Say not to Say:
New perspectives on miscommunication
L. Anolli, R. Ciceri and G. Riva (Eds.)
IOS Press, 2001

11 Ambiguous Self-Identification and Sincere Communication in CMC

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Abstract. While sincerity is a necessary taken-for-granted element of face-to-face communication, its status in CMC is more likely to be a ponderable (or arguable). In fact, the anonymity of CMC, facilitating and facilitated by concealment in self-presentation, allows distortions to be made through omission of information as well as through selective presentation.
To understand the characteristics of this process, we analyzed the message contents of men and women participating in asynchronous online discussion. Recent research indicated men and women differed in their fidelity of message concealment. Level of concealment did not significantly predict expected relationships between identity and attributes of online message style. Findings regarding concealment and message style led to a consideration of communicator status and gender identity needs. A new message style variable, *openness*, was also examined. Research findings indicated that gender identity and communicator status were strongly related to message openness.

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11.1 Self-Presentation, Gender Identity and Concealment in CMC

Sincerity is an inextricable part of social interaction. According to Goffman [1, 2], sincerity frames the assumption of trust underlying self-presentation. The assumption that we are as we appear provides a rationale for not questioning the motives of another person's social behavior. Only when someone's behavior appears to violate social norms or is erratic do we question its sincerity. There are times when individuals feel compelled to be less than forthcoming in their self-presentations. These instances comprise situationally induced episodes of *miscommunication*. Breaches of sincerity are less problematic in face-to-face (F2F) communication. Interactants have the advantage of observing a wide range of kinesic and vocalic cues in order to assess the congruency and consistency of communication.

Sincerity can be seen as having two potentially contradictory ends: sincerity of self-expression and sincerity of self-presentation. When a person strictly attends to their own identity imperatives, they ostensibly function honestly in their constructive representation of self-attention. The extent to which a person can be sincere depends up the extent to which the person is capable of self-expression without constraint. A person is far freer to perform impulsive acts when there are no consequences linked to the performance of such acts. Such freedom to act is reduced by the revelation of identity. For example, once the identity of a philanthropist is revealed the person may receive unwanted requests for other charitable donations.

On the other hand, when individuals present themselves to others, they increase the likelihood that their actions will have consequences in the form of shaping others' opinions of them. Furthermore, the more honest a person is in their self-presentation, the more they are likely to believe the consequences of an action are not merely a possibility but a *probability*. Thus, revealing one's identity compels the individual to frame their actions in such a way as to minimize the likelihood of creating negatively valenced perceptions of that identity (or its prior concealment). If, for instance, the hypothetical philanthropist referred to above does not conceal their identity, but makes contributions to, say, only one, or one type, of charity, they risk being publicly criticized for having a “pet cause” and not a truly charitable nature.

11.1.1 Inferring Sincerity in F2F Communication

In F2F communication, sincerity (in general) is inferred from observations of possessions and social interactions. According to Belk [3], we are the sum of our possessions; our identity is inferred from the presentation of our possessions. We make determinations about a person's sincerity through information derived from our observations of the match between revealed identity and behavior [1]. We question poorly concealed or explained inconsistencies between identities and behaviors.

A person's sincerity is inferred from two dimensions of self-presentation: congruency and consistency. Congruency refers to the parallelism between how a person verbally symbolizes a relationship and how they actually conduct the relationship [1]. Sincerity also depends on consistency, or the extent to which a person's self-presentation is consistent with their representative behavior. Sincerity can thus be seen as honesty in self-presentation and relational intent that endures relational longevity and the accumulated knowledge of others.

Honesty in self-presentation is most easily inferred from assessing the match between what people say about themselves and what can be visually observed about them. In a F2F

meeting, we can determine much about a person from a myriad of unobtrusive measures like artifacts, gestures, and mannerisms. These observations give us personal information that makes inconsistencies difficult to conceal or explain [3]. Information gleaned from visible behavior assists us in making perceptual attributions that either confirm or disconfirm the apparent truth-value of a person's self-presentation.

Summarizing to this point, sincerity in F2F interaction is inferred from consistent honesty and openness about one's self. Whereas, duplicity uses sincerity as a front for ego-defensive or nefarious ends advanced by concealment or self-conscious interaction management. Yet, how is real sincerity discerned from contrived sincerity? This question is difficult enough to ask in terms of F2F communication. With the growing popularity of computer-mediated communication (CMC), the question becomes even more important to ask and most difficult to answer.

11.1.2 Sincerity and Anonymity in CMC

Although the term CMC refers to a variety of communication channels that are electronically mediated, this assessment focuses on text-based asynchronous electronic mail [email]. The fact that email typically is uncensored and unregulated makes it an ideal channel for managing self-presentation. On the other hand, email also fosters intimate and supportive interpersonal relationships (Bechar-Israeli [4]) in which the disclosure of identity is purely optional.

While sincerity is a necessary taken-for-granted element of F2F communication, its status in CMC is more likely to be a ponderable (or arguable). Many computer-mediated contexts are predicated on anonymity. Spears and Lea [5, 6] propose that the identifiability of one's self-presentations directly influences the ways in which the individual engages in online communication. As discussed in Chapter 9, their social identity and deindividuation (SIDE) model argues that anonymity facilitates deindividuation .

