

Liar, Liar, Hard Drive on Fire: How Media Context Affects Lying Behavior

MATTITIYAHU ZIMBLER¹

University of Massachusetts, Amherst

ROBERT S. FELDMAN

University of Massachusetts, Amherst

This study investigated frequency of deception when getting to know a stranger face to face or using computer-mediated technologies. Same-sex pairs of undergraduate participants engaged in 15-min conversations using e-mail, instant messenger, or speaking face to face. Afterward, target participants reviewed transcripts of their conversations and recorded inaccuracies. The results showed increased deception in the computer conditions, compared to the face-to-face condition, with the most lies found in e-mail messages. Lie content, rationale, and type were also affected by the communication medium. The findings suggest that it may be normative to distort reality online.

Technological advances in the last two decades have produced considerable changes in methods of interpersonal communication. Both e-mail and instant messenger (IM) programs now allow for quick personal messaging, supplanting both traditional postal mail and often even face-to-face conversations, as means of communication. Although both e-mail and IM use electronic digital transmission, they differ in how they are used. Whereas e-mail is generally used for asynchronous communication, IM has been developed specifically to allow users to have text conversations back and forth in real time. Although both e-mail and IM are ubiquitous (estimates are that there will be close to 3 billion e-mail accounts and 1.6 billion IM accounts by the start of the next decade), relatively little is known about the consequences of their use, as well as how they differ from typical, face-to-face (FtF) communication (Radicati Group, 2007).

One domain in which the various communication modalities may differ involves interpersonal deception. Increasing evidence has shown that in FtF conversations, verbal deception is a common part of our everyday interactions with others. For example, Feldman, Forrest, and Happ (2002) found that most people lied at least once during 10-min FtF conversations, with an

¹Correspondence concerning this article should be addressed to Mattitiyahu Zimler, Department of Psychology, University of Massachusetts, Amherst, MA 01003. E-mail: mzimler@psych.umass.edu or to Robert S. Feldman, College of Social and Behavioral Sciences, University of Massachusetts, Amherst, MA 01003. E-mail: feldman@psych.umass.edu

average number of three lies told during the 10 min for those who lied. Other research has confirmed that deception is frequently used as a self-presentational tool during FtF conversation (DePaulo, Ansfield, Kirken-dol, & Boden, 2004; Fiedler, 2007).

Despite some recent work that was conducted to explore changes in speech when lying online (Hancock, Curry, Goorha, & Woodworth, 2008) and some pertinent theoretical work, there is a lack of empirical research examining the differential extent of lying over various communication modalities other than face to face. The current study explores not only the frequency of online lying behavior in comparison to FtF conversation, but also some of the potential motivating factors for those deceptive statements.

Several theoretical approaches suggest that deceptive behavior should differ according to the communicative modality. One factor suggesting that the different forms of communication might result in different levels of deception involves the concept of deindividuation. As first coined by Festinger, Pepitone, and Newcomb (1952), *deindividuation* refers to the tendency for individuals to lose their sense of evaluation apprehension and normative restraints when presented with a situation that provides some form of anonymity. Subsequent studies have shown that deindividuated people have a tendency to act less restrained and less self-regulated, and are more likely to act without reflecting on their own values (Diener, 1980; Prentice-Dunn & Rogers, 1980, 1989; Silke, 2003).

The idea of deindividuation affecting computer communication has some precedent in the psychological and communication literatures. Social identification/deindividuation (SIDE) theory (Lea & Spears, 1991, 1995; Spears & Lea, 1992, 1994) focuses on how computer-mediated technologies shape social identity variables that, in turn, influence cognitive processes. SIDE theory recognizes that interacting via computer narrows the available cues (e.g., no physical presence, no auditory information), and suggests that with no prior experience with a communication partner, people are apt to make inferences and over-attributions based on this minimal information. Furthermore, the deindividuated state created by the anonymity of online communication causes people to rely on incomplete information when forming opinions about their communication partner (Spears & Lea, 1994).

