Examining Gender Differences in Self-disclosure on Facebook Versus Face-to-Face

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Abstract

Previous studies have shown that women disclose to their close friends more often than men. However, no study has compared the intimacy of their disclosures across different media and different relationship types. The purpose of this study was to examine gender differences in self-disclosure between Facebook friends and between face-to-face friends. One hundred ninety-seven college women and 120 college men in this study were asked to report their levels of self-disclosure with three types of friends: an exclusive Facebook friend, an exclusive face-to-face friend, and a recently added Facebook friend. One-way MANOVA was used to test the hypothesis that women will self-disclose to their Facebook and face-to-face friends more than men. Results provided partial support for the hypothesis. Women disclosed to their exclusive face-to-face friends and exclusive Facebook friends more than men; however, men had more intimate discussions with their recently added Facebook friends than women did. Both men and women disclosed more to their exclusive face-to-face friends than to exclusive Facebook friends. Overall, these findings suggest that, regardless of the medium, both genders disclose more to the person they consider more intimate.

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With over 1 billion users and the continued growth in its popularity, Facebook is becoming another avenue for initiating and maintaining interpersonal relationships. A number of studies have found that relationship maintenance and social interaction (Sheldon, 2008; Smock, Ellison, Lampe, & Wohn, 2011) are the primary motivations for using Facebook. In order to interact with each other, users have to self-disclose. In this study, self-disclosure has been defined as "any message about the self that a person communicates to another" (Wheeless & Grotz, 1976, p. 338). According to social penetration theory (Altman & Taylor, 1973), self-disclosure plays a critical role in the development of intimacy in relationships. The more time we spend with others, the more likely we are to self-disclose more intimate thoughts and details of our life. If self-disclosure is high, then the relationship will develop (Altman & Taylor, 1973). Two dimensions of self-disclosure are breadth and depth. Breadth refers to the number of various topics discussed in the relationship. Depth refers to the degree of intimacy that guides topic discussions. In the initial stages, relationships have narrow breadth and shallow depth. As relationships move toward intimacy, a wide range of topics is discussed (breadth), with several of the topics to be intimately discussed (depth) (Altman & Taylor, 1987). This study uses breadth and depth dimensions to measure self-disclosure.

To our knowledge, no study has compared if there are any differences in how men and women disclose on Facebook versus face-to-face. Do women disclose on Facebook more intimate details than men? Do women/men disclose more on Facebook or face-to-face? Previous research (Aries & Johnson, 1983; Buhrke & Fuqua, 1987; Petronio, 2002) indicates that women discuss intimate topics with friends more frequently and in greater depth than men do. However, this might also vary according to the topic that they are discussing, as well as the intimacy of the relationship and the channel that they are using to communicate. For example, several studies have found that males were more likely to disclose to strangers than women (Dindia & Allen, 1992; Stokes, Huehrer, & Child, 1980). All of these studies referred to disclosure face-to-face. We also know that many people use social networking sites to communicate with each other. No studies have been conducted to explore gender differences in self-disclosure on Facebook, for example. However, we know that women spend

more time on Facebook (Sheldon, 2008) and also use social networking sites more to compare themselves with others (Haferkamp, Eimler, Papadakis, & Kruck, 2012). This study, therefore, explores if men and women differ in self-disclosure to their Facebook friend when compared to their face-to-face friend.

Self-disclosure, however, might not only differ between genders, but also between online and offline relationships. Due to missing nonverbal and contextual cues in computer-mediated relationships, some researchers (e.g., Cummings, Butler, & Kraut, 2000; Mesch & Talmud, 2006) have suggested that offline relationships are characterized by higher interdependence, and greater breadth and depth of self-disclosure. For example, an individual might self-disclose to their Facebook friends less than to their face-to-face friends because they cannot see each other's facial expressions and gestures. This "cues-filtered out approach" was popular in early 1990s. Later, it was challenged by the findings showing that people disclose personal information and therefore develop relationships through computer-mediated communication (CMC) (e.g., Cho, 2006; Walther, 1996). Even further, Walther (1995) proposed the hyperpersonal model according to which individuals compensate for the limitations of CMC by hyperpersonalizing their interactions and actually disclosing more than they do face-to-face. When individuals are motivated and allowed sufficient time to exchange social information, relationships via CMC develop at the same pace as those established through face-to-face interaction (Walther & Burgoon, 1992; Walther, 1996).

