who are physically and temporally dispersed (Wellman, Salaff, Dimitrova, Garton, Gulia, & Haythornthwaite, 1996).

For example, weak ties (mutual relationships with strangers who share common interests) created by community websites allow lay people to gain valuable information from a diverse group of people scattered throughout different regions and social boundaries. Meanwhile, strong ties (relationships with people whom we know well) can be further facilitated across the traditional boundaries. For instance, an Indian student can virtually communicate with her family in Bangalore from her dorm room.

While previous research showed that CMC benefits group processes structurally and functionally, such as enabling more efficient brainstorming (Wellman et al., 1996), its anonymity effects among its members in terms of overall group agreement and group attraction are still debatable. For instance, in regard to group democratization, some believe that CMC creates the equalization of status and thus, allows lower-status members to have higher influence or be more likely to advocate a position, especially when they have relevant expertise in the subject matter being discussed (Dubrovsky, Kiesler, & Sethna, 1991). Meanwhile, others believe that status inequalities and domination by high-status group members found in face-to-face (FtF) settings persist in CMC settings, especially when the discussion is asynchronous (Walther, 1992; Weisband, 1995).

Significance of Problem

Other than group setting, this study used group's gender composition as the independent variable. Research focusing on gender differences within the context of CMC dates back to early 1990s. Most of these studies, however, merely examined the language style differences between men and women when communicating via CMC

without considering the role of gender in CMC group decision making (Flanagin, Tiyaamornwong, O'Connor, & Seibold, 2002; Guiller & Durndell, 2006; Jaffe, Lee, Huang, & Oshagan, 1999; Postmes & Spears, 1992; Savicki, Lingenfelter, & Kelley, 1996; Waseleski, 2006). Therefore, there is still lack of understanding on how anonymity in CMC affects gender as a social identity in small group communication context.

Among the first research in this field, Savicki et al. (1996) found that CMC groups with higher proportions of females adopt languages that seek prevention and reduction of tension. Although it was not found in their study, Savicki et al. (1996) also reported that CMC groups with a higher proportion of males stated facts without personal ownership, tended to be more argumentative, and used coarse or abusive language (Herring, 1994, as cited in Savicki et al., 1996).

Unfortunately, FtF discussions still discriminate between men and women, resulting in status differences. When there is an opportunity to be anonymous, Jaffe et al. (1999) suggested that females are more likely than males to 1) mask their gender with their pseudonym choices, and 2) display social interdependent elements frequently. These social interdependence elements include references to other responses, references to self, supporting statements, such as "you're right" or "that's true", and emotional statements, such as exclamations, emoticons (e.g.: ☺), and textual symbols to express certain emotions (e.g.: 5\$2*#). Flanagin et al. (2002) indicated that due to perceived status differences in gender by women, in general women 1) perceived their contributions to be accepted more readily in CMC setting than in FtF setting, 2) enjoy the anonymity more than men, and 3) recognize the social benefits afforded them through reduced social cues.

Waseleski (2006) found that in CMC discussions, 73% of the exclamations were posted by females, while only 27% of them were posted by males. Most of these exclamations fell into the category of 1) thanks used in closing or opening (e.g.: Thanks! Amanda), 2) thanks expressed by sender in the body of the message (e.g: Thanks for the information! I appreciate that!), 3) friendly greetings or closings, (e.g.: Hi! Hello everyone! Good luck! Bye!), and 4) friendliness, helpfulness, cordiality expressed within the body of message (e.g.: You can check it out at [URL]!). Next, Guiller and Durndell (2006) found that females were more likely than males to express agreement and make attenuated contributions, and vice versa. In addition, Postmes & Spears (2002) suggested that in anonymous CMC settings men dominate when the topic is masculine, and women dominate when the topic is feminine, more so than in the FtF setting.

Other studies have focused on the group dynamics and level of agreement among groups with different gender compositions, but in exclusively FtF settings. Some of the significant research pertaining to this study include how groups of females are more sensitive to out-group threat than groups of males (Lodewikx, Van Zomeren, & Syroit, 2005) and the way males and females behave in groups with different gender compositions (Swan & Wyer, 1997).

Swan and Wyer (1997) divided groups of four into: one male - three females, one female - three males, and two males - two females. They found that for groups with unequal distribution of gender, being the minority among three other people of the other gender increased their self-awareness of their statuses. Both males and females also “judged themselves to be more masculine when they were in minority than when they were in majority” (p.1274).

The goal of this thesis is to identify the effect of anonymity of gender in constructing group agreement and group attraction in CMC. The general research question for this study is how significant the anonymity provided by CMC in attenuating gender as both social identity and physical cue during a group discussion. Particular attention will be given to the reliability of the case study plus the opinion scale in activating gender identity and each member's level of gender identity. This study differs from the previous research in the same field because the study used a real-life gender-relevant case, the study contrasted FtF group discussions with anonymous CMC group discussion, and that specific scales were given at the end of the group discussion to measure level of agreement and level of group attraction.

Chapter 2

REVIEW OF LITERATURE AND HYPOTHESES

The review of literature is divided into three parts: 1) the significance of gender as a social identity, 2) gender compositions as independent variable, and 3) the effects of anonymity in CMC.

Gender as a Social Identity

Tajfel's (1971) social identity theory suggests that humans tend to associate with those who are similar to us, which are called the in-group, and hold prejudice against the out-group (Tajfel, Billig, Bundy, & Flament 1971). In their experiment, Tajfel et al. (1971) stated that people can also be conditioned as belonging to a certain group – such as by assigning members to wear different uniforms. This will create in-group loyalty and out-group discrimination.

Sherif (1982) defined identity as an individual's psychological relationship to a social category system that negotiates their gender, racial, ethnic, sexual, and class identities. She proposed that gender as a social identity is derived from the biological differences between males and females. According to her, gender identity reflects a person's relationship to his or her gender as social category.

Combining Tajfel's (1971) social identity theory and Sherif's (1982) definition of gender as a social identity, there would be more loyalty in single gender groups than in mixed-gender groups if gender is activated as a social identity. Also, there will be in-

group loyalty among the male or female members and out-group discrimination toward members of other gender.

There are several theories on how an individual develops his or her gender identity. Money and Ehrhardt (1972) suggested that gender identity becomes fixed when a child reaches the age of two and a half due to child's sex assignment or rearing environment. Eaton and Von Bargen (1981) proposed four steps for how a child understands his or her own concept of gender including labeling the gender of self and others correctly, understanding the stability of the identity, recognizing that identity is not voluntary, and recognizing that identity is permanent. In the individual's adult life, Spence (1985) defined gender identity as a fundamental existential sense of one's maleness or femaleness that is protected by participating socially in activities that stereotypically belong to one's gender.

Therefore, gender, which has traditionally been presented as a demographic and biological category, is also used by individuals in describing members of his or her group. The salience of gender identity is conceptualized as an individual-level construct because individuals process their environment and experiences in ways that reflect individual differences. Tajfel (1982) held that through the salience of social identity, being part of the in-group becomes part of the individual's identity.

However, gender identity salience has not consistently been found to relate to work group conflict. There were contrasting results on the effect of how gender salience affects the unity of the group. Jehn, Northcraft, and Neale (1999) found a positive relationship between gender diversity and relationship conflict, while Pelled, Eisenhardt, and Xin (1999) found gender diversity to be unrelated to conflict. This suggests that an

understanding is needed of the circumstances under which the gender composition of a work group results in conflict.

In term of status differences, Lakoff (1975) argued that the linguistic patterns typical of women are less powerful than the patterns associated with men. Powerful language can be characterized by the use of declarative statements that convey vagueness and uncertainty. Powerless language contains hedges, qualifiers, intensifiers, tag questions and polite forms. It was suggested that socialization processes in childhood lead to women developing a language style that keeps them in submissive positions in society, whereas men remain in the dominant roles. Geis (1993) supported this notion by suggesting that males enjoy higher social status, which comes with perceived greater competence and authoritative behavior.

Furthermore, males discriminate their fellow group members based on their gender more than females do (Rigg & Sparrow, 1997). Comments that men make about other male colleagues are expressed strongly and visibly compared to their comments about their women colleagues. They perceived other men as “forceful” or “weak”, “assertive” or “passive”, and perceived women as “an all-rounder”, “middling”, or “quiet”. Meanwhile, women’s comments about their colleagues – whether men or women – are rather moderate, and they adopt greater subtleties, variations, and ambiguity than men do.

When group discussions shift from FtF to CMC within experimental conditions in this study, there might be lack of awareness of the other members’ gender identity which would attenuate the gender identity factor and accentuate group conformity and salience. In terms of attraction, however, while CMC would create a more “level playing field” for

everyone, the lack of disclosure from other members might reduce both male and females' cumulative interpersonal attractions toward the group.

Gender Compositions as Independent Variable

Savicki et al. (1996) examined the linguistic behavior of small groups in CMC consisting of male-only, female-only and mixed gender. The groups discussed a hypothetical scenario over a 3-4 week period. As previously mentioned they found that female-only groups used more self-disclosure, more than male-only or mixed groups. Female-only groups were also more likely to seek to prevent or alleviate tension or arguments than male-only groups.

An exception, however, happened in FtF groups comprised of all men except for one woman. This type of group would express greater pro-feminist attitudes than men in any other forms of gender composition. These pro-feminist attitudes are even higher than in all-female groups (Burian, Yanico, & Martinez, 1998). Burian et al. (1998) suggested that the presence of a sole woman elicited feelings of chivalry among male participants. In this case, the woman would be perceived as helpless, and the high pro-feminist attitudes are conceived out of the desire to protect or defend her interests.

There is evidence that the number of high-status or low-status members within a group plays a more important role than the medium that the group is using. Low-status members with relevant expertise prevail only when their number exceeds the high-status members – in both CMC and FtF settings (Dubrovsky et al., 1991; Weisband et al., 1995). In most cases, when members' status is equal or undetermined, the social group that makes up the majority of all members exerts its influence on the other members.

Therefore, in order to perform a balanced study there should be an equal amount of members representing each status or social category.

Anonymity in CMC

In short, studies of how group members interact via CMC have generated two main perspectives, which are the cues-filtered-out perspective by Sproull and Kiesler (1986) and social identity model of deindividuation effects (SIDE theory) by Spears and Lea (1994). Meanwhile, the level of attraction of interpersonal relationships among in-group members in a visually anonymous setting is explained by social presence theory by Short, Williams, and Christie (1976).