While one might expect impressions of strangers to be less intense when working with reduced information, research based on the SIDE model has shown that participants are more likely to form stereotypical or exaggerated opinions with the information available (Hancock & Dunham, 2001; Lea & Spears, 1992). In terms of deception, SIDE theory suggests that even superficial similarities or differences between participants using computer communication could cause exaggerated negative or positive opinions about their

partners. Hypothetically, this bias could, in turn, lead to either an increase or a decrease in motivation to deceive one's communication partner.

In terms of the current study, deindividuation theory relates directly to the synchronous versus asynchronous nature of the three communication media. FtF and IM communications normally occur with a dialogue consisting of a back-and-forth transaction occurring in real time. Conversely, e-mail communications involve some time delay between the initial message and its response. Consequently, there are several differences across the various media in both physical and virtual deindividuation. First, there is physical deindividuation in the computer-mediation technologies created by participants being situated in separate locations. Second, there is increased virtual temporal deindividuation in e-mail, compared with IM, because of e-mail's asynchronous stop-and-start nature.

Prior research has found that when participants are asked to deceive and are given the option of which media to use, they preferred synchronous over nonsynchronous technologies (Carlson & George, 2004). The same study found that those participants also preferred media that were non-reprocessable, or nonrecordable, when they were asked to lie to a partner. One explanation for this preference for nonsynchronous communication when lying may relate to the hyperpersonal communication model (Walther, 1996, 1997). When applied to unacquainted participants, this model assumes that people will utilize lack of available information and increase in available time to their advantage in order to construct selective self-presentations whereby they filter out negative information and emphasize positive attributes (Walther, 1996). In the context of deception, this filtering process can be construed as a combination of subtle deceptions and lies of omission.

The fact that different types of communication differ in the degree of their permanence and recordability suggests another explanation that could produce different levels of deception in different communicative modalities. Carlson, George, Burgoon, Adkins, and White's (2004) theoretical model of deception across computer-mediated communications hypothesizes that those media low in recordability will be especially prone to deception. Carlson et al. posited that by eliminating the ability to review and analyze incoming messages, people are more readily deceived. In contrast, other research has shown that the ability to craft messages in text form makes it easier for participants to create believable, effective messages (Burgoon, Stoner, Bonito, & Dunbar, 2003).

One generally assumes that in sending an e-mail, there is a permanent record of the message left not only on the recipient's computer, but also in the sender's outgoing mailbox. In contrast, IM tends to be a more impermanent written conversation, in which closing the window containing the IM conversation effectively ends the exchange, similar to walking away from an FtF

interaction. Although many IM programs have the capability of creating an electronic record of conversations, the contemporaneous conversational quality of IM interchanges provides the perception of impermanence. Furthermore, IM screen names and identities can be created and manipulated for the sole purpose of chatting online without being affiliated with a traceable e-mail address (Valkenburg, Schouten, & Peter, 2005). This increased opportunity for anonymity makes this medium appear to be less permanent than e-mail (DiGilio, 2001). FtF conversations are likely assumed to be the least permanent, given that conversations are recorded only in unusual circumstances.

Both deindividuation explanations and message permanence explanations suggest, then, that deception will fluctuate according to the communication medium. Deindividuation theory suggests that the more physically and psychologically removed the sender is from the recipient, both in terms of physical and virtual dimensions, the greater the amount of deception. In other words, for participants sending messages over e-mail, where the recipient is not only removed from the situation but also not generally prone to immediately respond, deception will be most prevalent. An IM conversation provides recipients with the resources and expectation that they should immediately respond to the sender. Consequently, we might expect that there will be a lower rate of deception, compared to e-mail dialogue, but the rate will still remain higher than FtF interactions. Furthermore, the fact that e-mail is not traditionally used for synchronous conversation may lead participants to lie the most. Consistent with this explanation, it is hypothesized that the most deception will be reported in e-mail communication, followed by IM, and then the least deception in the FtF communication. Additionally, it is hypothesized that the computer-mediated interactions (i.e., e-mail, IM) will show significantly more deception than will the FtF interactions.

