

## Self-Esteem, Interpersonal Risk, and Preference for E-Mail to Face-To-Face Communication

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### ABSTRACT

The media choices made by high and low self-esteem Internet users was studied using web-based methodology ( $n = 265$ ). Participants were asked to rank four media (face-to-face, e-mail, letter, and telephone) in order of preference across four different communication scenarios designed to pose an interpersonal risk. The level of interpersonal risk posed by two of the scenarios (asking for a pay rise and asking for a date) was also experimentally manipulated by randomly allocating participants to a 25%, 50%, or 75% chance of rejection. Low self-esteem users (LSE) showed a significant preference toward e-mail communication compared to high self-esteem users (HSE). This pattern was reversed for face-to-face preferences. Similarly, a greater chance of rejection in a scenario led to e-mail being preferred to face-to-face communication. The results are discussed in light of both the strategic use of different media and the motivated Internet user.

### INTRODUCTION

INTERNET BEHAVIOR and, more specifically, computer-mediated communication (CMC) has been characterized as more intimate, personal, and self-disclosing than face-to-face (FtF) interaction.<sup>1,2</sup> Significantly higher levels of self-disclosure have been found in CMC compared to FtF dyads, and when CMC pairs were visually anonymous compared to those linked via a video camera.<sup>1</sup> Indeed, the evidence from medical studies,<sup>3,4</sup> online counselling,<sup>5,6</sup> social support groups,<sup>7</sup> web-studies of social desirability,<sup>8</sup> online communities,<sup>9</sup> and web-based story boards<sup>10</sup> all suggest that people disclose more, less socially desirable, information about themselves online compared to equivalent FtF contexts.

Most explanations of this "hyperpersonal" interaction rely on aspects of the media itself to explain any effects. For instance, visual anonymity,<sup>1,2</sup> lack of identifiability,<sup>11</sup> asynchronous interaction,<sup>2</sup> uncertainty reduction,<sup>12</sup> or a combination of these<sup>2</sup> have all been implicated in heightened self-disclosure online. In general, these aspects of the media are im-

plicitly or explicitly linked to changes in a psychological state (e.g., self-awareness, self-presentation concerns), and thence to heightened disclosure or intimacy.

However, it also needs to be recognized that, outside the laboratory, Internet users usually have an array of communication media at their disposal and so may specifically choose CMC to convey intimate messages.<sup>13</sup> For instance, people have a tendency to prefer mediated communication when conveying a message likely to result in a negative reaction to the self from another person.<sup>14</sup> From this perspective, the prevalence of intimate communication (as occurs, for instance, in online social support forums) is a product of the motivated choices users make, rather than necessarily an outcome of media use per se. This approach has a degree of historical support: For instance, in the early part of the 20<sup>th</sup> century, telephone use in U.S. households peaked when courtship and dating began.<sup>15</sup> More recently, teenagers, especially females, have enthusiastically adopted mobile telephone text messaging (SMS) to flirt and to ask people on dates.<sup>16</sup> Similarly, the use of a mediated form of

communication (the "Dear John" letter) to end a relationship is likely to be motivated by self-presentation concerns rather than a product of a specific media. Recent research investigating personality and Internet use further suggests that a full understanding of Internet behavior needs to take account of both the user as well as the media itself.<sup>17,18</sup>

In an attempt to integrate the roles of the media and the user, Joinson<sup>19</sup> has argued for an interaction between the user and media, such that the users' personality, motives, and expectations lead to media choice, and that actual use of the media leads to changes in both psychological states and actual behavior. These effects then feedback to the user (and their subsequent media choices), creating a cycle linking the user and media through the process of social interaction.

This approach to understanding Internet behavior as an interaction between the user and the media is echoed in work on the mental health implications of Internet use. For instance, there is recent evidence to suggest that the effect of Internet use on mental well-being depends on the user's prior personality characteristic.<sup>20</sup> Specifically, Kraut et al. propose a "rich get richer" hypothesis whereby extraverts gain increased social capital and mental well-being through Internet use, a pattern reversed for introverts.