Cues-Filtered-Out Perspective

As one of the earliest explanations of group patterns in CMC settings, the cues-filtered-out perspective says that nonverbal cues not only regulate social interaction, but also diminish some information about the communicators. This perspective sees the group process of communication as a web of transmissions of information between senders and receivers. Because the number and the variety of signals get reduced in CMC, the process as a whole is dramatically transformed. Consequently, information regarding social status gets blurred and members become less concerned with others' perceptions or evaluation of the self (Sproull & Kiesler, 1986; Culnan & Marcus, 1987).

Furthermore, this perspective suggests that CMC equalizes status, democratizes and decentralizes decision-making, and liberates the individual users. First, the anonymity of self to others will have liberating and equalizing effects. Individuals thus feel less inclined to be dishonest due to group pressure, and more inclined to suspend the

influence of higher status members. Second, the anonymity of others implies reduced status cues on behalf of the higher status members making individuals less aware of others and more likely to be influenced by their messages. (Culnan & Marcus, 1987; Siegel, Dubrovsky, Kiesler, & McGuire, 1986).

Siegel et al. (1986) conducted three experiments to examine the effects of computer-mediated communication on communication efficiency, participation, interpersonal behavior, and group choice. Groups of three members communicated FtF and through CMC to reach consensus on career choice problems. Siegel et al. (1986) suggested that CMC creates higher social equalization and allows members to participate equally in the discussion. Siegel et al. (1986) also found that the decisions made in the CMC setting shifted further away from the members' initial individual choices toward the group choices more so than the decisions made in FtF setting.

Social Identity Model of Deindividuation Effects (SIDE) Theory

SIDE theory argues that the CMC setting does not break social boundaries and liberate individuals from social influence, group pressure, and status differentials that characterize the FtF setting. According to this theory, CMC deprives individuals of self-awareness, which results in the replacement of individual identities with a group identity. Anonymity in CMC pushes group members to accept in-group norms and reject out-group norms. This theory also suggests that the implied social cues that remain in CMC settings, related to role, status, and category membership, can become more important and influential than the literal nonverbal cues in the FtF setting (Spears & Lea, 1994; Postmes & Spears, 1998).

Furthermore, Spears and Lea (1994) proposed two features of CMC settings that differentiate it from the FtF setting, which are isolation and anonymity. According to SIDE theory, both of these features reduce the communication of interpersonal cues within the group, making certain information that is less dependent on visual cues become more salient. This condition then shifts perceptions of self and others from the personal to group level, encouraging behavior that is normative to the salient group.

The root of SIDE theory is based on Tajfel's social identity theory (1979) and Turner's self-categorization theory (1987), which state that a person's behavior in any situation can range from entirely personal to entirely group-based. First, social identity theory suggests that the self is composed of different identities, which can represent our personal self or any kinds of group we belong to (Tajfel & Turner, 1986). Meanwhile, self-categorization theory extends social identity theory in explicitly defining different levels of self, which are personal identity and group identity. We belong to many social groups and categories. We refer to ourselves using group identities, such as "I am an Episcopalian", "I am a Wyomingite", "I am an ambidextrous", or "I am a restaurateur." We are influenced in what we feel or think by these groups to the extent that we identify with them (Turner, 1991, as cited in Spears & Lea, 1994; Turner, 1991, as cited in Postmes & Spears, 1998).

Postmes and Spears (1998) continued the study by conducting a meta-analysis of 60 independent studies that dated from 1970 to 1993 in order to provide evidence to their new theory. Their study showed that in CMC settings, minority voices are more likely to succumb to the voices of the majority – as the personal identity is becoming more of a group identity – in order to create and strengthen the group norms rather than in the FtF setting.

Between these two perspectives mentioned above, early research in this field supported the cues-filtered-out perspective in CM group processes. One of the most significant studies by Dubrovsky, Kiesler, and Sethna (1991) found that there is a more equal participation between high-status and low-status members in CMC settings than the FtF setting, especially when the low-status members have relevant expertise in the subject matter being discussed. Furthermore, low status members are also more likely to be the first person to advocate a position. In their study, Dubrovsky et al. (1991) assigned participants into 24 groups of four members, in which each consisted of one MBA student representing high-status members and three college freshmen representing low-status members.

Dubrovsky et al.(1991) based their status and participation equalization assumption on an interpersonal relationship principle that the CMC context reduces two important cues in communication, which are static cues, such as the business suit that a manager wears, and dynamic cues, such as nodding approval, frowning, or eye contact (Patterson, 1983, as cited in Dubrovsky et al., 1991). These cues contribute to the perception of status, in addition to expectations established by members' social position in a more global context, such as race, gender, age, physical attractiveness, or organizational position (Dubrovsky et al., 1991).

Contrary to the findings of Dubrovsky et al. (1991) supporting the equalization of member status during CMC group discussion, a succeeding study by Weisband, Schneider, and Connolly (1995) denied the assumption that says status inequalities or domination by high-status group members were significantly reduced when groups made decisions using electronic mail. Their findings suggested that group members do not participate nor influence in a more equal manner when communicating in a CMC setting

than when communicating in an FtF setting, even when the members do not know their fellow members' positions. In this study, where high-status members made up the majority of the group – there were 12 groups being examined with each group comprised of two MBA students and one undergraduate - undergraduate students succumbed to MBA students' pressure.

Another study by Hollingshead (1996) measured the impact of CMC settings over the FtF on group decision quality, information exchange, and perceptions of influence. Her study indicated that CMC does not liberate individuals and groups from status-induced inhibition. She suggested that “the status effect on the quality of group decision was the same regardless of whether communication was face to face or via computer network” (p. 213). CMC does, however, restrain the information exchange processes and reduce the perceived influence of all group members, regardless of status (Hollingshead, 1996).

Barreto and Ellemers (2002) divided group members into high identifiers (those who identify strongly with the group) and low identifiers (those who identify weakly with the group). Using a laboratory experiment, the study suggests that the visibility of group members and the visibility of responses only affect the low identifiers and do not pose any significant effects to the high identifiers, which is probably due to the ceiling effect, which means that the high identifiers had reached the maximum identity on the scale being used. In this case, low identifiers show more “willingness to exert effort on behalf of the group” (p. 602) when there is total anonymity to the in-group, supporting the SIDE theory.

Among the first true implications of SIDE theory is probably the burgeoning number of activists and social movements that utilize CMC as their medium. As

Brunsting and Postmes (2002) put it, CMC is “a socially isolating medium that can reinforce social unity” (p. 528). Their study indicates that CMC provides an easy entry point for new members in social activity because there are minimum direct consequences from being appreciated or disliked from other members. In the long run, CMC makes the differences among group members less visible and obscure the presence of the out-group.

Lee (2004) took a new approach in examining SIDE theory. Since visual anonymity is known to depersonalize individuals and make the group norm salient, the study manipulates two distinct factors in SIDE theory, which are identifiability and similarity to presentation. Lee (2004) then varied visual representation using cartoon characters while holding anonymity constant. The participants in the depersonalization condition were represented by the same cartoon characters while the personalized participants were represented by different cartoon characters. This experimental design was based on the assumption that if text-based CMC messages make less unique products, the uniform visual representation of CMC of group members is likely to give the same effects.

The study suggested that 1) individuals are more likely to attribute different personal characteristics to each group member when each is represented by different characters than when each is represented by the same character and 2) individuals will attribute greater similarity to members with the same cartoon characters than to members with different cartoon characters. Furthermore, these findings show the strong effects of visual cues in CMC because although participants were aware that each person was randomly assigned to different characters, they attributed greater similarity and expressed greater agreements with the members of same characters. In other words, the visual cues are somehow more important than the text-based messages. This opens a new dimension

for the SIDE theory considering that many CMC instruments have now adopted webcams that give visual cues, particularly in teleconferences.

A related study on SIDE theory by Cress (2005) examined the effects of member portraits in the virtual CMC using 84 students from a German University. Half of the participants were provided with group members portraits, while the other half were not. Results suggested that member portraits have different effects for people with individualistic (those who want to maximize their own benefit) and pro-social behavior (those who want to maximize the group's benefit). In line with SIDE theory, member portraits weakened group identity and salience by giving cues about other members in regard to their gender and age differences, and thus, activated different stereotypes.

However, this study also found an exception for pro-social individuals. For them, member portraits can undermine their contribution and thus, lead to social loafing and less efficient group decision making.

In the past decade, studies in the field of CMC group process lent more empirical support toward SIDE theory than the cues-filtered-out perspective. However, past studies tended to emphasize group processes rather than group outcomes. Studies had also shifted quickly to exploring the rapid development and popular use of new media, such as virtual synchronous online discussions and group social networks, omitting the results that would have occurred had CMC groups stayed anonymous.

SIDE theory predicts that individuals in the CMC setting will have higher group salience and thus, they are less likely to sustain their personal preferences in making a group decision. In addition, in combining the theory with cues-filtered-out perspective, CMC neutralizes status by reducing the visual cues. Therefore, CMC fosters norm-based influence, because individuals' self-categorization is salient due to the lack of

individuating knowledge that is available about the fellow members. Until today, however, there has still been a number of contrasting opinions on whether SIDE theory applies in all circumstances.

In-group Agreement

The level of group salience in anonymous settings can be measured by the degree of expression of agreement among the group members or conformity to group norms (Lee, 2004; Lee, 2006). Based on the SIDE theory, Lee (2004) concluded that participants who are represented with same cartoon characters reach more agreements than participants who are represented with different cartoon characters. This finding suggested that in a visually anonymous setting, where everyone is simply represented by similar sounding nicknames, there will be more agreements than in FtFs setting where a variety of physical cues (gender, race, body size, outfit, or voice) divide group members. This is due to the fact that group members categorize themselves with those who are similar within their group and set their in-group boundaries.

Furthermore, group members constantly differentiate between in-group influence and out-group influence (Mackie, Worth, & Asuncion, 1990). With differences in physical cues, members will regard those with more similar group identity, such as same gender, race, or ethnicity as the in-group and those with less similarity as the out-group. In their experiment, Mackie et al. (1990) assigned participants to read messages from an in-group source (a member of their university) or an out-group source (a member of another university). Mackie et al. (1990) found that in-group messages were carefully processed and accepted regardless of argument quality, while out-group messages were

non-influential, regardless of argument quality. Therefore, it is expected that heterogeneous characteristics of a group contribute to lower level of group agreement.

