Metaperception in Cyberspace


ABSTRACT

Knowing how others perceive us is an important aspect of social life. “Impression meta-accuracy” is the extent to which we are correct in our assumptions about the impressions others have formed of us. The goal of this study was to compare meta-accuracy of WWW homepage creators to meta-accuracy of people in face-to-face interactions. Because creators of WWW pages have a high degree of control over the information they make available online, they may believe that they accurately know the nature of the impressions they give to other people. However, perceivers of homepages must form impressions without many of the social and context cues that influence judgments in a face-to-face setting, including body language and speaking qualities, and thus their impressions may not match those assumed by the creators of the pages. Our results showed a general tendency for homepage creators to believe the impression they gave to those who viewed their pages was more positive than was actually the case, and this discrepancy was greater than in face-to-face interactions. The source of online inaccuracy seems to lie in people’s belief that others develop the same impression of them in both online and offline contexts. In fact, perceivers are significantly influenced by whether the information they are receiving is based on face-to-face interaction or on cues obtained from a WWW homepage. Our data demonstrate that one of the challenges of social life in cyberspace is managing one’s online persona to take into account the limitations of metaperception.

INTRODUCTION

“Does my boss see me as competent?” “Do people perceive my sincerity?” “Have I come across the way I intended, as friendly and likeable?” These questions illustrate the importance we attach to knowing how others perceive us in face-to-face social interactions.¹² Our presumed knowledge about others’ views is often referred to as “metaperception,” and “impression meta-accuracy” is the extent to which we are correct in our assumptions about the impressions others have formed of us.² The processes by which people make judgments about how others view them and the accuracy of those judgments has received considerable attention from social psychologists.²⁻⁸ However, this past work has focused exclusively on face-to-face situations, and relatively little is known about meta-accuracy in online contexts. In this paper we explore the extent to which the same principles of face-to-face metaperception apply to metaperception in cyberspace.

There are a number of online instances in which impression meta-accuracy might be important. For example, accuracy in knowing the

Department of Psychology, Miami University, Oxford, Ohio.

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impression one gives in E-mail messages, chat interactions, and newsgroup postings would seem to be important in communicating effectively with a minimum of misunderstanding. The lack of cues that are normally available in face-to-face interactions may make this difficult. As Patricia Wallace has noted,

Managing your own impression on the Internet is like navigating white water with two-by-fours for oars. Your impression management toolkit is strangely devoid of the tools most familiar to you, and new ones appear that you may not know how to use. In a text-based environment, you can’t project your high status the way you could in visual mode—with impeccable grooming or a gold watch. Your commanding voice is silenced. Your contagious smile and raised eyebrow are invisible. Unless you bring up your own graphical Web site and direct others to it, the main tool you have to manage the impression others form about you is the QWERTY keyboard. (p. 28)

Techniques that people employ to overcome the impression-management restrictions of text-based communication include selecting expressive nicknames or “handles,” carefully crafting self-descriptions in chat rooms and online communities, and using paralinguistic cues such as emoticons and exclamation marks to convey emotion and feeling. Evidence suggests that these devices do influence the impressions others develop of the person using them, perhaps through the prototypes they stimulate in the perceiver. For example, the nickname “Timberwolf” may elicit an image of a rugged outdoorsman, independent and resourceful. In the absence of countervailing visual evidence, the impact of nicknames may be greater online than in face-to-face interactions and may lead to distorted impressions. Jacobson asked people to compare their impressions of others they had met online with their impressions of the same individuals after interacting with them face-to-face, and found that “... for most of the informants, offline experiences did not match online expectations.”

Predicting how a perceiver might respond to one’s nickname or to the paralinguistic cues embedded in a message would be necessary to be accurate in one’s metaperception. Another challenge to online meta-accuracy is the fact that the meanings of paralinguistic cues are highly context dependent. For example, Lea and Spears found that paralinguistic cues could have either positive or negative effects on people’s impressions of the author of an E-mail message, depending upon whether the common group identity of the author and the perceiver was salient. In the Lea and Spears study, perceivers interpreted an E-mail author’s use of paralinguistic cues as motivated to positively enhance group solidarity when group identity was salient, but as careless and presumptive when group identity was not salient. In order for authors to correctly gauge the impact of paralinguistic cues, they would have to be sensitive to the salience of group identity from the perceiver’s point of view.