Postmes and Spears [7] explain the mechanism for deindividuation as the capacity to act with relatively low risk of identity threat. Reduced threats to one's identity also lowers an individual's need to engage in self-monitoring. A decline in self-monitoring increases the likelihood of disinhibition as a group member whenever disinhibited behavior is supported by group norms. Feeling like one is part of the group frees an individual from mindful identity management in deference to one's group identity and the group's collective identity. Postmes, Spears, and Lea [8, 9] have shown the amount of identity protection afforded by communication channels dictates whether an individual's communication is more strongly affected by identity needs or group norms.

However, the SIDE model assumes that online communicators are completely in control of personally revealing online information or fully skilled at self-concealment. Not even F2F interactants are capable of maintaining their social masks all of the time. This leads to the question that grounds the present research: What tools exist for assessing sincere self-presentations in computer-mediated communication?

Vicissitudes of CMC technology can sometimes accommodate interactants' desires for anonymity by allowing users to override email system default settings that includes personalizing information in email message headers. Yet, users of this concealment feature put their anonymity at risk if they choose to be too open in their self-presentations. Anonymity comes with a cost. One's self-presentation is constrained by the self being presented [6]. Behavior inconsistent with the presented self is suspicious.

Honesty in relational intent is also inferred through self-presentation. Walther's [10] summary of the relevant research notes that an actor's anticipation of subsequent

interaction increases the amount of personal information they exchange. Anticipated future social contact causes actors to present themselves in ways that produce positive attributions and heightened desires for future affiliation.

Regardless of the observability of a person's forthrightness, some people are duplicitous and intentionally misrepresent themselves. Intentionally successful miscommunication, duplicity, depends on a person being able to make sacrifices for the duplicitous end, keep secrets, and attempt to present a flawless finished product [1]. Success requires that the machinations of duplicity be kept concealed. Presumably, a person that is not honest in his or her self-presentation will not be relaxed or comfortable and will appear nervous from engaging in highly absorbing self-monitoring (Walther and Burgoon [11]). Yet, Goffman [1] warns that the closer an impostor's performance approximates the real thing, the more intensely others may be threatened. A convincing impostor weakens moral connections between the presumed legitimacy of authorization to play a part and the capacity to play it.

Computer-mediated communication is not the only channel in which people use the ability to remain anonymous as a way to conceal themselves. But, standard features in CMC make concealment easier than in other channels. Nonverbal and relational cues are substantially absent in CMC. Cues of social presence, the senses of inclusion that actors are jointly involved in communicative interaction (such as facial expression, direction of looking, posture, dress and non-verbal, vocal cues) are often missing or difficult to emulate in CMC.

Social context framing cues in communication settings, and the social status of communication partners, are likewise often difficult to establish (Mabry [12]). Culnan and Markus [13] have referred to this removal of information as the "cues filtered out" perspective. As presented in Chapter 9, the Cues Filtered Out perspective provides insight into how interactants distort messages they receive as well as messages they send. These distortions typically involve attributions about the information value of meanings that can or cannot be conveyed on particular channels.

Lea and Spears [6] note that participants with too few cues invest the cues filtered-in that are available for interpretation with inflated value leading them to have distorted impressions of their online partners. Similarly, Walther [14] asserts that reduced communication cues in asynchronous communication facilitates selective self-presentation. Therefore, miscommunication involving what ultimately results in insincere self-presentations may not always be mindful because it emanates from misperceptions associated with message cue filtering.

11.1.3 Anonymity and Concealment in CMC

The three themes emerging from the cues filtered out perspective, anonymity, concealment and distortion of self and other, call into question how honesty in self-presentation can be trusted in CMC. The anonymity of CMC, facilitating and facilitated by concealment in self-presentation, allows distortions to be made through omission of information as well as through selective presentation. One of the main questions surrounding the selectivity of presentation is who distorts, in what way, to what extent, and for what outcome?

In order to be truly concealed, one must be invisible to others. Invisibility can only be achieved if one does not participate. As soon as a person interacts, his or her presence is publicly accessible to others even when their identity is shielded through anonymity (O'Sullivan [15], Scott [16]). Thus, interactants cannot be *either* revealed *or* concealed because the role they assume is more complex and not fully under their control [16].

Instead, people reveal themselves to a greater or lessor extent through their participation. Sincerity, genuineness in self-presentation, or concealment and distortion are discernible through the analysis of their *message behavior* (Buller, et. al, [17], Reicher and Levine [18]). Marx [19] views anonymity, and thereby revelation and concealment, as scaleable. A nominal range appears to span from how implicitly or explicitly an individual's styles of communication function to reveal or conceal their identity in the context of how their self-presentation is framed [16]. However, there does not appear to be a uniform approach for advancing a precise metric. In fact, Buller, et. al. [17], studying F2F interaction, failed to find a general pattern of deceptive interaction. Instead, they found that the specific type of deception enacted (i.e., falsification, concealment, equivocation) produced relatively different patterns of deceptive interaction.

Of central concern to CMC users is how to distinguish between people strategically concealing their identities and those revealing their true identities [1]. Effective concealment depends on observers not being able to tell the difference. Yet, participants forming intimate relationships with others apparently feel adequately informed about them using no other means than textual messages.