Kahai and Cooper (1999) defined group agreement in CMC as “the extent to which members of a group solving a problem hold similar views and solutions about the problem at the end of their task” (p.166). In the past, both groups in FtF and CMC are found to be able to reach an agreement when they are allowed to deliberate as long as it takes (Walther, 1995). In terms of group dynamics, Walther (1992) suggested that members in CMC groups were more task-oriented, offered more evaluations and opinions of proposals. Walther (1992) also suggested that CMC group members rely more heavily on the texts to satisfy their emotional, identity, and informational needs than FtF group members. Therefore, CMC group members are more likely to be influenced by the content of the messages or opinions from their fellow members. Although, the study stated that members in CMC groups were less likely to offer agreement, there is no face-loss cost in the group decision making process allowing the members to be more honest with their opinions.

When risks of face-loss cost involved in giving honest feedback are reduced, such as in CMC setting, Ang, Cummings, Straub, and Earley (1993) suggested that group members seek more feedback and provide more information than in FtF setting. This is because CMC allows equal participation and eliminates all physical features of the group members. Ang et al. (1993) concluded that the lack of nonverbal and status cues, the equality of member participation, the anonymity of contribution, exchanges of ideas, feedback, and the high amount of written interactions make CMC groups focus more on the interactions than the interactants.

Overall, using two different points of view: 1) cues-filtered-out perspective, which suggested that CMC democratizes the opinions of the group members, and 2) SIDE theory, which suggested that visual anonymity increases the level of group salience, this study expects to see higher level of group agreement in CMC than in FtF setting. These notions are also supported by the risk or face-saving techniques that might inhibit group members to provide or seek honest feedback in FtF setting.

In-group Attraction

Group anonymity, however, has not been proven to have significant effects on the level of group attraction. Research in this area was coined by Short, Williams, and Christie (1976) who proposed social presence theory. The theory states that anonymity would be expected to hinder immediacy and intimacy and thus, reduce the level of group attraction. In their book *The Social Psychology of Telecommunication*, Short et al. (1976) stated that similarity in age, sex, race, religion, and personality have all at various times been found to increase attraction between individuals. The anonymity of CMC does not allow the members to disclose their demographics and thus, lessens the possibility of interpersonal attraction.

Higher levels of interpersonal attraction within groups in more open settings is supported by Altman and Taylor's social penetration theory (Altman & Taylor, 1973). Altman and Taylor (1973) developed models of interpersonal relationships that present how disclosure leads to liking. Their research suggested that there is a significant association between a person's level of open communication which includes tone of voice, facial expression, gesture, or body language, and the level of liking accorded.

Short et al. (1976) also elaborated that it is possible in some situations attraction for the members of a group would be different than attraction for the group as a whole. However, in reality, the cumulative desire of the individuals to remain in the group will be very similar to the cumulative attraction by the individuals toward other individuals within the group. On the other hand, if attraction between some of the members is higher than between other members, there will be competition between subgroups and thus, reduce the level of cumulative members' attractions toward the group. Therefore, if similarity is positively correlated with attraction within interpersonal relationships, we should expect that the cumulative attraction in a homogenous group is higher than that within a heterogeneous group.

SIDE theory, while suggesting that anonymity would enhance conformity to group norms pushing the members to behave in similar ways by reducing private self-awareness and self-regulation (Postmes & Spears, 1998), does not always predict that the anonymity that CMC creates would lead to in-group interpersonal attraction among the group members. In the previous research, anonymity has resulted in reduced group attraction (Kiesler et al., 1985) but increased group attraction for those groups with high identity salience (Lea & Spears, 1992). Kiesler et al. (1985) suggested that there is a lack of social etiquette within the CMC setting that leads to less attention to others and social feedback. They also found that people evaluate each other less favorably in CMC than in FtF settings.

On the other hand, one study by Lea, Spears, and DeGroot (2001) supported the notion that visual anonymity increases group attraction. Lea et al. (2001) measured the effects of group-based self-categorization and stereotyping of others on group attraction using both visually anonymous CMC and videoconferencing. To represent the different

group-based self-categories, they chose to manipulate the nationality factor. Participants disguised themselves as German and English, two nationalities of equally developed countries – in manipulating the independent variable. Among the questions presented was “(what do you) think about British people, their attitudes and behavior in general and how they differ from other nationalities and their attitudes and behavior.” These questions were followed by several scales that measure group attraction. Results showed that visual anonymity significantly increased attraction to the groups – whether German or English – thus increased self-categorization and attraction to the group. The drawback of this study is that none of the groups formed were homogenous, leading to perceived in-group favoritism in a less anonymous setting. Therefore, the relationship whether group conformity and group attraction is still unknown.

This thesis aims to prove that regardless of low group salience, interpersonal bonds remain the basis of group attraction. Conditions that prevent the formation of bonds, such as visual anonymity will reduce politeness or tolerance, and thus, impede the development of interpersonal attraction and relation within group (Short et al., 1976). Because anonymity removes interpersonal cues, it decreases attention to others, reduces concerns about being positively evaluated by others, and creates an impersonal, task-oriented focus for group interaction.

Hypotheses

Hypothesis 1A: The level of agreement in single-gender groups will be higher than that in mixed-gender groups in FtF setting.

Hypothesis 1B: Female-only groups will have a higher level of agreement than male-only groups and mixed-gender groups in CMC setting.

	DV	Group setting	IV (Gender composition)	IV (Gender composition)	IV (Gender composition)
H 1A	Level of agreement	Face-to-Face	Male-only groups	Female-only groups	Mixed-gender groups
H 1B	Level of agreement	Computer-Mediated Communication	Male-only groups	Female-only groups	Mixed-gender groups

Hypothesis 2A: CMC setting will accentuate the level of agreement in male-only groups compared to that in FtF setting.

Hypothesis 2B: CMC setting will accentuate the level of agreement in female-only groups compared to that in FtF setting.

Hypothesis 2C: CMC setting will accentuate the level of agreement in mixed-gender groups compared to that in FtF setting.

	DV	Gender composition	IV (Group setting)	IV (Group setting)
H 2A	Level of agreement	Male-only groups	Face-to-Face	Computer-Mediated
H 2B	Level of agreement	Female-only groups	Face-to-Face	Computer-Mediated
H 2C	Level of agreement	Mixed-gender groups	Face-to-Face	Computer-Mediated

Hypothesis 3A: The level of group attraction in single-gender groups will be higher than that in mixed-gender groups in FtF setting.

Hypothesis 3B: Female-only groups will have a higher level of group attraction than male-only groups and mixed-gender groups in CMC setting.

	DV	Group setting	IV (Gender composition)	IV (Gender composition)	IV (Gender composition)
H 3A	Level of group attraction	Face-to-Face	Male-only groups	Female-only groups	Mixed-gender groups
H 3B	Level of group attraction	Computer-Mediated	Male-only groups	Female-only groups	Mixed-gender groups

Hypothesis 4A: CMC setting will attenuate the level of group attraction in male-only groups compared to that in FtF.

Hypothesis 4B: CMC setting will attenuate the level of group attraction in female-only groups compared to that in FtF.

Hypothesis 4C: CMC setting will attenuate the level of group attraction in mixed-gender groups compared to that in FtF.

	DV	Gender composition	IV (Setting)	IV (Setting)
H 4A	Level of group attraction	Male-only groups	Face-to-Face	Computer-Mediated
H 4B	Level of group attraction	Female-only groups	Face-to-Face	Computer-Mediated
H 4C	Level of group attraction	Mixed-gender groups	Face-to-Face	Computer-Mediated

Chapter 3

METHODOLOGY

Participants

The initial population of this study was everyone who has access to communicate through CMC or any other assisted technology devices that allow anonymous communication. However, due to the logistical limitations, the population shifted to students who were enrolled in classes at Western Kentucky University.

Participants were college students recruited from classes through agreements with their teachers. Students of four Communication instructors, one English instructor, and one Sociology instructor served as subjects. All participating students were given extra credit as a compensation to participate in this study.

Due to the limitations of time, space, and facility, the experiments took place in 10 different sessions that spanned over a month period. Subjects were assigned to groups prior to the experiment. This was to avoid students who were related as friends or acquaintances forming their own groups. Participants were divided into groups of 3 or 4 students each. Meanwhile, mixed-gender groups were always balanced at 2 males and 2 females.

Participants were presented with a case study individually prior to having the group discussion, in both FtF and CMC conditions. The FtF group discussions lasted between 10 to 15 minutes, while the CMC group discussions lasted between 40 minutes

to 1 hour. Longer time interval for the CMC experiment compensated for the fact that typing is roughly four times slower than speaking (Kiesler & Sproull, 1999). In the end, there were 145 participants consisting of 72 male students and 73 female students, in which 74 students participated in FtF discussions and 71 in CMC discussions. The participants made up 12 male-only groups (6 in FtF and 6 in CMC), 15 female-only groups (6 in FtF and 9 in CMC), and 13 mixed-gender groups (8 in FtF and 5 in CMC).

Measurements

Scales used in this study consisted of an opinion scale on the case study to measure the level of agreement, Evans and Jarvis's (1986) group attraction scale to measure the level of group attraction, and Mael and Ashforth's (1992) organizational identification scale.

Reliability of scales

Each question of the opinion scale was independently constructed. The purpose was to measure four different dimensions of the agreement. Therefore, correlation test between each item was not needed.

The alpha coefficient for Evans and Jarvis's (1986) group attraction scale ranged from .90 to .97 based on data obtained from 178 members in 26 groups in three separate studies. Factors within the scale included willingness to participate, conformity, attendance, and nondefensiveness (Evans & Jarvis, 1986).

However, the previous study used the scale for long-term groups. The scale originally examined the degree to which interpersonal attraction was related to group

early, midway, and late in the growth of groups. In addition, the scale has only been used to measure group attraction in a non-anonymous setting. Therefore, using the same scale for this study would be inappropriate. To fulfill the synchronous and anonymous nature of the group discussions in this experiment, the scale was modified.

