

e-Perceptions: Personality Impressions Based on Personal Websites

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This research examined the accuracy of personality impressions based on personal websites, a rapidly growing medium for self-expression, where identity claims are predominant. Eighty-nine websites were viewed by 11 observers, who rated the website authors' personalities. The ratings were compared with an accuracy criterion (self- and informant reports) and with the authors' ideal-self ratings. The websites elicited high levels of observer consensus and accuracy, and observers' impressions were somewhat enhanced for Extraversion and Agreeableness. The accuracy correlations were comparable in magnitude to those found in other contexts of interpersonal perception and generally stronger than those found in zero-acquaintance contexts. These findings suggest that identity claims are used to convey valid information about personality.

Jessica has agreed to go on a blind date. She knows nothing about Ben except his name. Naturally, she wonders what he is like and she begins to browse the Internet for information. After entering his name into a search engine, she soon finds Ben's personal website; here she discovers that Ben has read all of Steinbeck's novels, minored in Eastern philosophy in college, pays homage to his heroes Ralph Nader and Malcolm X, and keeps meticulous records of his stamp collection. An impression begins to form of Ben in Jessica's mind as a quiet, intellectual, organized, politically liberal neat freak. But how accurate is Jessica's impression of Ben? Would other visitors to Ben's website form the same impression? Is the website giving Jessica an overly positive impression of Ben? How does Jessica's impression differ from the impression she would get from another source of information, such as actually meeting Ben or visiting his office?

Jessica's Internet sleuthing illustrates one of the myriad ways in which the Internet impacts modern social life (McKenna & Bargh, 2002). With the proliferation of Internet chat rooms, e-mail, newsgroups, and personal websites, the Internet has become a pervasive medium for social interaction. Indeed, over 50% of American

households have access to the Internet (U.S. Department of Commerce, 2002), and many people now use personal websites to communicate information about what they are like. According to one survey, even in 1998, more than one third of college students had personal websites (Greenfield Online, Inc. & Network Event Theater, Inc., 1998). Many also use websites as a way to learn about someone they barely know, a behavior that was recently deemed ethical (and common) by the New York Times ethics columnist Randy Cohen (2002). Personal websites provide individuals with a new outlet for presenting information about themselves to anyone who cares to read them. But what do we learn from websites? Some recent studies have examined the broader social consequences of the Internet (Bargh, McKenna, & Fitzsimons, 2002; Jacobson, 1999; McKenna & Bargh, 2000; Sherman et al., 2001) and interpersonal perception in experimental online chat rooms (Markey & Wells, 2002). However, despite the growing popularity and use of personal websites, none have examined the expression and perception of personality in these naturally occurring Internet contexts. One major goal of the present research was to examine interpersonal perception in the context of personal websites and to compare our findings with those from other real-world contexts.

The prevalence of personal websites in everyday life makes them an important phenomenon to study in their own right. However, personal websites are also useful because they provide an ideal context in which to examine interpersonal perception processes more generally. By exploiting the unique characteristics of personal websites and comparing personal websites with other contexts in which personality is manifested, researchers can disentangle the effects of deliberate self-expression from the effects of inadvertent expression, which are confounded in most contexts of social perception. To understand why it is useful to isolate these two sources of information, we next describe the theoretical model underlying this research.

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Theoretical Background: Mechanisms Underlying Interpersonal Perception

Recently, Gosling, Ko, Mannarelli, and Morris (2002) proposed a model of interpersonal perception that provides a useful framework for our research. The model was derived from research examining personality impressions based on personal offices and bedrooms, but it can easily be extended from physical environments to virtual environments, such as personal websites. The model specified two broad mechanisms by which personality is manifested in physical environments: identity claims and behavioral residue. Identity claims are symbolic statements made by individuals about how they would like to be regarded; these statements may be directed at the self or used to convey messages to others. For example, a student could decorate her dorm room with a poster of Albert Einstein, an icon of creative genius, to communicate to others her intellectual values. Identity claims can be quite subtle, such as displaying photographs of friends to reflect one's sociable nature, or quite explicit, such as stating one's beliefs. Behavioral residue, in contrast, refers to physical traces of a person's behavior left unintentionally. Behavioral residue can reflect behaviors performed inside the environment, such as a disorganized CD collection (reflecting a low frequency of tidying behaviors), or outside it, such as dirty soccer shoes (reflecting athletic activities performed elsewhere).