However, despite the likelihood that Internet behavior is a product of both the user and the specific tool, there has, apart from recent work on personality, been very little research that examines specific motivational or strategic factors that influence users' choice of media. In the present study, trait self-esteem is used to study motivated media choice. Self-esteem, at least as measured by most psychological scales, has a clear and well-defined interpersonal element.<sup>21</sup> Specifically, differences in behavior between high and low self-esteem people are most pronounced when the behavior is public. In such circumstances, people with high self-esteem tend to adopt a self-enhancement interpersonal strategy, while people with low self-esteem tend to adopt a self-protection strategy. For instance, public speaking is risky in that it offers the opportunity for either success and kudos, or abject failure and shame. People with high self-esteem (HSE) tend to take the risk to self-enhance, while low self-esteem (LSE) people will self-protect and not take the risk of public humiliation, even though success would be beneficial in raising their self-worth.<sup>21</sup>

The use of technology to mediate interpersonal interaction may well provide an opportunity for LSE people to protect the self from negative feedback. Since e-mail is visually anonymous and asynchronous, it allows the user considerable control over self-presentation and the pace and content of

an interaction.<sup>2</sup> If faced with a situation that poses an interpersonal risk, people with low self-esteem may well prefer e-mail to FtF interaction because of the control over self-presentation it provides. Mediated forms of communication are also perceived as lower in social presence,<sup>22</sup> which may also give the user a sense that the impact of a failure on their self-assessment will be weakened through the lens of mediation.

Meanwhile, if we follow the logic that mediating an interpersonal interaction weakens the impact of failure on the self, the impact of success should also be correspondingly weakened. So, for an individual pursuing a self-enhancement strategy, the tendency should be to prefer FtF to e-mail interaction,<sup>21</sup> even when there is a moderate chance of rejection or embarrassment.

In the present study, HSE and LSE participants are presented with four communication scenarios designed to pose an interpersonal risk. Specifically, these are (1) asking for a pay rise, (2) asking for a date, (3) lying, and (4) disclosing intimate information. Four communication media (face-to-face, e-mail, letter, and telephone) are then rated by order of preference for each scenario. Of interest in the present study are the preference ratings for FtF and e-mail. The ratings for letter and telephone are treated as filler items.

In the case of scenarios 1 and 2, the scenario poses a risk because they may well be rejected. The level of risk is also experimentally manipulated by giving a 25%, 50%, or 75% chance of success for these two scenarios. It is predicted that LSE will show a greater preference for e-mail than HSE. Second, it is further predicted that preference for e-mail will increase as the chance of failure and rejection increases. No specific predictions are made about the possible interaction between self-esteem and risk.

For scenarios 3 and 4, it is predicted that, compared to HSE participants, LSE participants will show an increased preference for e-mail and decreased preference for FtF interaction.

## MATERIALS AND METHODS

### *Design*

For the analysis of scenarios 1 and 2, a two-way, between-subjects design (self-esteem  $\times$  level of risk) was used. Self-esteem was divided at the mean into high and low self-esteem. Interpersonal risk was experimentally manipulated at a 25%, 50%, and 75% chance of success. For scenarios 3 and 4, a one-way between-subjects design (LSE vs. HSE) was

used. Participant's preference ratings of the media formed the dependent variable.

#### *Participants*

Participants were 306 respondents to a call for participants on the internal university conferencing system for students, and advertisements in the American Psychological Society Internet Studies page (<http://psych.hanover.edu/research/exponnet.html>) and Social Psychology Network ([www.socialpsychology.org/expts.htm](http://www.socialpsychology.org/expts.htm)). Following the removal of multiple submissions (when entries shared an i.p number), submissions with missing data, and any minors, 265 participants (209 females, 56 males) remained in the main analysis. The mean age of the participants was 34.7 years ( $SD = 12.16$  years).

#### *Materials*

*Rosenberg's self-esteem scale.* Participants completed Rosenberg's 10-item Self-Esteem Scale<sup>23</sup> using a four-point Likert scale anchored at "not at all" (1) and "very much" (4).