A final challenge to meta-accuracy is the differential rate at which impressions develop in computer-mediated contexts versus face-to-face situations. Research by Walther has found that impressions formed online are initially less well developed than those formed in face-to-face interactions, but this difference diminishes over time. Although Walther did not assess meta-accuracy in his study, one implication of his data is that people may be less accurate in their metaperceptions in early stages of online interaction compared to offline, but as interaction continues the meta-accuracy of online and offline impressions converges.

As suggested by Wallace, WWW homepages may overcome some of the limitations of impression management in purely textual online environments. The graphical and hypertextual interface “... provides a richer medium for presenting the persona online” (p. 31). Indeed, the author of a homepage has a high degree of control over the self-image that is projected through the careful selection and arrangement of photographs and other graphical elements, as well as in the number and type of external links that can be chosen to convey interests, attitudes, values, and other personal qualities. This high degree of impression management has been characterized by some authors as being “hyperorpersonal communication”—communication of personal information that the sender can control far more than in normal face-to-face situations.
However, although the WWW homepage may provide a great deal of control and allow rich expression through graphics and hyperlinks, it poses its own set of problems for meta-accuracy. The homepage, unlike text-based or face-to-face interaction, is largely a one-way presentation medium. One consequence of this difference is that the focus shifts from concern for “dyadic meta-accuracy” in text-based and face-to-face interactions, to concern for “generalized meta-accuracy,” in homepages.2 Dyadic meta-accuracy refers to people’s ability to know how they are differentially regarded by other people, whereas generalized meta-accuracy refers to people’s ability to know how they are generally viewed by others in a particular audience. One difficulty facing the creator of a homepage is that neither the size nor the makeup of the audience is known. As described by Wynn & Katz12:

By contrast to the random nature of the homepage audience, in traditional self-presentation formats, professional or political, the nature and numbers of the audiences are explicit. In home page ‘advertisements for one’s self,’ audience is a self-selected unknown. There may be a presumption that the home page in and of itself will be an audience definer, but presenters have little knowledge of the range and size of potential audiences. It is thus possible to construct a presentation of self for an imagined audience while the actual audiences vary. (p. 319)

A homepage creator’s meta-accuracy would seem to require accurate assumptions about the characteristics of who is viewing one’s page. In face-to-face situations this is far easier than in cyberspace. As Wynn and Katz12 have put it, “At any given time and place in physical life, we can look around and see who else is there. Based on that assessment, we can adjust our presentation of self.” For homepage creators this is not possible, and may lead them to rely on assumptions that do not hold:

Some homepage creators appear to perceive a more private world of readers than is in fact the case. Frequently the pages are not so much personally private but are located at an intermediate level of privacy, the sheltered environment of a peer group or work group. The problem is that anyone can access these pages. That is a fact of their existence. Yet how much social understanding do the creators of pages have, and how accordingly do they mediate their self-expression to account for possibilities of a limitless audience?

In this study we attempted to answer Wynn and Katz’ question by comparing impression meta-accuracy of WWW homepage creators to meta-accuracy of people in face-to-face interactions. Our general prediction, based on the views discussed above, was that metaperception would be less accurate in cyberspace than in face-to-face interactions. However, there is considerable social psychological research that makes the magnitude of this difference less than certain. In particular, there is ample documentation of forces that may diminish accuracy in face-to-face interaction, despite the abundance of sensory and paralinguistic cues. For example, Gilovich and Savitsky4 have demonstrated a general egocentric bias in people’s appraisals of how they appear to others, stemming from a preoccupation with their own behavior, appearance, and internal states. This bias may lead people to overestimate how salient they are to others and how much others can detect their inner states and characteristics. In short, although there are good reasons to expect inaccuracy in the metaperceptions of homepage creators, there are also factors that may detract from the accuracy of metaperceptions in face-to-face contexts.

METHOD

Overview

Participants viewed several WWW homepages and recorded their impression of the creator of each page. A separate group of participants engaged in 10-minute dyadic sessions with 3–4 different partners and recorded their impressions of each partner. Homepage creators recorded the impressions they thought their pages would generate when viewed by other people. Participants in the face-to-face interactions recorded the impressions they thought they conveyed to their partners. In both the WWW and face-to-face contexts, the
targets of the impressions indicated how they thought others viewed them on the same rating scales used by the perceivers.

Participants

Participants who viewed WWW homepages were 120 volunteers (60 men and 60 women) from introductory psychology courses who received credit toward a research experience requirement for participating. The homepage creators were 40 undergraduates (20 men and 20 women) at the same institution who had responded to an E-mail request distributed to all students with homepages in the university directory. Creators received $10 for allowing their pages to be used in the study and for filling out the metaperception questionnaire (see below) online.