Interactants in CMC do, however, have one clue that may give them insights into a person's self-presentations and relational intent: level of *formality*. Goffman [2] asserts that social rituals, like greeting rituals, become abbreviated, and informal, when probability and frequency of social contact are high. A person's self-image can be served by the formality of their self-presentation. An informal presentation appears learned and credible, and focused on the task, rather than the social, aspects of the interaction. Formality and informality seem to parallel the gender descriptors of "agency" and "communality," thus suggesting that formality may be gendered [21].

The idea that clues allow inferences to be made about a person in terms of self-presentation and relational intent forms the basis for another theoretical perspective regarding the determination of honesty in self-presentation. Walther [20] proposed that CMC often supplemented the communication channels of people who see each other regularly. CMC merely provides an efficient means of sending messages without the delays of unanswered or returned phone calls or visiting empty offices. Thus, cues filtered out research effects have been limited to initial interactions among strangers.

Walther [14] offered an alternative theory stating that relationships in CMC develop despite the lack of social cues, because time and rate of message exchange attenuate the effects of missing information. The alternative he proposed is Social Information Processing theory. In the Social Information Processing perspective, lack of social information changes the pacing of relational development by forcing interactants to adapt their remaining communicative cues, language and textual display, to the processes of relational management. As a result, relational communication changes from impersonal to more personal levels as relational developed forms in CMC. According to Spears and Lea [5], relational development follows a pattern of relational motivation. Exchanging messages leads to impressions derived from decoding text from which psychological knowledge is inferred. In turn, this leads to the management of relational changes and the encoding of relational messages.

Social Information Processing theory assumes that interactants rely on disclosed information to determine honesty. Once information is obtained, then, according to Walther [20] strategic *probes* are used to test the relationship. Over time, however, with many exchanges, relational development should converge with F2F relationship development. The assumption is that, over time, inconsistencies of text and self-presentation will become evident through self-disclosure and relational knowledge.

The cues filtered out perspective questions the viability of inferring believability from a message that is purely text-based. Social information processing claims that, over time and self-disclosure, a high level of relational knowledge can occur. These conflicting views provide a strong argument for investigating the effect of computer-mediated communication on honesty in self-presentation and the communication of relational intent.

11.1.4 Assessing Gender, Anonymity, and Concealment in CMC Messages

Neither cues filtered out nor social information processing perspectives address the production of congruity or consistency despite the centrality of these ideas to the notion of honesty. For the purpose of this project, congruity is the match between the level of relational involvement, topical involvement, or level of formality observed in a message. Consistency is the extent to which self-presentation is consistent with gender-revealing identity information.

A primary assumption advanced in this project is that attempted concealment, specifically as it relates to gender identity, can be successfully extrapolated from an actor's communicative performances in online contexts. The constituents of sincere messages are the actor's congruity and consistency of language use serving to disambiguate gender. This can take place either through self-referential identification or message constructions indicative of communicator style attributes like relational involvement, topical involvement, and formality of expression.

Spears and Lea [6] suggest that gender may be one subject on which people engaged in CMC are more likely to be evasive in their self-presentations. As an ego-defensive maneuver, how this evasiveness is manifested may be gendered with women being more likely to conceal their gender identity and men more likely to "gender bend" or present themselves as women. Based on this assumption, women or men who reveal too much risk exposing themselves. A person is free to explore the possibilities of the CMC environment only to the extent that he or she is able to *flawlessly* enact the persona he or she has adopted. A flawless performance disallows openness [1].

Women, according to Spears and Lea [5, 6], conceal their gender to prevent harassment in a largely male-dominated social environment and men experiment with alternative sexual identities for personal gratification. They contend that women are more self-protective in situations like online discussions where they perceive greater risks from being attacked as gender role-incumbents unless group norms mitigate those risks. This reticence leads women to be less forthcoming in their self-attribution of gender and apply greater effort at managing their self-presentations. Thus, it is reasonable to expect that: *men and women in online discussion groups will differ significantly in their manner of self-identifying gender.*

Consistent with the above reasoning, we also would expect that the style of messages men and women contribute in online interaction will be related to the apparent clarity they wish to portray in their appropriation of gender. If the foregoing assumption is correct: *levels of relational involvement, topical involvement, and formality should differ according to whether and/or how men and women provide identity cues in their online messages.*

11.2 Gender Identity and Concealment: New Research

The assumptions regarding gender and identity management discussed above were tested

in a study analyzing attributes of messages sent to online groups. Data in this study was obtained as part of an international, computer-mediated collaborative research project. The principle goal of the project was to facilitate the investigation of CMC by examining messages contributed to computer-mediated bulletin boards and discussion groups accessible on the Internet. Over a period of months, research objectives and methodological practices were chosen, then a trained group of researchers analyzed samples of messages obtained from electronic discussion groups. A complete explanation of the project is contained in Rafaeli, Sudweeks, Konstan, and Mabry [22].

11.2.1 Research Data

A complete discussion of sampling is available in Rafaeli, et. al. [22] and will be abbreviated here. Various computer bulletin boards, lists, and news-groups were canvassed for a period of approximately one-month. Messages were randomly sampled across days and times. Only lists in English were retained for the message pool. An N = 3000 messages, from 30 different online discussion groups, comprises the database.