From 20 items in the original scale, 17 were extracted and included in the new modified scale. Those items that were eliminated from the original scale included “I dread coming to this group”, “If I were told my group would not meet today, I would feel badly”, and “I would not feel badly if I had to miss a meeting of this group”. The new scale was named group attitude scale (GAS) and had an alpha coefficient of 0.924.

Finally, Mael and Ashforth’s (1992) organizational identification scale was used as a post-hoc measurement. This was to determine whether the case activated the gender identity of the group members, and whether there is a positive correlation between gender identity and the answers on the four-item opinion scale. Mael and Ashforth’s (1992) organizational identification scale had an alpha coefficient of 0.87 in measuring both cognitive and affective aspect of self-identity toward a social group (Meal & Ashforth, 1992). For the purpose of this study, the “name of the organization” of the original scale was replaced with “gender group”, and the organizational identification scale was renamed gender identity scale (GIS). This new scale had an alpha coefficient of 0.773.

Activating Gender Identity

Past experiments indicated that certain conditions could increase the level of salience of group membership. Charters and Newcombe (1958) described the salience of a membership group as the potency that forces an individual toward one of the many groups that he or she is a member of. In their experiment, Charters and Newcombe

(1958) suggested that a discussion regarding one's religious belief would increase the salience of the participants' religious group membership and thus, make them adhere to the religious doctrine.

Several topics have been found to activate gender identity among members in groups with different gender composition. The most widely used topics revolve around hypothetical scenarios of sexual harassment (Burian et al., 1998). Other than that, Savicki and Kelley (2000) created a hypothetical case of male infidelity that successfully activated gender identity among CMC group members. Although the research did not study the outcomes, Savicki and Kelley (2000) found significant differences in communication styles and patterns between female-only groups, male-only groups, and mixed-gender groups.

In terms of gender identity, Sherif (1982) believed that an understanding of reference role models or groups is important, because they present a complete view of what values and norms that an individual may relate to his or her gender group. The way the reference groups behave would then be followed by those with the need to protect one's maleness or femaleness (Spence, 1985). Therefore, to activate the subjects' gender identity in this study, I proposed a gender-relevant case study.

The case study involved the recent news of Justice Sandra Day O'Connor, the first woman on the U.S. Supreme Court who is now retired. Justice O'Connor's husband is an Alzheimer patient who struck up a romance with another Alzheimer patient after moving into an assisted living center. The group members were asked for their opinions on whether 1) O'Connor should divorce her husband, 2) O'Connor should continue taking care of her husband, 3) O'Connor should support her husband with his new relationship, and 4) O'Connor should remind her husband about their marriage. Because

this case was considered a current issue, I chose synchronous CMC group discussion over asynchronous CMC to avoid any influence toward the participants from outside the group discussion.

Procedure

To accommodate an optimal number of groups using limited number of participants, this study will divide the participants into groups of three to four members. Single gender groups can be: three males, four males, three females, or four females. Similar to Swan & Wyer (1997), to avoid increased self-awareness from the minority members, it is important for the mixed-gender groups to have equal amount of male and female members - in this case two males and two females.

Each FtF group conducted the discussion in separated enclaves in the corners of the classrooms to prevent any distractions or influences from other groups. The computer-mediated-communication (CMC) experiments were conducted in several sessions due to the capacity and availability of the computer labs. Students were taken from their classrooms to three student computer labs.

Meanwhile, members in CMC groups were not allowed to know their group mates. The CMC group members did the work from their individual PC at Helms Computer Lab. Nicknames were assigned to represent each group member. They nicknames began with "WKU" followed by random numbers. Examples of nicknames were WKU62, WKU29, or WKU94. They will communicate using public chat rooms provided by www.icq.com. They were told to 1) refrain from using any statements that may allude to any information regarding their gender or identity, 2) converse only with

members with certain nicknames—there were other people in the public chat rooms, and

3) discuss only the case study.

Chapter 4

RESULTS

The results are divided into two main parts, which are the confirmation of the scales validity, and the testing of the hypotheses. The confirmation of the scales validity was crucial because authors of both Evans and Jarvis (1986) group attraction scale and Mael and Ashforth's (1992) organizational identification scale suggested that the scales need further validation due to the limitations of the conditions where the scales validity and reliability were tested.

Confirming the Validity of the Scales

This experiment used three different scales. Those were 1) the personal opinion scale that measured level of agreement, 2) the modified version of Evans and Jarvis's (1986) group attraction scale to measure level of group attraction, and 3) Mael and Ashforth's (1992) organizational identification scale for gender group identity (GID). The GID scale was used, in part, to determine whether the specific content of the case activated gender identity.

Each opinion question was measured individually for level of agreement within groups. Each question was independently constructed, and thus, became one dependent variable that measure the level of agreement. Due to the absence of scale reliability test prior to the experiment, we cannot assume that each question of the 4-item scale measures the same construct

Principal Component Analysis (PCA) was conducted to factor analyze the group attitude scale (GAS). Three factors emerged, which were 1) sense of belongingness, 2) role as a member, and 3) indifference toward the group. The factors deviated from the four factors found in the original Evans and Jarvis' (1986) group attraction scale, which were 1) willingness to participate, 2) attendance, 3) conformity, and 4) nondefensiveness.

Of the 17 items, 13 items were loaded heavily on factor 1, while item A13 (I do not feel part of the group's activities) was loaded moderately on this factor at -.560. Two other items loaded heavily on factor 2 and factor 3 respectively. They are A14 (I feel it would make a difference to the group if I were not here) which is loaded on factor 2 at .776 and A4 (I don't care what happens in this group) which is loaded on factor 3 at .602. One item that did not load heavily on any of the factors was A16 (It makes a difference to me how this group turns out). (See Table 1.)

Table 1: Component Matrix for Group Attraction Scale using three factors

	Component		
	1	2	3
A1 I want to remain a member of this group	.821	-.043	.228
A2 I like my group	.880	.060	.291
A3 I look forward to coming to the group	.794	.048	.265
A4 I don't care what happens in this group	-.485	.092	.602
A5 I feel involved in what is happening in my group	.739	.187	-.110
A6 If I could drop out of the group now, I would	-.861	.081	.043
A7 I wish it were possible to move to another group at this time	-.775	.367	.021
A8 I am dissatisfied with the group	-.889	.110	.001
A9 If it were possible to move to another group at this time, I would	-.734	.443	-.093
A10 I feel included in the group	.726	.264	-.159
A11 In spite of individual differences, a feeling of unity exists in my group	.752	.286	.131
A12 Compared to the groups I know of, I feel my group is better than most	.673	.283	.304
A13 I do not feel a part of the group's activities	-.560	.348	.229
A14 I feel it would make a difference to the group if I were not here	.081	.776	-.164
A15 I feel distant from the group	-.743	-.027	.383
A16 It makes a difference to me how this group turns out	.411	.026	.275
A17 I feel my absence would not matter to the group	-.628	-.210	.268

Extraction Method: Principal Component Analysis.
3 components extracted.

Finally, all questions were forced into a single factor. Three items did not load heavily on the factor: A4 (I don't care what happens in this group), A14 (I feel it would make a difference to the group if I were not here), and A 16 (It makes a difference to me how this group turns out). (See Table 2.) Therefore three items were omitted from the composite index of Group Attraction. The index was created by adding the score on the 14 significant items. The accumulation of total scores for all items on the GAS for each individual was labeled as a dependent variable "Attraction". This scale was then used to measure level of attraction in different settings and gender compositions.

Table 2: Component Matrix for Group Attraction Scale using one factor

	Component
	1
A1 I want to remain a member of this group	.821
A2 I like my group	.880
A3 I look forward to coming to the group	.794
A4 I don't care what happens in this group	-.485
A5 I feel involved in what is happening in my group	.739
A6 If I could drop out of the group now, I would	-.861
A7 I wish it were possible to move to another group at this time	-.775
A8 I am dissatisfied with the group	-.889
A9 If it were possible to move to another group at this time, I would	-.734
A10 I feel included in the group	.726
A11 In spite of individual differences, a feeling of unity exists in my group	.752
A12 Compared to the groups I know of, I feel my group is better than most	.673
A13 I do not feel a part of the group's activities	-.560
A14 I feel it would make a difference to the group if I were not here	.081
A15 I feel distant from the group	-.743
A16 It makes a difference to me how this group turns out	.411
A17 I feel my absence would not matter to the group	-.628

Extraction Method: Principal Component Analysis.
1 component extracted.

Next, factor analysis to GID was applied and a single factor was found. Using PCA, all 6 items of GID were found loaded heavily on the factor of gender identity. Coefficients range from .504 for GID6 (If a story in the media criticized my gender

group, I would feel embarrassed) to the highest at .789 for GID4 (My gender group successes are my success), allowing all items to be included on the GID. The accumulation of total scores for all items on the GID for each individual was then labeled as “Gender Identity.” (See Table 3.)

Table 3 Component Matrix for Gender Identity

	Component
	1
GID1 When someone criticizes my gender group, it feels like a personal insult	.691
GID2 I am very interested in what others think about my gender group	.736
GID3 When I talk about my gender group, I usually say 'we' rather than 'they'	.629
GID4 My gender group's successes are my successes	.789
GID5 When someone praises my gender group, it feels like a personal compliment	.747
GID6 If a story in the media criticized my gender group, I would feel embarrassed	.504

Extraction Method: Principal Component Analysis.
1 component extracted.

Testing The Role of Gender Identity on Opinion

The effect of FtF, CMC, gender identity, and group gender composition on opinion was measured by a 4-item opinion scale. Four different independent T-tests were conducted. These tests were to measure 1) the difference in means between gender of the participants on each item, 2) the difference in means between gender of the participants with high level of gender identity on each item, 3) the difference in means between male participants with high and low level of gender identity on each item, and 4) the difference in means between female participants with high and low level of gender identity on each item. Using a 6-point Likert scale, “strongly agree” is represented by 6, while “strongly disagree” is represented by 1.