*Media preference scenarios.* Participants rated four media (face-to-face, e-mail, telephone and letter) in rank order of preference (where "1" is most preferred and "4" was least preferred) in response to four hypothetical communication scenarios. The four scenarios were as follows

1. You want to ask your manager for a pay rise. There is a 50% chance that you will be granted your request. Please rank order the media below in order of preference for this communication.
2. You are currently single. You met someone you find attractive while out with mutual friends. Your friends gave you this person's contact details. You figure from what friends have said that there is a 50% chance this person will say yes if you ask for a date. How would you prefer to ask them for a date?
3. You are beginning to struggle with your current studies or workload due to quite intimate personal reasons. You want to tell your tutor/manager the "full story" because you feel that you need additional time and support for a forthcoming deadline. How would you prefer to tell your tutor/manager about your current predicament?
4. You are taking a day off from work to attend a job interview. Rather than upset your manager, you have decided to say that you are attending to "family business." How would you prefer to inform your manager that you will be off on that day?

In dilemmas 1 and 2, the odds of success were experimentally manipulated, such that in condition 1, the odds were 50% for both dilemmas, in condition 2, the odds were 25% and 75% for dilemmas 1 and 2, respectively, and in condition 3, the odds of success were 75% and 25% for dilemmas 1 and 2, respectively. Participants in all conditions received the same information for dilemmas 2 and 3. The order of the dilemmas was randomly allocated.

#### *Procedure*

The study was "advertised" as an investigation into media choice and self-esteem. If participants followed the link to the study, they were automatically directed to an instructions page. This page outlined the study and the privacy policy, and requested that participants should be aged over 18. In "clicking below" to agree to participate, they were randomly allocated to one of three conditions (based on the level of risk in scenarios 1 and 2) using JavaScript.

On the second page, participants first completed Rosenberg's self-esteem scale and then ranked their media preferences for each of the four scenarios. Finally, they were asked, "Should your responses be entered into the analysis? (e.g., you've answered randomly or are just testing the site)." Any participants responding "no" to the question were discarded from the dataset.

Once participants had submitted the questionnaire, they were automatically directed to a debriefing page that thanked them for their time, explained the aims of the experiment, provided contact details and anonymous commenting facilities, and a link to the experimenters' homepage.

The questionnaire data submitted by the participants was stored alongside any comments and the time, date, browser type and i.p number of the submission. If any two submissions originated from the same i.p address, both submissions were excluded from the analysis. This removed 36 participants from the data. Although this excludes participants responding via a proxy server, it is a well-documented method for ensuring data integrity<sup>24</sup> and represented an acceptable loss of participant numbers.

## RESULTS

#### *Media preferences*

For scenarios 1 and 2, face-to-face was rated as the preferred mode of communication (Table 1). However, for scenarios 3 and 4, a less "rich" media was the preferred form of communication. A lower score equates to increased preference.

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TABLE 1. MEDIA PREFERENCE (INCLUDING FILLERS) ACROSS THE FOUR SCENARIOS

Scenario	Mean preference rating (SD)			
	Face-to-face	E-mail	Letter	Telephone
Pay rise				
M	1.27	2.99	2.98	2.76
SD	0.71	0.94	0.95	0.82
Date				
M	2.00	2.42	3.19	2.36
SD	1.18	1.11	0.94	0.87
Deception				
M	2.21	2.26	3.43	2.09
SD	1.23	0.99	0.84	0.78
Intimacy				
M	2.45	2.14	3.66	1.73
SD	0.98	0.98	0.65	0.75

*Self-esteem, odds of success, and communication choice*

Participants were allocated to a high and low self-esteem group by splitting at the mean (29.5). Thus, participants with SES scores below 30 were allocated to the LSE category ( $n = 122$ ), and those above 30, the HSE category ( $n = 143$ ).

In the present analyses, the rankings for face-to-face and e-mail alone are considered as unique dependent variables. Although an increased enthusiasm for one media, because of the nature of the measurement, will naturally lead to decreased ratings for the others, the use of the filler items ensures an acceptable degree of freedom in the second choice.