A standardized, message content analysis coding protocol was collaboratively developed by a subgroup of the research team [22]. The content analysis measured 46 message variables; 40 variables were hand-coded and six were machine coded. The coding protocol required trained coders to read the literal text of a message and apply all applicable code to each message. A message was evaluated on whether it contained content descriptive of facts, opinions, humor, challenges, meta-communications, presence of graphic art, formality of composition, quoted material, emotional tone (or flames), sender characteristics (e.g., gender, status), and stylistic various factors (e.g., appropriate subject line attribution, presence of personalized signature lines). A subset of the project's message variables were used in this study are listed in Table 11.1.

Over 40 researchers participated as coders. Coders were provided online training, proficiency tests, and expert guidance. Training involved coding a set of sample messages chosen to cover the range of code variables. Coders rated the messages and returned their results via electronic mail. Low concordance on the training sample of messages led to additional coaching and more training messages being sent for test coding. High agreement with preferred responses to training messages qualified a person as coder for the purpose of receiving messages to be analyzed in the main study.

Coders were electronically sent sets of 100 messages. In addition to the set of messages, coders were supplied with various reporting style formats for submitting their work, and a post-task questionnaire requesting impressions of the list coded and information about coding and reporting practices. Completed sets of formatted codes were returned via electronic file transfer to a host computer system. Work was automatically screened using custom software to debug technical errors (e.g., off line formats, typographical errors); rejected codes were returned to the coder for correction.

Given the methodological approach taken in the project, coding reliability proved to be a complex task. Two conventional methods for assessing reliability were used: Brennan and Prediger's [23] modification to Cohen's *kappa*, $\kappa_{(n)}$, coefficient, and Cronbach's [24] *Alpha* coefficient, $R_{(\alpha)}$. The *kappa* coefficient permits an assessment of inter-rater reliability under conditions where marginal values of an n x n coding matrix are free to vary. *Kappa* was computed for nominal and ordinal variables. *Alpha* was computed for scaleable variables.

Table 11.1. Study 1: Variables

Item	Range	Operational Description	Reliability
Measurement Variables			
Relational Involvement			$R_\alpha = .58$
Argumentativeness	1-6	Scaled: Friendly to hostility	$\alpha = .67$
Promoting Cohesiveness	1-5	Scaled: Strong Agreement/Strong Disagreement	$\alpha = .75$
Topical Involvement			$R_\alpha = .53$
Opinion	1-3	No; peripheral; central to message	$\alpha = .54$
Referencing Messages	1-4	None; 1; 2+; sequential string	$\kappa = .60$
Connecting Prior Message	1-2	No; yes	$\kappa = .76$
Lines Quoted	1-4	None; 1-10; 11-25; 26+	$\kappa = .88$
Formality			$R_\alpha = .52$
Emoticons	1-3	Smiley faces, winks, etc.: None; 1; 2+	$\kappa = .87$
Emodevices	1-3	CAPS, !!!!, etc..: None; 1; 2+	$\kappa = .80$
Articons	1-3	Keyboard graphics: None; 1; 2+	$\kappa = .97$
Research Design Variables			
Gender	1-2	1 = Female; 2 = Male	$\kappa = .76$
Gender Identification	1-5	1 = Not; 2 = name/signature; 3 = stated; 4 = indirectly implied; 5 = 2, 3, and/or 4	$\kappa = .66$

A sample of 1,000 messages, 100 messages cross-coded from 10 discussion groups/lists, constituted the data for reliability analyses. Because coders were not fixed across lists, reliability calculations were performed on a list-wise basis (for each 100 cross-coded message sample) and averaged. Some difficulties were encountered as both list-wise and variable-specific results yielded substantial variability and, for some variables, moderate to low reliability values. List-wise coefficients could not be computed for some variables due to attenuated variances caused by high percentages (exceeding 95%) of inter-coder agreement. Reliability results were within acceptable ranges. Table 1 contains reliability results for Study 1 message variables contributed from two separate studies that have used the project's database (Mabry [25], Karge, et. al. [26]) plus additional analyses conducted for this study.

11.2.2 Measures of Gender, Concealment, and CMC Messages

Two types of analysis variables are used for Study 1 analyses: research design variables and measurement variables. These variable types are identified in Table 1. Variables used in the research design were: gender of the message author, and the mode of gender identification of the message author (if present). Measurement variables were constructed from Relational Involvement, Topical Involvement, and Formality. Constructing summated measures did lead to a loss of data due to uneven patterns of unreconciliable or missing data.

Gender. Both research design variables for this study are related to gender: apparent gender and the mode of its expression in a message. The latter is important because it

involves how forthcoming communicators were in their disclosure of gender. This variable notes whether and/or by what methods online interacts revealed their gender. The coding protocol differentiated names and/or formatted signatures, direct references to the individual's gender in the message text (e.g., "I am a woman.…"), indirect references to the individual's gender in the message text (e.g., "Us men ought to stick together…."), the presence of two or more types of attributions (mixed modes of gender identification), or the absence of any identification of gender in the message body or headers/footers.

Relational Involvement. This variable was designed to measure the relational tone of a message expressed through the presence (or absence) of interpersonally sensitive language or language that promotes group solidarity: argumentativeness and messages promoting cohesiveness. The items were reflected and summed to calculate a profile variable measuring each message's relational involvement. The summated variable produced a scale range with higher scores indicating the actor's greater value for pro-social behaviors.