An alternative, but also plausible, hypothesis is that the frequency of lies will vary depending on the permanence of the medium in which the conversation occurs. Specifically, it is possible that individuals using e-mail, assuming there will be a record of their conversation, will have the fewest instances of deception. Those using IM would then have a greater frequency of lying behavior, but still less than the most impermanent, FtF interactions, in which one would expect the greatest amount of deception. If this explanation holds, it could be hypothesized that the greatest amount of deception will be reported in the FtF interaction, followed by IM, and then the least deception in the e-mail condition. Consistent with this hypothesis, there should be significantly more deception found in the FtF condition when compared to the computer-mediated communications together.

In addition to examining these alternative hypotheses, the current experiment seeks to examine whether explicit self-presentational goals will affect

the degree of deception shown by communicators. Because prior research has shown that individuals holding a self-presentation goal lied more in FtF conversations than did those without such a goal (Feldman et al., 2002), we examine whether self-presentational goals will affect deception differentially across the various media in the current study.

In addition, the study looked at gender differences, which prior research has shown are related to deception. For example, DePaulo, Kashy, Kirkendol, Wyer, and Epstein (1996) found that while both males and females tend to lie the same overall amount, the types of lies told vary by gender. While females told lies intended to enhance their partners' presentations, males' lies focused on making themselves look better. Other research on gender differences in chat rooms (Whitty, 2002) has found that not only are men more likely than women to lie, but the topics that they lie about also differ. Where men most often lied about topics related to socioeconomic status, women more often lied because of safety concerns. We expect that the gender differences seen in prior research will be found across all conditions. Specifically, we expect that differences in male and female participants' rate of lying will be negligible, but that the men will tend to self-promote, while the women will lie to enhance their partners' images.

Finally, the study also examines the type of lies told across the various media. Specifically, we analyze the lies in terms of their content, rationale, and type to determine whether lies told face to face might differ from those told in computer-mediated communications.

Method

Overview

Participants engaged in 15-min conversations with a same-sex partner either using IM, e-mail, or FtF communicative modalities. Following the conversation, the participant reviewed the computer transcript or videotape of the conversation and was asked to indicate which of his or her statements were inaccurate. In this way, we investigate if the rate and content of deception can be predicted, depending on the type of media communication being used.

Participants

The study participants were 110 pairs of undergraduate students at a large state university who were recruited to participate. To simplify the design,

same-gender pairs were used. There were 30 male dyads and 80 female dyads. All participants received extra credit in their psychology courses for their participation.

Procedure

Participants were told that the study was interested in how people get to know other people. They were not informed that there were various media conditions or that the veracity of their statements would be examined later. In the likable condition, drawing from Feldman et al.'s (2002) procedure, the self-presenters—or “target” participants—were additionally told that the researchers were interested in the way people act when they meet someone likable. They were asked to present themselves in such a way that their partners would think they were likable. These target participants were also told to “not let your partner know directly what your goals are for this session.” In the control conditions, the targets were not given any presentation goal and were simply instructed to act as they normally would while getting to know their partners. All participants who were chosen to be the non-targets were given the same instructions as were those in the control condition.

The participants then engaged in their conversations over e-mail, IM, or face to face. Those in the e-mail and IM conditions were put in a separate room from the person with whom they were interacting, while FtF participants interacted in facing chairs in a small comfortable room. Participants were given no information about the logging of their interactions, whether it was by recording the transcript of the online communications or the covert videotaping of the FtF conversations through a one-way mirror. The participants in the e-mail condition were further instructed that during their interaction they should intermittently press the “Refresh” button on the e-mail window. This process served both to ensure quick receipt of their partners' e-mails and also to accentuate the asynchronous aspects of e-mail communication.

Following the 15-min FtF conversation, the participants were brought into separate rooms to complete questionnaires regarding the conversation. Those in the e-mail and IM conditions remained alone in their rooms and completed the same questionnaires. As a manipulation check, all participants were also asked to specify what goal they had been asked to achieve during their interaction. After the manipulation check, the participants were informed that their conversations had been recorded (by video or by computer), and their consent was obtained to use those transcripts for research purposes. After this step, those who were assigned to the non-target conditions were debriefed and dismissed.