For the first test, differences in mean agreement between three of the four items and the gender of the participants were found significant. Those were OP1, which stated that O'Connor should divorce her husband ($t[143] = -2.442, p = 0.16$), OP2, which stated that O'Connor should continue taking care of her husband ($t[118.609] = 4.207, p < .001$), and OP3, which stated that O'Connor should support her husband with his new relationship ($t[143] = 2.469, p = .015$). For OP1, male participants ($n = 72; M = 3.88, SD = 1.711$) agreed less than female participants ($n = 73; M = 4.56, SD = 1.675$). For OP2, male participants ($M = 2.76, SD = 1.78$) agreed more than female participants ($M = 1.73, SD = 1.109$). For OP3, male participants ($M = 4.01, SD = 1.640$) agreed less than female participants ($M = 2.99, SD = 3.21$). (See Table 4.1.) Gender differences were not significant for OP4 (O'Connor should remind her husband about their marriage). (See Table 4.2.)

Table 4.1 Means of opinion questions according to gender

	Gender	N	Mean	Std. Deviation	Std. Error Mean
OP1 O'Connor should divorce her husband	Male	72	3.88	1.711	.202
	Female	73	4.56	1.675	.196
OP2 O'Connor should continue taking care of her husband	Male	72	2.76	1.780	.210
	Female	73	1.73	1.109	.130
OP3 O'Connor should support her husband with his new relationship	Male	72	4.01	1.640	.193
	Female	73	3.33	1.700	.199
OP4 O'Connor should remind her husband about their marriage	Male	72	2.99	1.804	.213
	Female	73	3.21	1.929	.226

Table 4.2 T-Tests comparing opinion questions by gender

	t-test for Equality of Means				
	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
OP1 O'Connor should divorce her husband	-2.442	143	.016	-.687	.281
OP2 O'Connor should continue taking care of her husband	4.207	118.609	.000	1.038	.247
OP3 O'Connor should support her husband with his new relationship	2.469	143	.015	.685	.277
OP4 O'Connor should remind her husband about their marriage	-.707	143	.481	-.219	.310

For the second test, all of the participants were divided equally into three sub-groups, which are high level of gender identity, medium level of gender identity, and low level of gender identity. Then, the difference in means between males and females who had a high level of gender identity were measured. Participants who scored in the top one-third on the gender identity scale consisted of 32 males and 14 females. (See Table 4.3.)

Correlations between three out of four items and the gender of the participants with high gender identity with significance of .05 or better were found at OP1 ($t[44] = -2.090, p = .042$), OP3 ($t[44] = 2.034, p = .048$), and OP4 ($t[44] = -2.810, p = .007$). (See Table 4.4). For OP1, male participants with high gender identity ($n = 32; M = 3.53, SD = 1.759$) agreed less than female participants with high gender identity ($n = 14; M = 4.64, SD = 1.393$). For OP3, male participants with high gender identity ($M = 4.03, SD = 1.656$) agreed more than female participants with high gender identity ($M = 2.93, SD = 1.774$). For OP4, male participants with high gender identity ($M = 2.38, SD = 1.601$) agreed less than female participants with high gender identity ($M = 3.86, SD = 1.748$). (See Table 4.4.)

Table 4.3 Means of opinion questions according by gender for subjects with high gender identity

	Gender	N	Mean	Std. Deviation	Std. Error Mean
OP1 O'Connor should divorce her husband	Male	32	3.53	1.759	.311
	Female	14	4.64	1.393	.372
OP2 O'Connor should continue taking care of her husband	Male	32	2.94	1.900	.336
	Female	14	2.00	1.301	.348
OP3 O'Connor should support her husband with his new relationship	Male	32	4.03	1.656	.293
	Female	14	2.93	1.774	.474
OP4 O'Connor should remind her husband about their marriage	Male	32	2.38	1.601	.283
	Female	14	3.86	1.748	.467

Table 4.4 T-Tests comparing opinion questions by gender for subjects with high gender identity

	t-test for Equality of Means				
	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
OP1 O'Connor should divorce her husband	-2.090	44	.042	-1.112	.532
OP2 O'Connor should continue taking care of her husband	1.939	35.584	.060	.938	.483
OP3 O'Connor should support her husband with his new relationship	2.034	44	.048	1.103	.542
OP4 O'Connor should remind her husband about their marriage	-2.810	44	.007	-1.482	.527

The Role of Gender Identity among Males regarding Opinion

For the next tests, the differences in means between those with high level of gender identity and those with low level of gender identity were compared. The participants were grouped into males and females.

The first test focused exclusively on the male participants to measure the difference of means between males with high gender identity and males with low gender identity. Previously, those who scored in the highest third on gender identity scale had

been considered as “high” ($n = 32$) while those who scored lowest third on the same scale had been considered as “low” ($n = 13$). The only significant difference in means between males with high and low gender identity was in OP4 ($t[43] = 3.667, p = .001$). (See Table 5.2.) Those with low gender identity ($M = 4.46, SD = 2.025$) agreed more than those with high gender identity ($M = 2.38, SD = 1.601$). (See Table 5.1.)

Table 5.1 Means of opinion question by level of gender identity for males

	Gender ID	N	Mean	Std. Deviation	Std. Error Mean
OP1 O'Connor should divorce her husband	Low	13	4.15	1.625	.451
	High	32	3.53	1.759	.311
OP2 O'Connor should continue taking care of her husband	Low	13	2.69	1.750	.485
	High	32	2.94	1.900	.336
OP3 O'Connor should support her husband with his new relationship	Low	13	4.31	1.702	.472
	High	32	4.03	1.656	.293
OP4 O'Connor should remind her husband about their marriage	Low	13	4.46	2.025	.562
	High	32	2.38	1.601	.283

Table 5.2 T-Test comparing opinion questions by level of gender identity among males

	t-test for Equality of Means				
	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
OP1 O'Connor should divorce her husband	1.099	43	.278	.623	.567
OP2 O'Connor should continue taking care of her husband	-.401	43	.690	-.245	.612
OP3 O'Connor should support her husband with his new relationship	.504	43	.617	.276	.549
OP4 O'Connor should remind her husband about their marriage	3.667	43	.001	2.087	.569

The Role of Gender Identity among Females regarding Opinion

Next, the difference of means between female participants with high gender identity and those with low gender identity were compared. Female participants who scored in the highest third on the gender identity scale had been categorized as “high” ($n = 14$) and the lowest third on the same scale had been categorized as “low” ($n = 32$). There were 14 females with high gender identity and 32 females with low gender identity. (See Table 6.1.) There was no significant difference in means between females with high and low gender identity. (See Table 6.1 and Table 6.2.)

Table 6.1 Means of opinion questions by level of gender identity among females

	Gender ID	N	Mean	Std. Deviation	Std. Error Mean
OP1 O'Connor should divorce her husband	Low	32	4.56	1.933	.342
	High	14	4.64	1.393	.372
OP2 O'Connor should continue taking care of her husband	Low	32	1.44	.948	.168
	High	14	2.00	1.301	.348
OP3 O'Connor should support her husband with his new relationship	Low	32	3.25	1.646	.291
	High	14	2.93	1.774	.474
OP4 O'Connor should remind her husband about their marriage	Low	32	2.84	2.112	.373
	High	14	3.86	1.748	.467

Table 6.2 T-Test comparing opinion questions by level of gender identity among females

	t-test for Equality of Means				
	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
OP1 O'Connor should divorce her husband	-.140	44	.889	-.080	.574
OP2 O'Connor should continue taking care of her husband	-1.649	44	.106	-.563	.341
OP3 O'Connor should support her husband with his new relationship	.595	44	.555	.321	.540
OP4 O'Connor should remind her husband about their marriage	-1.573	44	.123	-1.013	.644

Hypotheses

Hypothesis 1A: The level of agreement in single-gender groups will be higher than that in mixed-gender groups in FtF setting.

The first test selected only the cases that were conducted in FtF setting. Then, using the aggregate data application, I created a new file called “FtF agreement”. This file contains three person and four person groups and their gender compositions (male-only, female-only, or mixed) as the independent variable, and the standard deviation of each group’s answers on each item as the dependent variables. Standard deviation was used to represent level of agreement since the larger the standard deviation the more dispersed are the opinions of the members of a particular group, and therefore, the less agreement.

Later, each gender composition was coded as “1” for male-only ($n = 6$), “2” for female-only ($n = 6$), and “3” for mixed-gender ($n = 8$). The significance of these three groups’ level of agreement on the four opinion items was measured using ANOVA. There was no significant difference in means among the three groups with different gender compositions. (See Table 6.2.)

6.1 Descriptive measures for level of agreement of different gender compositions in FtF setting

		N	Mean	Std. Deviation	Std. Error
OP1_sd	Male-Only Groups	6	1.3065	.72003	.29395
	Female-Only Groups	6	1.1104	.94188	.38452
	Mixed-Gender Groups	8	1.0846	.71606	.25317
	Total	20	1.1589	.75415	.16863
OP2_sd	Male-Only Groups	6	1.1294	.78690	.32125
	Female-Only Groups	6	1.0603	.51728	.21118
	Mixed-Gender Groups	8	.7763	.34757	.12288
	Total	20	.9674	.55161	.12334
OP3_sd	Male-Only Groups	6	1.4529	.65837	.26878
	Female-Only Groups	6	1.5048	.67025	.27363
	Mixed-Gender Groups	8	1.3219	.62915	.22244
	Total	20	1.4161	.62030	.13870
OP4_sd	Male-Only Groups	6	1.1437	.89280	.36448
	Female-Only Groups	6	1.3787	.99283	.40532
	Mixed-Gender Groups	8	1.3625	.67057	.23708
	Total	20	1.3017	.80383	.17974

6.2 ANOVA for level of agreement of different gender compositions in FtF setting

		Sum of Squares	Df	Mean Square	F	Sig.
OP1_sd	Between Groups	.189	2	.094	.151	.861
	Within Groups	10.617	17	.625		
	Total	10.806	19			
OP2_sd	Between Groups	.502	2	.251	.807	.462
	Within Groups	5.280	17	.311		
	Total	5.781	19			
OP3_sd	Between Groups	.126	2	.063	.150	.862
	Within Groups	7.184	17	.423		
	Total	7.311	19			
OP4_sd	Between Groups	.215	2	.108	.152	.861
	Within Groups	12.062	17	.710		
	Total	12.277	19			

Hypothesis 1B: Female-only groups will have a higher level of agreement than male-only groups and mixed-gender groups in CMC setting.

The second test selected only the cases that were conducted in the CMC setting. Then, using the aggregate data application, a new file called “CMC agreement” was created. This file comprised the various gender compositions of the groups as the independent variable, and the standard deviation of the groups’ answers on each item as the dependent variables. Each gender composition was labeled as “1” for male-only (n = 6), “2” for female-only (n = 9), and “3” for mixed-gender (n = 5).