The aim of the current study is to explore how (and if) female and male college students differ in self-disclosure to three different types of friends: an exclusive Facebook friend, an exclusive face-to-face friend, and a recently added Facebook friend. Our participants were asked to think about three types of friends and report self-disclosure to each of them. The "exclusive Facebook friendship" was defined as one maintained exclusively through Facebook. In other words, the individuals do not communicate using other media. This person could be a friend whom they do not see face-to-face because the friend moved away or they moved away. The second type of relationship was an "exclusive face-to-face friendship." For this type of relationship, it was assumed that participants communicate to each other face-to-face only. It is important to mention that in this study,

the term "exclusive" describes a very close friendship. The third type of relationship was the "recently added Facebook friend." For the latest added Facebook friend, it is assumed that participants just met at an event, and recently added each other as a Facebook friend.

Gender Differences in Self-Disclosure

Gender differences in self-disclosure have emerged in both face-to-face and online relationships. For example, women, including college women, appeared to discuss intimate topics with friends more frequently and in greater depth than men do (e.g., Aries & Johnson, 1983; Buhrke & Fuqua, 1987; Caldwell & Peplau, 1982; Dolgin & Minowa, 1997; Petronio, 2002). Women seek dialogue and ease of conversation, while men tend to restrict dialogue and converse for functional reasons (Fleuriet, Estrada, & Houser, 2009).

When looking at self-disclosure to different targets, Stokes, Huehrer, and Child (1980) discovered that males were more likely to disclose to strangers and acquaintances, while women were more willing to disclose to those that they know well. Similar results were later found in a Dolgin, Meyer, and Schwarts (1991) study and a Dindia and Allen (1992) meta-analysis. Dindia and Allen (1992) performed a meta-analysis of 205 studies to determine whether there are gender differences in self-disclosure. When the target had a relationship with the discloser (i.e., friend, parent, or spouse), women disclosed more than men regardless of whether self-disclosure was measured by self-report or observation. When the target was a stranger, men reported that they disclosed similarly to women; however, studies using observational measures of self-disclosure found that women disclosed more than men. This study, however, surveys both men and women about their disclosure to a Facebook friend and disclosure to a face-to-face friend.

Several studies have looked at how men and women disclose online. Overall, they have found that women disclose online more than men (Kleman, 2007; Peter, Valkenburg, & Schouten, 2005). When looking at the content of messages, Li (2006) found that CMC messages sent by males were more confrontational and autonomous, while female messages were supportive and rapport-building. In a series of studies focusing exclusively on female adolescent personal home pages, Stern (1999, 2002a, 2002b) found that girls' home pages

were personal, intimate and immediate. Home pages authored by men provided less biographical information than those produced by women. Women also included more information about their families and romantic interests and men discussed sports more (Doering, 2002; Dominick, 1999). In several Facebook studies, researchers (e.g., Acar, 2008; Sheldon, 2008) have discovered that not only do women have more Facebook friends, they also spend more time communicating with them. On Facebook, men disclosed more basic information and more contact information than females (Special & Li-Barber, 2012). Similarly, among the users of StudiVZ social networking sites, women were more likely to use it for comparing themselves with others and for searching for information. Men, however, were more likely to look at other people's profiles to find new friends (Haferkamp, Eimler, Papadaki, & Kruck, 2012).

There are several possible reasons for the difference in self-disclosure. The explanation for gender differences in self-disclosure may be due to variations in how men and women are socialized, gender-role expectations, or how men and women use different criteria in defining and controlling private information (Petronio, 2002). While men are traditionally taught to exercise restraint in sharing their feelings (Rubin & Shenker, 1978), women have been socialized to be more expressive and open in their communication. Women are concerned with and evaluate their interpersonal relationships more often than men. Men are more task-oriented than women. As Burnett (1990) found, men are bothered about the practical aspects that make relationships possible, regardless of what went on in them, whereas women care more about monitoring and evaluating the intrinsic relational events. Jones (1991) and Steel (1991) offered another explanation for women's higher levels of overall self-disclosure. Having trust in the individual one discloses to tends to coincide with increased self-disclosure. Since females place more importance on trust than males, they also self-disclose more. Others also found that women wanted to make sure that the people they were disclosing to were trustworthy, whereas men did not take those concerns into consideration (Petronio, Martin, & Littlefield, 1984).