The target participants were then informed of the study's interest in conversational accuracy and varying degrees of telling the truth. The researcher provided examples of various kinds of inaccuracies that occur in everyday interactions. The participants were then asked to review either the videotape of their conversations or the transcript of their e-mail/IM conversations, and to identify any inaccuracies they may have stated during their interactions. They were also asked to provide information as to what a more accurate response would have been for each inaccuracy. This process was used both to ensure that the statements identified were actually lies, and to determine the type of lie. Participants were asked to record all inaccuracies, no matter how large or small they might be. If there was any question as to whether a particular statement was a lie or not, the participant was asked to record it.

Once the recording process was completed, the participants were carefully debriefed. The reason for the initial deception was explained in terms of the research question, and the normative element of deceptive behavior was emphasized. All efforts were made to alleviate any negative feelings and to answer any questions the participants had about the experiment.

Results

Manipulation Check

After the participants had reviewed the record of their interactions to identify the lies told, the target participants were asked to identify their purpose during the session as part of the Post-Session Questionnaire. Of the target participants who were given no specific presentation goal, 95% said that they were meant to get to know their partners, and 4% reported no goal. Of those participants who were given the self-presentation goal to appear likable, 67% responded that they intended to get their partners to think they are likable. This manipulation check shows that the participants generally understood the task they were assigned.

Total Number of Lies

Overall, the participants told an average of 1.54 lies per 15-min session ($SD = 0.18$; range = 0–10). The most lies per session were told in the FtF condition ($M = 2.16$, $SD = 2.67$), followed by e-mail ($M = 1.27$, $SD = 1.15$) and IM ($M = 1.17$, $SD = 1.06$). Of the participants, 29% reported telling no lies during their conversations. Of the remaining participants who did report lying, the average number of lies was 2.17 ($SD = 0.21$).

Prior to analyzing the number of lies between media conditions, it was essential to control for the amount of information communicated in the 15-min period. Analysis of the conversational records shows that fewer words were exchanged in the e-mail ($M = 176.08$, $SD = 61.68$) and IM conditions ($M = 266.31$, $SD = 87.14$) than in the FtF condition ($M = 1500.84$, $SD = 442.12$). In order to control for this discrepancy, word counts were performed on the transcripts and video recordings of the target participants' IM, e-mail, and FtF conversations. The number of each participant's lies was then divided by the number of words communicated during the interaction in order to control for information exchanged. Because of how small this newly computed variable is ($M = 0.0047$), we transformed the data by multiplying by 10,000 for ease in reporting ($M = 47.40$, $SD = 5.47$; range = 0–402.69).

We analyzed the average words per 15 min in a 3 (Media) \times 2 (Presentation Goal) \times 2 (Gender) between-subjects ANOVA. The results show that there was an overall effect of media context, in which participants in the e-mail condition had the highest proportion of lies ($M = 80.47$, $SD = 8.50$) and participants in the FtF condition had the lowest proportion of lies ($M = 16.35$, $SD = 8.50$), with participants in the IM condition falling in between ($M = 45.22$, $SD = 8.62$), $F(2, 104) = 14.26$, $p < .01$.

In order to determine if all media conditions were significantly different from one another, we conducted planned contrasts between all media conditions. The results show significant differences between each of the condition means: IM versus e-mail, $F(1, 65) = 4.94$, $p = .03$; IM versus FtF, $F(1, 65) = 8.68$, $p < .01$; e-mail versus FtF, $F(1, 66) = 17.15$, $p < .01$. Furthermore, to test the hypothesis that the computer-mediated communications would have significantly different levels of deception, compared to FtF interactions, planned weighted contrasts combining the IM and e-mail conditions ($M = 63.13$, $SD = 7.41$) versus face to face ($M = 16.37$, $SD = 21.49$) were also significant (estimated mean difference = 46.50, $SE = 10.44$, $p < .01$). Importantly, this analysis also led to the conclusion that the proportion of lies told via computer communication was significantly greater than those lies told in person.

Contrary to our hypothesis, there was no significant effect of being given a self-presentation goal versus not being given any specific goal, $F(1, 98) = 0.98$, *ns*. This finding held across all media conditions.