Because of the different nature of the two "risk" scenarios, they are also analyzed separately. For both "risk" scenarios, the statistical analyses were first calculated with gender entered as an independent variable. Gender did not interact significantly with either the odds of success or self-esteem, and so was not entered into the subsequent analyses.

*Scenario 1: Asking for a pay rise*

The respective preference ratings for face-to-face and e-mail communication formed the dependent variable in a 2 (HSE vs. LSE) by 3 (25%, 50%, 75% chance of success) between-subjects ANOVA.

The main effect of self-esteem was significant for both face-to-face ( $F(1,259) = 14.21$ ,  $p < 0.001$ ,  $Ms. 1.44$  ( $SD = 0.88$ ) and  $1.12$  ( $SD = 0.48$ ) for LSE and HSE, respectively) and e-mail preference ratings ( $F(1,259) = 13.19$ ,  $p < 0.001$ ,  $Ms. 2.77$  ( $SD = 1.03$ ) and  $3.18$  ( $SD = 0.81$ ) for LSE and HSE, respectively). This supports the first hypothesis that LSE will

show increased preference for e-mail, and decreased preference for face-to-face, compared to HSE.

The main effect of odds of success was not significant for face-to-face ( $F(2,259) = 1.07$ ,  $p = 0.34$ ,  $Ms. = 1.25$  ( $SD = 0.75$ ),  $1.38$  ( $SD = 0.78$ ), and  $1.19$  ( $SD = 0.59$ ) for 25%, 50%, and 75%, respectively), or for e-mail ( $F(2,259) = 2.02$ ,  $p = 0.13$ ,  $Ms. 3.09$  ( $SD = 0.85$ ),  $2.80$  ( $SD = 1.08$ ), and  $3.06$  ( $SD = 0.87$ ) for 25%, 50%, and 75%, respectively) preference ratings. This does not support the second hypothesis that preference for e-mail over face-to-face will be related to the odds of success.

The interaction between self-esteem and odds of success was significant for both face-to-face ( $F(2,259) = 3.27$ ,  $p < 0.05$ ) and e-mail ( $F(2,259) = 3.18$ ,  $p < 0.05$ ) preference ratings. The pattern of these interactions is illustrated in Figure 1.

*Scenario 2: Asking for a date*

Again, the respective preference ratings for face-to-face and e-mail communication formed the dependent variable in a 2 (HSE vs. LSE) by 3 (25%, 50%, 75% chance of success) between-subjects ANOVA.

The main effect of self-esteem was significant both face-to-face ( $F(1,259) = 14.37$ ,  $p < 0.001$ ,  $Ms. 2.68$  ( $SD = 0.96$ ) and  $2.25$  ( $SD = 0.95$ ) for LSE and HSE, respectively) and e-mail preference ratings ( $F(1,259) = 4.38$ ,  $p < 0.05$ ,  $Ms. 2.01$  ( $SD = 0.96$ ) and  $2.26$  ( $SD = 0.99$ ) for LSE and HSE, respectively). This supports the first hypothesis that LSE will show increased preference for e-mail, and decreased preference for face-to-face, compared to HSE. The main effect is illustrated in Figure 2.

The main effect of odds of success was significant for face-to-face ( $F(2,259) = 3.11$ ,  $p < 0.05$ ,  $Ms. 2.57$  ( $SD = 0.99$ ),  $2.54$  ( $SD = 0.96$ ), and  $2.25$  ( $SD = 0.95$ ) for 25%, 50%, and 75% chance of success, respectively)

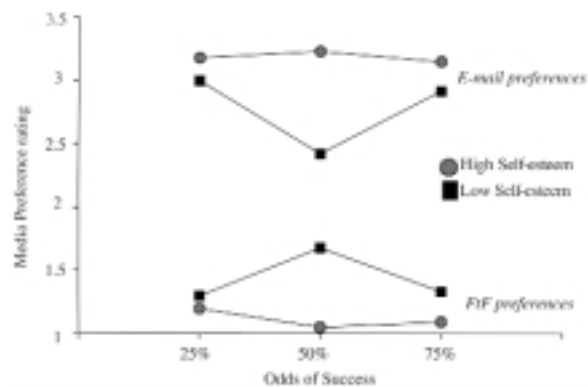


FIG. 1. Self-esteem, odds of success (pay rise), and preference ratings for face-to-face and e-mail.