However, Pearson (1981) noticed that claiming that women self-disclose more than men is not as simple as it seems. First, the concept of self-disclosure is not unidimensional, but multidimensional.

There are five dimensions of self-disclosure: intent, amount, positive/ negative valence, accuracy, or honesty (Wheeless, & Grotz, 1976). The setting in which self-disclosure occurs may provide an additional mediating variable. According to Pearson (1981), men self-disclose more in dyads than they do in small-group settings, while women self-disclose more in a small-group setting.

Based on previous studies that women self-disclose more often than men both face-to-face and in CMC (e.g., Buhrke & Fuqua, 1987; Dolgin & Minova, 1997; Kleman, 2007; Petronio, 2002) and also spend more time on Facebook and have more Facebook friends than men (Sheldon, 2008), it is hypothesized that:

Women self-disclose to their latest added Facebook friends, exclusive Facebook friends, and an exclusive face-to-face friends more than men.

Differences in Self-Disclosure on Facebook and Face-to-Face

Proponents of the cues filtered out perspective (Culnan, & Markus, 1985; Kiesler, Siegel, & McGuire, 1984; Dubrovsky, Kiesler, & Sethna, 1991) argued that important nonverbal cues are missing from CMC so relationships cannot completely develop. Brennan (1991) writes that "CMC occurs in a much less cooperative environment because of the special conditions imposed by the medium itself" (as cited in Riva, 2002, p. 581). CMC is missing turn-taking and yielding behaviors (Patterson, 1983; 1990).

Due to increased use of the Internet for social purposes in the last two decades, other perspectives emerged suggesting that people can have intimate relationships in the computer-mediated environment as users rely on alternative mechanisms to accomplish these functions (Walther, 1996). Specifically, social information processing theory (SIPT; Walther, 1992) has been developed to explain how people develop and maintain relationships in a computer-mediated environment. According to social information processing theory, people can develop online relationships that are similar to or better than normative face-to-face interactions. When individuals are motivated and allowed sufficient time to exchange social information, relationships via CMC develop at the same pace as those established through face-to-face interaction (Walther & Burgoon, 1992; Walther, 1996). According to Walther's (1995) hyperpersonal model, individuals compensate

for the limitations of CMC by hyperpersonalizing their interactions and actually disclose more than they do face-to-face. Henderson and Gilding (2004) also found that individuals reported higher levels of self-disclosure in their online friendships. In face-to-face relationships, they noted, appearance can get in the way of intimacy. Giddens (2000) argued that in contemporary societies, people expect a "pure relationship," and the online environment is a perfect place to accomplish it. Another group of researchers (e.g., Cummings, Butler, & Kraut, 2000; Mesch & Talmud, 2006) found the opposite results. Offline relationships are characterized by higher interdependence and greater breadth and depth of self-disclosure. Online relationships are not a substitute for an offline one.

The debate about whether we self-disclose more online or offline, led us to ask the following research question:

Do women and men disclose more to their face-to-face friends or to their Facebook friends?

Method

A survey was conducted with 328 participants at a large research university. College students were used in this study because they generally have a high degree of technological ability and are familiar with initiating relationships/friendships on Facebook. A sample consisted of 120 men (37.9%) and 197 women (62.1%). The average participant's age was 20 (M = 20.33, SD = 1.77), ranging from 17 to 30 years. There were 81 first year students, 100 sophomores, 115 juniors, and 21 seniors. Most respondents identified themselves as European American or White (n = 252, 79.5%), followed by African-Americans (n = 36, 11.4%), and Asian-Americans (n = 10, 3.2%).