Analysis of Lie Content, Rationale, and Type

In analyzing the lies told, we used a coding scheme that was previously developed by DePaulo et al. (1996). Using this methodology, lies were independently scored across three dimensions: content, rationale, and type (see

Table 1

Taxonomy of Lies

Coding	Definition
Content of lie	
Feelings	Lies about affect, emotions, opinions, and evaluations
Achievement	Lies about achievements, accomplishments, knowledge, and so on
Actions, plans	Lies about what the liars did, are doing, plan to do, where they are
Explanations	Lies about liars' reasons or explanations of their behavior
Facts	Lies about facts, objects, events, people, or possessions
Rationale for lie	
Self-oriented	Lies told to protect or enhance the liars or advantage liars' interests
Other-oriented	Lies told to protect or enhance others or advantage others' interests
Type of lie	
Outright	Total falsehoods
Exaggerations	Lies in which liars overstate the facts or convey an impression that exceeds the truth
Subtle	Lying by evading or omitting relevant details; also behavioral and white lies

Note. More detailed definitions are found in DePaulo et al. (1996).

Table 1 for a summary of the coding scheme). Lies were coded across all three dimensions by two coders, and a minimum reliability of 71% agreement was obtained on an overlapping 20% of the data that both coders analyzed independently for lie content ($\kappa = .783$, approx. $T = 9.37$, $p < .01$), rationale ($\kappa = .479$, approx. $T = 3.32$, $p < .01$), and type ($\kappa = .634$, approx. $T = 5.89$, $p < .01$). Additionally, those lies were converted into percentages within each category (i.e., content, rationale, and type) to test for relative frequency while controlling for word count across media.

In analyzing the content of lies told, we examined the percentage of lies falling into the categories of feelings, plans, achievements, facts, or explanations. For the analysis of lie content, the presentation goal and gender variables were dropped from the analysis because of their lack of variability. The

Table 2

Percentage of Lies Coded for Content of Lie by Media Type

Type of lie	E-mail	Instant messenger	Face to face
Feelings	34.14*	38.89*	19.10*
Achievement	0.54†	0.69†	4.23†
Action/plans	17.12	12.50	20.77
Explanation	10.36	5.56	2.52
Facts	16.22	11.81	18.24

Note. $n = 37$ for e-mail and face-to-face (FtF) groups; $n = 36$ for instant messenger group. Asterisks denote significant contrasts between the computer-mediated conditions and the FtF condition.

† $p = .083$. * $p < .05$.

resulting variables were analyzed in a 3 (Media) \times 5 (Content of the Lie) MANOVA, where media was a between-subjects variable and lie content was a within-subjects variable.

In looking at the omnibus F test, Roy's largest root shows a marginally significant difference in the content of the lies, $F(5, 104) = 2.10, p = .07$; with the percentage of lies about feelings being the most common ($M = 30.64, SD = 40.37$), followed by lies about plans ($M = 16.83, SD = 30.68$) and lies about facts ($M = 15.45, SD = 30.57$). Lies concerning achievements ($M = 1.83, SD = 10.29$) and explanations ($M = 6.15, SD = 22.31$) were the least common, which is consistent with previous research.

There were marginally significant differences in the percentages of lies told about feelings and perceptions in the FtF condition ($M = 19.10, SD = 31.02$) than in the IM ($M = 38.89, SD = 44.90$) and the e-mail conditions ($M = 34.14, SD = 42.38$) conditions, $F(2, 107) = 2.47, p = .09$ (see Table 2). This result was strengthened by a significant planned weighted contrast aimed at exploring any differences between the FtF condition and the computer-mediated communications (estimated mean difference = 17.42, $SE = 8.04, p = .03$). No other effects of lie content were significant.