Topical Involvement. Both adherence to, and amount of expression about, a message's central them was used in constructing a measure of topical involvement. Message content variables used in constructing this index included: opinionation, presence and length of matter quoted from prior messages in the group, extent of prior message referencing, and references to continuities observed in preceding message strings. The relative presence of these variables indicates attempts not only to stay on topic but also increase credibility with other members of the group. These items were reflected and summed to form a profile measure of topical involvement. A high score corresponded to a high level of topical involvement.

Formality. This variable measures the level of formality (or informality) present in the message and relied on the presence (or absence) of graphical expressions of emotion denoting departures from conventional message composition styles. Content variables used in constructing this item included: presence of emoticons (e.g., "smiley" faces), emodevices (irregular use of punctuation or capitalization for emphasis), and articons (artistic or illustrative use of symbols). Items were reflected and summed to compose a measure of the relative amount of formality or informality present in each message. This measure was directionally scaled so higher scores reflected *less* formality.

11.2.3 Research Findings on Gender and Concealment

In order to facilitate a precise assessment of the assumptions this research addressed, data analysis was subdivided into tests of specific hypotheses regarding the potential effects of gender and identity management on message style. To confirm the independence of the summated message style items for separate analyses, Cronbach's *Alpha* coefficient was calculated for the relational involvement, topical involvement and formality scales. The Alpha coefficient indicated the three scales were significantly independent ($R_\alpha = -.01$) of each other and could be analyzed separately.

The first hypothesis contends that women would perceive online discussions as holding greater risks for them as interactants, compared to men, and lead them to engage in less disambiguated, sincere, self-presentations through their self-attribution of gender.

Preliminary analyses of the N = 3,000 messages indicated that messages produced by men outnumbered women's message output by a five to one ratio (Men = 2,162, Women = 427). Thus, men were clearly dominant on-line interactants in the discussion groups sampled. The contingency table comparison for men and women according to their manner of self-identification produced a significant Chi-square value ($\chi^2(4) = 119.77$, $p < .0001$).

Approximately the same percentage of messages from men and women contained no embedded gender attributions (Women [W] = 9.8% versus Men [M] = 9.4%). Women were less likely to explicitly provide their names compared to men (W = 74.5% versus M = 87.5%). And, women were four times more likely to enact indirect references to their gender (W = 6.8% versus M = 1.6%). Yet, women were also considerably more likely to use either direct gender references (W = 4.0% versus M = .05%) or produce messages containing more than one form of gender reference (W = 4.9% versus M = 1.0%). These findings are consistent with basic thrust of the hypothesis.

Consistent with the forgoing results, we would expect the styles of message enactments by men and women to vary according to the state of apparent clarity in their appropriation of gender. That is the underlying argument advanced in three remaining hypotheses on the presence of relational involvement, topical involvement, and message formality.

However, results for the test of hypothesis one clearly suggest that the statistical interaction of gender and mode of gender identification is the proper model for testing the remaining hypotheses. Therefore, the data for the hypotheses were analyzed in a 2 (Gender) x 5 (Mode of Identification) univariate analysis of variance [ANOVA] with relational involvement, topical involvement, and formality as dependent variables [27].

Hypothesis two proposes that the amount of relational involvement in the messages of men and women would be significantly related to the clarity of their gender appropriation. The results are inconclusive. The ANOVA interaction effect was not significant ($F (4, 1,203) = 1.62$, $p < .15$). This indicates that any differences in the identity management of men and women in online groups did not affect the stylistic content of their messages. Yet, it is possible that the styles of online messages varied between men and women and mode of identity management without interacting.

The main effect for gender also was not significant ($F (1, 1,203) = 2.57$, $p > .10$). Means for this analysis are contained in Table 2. However, the main effect of mode of identification was significant ($F (4, 1,203) = 5.65$, $p < .0001$, $\omega^2 = .15$). Table 11.3 contains the means for this analysis. Multiple comparisons between means indicated that the relational involvement mean for mixed, or multiple, forms of gender appropriations (M = 4.07) was significantly lower than those for all other identification modes. This indicates that message senders were more likely to be confrontational when gender identity was not concealed or not consistently concealed throughout a message.

Table 11.2. Means for Men and Women on Message Variables

Message Variables	Men	Women
Relational Involvement	4.92	4.70
Topical Involvement	1.76	1.78
Formality	1.15	1.36

The third hypothesis asserts that the amount of topical involvement in the messages of men and women would be significantly related to the clarity of their gender appropriation. The ANOVA interaction effect for topical involvement was not significant ($F (4, 1,203) = 1.10$, $p < .40$). Therefore, the underlying hypothesis could not be supported by the data. The main effect for gender also was not significant ($F (1, 1,203) = .33$, $p < .60$). The main effect for mode of identification was significant ($F (4, 1,203) = 6.23$, $p < .0001$, $\omega^2 = .14$).

Table 3 contains the means for this analysis. Multiple comparisons indicated that the topical involvement means for direct appropriations (M = 2.03) and mixed modes of identification (M = 1.98) were significantly different from those of other identification modes. However, the results make it impossible to support this hypothesis.