In their research on offices and bedrooms, Gosling et al. (2002) found that impressions based purely on physical personal environments converged with criterion measures of what the occupants were really like. For example, ratings of Openness to Experience made by observers who had inspected individuals' dorm rooms correlated .65 with criterion measures of the occupants' actual levels of Openness. These findings provided initial evidence for the hypothesized links between individuals and the spaces in which they dwell. However, their design did not permit direct tests of whether both proposed mechanisms actually contributed to observer accuracy. This is because it was impossible to distinguish between identity claims and behavioral residue in the contexts they examined (offices and bedrooms). For example, the dirty soccer shoes that seem like unintentional behavioral residue may also be intentional identity claims, deliberately left visible by the occupant to convey their athleticism to others. As a result, we now know that everyday cues do provide observers with information about an occupant's personality, but we have yet to uncover whether both mechanisms play a role.

To understand the impact of the individual mechanisms proposed in the model, the next step is to examine the mechanisms independently. By isolating the mechanisms, we can examine their unique roles in interpersonal perception. For example, we can examine whether observers can form accurate impressions of others based on identity claims alone or whether people use identity claims to convey biased messages about themselves. As we explain below, personal websites are an ideal environment in which to do this because they provide a large collection of identity claims while simultaneously minimizing the presence of behavioral residue.

Personal Websites as a Collection of Identity Claims

Unlike other contexts that have been examined (e.g., bedrooms), personal websites are a highly controlled context for self-

expression consisting almost entirely of identity claims. In fact, nearly every detail of a personal website is the result of a conscious decision on the part of the author. This allows website authors to create their online identity in a much more deliberate and calculated way than is permitted in other aspects of everyday life, where the inadvertent effects of behavioral residue can impinge on the impression one broadcasts. Of course, no real-world environment can be completely free of behavioral residue. Even websites may contain spelling and grammatical errors, broken links, and other unintentional cues. However, an environment such as a website, where the only behavioral traces are from construction of the website itself, comes very close to eliminating such cues. These characteristics of personal websites make them an ideal arena for isolating identity claims and examining their role in interpersonal perception while maintaining ecological validity.

Although personal websites are one clear manifestation of identity claims in everyday life, they are hardly the only common example; individuals decorate their homes, offices, cars, book bags, and clothes with identity claims. Indeed, any possession large enough for a sticker or pin can become a canvas for self-expression. What is the function of these identity claims? Clearly they are meant to convey a message. This raises the first question driving our research: Do the identity claims in personal websites convey a clear, consistent, and interpretable message about the author's personality? If so, two questions follow: How accurate is that message, and, independently, how much does that message reflect an idealized version of the author's personality? The high level of control associated with websites gives authors the opportunity to portray themselves in an overly positive light, so we examined the possibility that the messages conveyed by personal websites contain both accurate and enhanced components.

Present Study

The aim of the present study was to examine personality impressions based on personal websites. The theoretical framework for our study was based on Gosling et al.'s (2002) ecological model of interpersonal perception. Thus, we designed our study to follow the basic format of Gosling et al.'s studies on offices and bedrooms, addressing three broad questions of interpersonal perception: how much observers' impressions agreed with one another (*consensus*), whether observers could correctly identify what website authors were like (*accuracy*), and whether observers were forming overly positive impressions of the authors (*impression management*).

Question 1. Consensus: Do Personal Websites Provide a Coherent, Interpretable Message to Observers?