In analyzing the lie rationale, we examined the percentage of lies categorized as self-oriented lies and as other-oriented lies. Roy's largest root omnibus F test from the 3 (Media) \times 2 (Lie Rationale) MANOVA (once again, gender and presentation goal were excluded) shows a significant difference in the percentage of lies told concerning self versus other, $F(2, 107) = 3.40, p < .04$. Overall, participants told a higher percentage of self-oriented lies ($M = 52.92, SD = 45.86$) than lies to enhance their partners

Table 3

Percentage of Lies Coded for Lie Rationale by Media Type

Lie rationale	E-mail	Instant messenger	Face to face
Self-oriented	62.69*	56.25*	38.92*
Other-oriented	14.69††	13.19††	25.95††

Note. $n = 37$ for the e-mail and face-to-face (FtF) groups; $n = 36$ for the instant messenger group. Asterisks denote significant contrasts between the computer-mediated conditions and the FtF condition.

†† $p = .071$. * $p < .05$.

($M = 17.98$, $SD = 32.83$). There were significant differences in the percentage of self-oriented lies told between the FtF condition ($M = 38.92$, $SD = 40.71$) than the IM ($M = 56.25$, $SD = 47.58$) and the e-mail conditions ($M = 63.69$, $SD = 46.68$), $F(2, 107) = 2.94$, $p = .057$ (see Table 3). This result was supported by a significant planned contrast between the FtF condition and the computer conditions (estimated mean difference = 21.05, $SE = 9.10$, $p = .02$). No other effects of lie rationale were significant.

In analyzing lie type, the percentage of lies that were categorized as outright lies, subtle lies, and exaggerations were examined. Roy's largest root omnibus F test from the 3 (Media) \times 3 (Type of Lie) MANOVA (once again, gender and presentation goal were excluded) shows a significant difference in the percentages of types of lies told, $F(3, 106) = 3.02$, $p = .03$. Overall, participants told the highest percentage of outright lies ($M = 29.42$, $SD = 39.90$), as compared to exaggerations ($M = 21.12$, $SD = 36.02$) or subtle lies ($M = 19.45$, $SD = 35.75$). There were significant differences in the percentage of subtle lies told between the FtF condition ($M = 9.14$, $SD = 21.51$) and the IM ($M = 17.36$, $SD = 35.77$) and the e-mail conditions ($M = 31.80$, $SD = 43.50$), $F(2, 107) = 4.02$, $p = .02$ (see Table 4). This result was supported by a significant planned contrast between the FtF condition and the computer conditions (estimated mean difference = 15.44, $SE = 7.02$, $p = .02$). No other effects of lie type were significant.

Discussion

The findings of this study clearly demonstrate that some degree of deception is used across all three modalities of communication: face to face, instant messaging, and e-mail. This research extends the previous literature by showing an increase in deceptive behavior when communications are taking place through computer media.

Table 4

Percentage of Lies Coded for Type of Lie by the Media Type

Type of lie	E-mail	Instant messenger	Face to face
Outright	24.05	26.39	37.75
Subtle	31.80*	17.36*	9.14*
Exaggeration	19.82	25.69	17.97

Note. $n = 37$ for the e-mail and face-to-face (FtF) groups; $n = 36$ for the instant messenger group. Asterisks denote significant contrasts between the computer-mediated conditions and the FtF condition.

* $p < .05$.

We considered two competing hypotheses. The first hypothesis was based on the concept of deindividuation, which suggests that as people grow psychologically and physically further from the person with whom they are communicating, they are more likely to lie. A second, alternate hypothesis suggested that the different degrees of permanence for the various kinds of communication would determine the degree of deception. This hypothesis suggests that the recordability of the communication and, therefore, the likelihood that one could be caught in one of the lies, would predict how much deception one would use in an initial conversation with a stranger. If this hypothesis were proven true, the most deception would occur in face-to-face conversations and the least amount of deception would occur in e-mail exchanges.

The pattern of results lends support to the deindividuation hypothesis. It appears that the degree to which the sender is psychologically and physically distant from the receiver is the more critical factor in determining when people are deceptive. The results indicate that the further removed one is from an individual they are getting to know, the more likely they are to utilize deception in that interaction. Moreover, either physical separation, as illustrated by the significant increase in lies over the computer media versus face to face—or virtual temporal distance, as illustrated by the significant increase in lies in the asynchronous e-mail condition over the synchronous IM condition—can cause this deindividuation effect to occur.