Participants who interacted in face-to-face sessions were 59 undergraduate volunteers (29 women and 29 men) from introductory psychology courses who received credit toward a research experience requirement for participating. None participated in the WWW portion of the study described above.

Materials

Impression ratings. Perceivers’ impressions were assessed using five 7-point rating scales: “How positive or negative is your overall impression of this person?” (1 = very negative, 7 = very positive); “How much do you like this person?” (1 = dislike very much, 7 = like very much); “How much in common do you think you have with this person?” (1 = very little, 7 = a great deal); “How clear or complete would you say your impression of this person is?” (1 = very unclear/incomplete, 7 = very clear/complete); “In general, how accurate a picture do you have of this person’s personality?” (1 = very inaccurate, 7 = very accurate).

Metaperception ratings. In the face-to-face condition, participants rated how they thought the other people they had interacted with would perceive them, using variations of each of the rating scales described above: “The overall impression that you conveyed to the other people about your personality was probably . . . “ (1 = very negative, 7 = very positive); “Based on your interactions with the other people, how much do you think they feel they have in common with you?” (1 = very little, 7 = a great deal); “How clear or complete do you think the impression is that the other people have of your personality?” (1 = very unclear/incomplete, 7 = very clear/complete); “In general, how accurate a picture of your personality do you think you conveyed during the interactions?” (1 = very inaccurate, 7 = very accurate). In the WWW homepage condition, the creators of the pages completed the same rating scales, with wording slightly modified to match the WWW context.

Procedure

WWW homepage condition. The 40 homepages were randomly grouped into 10 sets of 4 pages each. Three perceivers at a time reported to a computer lab and were given 5 minutes to view and explore each page in one of the sets, with the instruction to “form an impression of the person who created the page.” Participants worked independently. After viewing each page they rated their impression of the creator on the items described above. Creators of the homepages responded to the metaperception questionnaire online.

Face-to-face condition. Four participants (two men and two women) were scheduled for each experimental session. In a random sequence each person interacted with each of the other participants for 5 minutes each. The instructions for these interactions was simply to “get to know each other.” Immediately following an interaction the participants rated their impressions of each other on the scales described above. When all interactions were finished, each person in the group completed the metaperception questionnaire.

RESULTS

For each person in the face-to-face condition generalized impression indices were created by combining the ratings of those who had inter-
acted with the person. One index was created for each of the five impression items. Likewise, for each WWW homepage creator, indices were created by combining the ratings of the three people who had viewed his or her page.

These data were then analyzed using a 2(Source: Target vs. Perceiver ratings) × 2(Context: WWW vs. Face-to-Face) mixed model ANOVA with source as a repeated measure. We use the term “Target” here to refer to the person who is the focus of the impression ratings—the homepage creator in the WWW context and the individual interactant in the face-to-face context. There was a general tendency for targets to believe they were perceived more positively than they actually were, as revealed by higher ratings by targets than by perceivers on all five rating scales (cf. Fig. 1). However, on three of the five dimensions this tendency was moderated by the context, as indicated by significant Source × Context interactions for positivity/negativity of the impression, $F(1,194) = 8.10, p < 0.01$, liking, $F(1,194) = 14.37, p < 0.01$, and commonality, $F(1,194) = 6.87, p < 0.01$. As can be seen in Fig. 1, in all cases the perceiver/target discrepancy was greater in the WWW context, indicating lower meta-accuracy than in the face-to-face context. Simple effects tests of the differences between perceiver and target ratings confirm this pattern. In the WWW context the perceiver/target differences were significant (p's < 0.01) for three of the dimensions (positivity, liking, and commonality), whereas in the face-to-face context only the difference on one of the dimensions (accuracy) was significant.

The Source × Context interactions can also be interpreted as a tendency for perceivers' im-

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**FIG. 1.** Metaperceptions versus actual impressions for WWW homepages (top) and for face-to-face interactions (bottom). Higher ratings correspond to more positive judgments, greater degrees of commonality, completeness, and perceived accuracy.
pressions to be more influenced by Context (Web Page vs. Face-to-Face) than targets believed them to be. Analyses of the differences in ratings given in the WWW vs. face-to-face contexts were significant (p’s < 0.01) on three of the five dimensions (positivity/negativity, likeability, and commonality) for perceivers’ impressions, and on all three the means were more positive in the face-to-face context than for WWW homepages. None of the differences were significant for targets’ metaperceptions, indicating that the targets believed they were being perceived the same in both contexts. In sum, the source of targets’ inaccuracy was their underappreciation for how much impact context had on others’ impressions.