To the extent that websites provide coherent messages about their authors, observers' impressions of the authors will be consensual. There are two reasons to expect that consensus levels will be strong for impressions based on websites. First, because authors construct personal websites to be viewed by others, the websites are organized in a way that makes them easy to search exhaustively. Therefore, it is likely that all observers of websites are exposed to much of the same information. The amount of information overlap among observers is one of the parameters hypothesized in Kenny's (1994) weighted average model (WAM) to

influence interobserver consensus, with greater overlap leading to greater consensus.

A second reason to expect strong consensus for websites is derived from the fact that they are composed almost entirely of identity claims. Identity claims make use of symbols, which by definition have shared meaning. Kenny's (1994) WAM also predicts that this quality, similar meaning systems, should lead to greater consensus.

Thus, we expected consensus to be strong. To test this, we assessed the degree to which website raters formed similar impressions of the targets on the basis of personal websites.

On the basis of previous findings, we also expected that consensus would vary across the traits judged. We expected websites to hold many clues to an author's interests (e.g., from a list of hobbies or pictures of favorite activities), preferences (e.g., from references to music by their favorite artists), and values (e.g., from symbols and statements representing their religious or political beliefs). Therefore we predicted particularly strong consensus for website raters' judgments of Openness to Experience, which reflects individuals' interests, preferences, and values.

Question 2. Accuracy: Is the Message Conveyed by Personal Websites Accurate?

There is abundant evidence that personality impressions are usually quite accurate, even when based on minimal information. People can accurately predict the personality (Blackman & Funder, 1998; Borkenau & Liebler, 1992, 1993, 1995; Chaplin, Phillips, Brown, Clanton, & Stein, 2000; Funder & Colvin, 1988; Gosling et al., 2002; Kenny & Albright, 1987; Krueger & Funder, in press; Markey & Wells, 2002), behavior (Colvin & Funder, 1991; Funder & Sneed, 1993; Levesque & Kenny, 1993), intelligence (Borkenau & Liebler, 1993, 1995; Reynolds & Gifford, 2001), and liking (Kenny, Bond, Mohr, & Horn, 1996) of people they barely know. This growing body of research suggests that people have a natural talent for judging one another and that their judgments are not debilitated by bias and error as was once believed (Funder, 2001). In addition, personal websites provide almost limitless quantities of information in an easily accessible format. For these reasons, we expected accuracy correlations to be strong across all dimensions of personality. To test this prediction, we compared the website ratings with criterion ratings of what the authors were actually like.

We also expected that accuracy would vary across the traits judged, with accuracy being strongest for traits with many relevant cues present in websites. Specifically, we expected the greatest accuracy for Openness to Experience, because, as noted above, websites provide an ideal forum for expressing interests, preferences, and values.

Question 3. Impression Management: Is the Message Conveyed by Personal Websites Overly Positive?

According to impression management theory (Schlenker, 1980) people are motivated to control the impressions they make on others. The primary goal of their self-presentation is to gain approval and status from others (Hogan, Jones, & Cheek, 1985). They do so by manipulating information to bring others' views in line with their own ideal-self views (Higgins, 1987). Laboratory studies have shown that under certain circumstances, people at-

tempt to manage how they are seen by others (e.g., Leary et al., 1994; Leary & Kowalski, 1990; Sedikides, 1993; Stires & Jones, 1969; Tice, Butler, Muraven, & Stillwell, 1995). Personal websites are highly controllable conduits of information with few constraints imposed by reality, making them a good place to engage in strategic self-presentation. Thus, we examined whether websites broadcast enhanced portraits of their authors. Specifically, we tested Baumeister's (1982) claim that people are "guided by the desire to make one's public image equivalent to one's ideal self" (p. 3). To test this possibility, we compared the website ratings with the authors' ideal-self ratings.

Method

This study involved two phases of data collection. In the first phase, raters viewed personal websites and recorded their impressions of each of the authors' personalities. In the second phase, we obtained measures of personality from the website authors and from two informants. We also obtained ideal-self ratings from the website authors.