Participants were first asked if they had a Facebook account. If they did, they could proceed to answer the next question. If they did not, they were thanked for the attempt to participate. Each person was asked to think about three types of friends: an exclusive Facebook friend, a recently added Facebook friend, and an exclusive face-to-face friend. For each friend, they were asked to report how much they disclose to each other, how long they have known each other, and how frequently they communicate with each other. In addition, participants were asked to describe each friend. To prevent a carry-over effect, answer choices were randomized for each participant. The

following measures were used in the study:

Self-disclosure

Self-disclosure to an exclusive Facebook friend, exclusive face-to-face friend, and recently added Facebook friend was measured by Parks and Floyd's (1996) scale that was developed based on Altman and Taylor's (1973) scales of self-disclosure, measuring depth and breadth. The Parks and Floyd (1996) scale is topic-free and was used in numerous studies (e.g., Craig et al., 2007; Yum & Hara, 2005) to measure self-disclosure online. Both breadth and depth used a 5-point Likert-type scale (1 = "strongly disagree" and 5 = "strongly agree"). A higher number represented more self-disclosure with a person (see Table 2 for mean differences in self-disclosure across three relationship types). One item in the breadth dimension and one item in the depth dimension were reverse-coded.

Duration of relationship

Duration of relationship for each type of a friend was measured with a single item: "How long have you known each other?" Respondents were asked to indicate the amount of time measured in days, months, or years. For the recently added Facebook friend, respondents indicated that they had known each other for an average of 3.7 months (Mn = 3.72). For the exclusive Facebook friend to whom participants interacted only through Facebook because he or she lives far away or is hard to reach, respondents indicated they have known each other for an average of 6 years (M = 6.43). Finally, duration of the relationship with an exclusive face-to-face friend (who does not have a Facebook account) was also 6 years (M = 6.02).

Frequency of communication

Frequency of communication with each friend was measured with a question, "How often do you communicate through Facebook/face-to-face." Responses included, "Less than once a week," "Once a week," "Two-three times per week," "Every day," and "Several times per day" for an exclusive Facebook and exclusive FTF friend that participants interacted with. Most respondents indicated that they talk to their exclusive Facebook friend less than once a week (47.9%). Only 15% respondents indicated that they talk to each other every

day or several times per day. For an exclusive face-to-face friend, 42% respondents indicated that they talk to each other every day or several times per day, and 29% that they talk to each other two-three times per week.

Respondents were asked to report their gender, age and education level. Table 1 provides some examples of whom the participants indicated as their Facebook and face-to-face friends.

Table 1
Examples of Facebook and Face-to-Face Friendships

Recently added Facebook friend with not much face-to-face interaction	*Good Facebook friend with not much face-to-face interaction*	*Good face-to-face friend (never had a Facebook conversation)*
A new/fellow class-mate *	A friend who moved away*	My best friend*
A girl I met tailgating	I went to middle school with him/her.	Sister
A friend of a friend	Met at a camp	My girlfriend
A friend's boyfriend	Good friend who went to college out of state	My neighbor
Went to high school with this person	A friend I met in Europe this summer	Co-worker
Co-worker	My old roommate from London	My brother who does not have a FB account

*Dominant answer in a category

Results

Hypothesis stated that women will self-disclose to their Facebook and face-to-face friends more than men. One-way MANOVAs were computed for the combination of dependent variables breadth and depth of self-disclosure to a recently added Facebook friend, an exclusive Facebook friend and for an exclusive face-to-face friend. For the recently added Facebook friend, a one-way MANOVA revealed a significant multivariate main effect for gender, Wilks' λ = .978, F (2, 314) = 3.48, $p < .05$, η^2 = .02. Given the significance of the overall

test, the univariate main effects were examined. Significant univariate main effects for gender were obtained for the depth dimension of self-disclosure to a recently added Facebook, $F (1, 315) = 6.11$, $p < .05$, $\eta^2 = .02$, power = .69, but not for the breadth of self-disclosure. Mean comparisons revealed that men scored higher on the depth dimension of self-disclosure (Mdepth_m = 2.15) to their recently added Facebook friend than women (Mdepth_f = 1.91), which is opposite of the hypothesis that women will self-disclose more than men (see Table 2 for mean differences).