Table 11.3. Means for Modality of Gender Identification on Message Variables

Message Variables	Gender Identification None	Name	Direct	Indirect	Mixed
Relational Involvement	4.67	4.95	4.52	4.50	4.07
Topical Involvement	1.74	1.75	2.03	1.88	1.98
Formality	1.25	1.14	1.96	1.51	1.68

Note. None = no explicit gender reference; Name = a name attributed to a gender included with message; Indirect = reference to one's own gender only by comparison or implication; Direct = explicitly stating one's gender; Mixed = a combination of two or more modes (except None).

The final hypothesis argues that the amount of formality of expression in the messages of men and women will be significantly related to the clarity of their gender appropriation. The ANOVA interaction effect for message formality also was not significant (F (4, 1,203) = 1.75, p < .15). Again, there was no significant difference in the way men and women engaged in identity management that affected the formality of messages they expressed in online groups.

The main effect for gender was significant (F (1, 1,203) = 23.68 p < 0001, ω^2 = .23). Means for this analysis are in Table 2. A comparison of the means showed that men were significantly more formal in their message enactments than women.

The main effect of mode of identification also was significant (F (4, 1,203) = 53.45, p < .001, ω^2 = .42). Table 3 contains the means for this analysis. Multiple comparisons indicated that message formality means for messages with no gender identification (M = 1.25) or identification only through a name (M = 1.14) were significantly lower, indicating greater formality, than other forms of gender identification. And, the mean for indirect appropriations was significantly different from all other means. Therefore, once again, while there were substantial differences on formality scores related to mode of gender identification, gender and mode of identification did not statistically interact and the research hypothesis could not be supported.

11.2.4 Gender, Identity Management, and Concealment: Research Implications

The results of analyses of mode of gender and mode of gender identification and message variables were inconclusive. Men and women participating in online discussion groups tend to use different forms of self-referential message constructions. Therefore, the overall amount of and potential for miscommunication caused by identity management was not substantially isolated to one gender.

Also, it would not be accurate to conclude that only men used more disambiguating strategies. Women's use of gender-revealing self-referential messages showed a more complex trend. First, the majority of messages from women paralleled the content patterns observed for men. Second, women were more likely to create messages including either direct references to their sex or containing mixtures of references with varying types of

self-identification. Women also were four times more likely than men to use indirect self-references to their gender in the messages they sent to online groups.

The three hypotheses specifically asserting relationships between gender, self-identification, and language variables measuring relational involvement, topical involvement, and message formality were not supported. It would be tempting to attribute these results to factors like the attenuated range of the summated scales (based on items with only two or three categories). However, this explanation would be inconsistent with the significant ANOVA main effect results obtained using these variables.

The research design variables of gender and mode of identification of the interactant were robust. They produced significant ANOVA main effects for all of the message style variables. These results provide strong, though not unequivocal, support for the presumptive rationale underlying the hypotheses.

Results for comparisons between men and women's use of relational involvement language were not in the direction expected. If women in on-line groups are disposed to be more guarded with their presence, they would be expected to have lower relational involvement scores than men. The results did not confirm that expectation. Women's scores were significantly higher than men's scores.

Results for the topical involvement and formality seemed consistent with the basic assumptions underlying the strategic self-presentation hypothesis suggested by Spears and Lea [5, 6]. Women were significantly less likely to be as involved in the topicality of online discussions. They were also less likely to use formal language in their messages. However, there is evidence from F2F research that deception and informality are positively related [17]. These outcomes seem consistent with the expectation that, in order to enact a more viable means of self-protection online, women will appear more detached in the presence they project through their messages. Yet, this distance may be tempered by a less formal style of self-presentation. This finding is also consistent with the assumption that as women perceive less risk in a group setting they may become less concerned with identity management thereby reducing their social distance as members by using less formal messages. In general, the results of the data analyses appear to bear out these implications.

Looking broadly at the overall pattern of results, we have some reason to be optimistic that, even with failures in the potency of certain statistical tests, the underlying rationale motivating this project has been reinforced by these findings. There is some evidence to suggest that both men and women approach on-line discussions as though sincerity was not overly problematic. This suggests that online messages are influenced by a sort of normative halo-effect regarding taken-for-granted assumptions of genuineness accorded F2F interaction.

Second, and just as important, we also have demonstrated that the exportability of assumptions about managing identity that govern F2F contexts are open to manipulation in online contexts (albeit for unarguably good reasons). The self-referential nature of communication can present a Janus-faced dilemma for many people. Genuine self-presentation can be precipitous in contexts that are relatively inaccessible to conventional social control mechanisms. The results of this study clearly indicate that participants in online groups apparently make choices regarding their persona and presence. These choices are instanciated in participants' communication styles evidenced either mindfully or unmindfully in the ways they construct messages that are shared publicly with, for the most part, strangers or cursory acquaintances. Thus, while not usually intended, the pragmatic realities of online contexts can make miscommunication either difficult to avoid or socially necessary.

11.3 Gender, Status, and Concealment in CMC

We use information obtained from observing people's F2F social interactions to make inferences about the genuineness of their self-presentations [2]. An important clue to a person's sincerity is the way in which he or she performs facework (Goffman [28]. Facework is a general term for negotiations between social actors involving their autonomy, solidarity, and approbation (Lim and Bowers [29]). Solidarity and approbation refer to positive face, which addresses desirability needs, including regard for a person and respect for a person's abilities [28]. Autonomy refers to negative face, or a person's need not to be imposed upon by others. Attention to face can be observed through the *level of openness* with which he or she engages others [30].