It is worth emphasizing that less deception was found for the synchronous media of face to face and IM than for the asynchronous e-mail condition. It seems likely that the asynchronicity of e-mail makes the users feel even more disconnected from the respondent in that a reply to their queries is not expected immediately, but rather is delayed until some future point in time.

Interestingly, the content of the lies told face to face was evenly distributed across lies about plans, feelings, or factual information; while the computer-mediated lies showed significantly more lies concerning feelings. One possible explanation for this difference is that participants felt that in person, their nonverbal cues would give away their true feelings, so they may have felt that it was safer to lie about internal states when they were "protected" by the virtual communication mode. Another plausible cause for this difference is that while people are generally used to telling small factual lies in everyday life, the process of typing the information into words may make it more difficult to deny that the information is actually untrue.

The results also indicate that participants were more likely to lie about themselves, as opposed to others, over the computer-mediated communications versus face to face. This finding is consistent with previous research showing that people tend to tell more self-serving lies over e-mail versus face to face (Whitty & Carville, 2008). Whitty and Carville also found that people tend to tell more self-serving lies to people with whom they were not previously acquainted.

Finally, our research also specified a preference for telling subtle lies across the computer modalities. In keeping with the hyperpersonal communication model, this finding is thought to be the result of participants using the text-based modalities to self-present themselves selectively in the best light (Walther, 1996, 1997). Utilizing subtle deception, participants downplayed negative attributes while emphasizing their positive qualities in order to present the best version of themselves to their interaction partners.

In exploring the practical implications of this research, the results seem to indicate that the Internet allows people to feel more free, psychologically speaking, to use deception, at least when meeting new people. Given the public attention to incidents of Internet predation, this research suggests that the deindividuation created by communicating from behind a computer screen may facilitate the process of portraying a disingenuous self. While this research does not imply that the increased deception found in computer communication produces Internet predation, it does seem that it may be normative to distort reality to a certain degree.

The present research found no effect for self-presentation goal. Regardless of whether participants were told to appear likable or were given no self-presentation goal, deception occurred at similar levels, unlike what was found by Feldman et al. (2002). A possible explanation for this discrepancy is that the self-presentation manipulation may not have been made salient enough to the target participants. Our manipulation check shows that of those participants who were asked to appear likable, only two thirds reported that as their goal when they were asked immediately following the

conversation. Utilizing a stronger self-presentation manipulation is one potential direction for future research.

It should be noted that similar to prior research on deception, there is the inherent methodological problem of how to record a participant's lies accurately. As in prior research, there is no way to verify whether participants' self-reports of deception are accurate. However, it is reasonable to suggest that the procedure used in the present study actually underestimates the actual amount of lies told, in that participants may be least likely to reveal any lies that would cast them in a negative light. In addition, it is possible that those participants who reported no instances of deception were lying about not lying. In either case, the result would be an underestimation of the total deception. Still, there is little reason to believe that this potential underestimation would have any systematic differences between media conditions.

Another potential methodological issue is the possibility of a differential response in the reporting of one's deception based on whether the participants were reviewing the written transcript of their conversations versus watching the video of their interactions. In other words, it may be easier for participants to rationalize their responses as more accurate when reading a transcript of their conversations than when watching themselves on a television (or vice versa). In order to minimize this potential bias, the participants were reminded to record "any statement that could be perceived as inaccurate," and any statement that they were unsure as to whether or not it should be considered inaccurate. By encouraging participants to report any and all potentially misleading statements, we intended to standardize judgments of deception across conditions.

Future research should delve further into online lying behavior in two specific directions. First, it would be useful to look at individual differences in online deception to determine what drives certain people to be more deceptive than others. This research might examine deception within particular contexts (e.g., the realm of online dating) to learn how deception is used to facilitate future interaction as well as what characteristics (e.g., attachment style) might predict greater deception in pursuing a romantic relationship. Second, it is important to expand these findings and to demonstrate how experimentally induced deindividuation would interact with these three communication modalities.

In conclusion, the present study provides evidence that the communication modality can affect not only the amount of deception in introductory conversations, but also the content of those lies. Specifically, one should be prepared when engaging strangers in online conversation that the content of that interaction may contain less veracity than if it were taking place in person.

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