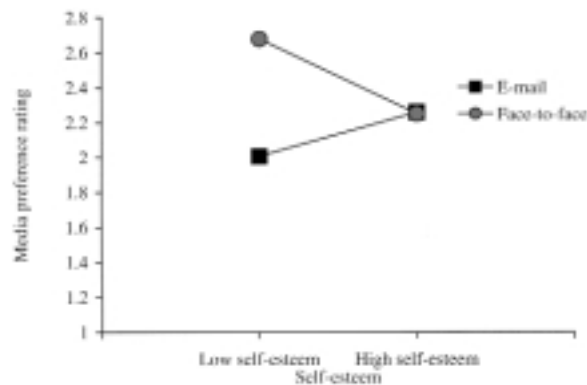


FIG. 2. Self-esteem and media preference when asking for a date.

and for e-mail ( $F(2,259) = 4.79, p < 0.01$ ,  $M_s$  2.07 ( $SD = 1.00$ ), 1.95 ( $SD = 0.94$ ), and 2.39 ( $SD = 0.96$ ) for 25%, 50%, and 75% chance of success, respectively). This supports the second hypothesis that odds of success will be related to e-mail and face-to-face preferences. This main effect is illustrated in Figure 3.

The interaction between self-esteem and odds of success was not significant for either face-to-face ( $F(2,259) = 1.12, p = 0.32$ ) or e-mail ( $F(2,259) = 0.43, p = 0.65$ ) preference ratings.

#### Scenarios 3 and 4: Deception and intimacy

In scenarios 2 and 3, no differential odds were assigned, so the three assigned conditions were analyzed together. The mean preference rating assigned to each media in the two scenarios is presented in Table 2.

For both scenarios, the hypothesis that LSE would show a greater preference for e-mail than HSE and a lower preference for FtF was supported.

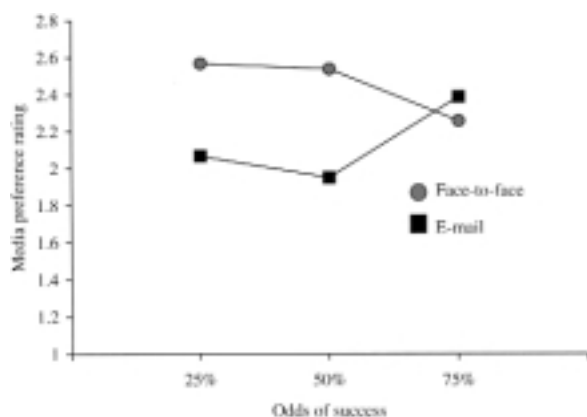


FIG. 3. Odds of success (asking for a date) and preference ratings for face-to-face and e-mail.

## DISCUSSION

It was predicted that LSE participants, compared to HSE, would show a greater preference for e-mail and a reduced preference for FtF, across all scenarios. This was the pattern of results found in the study. In both the risk of rejection scenarios (asking for a date or a pay rise), as well as the deception and intimacy scenarios, LSE participants showed a greater preference for e-mail as the communication media of choice than HSE participants. Conversely, HSE participants showed a significantly higher preference for FtF communication in these hypothetical scenarios than LSE participants.

The second hypothesis was that preference for e-mail would increase as the odds of success decreased (a pattern reversed for FtF). This relationship was found in one scenario (asking for a date), but not in the other (asking for a pay rise). It would seem that the nature of the scenarios might be the reason for this difference. In the first scenario (asking for a pay rise), face-to-face was overwhelmingly the preferred media of communication. No other scenario presented a similar pattern of preferences, suggesting that for the present sample, asking for a pay rise was a qualitatively different type of communication scenario than, say, asking for a date or disclosing intimate information. Presumably, there are also factors such as social norms and customs, and the symbolic meaning of the communication media,<sup>25</sup> which mean that asking for a pay rise is usually conducted face-to-face rather than by telephone or e-mail.