Finding from the preceding study reported that the percentages of men and women sending messages containing no embedded gender attributions was approximately equal. Women were less forthcoming than men in explicitly providing potentially revealing information. Similarly, women were four times more likely than men to indirectly refer to their gender. Yet, women were much more likely than men to use direct gender references as well as author messages containing more than one form of gender identification.

Most compelling, however, is the finding that confrontational messages were more likely to contain identity information. This result is not easily reconciled with theoretical stances like the cues filtered out perspective. It is consistent with SIDE model reasoning only if we can assume that online participants felt a strong enough sense of in-group identification to mitigate risks associated with revealing identity information [7]

Findings from the previous study also suggest that participants in CMC groups become more willing to engage in sincere self-presentation as they become more ego-involved with their participation. However, using gender as the only proxy for identity management may not yield the most powerful measure of identity.

In fact, evidence bearing on the management of anonymity suggests that social power can mitigate anonymous activity [18, 19]. This reasoning is consistent with the SIDE model and Social Information Processing [14] perspectives. In the latter case, providing information is a way of garnering prestige. Anonymity becomes a hurdle to accumulating status through information sharing because it inhibits the formation of credibility impressions [15].

Status is also a corollary to facework and, by extension, openness in self-presentation. Higher status people have greater face needs. However, their social power also provides more social capital for negotiating face needs and more presumed control over threats to their sense of face. Yet, women's status resources as communicators are different than men's. And, differential uses of language often leads to miscommunication between men and women [30]. The potential for such miscommunication seems even greater in online group contexts. As the preceding research has demonstrated, both gender and identity management shapes the styles of CMC messages enacted in online groups.

Men and women also can choose to reveal or conceal other social status cues besides gender. Gender is also an interactive status marker that is often only manifestly evident during communication [31]. Other status cues, based on conferred or achieved social position, can also have a great bearing on individual and group identity. Therefore, status cues not specifically related to gender could enhance, or even subsume, the status value of gender. There is also evidence that social status and concealment decisions are related [19]. And, evidence from research on deception in F2F interaction shows that status

markers like expertise influence perceptions of messages from both senders and receivers [17].

Literature regarding concealment and uncertainty indicates that interpersonal openness is more likely to be signaled in the patterns of message content and exchanges that define personal relationships [32]. Openness also can define the value of the social capital one brings to a social context. Higher status is more likely to stimulate openness when the source(s) of one's status are not perceived as targets of ego-threatening reactions from others. The working assumption is that: *non-gendered status markers should enhance social power, thereby making gendered identity less tenuous, and lead to greater openness in online social communication.*

Results from another study investigating the hypothesized effects of gender, status, and identity management on communication are discussed below. However, the message variables previously analyzed were not replicated in this study. The underlying rationale for this hypothesis is not broad enough to be extended to relational or topical involvement. Message formality is easily understood as a stylistic corollary to status. However, the potency of the message formality variable was already established and was not re-tested in this study for the sake of brevity.

11.3.1 Assessing Status, Identity Management, and Openness

Data for this study was obtained from the same database used in previous study. Testing the hypothesis required the use of gender and gender identification variables, plus the addition of a variable to measure the research design factor of status. Message analysis required the construction of a new summated scale measuring openness. See Table 1 for information regarding variables carried over the previous study.

Three research design variables were needed for testing the hypothesis regarding status, gendered identity management effects on communicative openness: gender of the message sender, mode of gender expression (if present), and communicator status. One analysis variable, communication openness, was tested. The openness variable is explained below. Status was measured using a message content item coded to denote the presence or absence of any form of information about the communicator's personal status (e.g., degrees, positions, titles, and so forth). Messages were rated “no” when they did not contain such information and “yes” when they did. The *kappa* statistic for reliability on this measure was $\kappa = .81$. As was the case in the preceding study, there was some data loss due to aggregating items in scale construction.

Table 11.4. Openness Variable

Item	Range	Operational Description	Reliability
Inclusiveness	1-2	Using 1st. person plurals: No; yes	$\kappa = .79$
Personal Addresses	1-2	Acknowledging others: No; yes	$\kappa = .71$
Challenges	1-2	Demands authorization/verification: No; yes	$\kappa = .95$
Exhorting Action	1-3	Out-of-group responsiveness: No; peripheral; central to message	$\kappa = .83$
Openness			$R_\alpha = .40$

One summated scale to measure openness was developed by screening relevant message analysis variables included in the database. Four variables that operationalized a

sense of interpersonal acceptance and inclusiveness, and willingness to expand thought and proactive behavior, were reliably aggregated to form the openness variable. The variables, brief explanations, and reliability information are presented in Table 11.4. Individually, the items demonstrate strong reliability. The summated scale is weaker but allows for an efficient metric suitable for the statistical design.

11.3.2 The Effects of Status and Gendered Identity Management on Openness

Previous analyses of the N = 3,000 messages showed that men's message output outnumbered women's by a five to one ratio. Those findings suggested that there is an interaction between participant's gender and mode of gender identification. Therefore, the hypothesis was analyzed using a 2 (Gender) X 5 (mode of identification) univariate analysis of variance (ANOVA) [27].