Using ANOVA, the hypothesis was supported only for OP1 ($F[2,17] = 11.989$, $p = .001$) (See Table 7.2.). The level of agreement among female-only groups ($M = .3591$, $SD = .369$) was substantially higher than male-only groups ($M = .7275$, $SD = .57580$) followed by mixed-gender groups ($M = 1.7934$, $SD = .70754$) (See Table 7.1.) However, with ANOVA, there was no clear indication which groups are statistically significant in their differences of mean.

7.1 Descriptive measures for level of agreement of different gender compositions in CMC setting

		N	Mean	Std. Deviation	Std. Error
OP1_sd	Male-Only Groups	6	.7275	.57580	.23507
	Female-Only Groups	9	.3591	.36900	.12300
	Mixed-Gender Groups	5	1.7934	.70754	.31642
	Total	20	.8282	.77624	.17357
OP2_sd	Male-Only Groups	6	.9795	.60442	.24675
	Female-Only Groups	9	.4733	.55723	.18574
	Mixed-Gender Groups	5	1.0555	.69460	.31063
	Total	20	.7707	.63675	.14238
OP3_sd	Male-Only Groups	6	1.4693	1.00469	.41016
	Female-Only Groups	9	.9222	.65473	.21824
	Mixed-Gender Groups	5	1.0932	.43999	.19677
	Total	20	1.1291	.73759	.16493
OP4_sd	Male-Only Groups	6	1.0627	.90996	.37149
	Female-Only Groups	9	.8082	.79360	.26453
	Mixed-Gender Groups	5	1.7927	.58049	.25960
	Total	20	1.1307	.84858	.18975

7.2 ANOVA for level of agreement of different gender compositions in CMC setting

		Sum of Squares	Df	Mean Square	F	Sig.
OP1_sd	Between Groups	6.699	2	3.349	11.989	.001
	Within Groups	4.749	17	.279		
	Total	11.448	19			
OP2_sd	Between Groups	1.463	2	.732	1.993	.167
	Within Groups	6.240	17	.367		
	Total	7.704	19			
OP3_sd	Between Groups	1.086	2	.543	.998	.389
	Within Groups	9.251	17	.544		
	Total	10.337	19			
OP4_sd	Between Groups	3.155	2	1.578	2.548	.108
	Within Groups	10.526	17	.619		
	Total	13.682	19			

Based on this result, an Independent Samples T-test was conducted to measure the differences of mean agreement between female-only groups and male-only groups, and found no significance for OP1. (See Table 7.3.) Next, an Independent Samples-T-test to measure the differences of mean agreement between female-only groups and mixed-gender groups for OP1 was significant ($t[12] = -5.066, p < .000$). (See Table 7.4.)

7.3 Independent Samples T-Test of level of agreement between male-only groups and female-only groups in CMC

		t-test for Equality of Means				
		T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
OP1_sd_1	Equal variances assumed	1.521	13	.152	.36839	.24228

7.4 Independent Samples T-Test of level of agreement between female-only groups and mixed-gender groups in CMC

		t-test for Equality of Means				
		T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
OP1_sd_1	Equal variances assumed	-5.066	12	.000	-1.43425	.28312

Hypothesis 2A: CMC setting will accentuate the level of agreement in male-only groups compared to that in FtF setting.

The third test filtered the cases to obtain male groups only. Then, using aggregate data application, a new file called “Male Agreement” was created. This file had the group setting as the independent variable, and the standard deviation of groups’ answers on each item as the dependent variables. The new independent variable was coded as “1” for the FtF setting (n = 6 groups), and “2” for the CMC setting (n = 6 groups). Using Independent Samples T-test I measured the difference in mean agreement between group settings among male groups. Results showed no significance. (See Table 8.2.)

8.1 Group statistics of level of agreement among male-only groups in FtF and CMC

	SETTING_mean	N	Mean	Std. Deviation	Std. Error Mean
OP1_sd	FtF	6	1.3065	.72003	.29395
	CMC	6	.7275	.57580	.23507
OP2_sd	FtF	6	1.1294	.78690	.32125
	CMC	6	.9795	.60442	.24675
OP3_sd	FtF	6	1.4529	.65837	.26878
	CMC	6	1.4693	1.00469	.41016
OP4_sd	FtF	6	1.1437	.89280	.36448
	CMC	6	1.0627	.90996	.37149

8.2 Independent Samples T-Test of level of agreement among male-only groups

		t-test for Equality of Means				
		T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
OP1_sd	Equal variances assumed	1.538	10	.155	.57896	.37638
OP2_sd	Equal variances assumed	.370	10	.719	.14993	.40508
OP3_sd	Equal variances assumed	-.033	10	.974	-.01636	.49038
OP4_sd	Equal variances assumed	.155	10	.880	.08092	.52044

Hypothesis 2B: CMC setting will accentuate the level of agreement in female-only groups compared to that in FtF setting.

The fourth test filtered the cases to obtain female groups only. Then, using aggregate data application, a new file called “Female Agreement” was created. The group setting became the independent variable, and the standard deviation of groups’ answers on each item became the dependent variables. The new independent variables were coded as “1” for the FtF setting (n = 6 groups), and “2” for the CMC setting (n = 9 groups). Using Independent Samples T-test the difference in mean agreement between group settings among female groups was measured. (See Table 9.1 and Table 9.2.)

Visual inspection of the means shows a clear pattern. In the CMC condition, females showed noticeably higher levels of agreement on OP1 ($M = .3591$, $SD = .369$), OP2 ($M = .4733$, $SD = .55723$), OP3 ($M = .9222$, $SD = .65473$) and OP4 indicated by the smaller aggregated standard deviations than those in FtF on OP1 ($M = 1.1104$, $SD = .94188$), OP2 ($M = .10603$, $SD = .51728$), OP3 ($M = .15048$, $SD = .67025$), and OP4 ($M = 1.3787$, $SD = .99283$). (See Table 9.1).

However, due to the very small sample sizes in CMC condition, none of the differences in means were statistically significant at the .05 level. For OP2 there was a

strong trend toward statistical significance ($t[13] = 2.054, p = 0.61$). OP1, OP3, and OP4 also went to the predicted directions giving further reason to believe that larger sample sizes would have confirmed significant differences in agreement between the FtF and CMC conditions. (See Table 9.1 for means of agreement and Table 9.2 for significance of differences in means.)

9.1 Group statistics of level of agreement among female-only groups in FtF and CMC

	SETTING_mean	N	Mean	Std. Deviation	Std. Error Mean
OP1_sd	FtF	6	1.1104	.94188	.38452
	CMC	9	.3591	.36900	.12300
OP2_sd	FtF	6	1.0603	.51728	.21118
	CMC	9	.4733	.55723	.18574
OP3_sd	FtF	6	1.5048	.67025	.27363
	CMC	9	.9222	.65473	.21824
OP4_sd	FtF	6	1.3787	.99283	.40532
	CMC	9	.8082	.79360	.26453

9.2 Independent Samples T-Test of level of agreement among female-only groups

		t-test for Equality of Means				
		T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
OP1_sd	Equal variances not assumed	1.861	6.036	.112	.75126	.40372
OP2_sd	Equal variances assumed	2.054	13	.061	.58701	.28577
OP3_sd	Equal variances assumed	1.673	13	.118	.58264	.34824
OP4_sd	Equal variances assumed	1.236	13	.238	.57053	.46149

Hypothesis 2C: CMC setting will accentuate the level of agreement in mixed-gender groups compared to that in FtF setting.

The fifth test selected only the mixed-gender groups. Then, using aggregate data application, a new file called “Mixed Agreement” was created. The group setting became the independent variable, and the standard deviation of groups’ answers on each item became the dependent variables. The new independent variables were coded as “1” for the FtF setting (n= 8 groups), and “2” for the CMC setting (n = 5 groups). Using Independent Samples T-test, the difference in mean agreement between group settings among mixed-gender groups was measured. Results showed no significance. (See Table 10.1 and Table 10.2.)

10.1 Group statistics of level of agreement among mixed-gender groups in FtF and CMC

	SETTING_mean	N	Mean	Std. Deviation	Std. Error Mean
OP1_sd	FtF	8	1.0846	.71606	.25317
	CMC	5	1.7934	.70754	.31642
OP2_sd	FtF	8	.7763	.34757	.12288
	CMC	5	1.0555	.69460	.31063
OP3_sd	FtF	8	1.3219	.62915	.22244
	CMC	5	1.0932	.43999	.19677
OP4_sd	FtF	8	1.3625	.67057	.23708
	CMC	5	1.7927	.58049	.25960

10.2 Independent Samples T-Test of level of agreement among mixed-gender groups

		t-test for Equality of Means				
		T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
OP1_sd	Equal variances assumed	-1.744	11	.109	-.70877	.40646
OP2_sd	Equal variances not assumed	-.836	5.276	.439	-.27918	.33406
OP3_sd	Equal variances assumed	.707	11	.495	.22867	.32364
OP4_sd	Equal variances assumed	-1.180	11	.263	-.43015	.36445

Hypothesis 3A: The level of group attraction in single-gender groups will be higher than that in mixed-gender groups in FtF setting.

The sixth test selected cases by filtering out the CMC group discussions leaving only the FtF group discussions. The significance of these three different gender compositions' level of group attraction was measured using ANOVA. There were no significant differences of means among the three different types of groups with different gender compositions in FtF setting. (Table 11.1 and Table 11.2.)

11.1 Descriptive measures for level of group attraction in FtF setting

	N	Mean	Std. Deviation	Std. Error
Male-Only Groups	23	2.9441	.24171	.05040
Female-Only Groups	19	3.0376	.19102	.04382
Mixed-Gender Groups	32	3.0313	.24201	.04278
Total	74	3.0058	.23070	.02682

11.2 ANOVA for level of group attraction on different gender compositions in CMC setting

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	.127	2	.064	1.204	.306
Within Groups	3.758	71	.053		
Total	3.885	73			

Hypothesis 3B: Female-only groups will have a higher level of group attraction than male-only groups and mixed-gender groups in CMC setting.