In the second scenario, the results supported the hypothesis. For both LSE and HSE participants, the odds of success influenced their media choices. Specifically, low odds of success led to e-mail being preferred over FtF, whereas higher odds of success led this pattern to be reversed.

#### Motivated Internet use

It was argued in the introduction that media choice might be motivated by self-protection needs. Because self-protection requirements differ for HSE and LSE people, it was predicted that trait self-esteem would lead to differential media choices across a number of hypothetical interpersonal situations. This was indeed the case—LSE participants showed a greater preference for e-mail over FtF than HSE participants. This effect was particularly marked when the risks of rejection in the interpersonal situation were high. This experimentally replicates the observation that shy people tend to benefit from computer-based dating systems,<sup>26</sup> and anecdotal evidence that socially

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TABLE 2. SELF-ESTEEM AND MEDIA CHOICE FOR DECEPTIVE AND INTIMATE COMMUNICATIONS (DF = 2, 263)

Scenario	Media	Preference rating, mean (SD)			F	p
		Overall rating	LSE	HSE		
Deception	FtF	2.00 (1.18)	2.18 (1.24)	1.85 (1.11)	5.33	0.02*
	E-mail	2.42 (1.11)	2.19 (1.05)	2.62 (1.13)	10.09	0.00**
Intimacy	FtF	2.21 (1.23)	2.39 (1.22)	2.06 (1.23)	4.76	0.03*
	E-mail	2.26 (1.00)	2.07 (0.94)	2.43 (1.01)	8.50	0.00**

AU: Please define single & double asterisks in Table 2.

anxious people may be more likely to be "pathological" Internet users than the more socially confident.<sup>27</sup>

E-mail offers people an opportunity to both engage in more careful self-presentation, as well as increasing the control they have over an interaction and their non-verbal cues. Although the pain of rejection or negative feedback might not differ whether it is conveyed FtF or by e-mail (something untested in the present study), e-mail affords the recipient of negative feedback more control over their self-presentation, the pace of the interaction, and the transmission of cues like nervousness. For a HSE participant, rejection in such situations is less of a threat in that they have greater reserves of self-worth to call upon.<sup>21</sup> For an individual with LSE, these resources are at best depleted, at worst non-existent.

A further element to consider is expected outcomes of an interaction. People with high self-esteem generally expect more positive outcomes than people with LSE. As such, we might expect HSE people to prefer FtF in risky scenarios, whether or not the level of risk is known for sure beforehand. It is also unclear how interpersonal motives might interact with personality to produce preferences for different media or Internet services.<sup>17</sup>

Although self-worth is the most well-known motive in social behavior, people are also motivated in other ways. Their individual need for affiliation, their need for uncertainty reduction about the self, a sense of efficacy, or even a need for meaning may well influence people's Internet behavior. Indeed, there is considerable anecdotal evidence to suggest that the motives for Internet use seem to be a complex interaction of self-improvement, discovery, fantasy, and escape.<sup>19,28,29</sup>

#### Future work

In the present study, participants' length of Internet experience was not measured. It is possible that, to understand the nuances of different media (and their advantages and disadvantages in different situations), one needs to be an experienced Internet

user. It is also possible that people have different experiences and expectancies of different media—again, something that should be linked to their choice of media for specific communication goals. A worthy future study would also investigate media switching, and the role of motivation and strategy in, for instance, the move from e-mail to the telephone as an Internet relationship progresses.<sup>30</sup>

While this author would not argue that some media are intrinsically better than others for specific communication "jobs," it is clear that many Internet users choose their media based on their interpersonal motives and strategies as well as any expectations about the probable outcome of a communication or interaction.

## CONCLUSION

Within the literature on Internet behavior, and more specifically computer-mediated communication, much is made of the impact of visual anonymity, asynchronous interaction, and changes in psychological states during CMC. The present work suggests that these perspectives need to be combined with an appreciation that CMC is motivated and chosen strategically from within an array of possible channels of communication at the disposal of Internet users.

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