The hypothesis proposed that the amount of openness in message enactments of men and women would be significantly related to the clarity of their gender appropriation and apparent status. The results are intriguing. The ANOVAs for main effects were significant: gender ($F (1, 1,194) = 9.77$, $p < 002$, $\omega^2 = .15$); mode of gender expression ($F (4, 1,194) = 21.23$, $p < 01$, $\omega^2 = .29$); and status ($F (1, 1,194) = 8.74$, $p < 003$, $\omega^2 = .13$).

However, there were significant two- and three-way interaction effects that made it impossible to interpret main effects. The interaction between status and mode of gender expression was significant: $F (4, 1,194) = 5.85$, $p < 0001$, $\omega^2 = .34$. And, there was a significant three-way interaction: $F (3, 1,194) = 3.86$, $p < 009$, $\omega^2 = .10$. Only the highest order of interaction effect can be directly interpreted [27]. Table 11.5 contains the means for the interpretable ANOVA analysis.

Overall, the effect, while statistically significant, was only moderately strong in yielding interpretable comparisons. One reason for this outcome is the lack of data for men directly mentioning status markers in their messages. This is a somewhat surprising result as it better fits patterns that have been established for women in online groups. Post hoc comparisons of means indicated men indirectly mentioning status (M = 1.83), and women directly mentioning status (M = 1.69), contributed most to the significant interaction effect.

Table 11.5. Openness Scale Means for Gender, Mode of Gender Identification, and Status

Gender: Male	Modalities				
Status	None	Name	Direct	Indirect	Mixed
Not Mentioned	1.17	1.18	1.33	1.15	1.50
Mentioned	1.42	1.19	.00	1.83	1.38
Gender: Female					
Status					
Not Mentioned	1.22	1.22	1.54	1.27	1.53
Mentioned	1.39	1.25	1.69	1.33	1.58

The only clear pattern to emerge for either gender was that men and women were more

open in their communication under very different combinations of status and gendered identity representations. Men were more likely to evidence greater openness in their online group messages when their mode of gender identification was indirect. The patter for women was more complex. Openness in women's messages was highest under both indirect and mixed identification conditions. Therefore, it appears the triggering mechanism stimulating openness may be readily identified for men but could be somewhat less obvious for women. Moreover, the fact that different ways of revealing gender were related to the presence of status markers suggests that status empowers each sex differently in online groups.

11.4 Gender Identity and Status Implications for Communicator Openness

The hypothesized assumption that there is a relationship between participant's gender, self-identification, status cues, and level of openness was supported. Not surprisingly, men and women in the anonymous and perfunctorily identified conditions were the least open. This is consistent with the possibility that either on an individual basis across groups, or due to the social climates in particular groups, there were greater risks to self-image regardless of gender. It is clear that women are more likely to enact openness in their communication because they reveal themselves more than men.

Findings that connected gender and status also were revealing in another way. It was surprising to learn that status did not universally empower members of either gender to act more openly as communicators when they had made revealing remarks in their messages. This finding suggests group members that do not participate anonymously probably have specific interaction goals in mind. Such goals may explain why they choose to participate in a particular group. Mabry [12] has shown online groups with a clearer apparent sense of purpose have messages with more internal structuring (framing) and higher topical involvement, but lower formality, scores.

11.5 Conclusions

Finally, we must ask, where do the findings of these studies lead? First, it is clear that lines of theoretical inquiry embracing egoistically nuanced explanations for online communication have an advantage over theories that more narrowly focus on the presumed communicability of message channels. Second, the fact that message style and openness were influenced by decisions involving communicator choices for concealment or revelation suggests that self-presentation often is actively managed. Status factors that could be meaningful to an online group (whether related to gender or not) enter into a communicator's message constructions. Third, the notion that sincerity as it has been discussed here is a problematic facet of social interaction indicates that miscommunication is not always passive or accidental.

Clearly, it would be prudent to reassess both the conceptual and operation definitions of our primary variables. Admittedly, it is hard to imagine that our measures did not potentially over-specify the concepts of relational involvement, topical involvement, and formality. Obvious too is the need to more directly address the ways consistency and congruency operate within a message. Here again, additional study might lead us to different patterns of individual message content measures available in the database. And, of course, the opportunity to revisit the original messages and reanalyze them by applying

new measures (and even methodologies) for understanding sincerity and its constituents is exciting.

As mediated technologies become increasingly complex, and capable of integrating video, voice, and data transmissions into broadband mediated channels, it becomes important to understand how the physical and symbol producing attributes of these communication technologies influences communication choices [32]. This becomes particularly necessary as new technologies increase the visibility of participants in online groups.

The level of accessibility a communicator chooses to permit will become a context defining decision. Such decisions will shape communication goals and perceptions of utility attributed to how technologies are being used to enact those goals. The notion of *miscommunication* could well shift from an emphasis on behavior to underlying intentions associated with channel selection.

Finally, there is the need to explore other communicative implications of electronic messaging. Research needs to address both the message-centered (and thus interactant-centered) and the contiguous and processual dimensions of the computer-mediated communication. One limitation to the data reported here was that data sampling procedures inferred with the collection of contiguous message streams. Future research needs to examine intact message streams in order to provide more precise analyses of message patterns and any embedded meanings such patterns might reveal.

11.6 Acknowledgments

The author wishes to thank Ms. Martha Karge and Ms. Drue-Marie McKelton for their assistance in early phases of this project.

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