The seventh test selected cases by filtering the FtF group discussions leaving only the CMC group discussions. The significance of these three different groups' level of group attraction using ANOVA was measured. There was no significance among the three different types of groups with different gender compositions in CMC setting. (Table 12.1 and Table 12.2.)

12.1 Descriptive measures for level of group attraction in CMC setting

	N	Mean	Std. Deviation	Std. Error
Male-Only Groups	21	2.8401	.33572	.07326
Female-Only Groups	30	3.0095	.25564	.04667
Mixed-Gender Groups	20	2.9750	.27642	.06181
Total	71	2.9497	.29212	.03467

12.2 ANOVA for level of group attraction on different gender compositions in CMC setting

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	.372	2	.186	2.260	.112
Within Groups	5.601	68	.082		
Total	5.973	70			

Hypothesis 4A: CMC setting will attenuate the level of group attraction in male-only groups compared to that in FtF.

The eighth test selected the male-only groups for the cases. Next, using Independent Samples T-test, the difference of group attraction means between group settings was measured and there was no significance (See Table 13.1 and Table 13.2.)

13.1 Group statistics of level of group attraction among male-only groups in FtF and CMC

	Discussion Setting	N	Mean	Std. Deviation	Std. Error Mean
Attraction	Face to Face	23	2.9441	.24171	.05040
	Computer Mediated Communication	21	2.8401	.33572	.07326

13.2 Independent Samples T-Test of level of group attraction among male-only groups

		t-test for Equality of Means				
		T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Attraction	Equal variances assumed	1.187	42	.242	.10396	.08762

Hypothesis 4B: CMC setting will attenuate the level of group attraction in female-only groups compared to that in FtF.

The ninth test selected the female-only groups for the cases. Next, using Independent Samples T-test, the difference of group attraction means between group settings was measured and there was no significance (See Table 14.1 and Table 14.2.)

14.1 Group statistics of level of group attraction among female-only groups in FtF and CMC

	Discussion Setting	N	Mean	Std. Deviation	Std. Error Mean
Attraction	Face to Face	19	3.0376	.19102	.04382
	Computer Mediated Communication	30	3.0095	.25564	.04667

14.2 Independent Samples T-Test of level of group attraction among female-only groups

		t-test for Equality of Means				
		T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Attraction	Equal variances assumed	.411	47	.683	.02807	.06832

Hypothesis 4C: CMC setting will attenuate the level of group attraction in mixed-gender groups compared to that in FtF.

The tenth test or the last test, selected the mixed-gender groups for the cases. Next, using Independent Samples T-test, the difference of group attraction means between group settings was measured and there was no significance. (See Table 15.1 and Table 15.2.)

15.1 Group statistics of level of group attraction among mixed-gender groups in FtF and CMC

	Discussion Setting	N	Mean	Std. Deviation	Std. Error Mean
Attraction	Face to Face	32	3.0313	.24201	.04278
	Computer Mediated Communication	20	2.9750	.27642	.06181

15.2 Independent Samples T-Test of level of group attraction among mixed-gender groups

		t-test for Equality of Means				
		T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Attraction	Equal variances assumed	.772	50	.444	.05625	.07287

Chapter 5

DISCUSSION AND CONCLUSION

This thesis examined the effect of anonymity in CMC on accentuating the level of agreement and attenuating the level of group attraction after a group discussion. To manipulate the cohesiveness of the groups, this thesis used gender as social identity. Based on social identity theory, it anticipated that group members would associate with members of the same-sex and separate themselves from members of the opposite sex.

Regarding level of agreement, the thesis asked whether 1) groups consisting of same-sex members would have a higher level of agreement than groups consisting of mixed-gender members, 2) groups consisting of female-only members would have a higher level of agreement than groups of male-only members or mixed-gender members in CMC, and 3) groups of the same gender composition would have a higher level of agreement in CMC than in FtF settings.

Regarding level of group attraction, the thesis asked whether 1) groups consisting of same-sex members would have a higher level of group attraction than groups consisting of mixed-gender members, 2) groups consisting of female-only members would have a higher level of group attraction than groups of male-only members or mixed-gender members in CMC, and 3) groups of the same gender composition would have a higher level of group attraction in FtF than in CMC settings.

This chapter discusses the validity of the scales, activation of gender identity by the stimulus narrative as measured by the 4-item opinion scale, and the level of agreement and level of group attraction following a group discussion.

Validity of the Scales

Three scales were used throughout the study. Each question in the opinion scale was meant to be independent from each other and therefore, no factor analysis was needed. The next two scales had different initial validities. Mael and Ashforth's (1992) organizational identification scale had a high reliability in measuring one construct, which is gender identity. However, Evans and Jarvis's (1986) Group Attraction Scale (GAS) needed some modifications to measure the level of group attraction in synchronous group discussions within this experiment.

There are three possible explanations for this result. First is that the scale was constructed to measure the development of attraction in groups, not an instant attraction after a brief synchronous group discussion. Second, previous research suggested that the scale had a high reliability when measuring level of attraction in FtF groups. Therefore, anonymous CMC groups might require different sets of scales. Third, particular variation in gender compositions might affect the results from GAS.

Activation of Gender Identity

Four questions regarding Justice O'Connor's husband's infidelity were used to test whether the stimulus narrative activated gender identity. Three out of four questions – OP1 (O'Connor should divorce her husband), OP2 (O'Connor should continue taking care of her husband), and OP3 (O'Connor should support her husband with his new

relationship) – confirmed the activation of gender identity for all male and female participants. The result revealed differences in means for those three items on gender of the participants.

One question, which is OP4 (O'Connor should remind her husband about their marriage), only activated the gender identity of male and female participants with a high level of gender identity. There are two possible explanations for this. First, in retrospect, the wording for the item appears to have been vague. Participants might have different perceptions of the way Justice O'Connor would "remind her husband". Second, prior knowledge toward Alzheimer's disease might influence some participants to disregard any suggestions to remind an Alzheimer's patient about his past.

In general, females were significantly more inclined than males to feel that Justice O'Connor should divorce her husband (OP1). On the other hand, males were significantly more inclined than females to feel that Justice O'Connor should continue taking care of her husband (OP2) and support her husband with his new relationship (OP3).

The differences in means supported the assumption that men and women tend to identify with the person of the same sex in a case of infidelity as previously found by Savicki and Kelley (2000). Their hypothetical case of male infidelity stirred a heated discussion between male and female participants. Tajfel's (1971) social identity theory proposed that if a social identity is salient, individuals will feel part of the group and tend to favor their in-group. In this case, those with a high level of gender identity would strongly approve the statements that were more supportive of the person of their own gender.

Level of Agreement

Results showed that there was no statistically significant difference in means that supported hypothesis 1A, which proposed the level of agreement in single-gender groups will be higher than that in mixed-gender groups in FtF setting. One explanation for this is that although the case activated gender identity, participants within the single-gender groups had different levels of gender identity. Therefore, single-gender group members had their initially different opinions that could not be mitigated through a FtF group discussion, making the level of agreement just as low as if they were mixed-gender groups.

Next, hypothesis 1B, which proposed female-only groups will have a higher level of agreement than male-only groups and mixed-gender groups in CMC setting was supported only for OP1. This is probably because OP1 is the least ambiguous item of the 4-item opinion scale. This is congruent with Daft and Lengel's (1984) media richness theory which states ambiguous, uncertain, or unequivocal tasks require rich format media, such as FtF. Therefore, when discussing OP1, the text-based CMC medium was sufficient to attain the high level of agreement in female-only groups.

As for the reason why female-only groups had the higher level of agreement, there is growing evidence that males and females communicate differently through CMC. Although this study did not report on the conversations during both FtF and CMC discussions, several other studies have suggested that females tended to post long messages with higher number of words per sentence, and communicated more frequently than males (Savicki et al., 1996b; Savicki et al., 2002; Hsi & Hoadley, 1997). If this is the case, more females in a group means that there is more information being processed in CMC setting, which is likely to result in higher level of agreement.

Another explanation that supported this result comes from Lakoff (1975) who stated that women's speeches are marked by features that insure further response, such as asking questions or verifications. Herring (1993) suggested that women's language in CMC consisted of "attenuated assertions, apologies, explicit justifications, personal orientations, and support others" while men's language consisted of "strong assertions, self-promotion, presuppositions, rhetorical questions, authoritative orientation, challenge others, and humor/sarcasm" (p.484). Finally, Savicki and Kelley (2000) found that female-only groups used more self-disclosure and "I" statements, while male-only groups used more collective monologues and mild flaming. These three findings suggest that in terms of gender communication, little has changed in the differences of features between males and females, even with the advent of an important new medium of communication.

Among the next hypotheses, which deal with group settings and level of agreement, only hypothesis 2B, which proposed CMC setting will accentuate the level of agreement in female-only groups compared to that in FtF setting, is worth noting with an almost significant difference of means between FtF and CMC settings. Female-only groups in CMC settings had a higher level of agreement than those in FtF settings. For hypotheses 2A, which proposed CMC setting will accentuate the level of agreement in male-only groups compared to that in FtF setting, the difference in means was in the predicted direction with CMC groups showing a higher level of agreement than FtF groups, yet the difference was not close to being statistically significant. Last, for hypothesis 2C, which proposed CMC setting will accentuate the level of agreement in mixed-gender groups compared to that in FtF setting, the result indicated the difference in means between FtF and CMC groups went in both directions on various items in the 4-item opinion questions, but none was significant.

Nevertheless, the support for hypothesis 1B and hypothesis 2B is a new step in extending SIDE theory. There has not been any research suggesting that female-only groups have a higher level of agreement than male-only or mixed-gender groups in a CMC group discussion. A possible explanation for this result is that the language styles and features in female-only groups were probably more conducive than those in male-only groups or mixed-gender groups. It would be interesting to see if the number of language styles or features associated with females is positively correlated with the level of agreement in a CMC group discussion.

Overall, the results suggest that the correlations between anonymity and level of agreement are inconsistent. However, female-only groups are more likely to reach agreement through a CMC group discussion than are male-only or mixed gender groups. Practitioners should be wary of simply imposing anonymity on members of a team to reach an agreement. Training on how to use anonymity effectively should be implemented. The purpose of the training would be to ensure that CMC group discussions would be conducted in an efficient way using the right language feature.