For the exclusive Facebook friend, analysis found a significant multivariate main effect for gender, Wilks' $\lambda = .903$, $F (2, 314) = 16.80$, $p < .001$, $\eta^2 = .10$. Significant univariate main effects for gender were obtained for the breadth dimension of self-disclosure to an exclusive Facebook friend, $F (1, 315) = 26.31$, $p < .001$, $\eta^2 = .077$, but not for the depth dimension of self-disclosure. Mean comparisons revealed that women self-disclosed, in terms of breadth, to their exclusive Facebook friends more than men, while there were no significant difference in the depth of disclosures. Finally, for the exclusive face-to-face friend, a significant multivariate main effect for gender was found, Wilks' $\lambda = .962$, $F (2, 314) = 6.26$, $p < .05$, $\eta^2 = .038$. Again, significant univariate main effects for gender were obtained for both the breadth dimension of self-disclosure to an exclusive face-to-face friend, $F (1, 315) = 10.17$, $p < .05$, $\eta^2 = .031$, and for the depth dimension of self-disclosure, $F (1, 315) = 12.20$, $p < .05$, $\eta^2 = .037$. Mean comparisons revealed that women self-disclosed (in terms of both breadth and depth) to their exclusive face-to-face friends more than men (see Table 2). Therefore, results partially supported the study hypothesis. When comparing gender differences across media, however, both women and men disclose more to their face-to-face friends than to their Facebook friend.

It was speculated that the differences in self-disclosure might be due to the frequency of communication with recently added Facebook friends versus exclusive Facebook and exclusive face-to-face friends. Therefore, time variables were correlated with self-disclosure on Facebook and face-to-face. Results indicated that the levels of self-disclosure for both an exclusive Facebook friend and an exclusive face-to-face friend increased as the frequency of communication increased. This means that more often individuals communicated

with each other through Facebook or face-to-face, the more they self-disclosed to that person.

Table 2
Descriptive Statistics for Self-Disclosure across the Three Friendship Types

Breadth		Gender	Mean (range 1-5)	SD
Latest added Facebook friend		*m*	2.64	1.03
		f	2.53	.88
Exclusive Facebook friend		*m*	3.66	.82
		f	4.10*	.68
Exclusive face-to-face friend		*m*	4.28	.69
		f	4.52*	.65
Depth				
Latest added Facebook friend		*m*	2.15*	.95
		f	1.91	.72
Exclusive Facebook friend		*m*	3.55	.91
		f	3.74	.99
Exclusive face-to-face friend		*m*	4.14	.79
		f	4.45*	.76

*statistically significant difference between genders

Duration of relationships was also related to self-disclosure to an exclusive Facebook and an exclusive face-to-face friend. The longer individuals knew each other, the more they disclosed to each other. However, no relationship was found between the duration of the relationship and self-disclosure and for the recently added Facebook friends (see Table 3).

Discussion
Self-disclosure is a rewarding experience, comparable to those of

food and sex (Tamir & Mitchell, 2012). People enjoy self-disclosure if they know other people are listening. Talking is a means of catharsis towards good feelings. Previous studies have shown that women disclose to their close friends more than men. However, no study compared their disclosures across different media and different relationship types. The purpose of this study was to examine gender differences in self-disclosure between Facebook friends and between face-to-face friends. One hundred and ninety-seven college women and 120 college men participated in this study. They were asked to report their levels of self-disclosure with three types of friends: "exclusive Facebook friend", "exclusive face-to-face friend", and "recently added Facebook friend."

Table 3
Correlations between Frequency of Communication, Duration of Relationship and Self-Disclosure to Facebook and Face-to-Face Friends

Self-disclosure	Frequency	Duration
New Facebook Friend		
Breadth	-	-.10
Depth	-	.10
Exclusive Facebook Friend		
Breadth	.30**	.21**
Depth	.31**	.24**
Exclusive Face-to-Face Friend		
Breadth	.28**	.15**
Depth	.30**	.21**

Note. *Significance at $p < .05$; ** Significance at $p < .01$

Results of testing gender differences in self-disclosure suggest that women disclose to their exclusive face-to-face and exclusive Facebook friends more than men, but men have more intimate discussions with their recently added Facebook friends than women do. These results partially support the hypothesis that women self-

disclose more than men in all three types of friendship.