**DISCUSSION**

Our data provide clear evidence that people’s assumptions about how others view them in cyberspace may be inaccurate, at least with respect to impressions formed from WWW homepages. In general, our participants assumed that others’ impressions based on homepages were more positive than they really were, and that others saw them as more likeable and having more in common with them than was the case. In contrast, participants in our brief face-to-face interactions were rather accurate in gauging the impression others formed of them.

Our results are consistent with the general prediction we derived from analyses of the differences between online and offline impression formation processes. We have also been able to demonstrate that the source of online inaccuracy seems to lie in people’s belief that others develop the same impression of them in both online and offline contexts. In fact, perceivers are significantly influenced by whether the information they are receiving is based on face-to-face interaction or on cues obtained from a WWW homepage, and tend to develop less positive impressions on the basis of WWW homepages than on the basis of brief face-to-face interactions.

There are many possible reasons for the pattern we have observed in our study, and future research might profitably explore them. One involves the assumptions homepage creators make about interactivity—assumptions not shared by perceivers of their page. Specifically, homepage creators may believe that the experience they are constructing for the visitor is more interactive in the usual social sense than is warranted. As Wynn and Katz have observed:

The home page seems to bend over backward to pretend to be interactive by being preemptively disclosive about the self. Without the preliminaries of two people ‘feeling each other out’ to sense what would be appropriate to disclose, the homepage jumps to state ‘this is who I am.’ Who-I-am tends to be expressed in a photograph, a list of interests which are active by being clickable, and a list of friends which is also active. Thus one is invited unilaterally to engage in an exploration that normally would occur at least dyadically. Indeed the dyadic nature of it would be the purpose for finding out about the person in the first place. (p. 320)

Because creators of homepages seldom receive feedback regarding the reactions of others to their self-disclosure, they have no corrective mechanism for adjusting the impression they may be giving. We note that this limitation is less characteristic of E-mail exchanges, news group postings, and text-based chat interactions, leading to the prediction that metaccuracy would be greater in those contexts than with WWW homepages, though still probably less than in face-to-face interactions.

The “billboard” nature of the homepage medium, coupled with the tendency toward intimate disclosure suggested by Wynn and Katz, may also exaggerate egocentric biases that contribute to inaccuracy of metaperception in face-to-face contexts. Two such biases are the “spotlight effect” and the “illusion of transparency.” The spotlight effect refers to the tendency of people to assume others take more notice of certain details about their manner, dress, or physical qualities than is actually the case. To illustrate this effect, Gilovich and Savitsky asked college students to enter a room of peers wearing a T-shirt depicting an unpopular musical artist and afterward to estimate the number of observers who would remember who was pictured on the T-shirt. The participants
greatly overestimated the number who did, in fact, recall the artist. This example seems relevant to the WWW homepage context because in both instances the individual is assuming others will base their impression on information that may actually be ignored. If the person were to interact with others, either face-to-face or via some computer-mediated medium, this discrepancy might be detected and used to correct the metaperception. The lack of true interactivity of the homepage makes this unlikely.

The illusion of transparency refers to the tendency of people to believe that their internal states (emotions, attitudes, values, etc.) are more apparent to others than they actually are. This is particularly relevant because of the graphical nature of home pages, which often include photographs of the creator in various situations. To illustrate the effect, Gilovitch et al. had participants estimate how many observers would correctly detect their emotional state from brief videotapes of their facial expressions. Consistent with the illusion of transparency, participants greatly overestimated the extent to which their emotion was detectable by others. This type of error is correctable, as is the spotlight effect, through interaction that might make it clear to the target that the emotion had not been detected by observers. The lack of interaction in the homepage context prevents such corrective action.

The internet and the WWW have given us a variety of new ways to express ourselves—Email, chat rooms, news groups, and home-pages. Some of the challenges of self-presentation in cyberspace are the same as in face-to-face interaction—most notably the need for being accurate in our assumptions about how others view us. As we have seen, however, there are also special problems associated with the new modes of expression, and these may limit our meta-accuracy without our awareness. In the case of WWW homepages, the overall lesson from the work presented here is that we must learn to adjust our impression management techniques to accommodate the limitations of the medium. We suggest that such adjustments have been made in the past in response to other technologies (e.g., the telephone and the word-processed letter) and are a natural aspect of the evolution of social life.

REFERENCES


Address reprint requests to:
Richard C. Sherman
Department of Psychology
Miami University
Oxford, OH 45056
E-mail: shermarc@muohio.edu