Level of Group Attraction

For level of attraction, hypothesis 3A, which stated that the levels of group attraction in single-gender groups will be higher than that in mixed-gender groups in FtF setting) was not supported. The absence of significance among FtF groups with different gender compositions has at least two possible explanations. First, the differences in level of gender identity might have affected the cohesiveness of the groups despite their single-gender composition. As the case study activated their gender as social identity, their disagreements reduce their comfort level toward the group. Second, while gender is a

social identity, heterosexual males and females are attracted to each other and therefore, they enjoy each other's company even in a group setting.

Next, hypothesis 3B, which stated female-only groups will have a higher level of group attraction than male-only groups and mixed-gender groups in CMC setting, hypothesis 4A, which stated CMC setting will attenuate the level of group attraction in male-only groups compared to that in FtF, hypothesis 4B, which stated CMC setting will attenuate the level of group attraction in female-only groups compared to that in FtF, and hypothesis 4C, which stated CMC setting will attenuate the level of group attraction in mixed-gender groups compared to that in FtF, were not supported.

A possible explanation for this comes from Walther's (1995) social information processing theory. The theory suggests that CMC group members will adapt the textual cues to meet their needs when faced with a channel that does not contain richer cues. This consisted of using self-disclosure, interrogations, verifications, and emoticons that eventually increase the level of social presence of group members. Based on this, group members are able to form impressions, gain interpersonal knowledge, and thus, develop relationships solely through textual interaction.

Time allocated for CMC group discussions was four times longer than the time allocated for FtF group discussions. Although this was initially intended to make up for the fact that typing is roughly four times longer than speaking, many students are now typing in a faster rate pertaining to chat room discussions. In fact, by the year 2002, there were already 85% of college students who considered instant messaging an easier and more convenient way of communicating with others than traditional FtF meeting (Pew Internet and American Life Project, 2002). In conclusion, given the rapid changes in

access and use of digital communication media, the earlier understanding of CMC may have become less meaningful or may be becoming obsolete.

Limitations

This study was limited by the nature of its sample collection, which consisted of students from only one university. This might not be a truly representative sample since college students are the most computer-savvy individuals. In addition, it also did not take into consideration several variables related to group process. These included but are not limited to race, age, level of education, level of income, knowledge of Alzheimer's disease, experience with Alzheimer's patients, whether group members know each other beforehand, past experience in using CMC in doing group work, and beliefs relating to marriage.

Meanwhile, there were also several limitations from the logistical side. The computer stations available could not accommodate more than one classroom of students at a time. In addition, there was no incentive available for the participants. In some CMC sessions, the length of time and effort it took to for participants to walk from their classes to the designated computer labs might have influenced their behaviors during group discussions.

The lack of significance in several of the tests of difference of means might be due to the small sample size. Although the sample size of 145 seems reasonable, when level of agreement is measured only within the groups, the unit of analysis becomes the group instead of the individual subject. Consequently the sample size shrank to 40. Furthermore, when these groups were categorized according to settings or gender compositions, the number of groups became even smaller. One grouped unit of analysis,

which was mixed-gender groups in CMC, had only five cases. This made the likelihood of finding any statistically significant differences in means rather remote.

In terms of social identity, participants were grouped by gender, instead of by their gender identity. This implied that gender was more prevalent as a physical cue rather than a social identity. To ideally measure the impact of gender as social identity in synchronous anonymous group discussion, a pre-test of level of the participants' gender would be required.

Future Direction

This particular study introduced three new major hypotheses: 1) the role of gender identity and gender compositions within groups in creating group agreement and group attraction in both FtF and CMC settings, 2) the effect of gender relevant case in activating gender identity of group members, and 3) the relationship between group agreement, group attraction, and group members' degree of gender identity.

Future study may include how to develop an efficient group decision making process using CMC, how webcams affect the existing perspectives on group communication, how synchronous and asynchronous CMC influences group decision making and social identities, etc. As long as there are new developments in CMC or other technology assisted groups, the communication aspect of the available mediums provides an area that is open to investigate for communication researcher.

Conclusion

This study has extended the exploration within small-group communication research. Similar studies in this area have come in many contexts, such as work group,

business meeting, non-profit organizations, social clubs, or online network. This area of discipline is considered crucial because this type of communication assimilates interpersonal relations within a social setting. The findings from this study might be valuable in constructing a full understanding of the implications of anonymity and social identity.

APPENDIX A

Case Study

PHOENIX, Arizona (AP) -- Sandra Day O'Connor's husband struck up a romance with a fellow Alzheimer's patient after moving into an assisted living center, and under the circumstances, the retired Supreme Court justice is just glad that he is comfortable, her son told a TV station.



Sandra Day O'Connor cited her husband's illness and her need to take care of him when she retired in 2005.

The retired justice isn't jealous about his relationship with the woman, Scott O'Connor told KPNX in Phoenix in a broadcast that aired Thursday. He said it has dramatically changed the outlook of his father, John, toward being in the Huger Mercy Living Center.

The focus of the broadcast report was Alzheimer's patients who forget their spouses and form new relationships. It quoted experts as saying that that situation is not unusual.

Sandra Day O'Connor, the first woman on the Supreme Court, cited her husband's illness and her need to take care of him when she retired in 2005. His neurological disease was diagnosed 17 years ago.

"Mom was thrilled that Dad was relaxed and happy and comfortable living here and wasn't complaining," their son said.

It was different when he first came to the center recently, the son said: "He knew this was sort of the beginning of the end ... It was basically suicide talk."

John O'Connor was shifted to another cottage at the center, Scott O'Connor said, and "48 hours after moving into that new cottage he was a teenager in love. He was happy."

APPENDIX B

Case Opinion Scale

Please place a check mark in the blank on the given scale below that best reflects your opinion. For example, if the statement is “I like strawberry ice cream”, and you like you strawberry ice cream very much, your answer would be:

I like strawberry ice cream

strongly agree : X : _____ : _____ : _____ : _____ : _____ : strongly disagree

If you like strawberry ice cream but you are somewhat indifferent, your answer then would be:

I like strawberry ice cream

strongly agree : _____ : _____ : X : _____ : _____ : _____ : strongly disagree

You can check only one blank per item.

Case Opinion Scale:

Sandra O’Connor should divorce her husband:

strongly agree : _____ : _____ : _____ : _____ : _____ : _____ : strongly disagree

Sandra O’Connor should continue taking care of her husband:

strongly agree : _____ : _____ : _____ : _____ : _____ : _____ : strongly disagree

Sandra O’Connor should support her husband with his new relationship:

strongly agree : _____ : _____ : _____ : _____ : _____ : _____ : strongly disagree

Sandra O’Connor should remind her husband about their marriage:

strongly agree : _____ : _____ : _____ : _____ : _____ : _____ : strongly disagree

APPENDIX C

Evans and Jarvis's (1986) Group Attraction Scale (Original version)

Circle the letter that best represents your feeling toward your discussion group.

SA : strongly agree A : agree N : neutral

SD : strongly disagree D : disagree

1. I want to remain a member of this group. *

SA A N D SD

2. I like my group. *

SA A N D SD

3. I look forward to coming to the group. *

SA A N D SD

4. I don't care what happens in this group.

SA A N D SD

5. I feel involved in what is happening in my group. *

SA A N D SD

6. If I could drop out of the group now, I would.

SA A N D SD

7. I dread coming to this group. ^

SA A N D SD

8. I wish it were possible to move to another group at this time.

SA A N D SD

9. I am dissatisfied with the group.

SA A N D SD

10. If it were possible to move to another group at this time, I would.

SA A N D SD

11. I feel included in the group. *

SA A N D SD

12. In spite of individual differences, a feeling of unity exists in my group. *

SA A N D SD

13. Compared to their groups I know of, I feel my group is better than most. *

SA A N D SD

14. I do not feel a part of the group's activities.

SA A N D SD

15. I feel it would make a difference to the group if I were not here. *

SA A N D SD

16. If I were told my group would not meet today, I would feel badly. * ^

SA A N D SD

17. I feel distant from the group.

SA A N D SD

18. It makes a difference to me how this group turns out. *

SA A N D SD

19. I feel my absence would not matter to the group.

SA A N D SD

20. I would not feel badly if I had to miss a meeting of this group. ^

SA A N D SD

* : scoring is reversed for these items

^ : question was eliminated in the modified version of this scale

Modified Evans and Jarvis' (1986) Group Attraction Scale

1. I want to remain a member of this group. *

SA A N D SD

2. I like my group. *

SA A N D SD

3. I look forward to coming to the group. *

SA A N D SD

4. I don't care what happens in this group.

SA A N D S

5. I feel involved in what is happening in my group. *

SA A N D SD

6. If I could drop out of the group now, I would.

SA A N D SD

7. I wish it were possible to move to another group at this time.

SA A N D SD

8. I am dissatisfied with the group.

SA A N D SD

9. If it were possible to move to another group at this time, I would.

SA A N D SD

10. I feel included in the group. *

SA A N D SD

11. In spite of individual differences, a feeling of unity exists in my group. *

SA A N D SD

12. Compared to their groups I know of, I feel my group is better than most. *

SA A N D SD

13. I do not feel a part of the group's activities.

SA A N D SD

14. I feel it would make a difference to the group if I were not here. *

SA A N D SD

15. I feel distant from the group.

SA A N D SD

16. It makes a difference to me how this group turns out. *

SA A N D SD

17. I feel my absence would not matter to the group.

SA A N D SD

* : scoring is reversed for these items

APPENDIX D

Mael and Ashforth's (1992) Organizational Identification Scale

Please place a check mark in the blank on the given scale below that best reflects your opinion. You can check only one blank per item.

1. When someone criticizes my gender group, it feels like a personal insult.

strongly agree : _____:_____:_____:_____:_____: strongly disagree

2. I am very interested in what others think about my gender group.

strongly agree : _____:_____:_____:_____:_____: strongly disagree

3. When I talk about my gender group, I usually say 'we' rather than 'they'.

strongly agree : _____:_____:_____:_____:_____: strongly disagree

4. My gender group's successes are my successes.

strongly agree : _____:_____:_____:_____:_____: strongly disagree

5. When someone praises my gender group, it feels like a personal compliment.

strongly agree : _____:_____:_____:_____:_____: strongly disagree

6. If a story in the media criticized my gender group, I would feel embarrassed.

strongly agree : _____:_____:_____:_____:_____: strongly disagree

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