Looking at the literature review, the findings about women self-disclosing to their existing face-to-face friends and Facebook friends more than men are not surprising. In face-to-face interactions, as well as in computer-mediated communication, a number of studies (e.g., Buhrke & Fuqua, 1987; Dolgin & Minowa, 1997; Kleman, 2007; Peter et al., 2005; Petronio, 2002) proposed this previously. In fact, a meta-analysis of 205 studies (Dindia & Allen, 1992) found that women disclose more than men when the target has a relationship with the discloser (in this study, "exclusive Facebook friend" is a friend from high-school that lives far away, and "exclusive face-to-face friend" is the person's best friend, family member, or romantic partner).

Women in this study not only discuss more topics (greater breadth) with their exclusive Facebook friends and exclusive face-to-face friends, but also discuss them more intimately (greater depth) than men. However, men and women do not differ in the breadth of self-disclosure to their recently added Facebook friend, but only in the depth dimension of self-disclosure to that friend. This means that both genders discuss about the same amount of topics with recently added Facebook friends, but men's discussions are more intimate. This is a new finding that almost corresponds with previous studies that focused on disclosures that are done face-to-face. Dindia and Allen (1992) previously reported that, when the target is a stranger, men report that they disclose similarly to women. Although the recently added Facebook friend in our study is not a complete stranger, it is the person whom both men and women know the least, "a new/fellow classmate" or "a friend's friend." As Jones (1991) suggested, women place more importance in trust and therefore disclose to trusted partners, while men place less importance on trust. Consequently, men disclose more intimate topics with a friend that they recently added on Facebook than women do.

Both men and women in this study disclosed more to their exclusive face-to-face friend than exclusive Facebook friend. They disclose the least to the recently added Facebook friend. This goes against previous findings that men were more likely to disclose to acquaintances. Both genders disclosed more to the person they considered more intimate. They were more intimate with a geographically close

friend, and that was the close friend they communicate with face-to-face. It is important to point out that these results might not be necessarily due to the communication channel, but also to the type of relationships individuals reported on, as well as the duration of the relationship. While Christofides, Muise, and Desmarias (2009) showed that the participants were more likely to disclose information on Facebook than in their everyday life, they did not test one-on-one personal interactions through Facebook messages. These private interactions might occur just as they do face-to-face (i.e. social penetration theory's "the better I know you, the more I disclose to you"), and might be very different from what individuals post on Facebook for public view as a status update.

In addition to the context of self-disclosure, the results indicate that the longer they know each other, the more friends (both Facebook and face-to-face) self-disclose to each other. This is in line with previous studies (Chan & Cheng, 2004; Collins & Miller, 1994; Parks & Floyd, 1996; Peter et al., 2005) and mere exposure effect. The more time a person spends interacting with another person, the closer they become. This, however, was true only for exclusive Facebook and exclusive face-to-face friends. No relationships existed between the duration of relationship and self-disclosure to a recently added Facebook friend. While this may seem surprising, social information processing theory of CMC (Walther, 1995) posits that time is an important element of developing online relationship. It takes longer to develop online relationships than face-to-face relationships (Walther, 1995). Since the latest added Facebook friend was a new relationship, it is not surprising that time did not correlate with self-disclosure variables.

Limitations and Future Research

There are several limitations of this study. The first one is the homogeneity of the sample. All participants were recruited through communication classes and were of similar age. This might affect the generalizability. The second limitation is the lack of control over whom the participants selected as their Facebook or face-to-face friend, and the lack of control through which media, except those tested in this study, individuals use to communicate with each other. In addition, participants were asked to think about an exclusive

Facebook friend to whom they talk only through Facebook with the expectation that they have previously met face-to-face. Future studies could limit the choice of a friend by specifying individuals who interact with each other using only one medium during the course of their relationship. Future studies should take these limitations into the consideration, especially the control over the participants' choice of "exclusive Facebook friend" or an "exclusive face-to-face friend." One way to control this would be to ask participants to access their Facebook page at the time of an experiment and record their interaction with a friend. Future studies should also examine disclosure in same-sex and cross-sex dyads, as research shows that disclosure decreases in cross-sex dyads (Hacker, 1981).

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