Target Websites

Personal websites and their authors were recruited through Yahoo!'s directory of personal websites¹ and were chosen using a random-selection algorithm. To test our questions, we needed to identify personal websites authored by a single individual. Therefore, for inclusion in the study, the websites needed to belong to one individual (not a family or business), and they needed to be personal (not selling or advertising a product). The author also needed to be at least 18 years of age. We excluded websites from authors living outside the United States in order to avoid introducing unnecessary language or cross-cultural complexities. In addition, to exclude the possibility that the website raters might get information by face-to-face exposure with the authors, websites belonging to residents of Austin, Texas (where the study was conducted) were excluded. We were concerned that the authors might alter their websites in response to being in the study. Therefore, we saved the websites (which were publicly accessible) before contacting the authors. The websites were saved onto CDs, including all links and pages associated with the websites. If we received consent, the previously saved sites served as the stimuli for the present research. If not, the websites were deleted. Of the 385 authors contacted, 89 replied and returned the consent forms.

Website Authors

Of the 89 website authors who returned the consent forms, 79 completed self-ratings. The average age of these participants was 31.4 years ($SD = 9.9$). Of the website authors who reported sex, 16 were female and 63 were male. Of the website authors who reported race, 5 were Asian, 1 was Hispanic, 1 was Middle Eastern, and 70 were White. In exchange for their participation, authors were offered feedback on their self-reports and on website raters' impressions of them.

Website Ratings

Eleven website raters independently made personality ratings of all 89 website authors based solely on an examination of the authors' websites. The website raters were undergraduate students working on the project as research apprentices. They were unacquainted with the participants and did

¹ To be listed in Yahoo!'s directory, websites must either be created through Yahoo!'s Geocities server or submitted to Yahoo! by the author for inclusion in the directory.

not discuss their ratings with one another. To reduce the risk of order effects, the order in which the website raters viewed the websites was varied systematically. Obviously, it was crucial that none of the website raters knew the website authors, so we asked the raters to notify us if they knew the authors (none did). We obtained consensus estimates by computing the intraclass correlation (ICC), ICC(2, 1), among the 11 website ratings (Shrout & Fleiss, 1979).

Accuracy Criterion

By what criterion should accuracy be assessed? We agree with Kenny's (1994) view that in an ideal world, behavioral measures of personality are the best criterion for accuracy. However, even Kenny acknowledged the impracticality of obtaining behavioral measures. The two best practical alternatives are self-reports and informant reports. Researchers disagree about which is more accurate, but most agree that both self-views and informant views contain large components of accuracy (Funder, 1987, 1995, 1999; Gosling, John, Craik, & Robins, 1998; John & Robins, 1994; Kolar, Funder, & Colvin, 1996; Levesque & Kenny, 1993; Robins & John, 1997a, 1997b; Wu & Clark, 2003). In order to draw on both of these perspectives on personality and to reap the benefits of aggregating personality ratings (Hofstee, 1994), we combined self-reports and informant reports into one accuracy criterion by taking the average of the three reports (one by the self and two by informants). This criterion measure was used to assess accuracy, though of course, like any measure, it contains an element of error and will not provide a perfect estimate of the authors' personalities.

The authors were directed to a website containing self-report measures, which they completed confidentially. Each author was also asked to nominate two people who knew them well and could provide informant reports. The informants were contacted by e-mail and directed to a website with the informant rating scales, which they completed confidentially. We assured the informants that the authors would have no way of knowing what the informants reported. We were able to obtain ratings from two informants for 70 of the authors, and ratings from at least one informant for 81 of the authors (including all of the authors who provided self-reports). The average number of years of acquaintance between the informants and the authors was 10.2 ($SD = 10.1$), and 146 of the 152 informants (96%) reported knowing the author they rated "quite well" or "very well." Informants were told the purpose of the study and were asked about their familiarity with the author's website. Most of the informants (92%) had seen the author's website, and some of them (22%) reported being "very familiar" with the author's website. The self-informant agreement correlations were .58 for Extraversion, .46 for Agreeableness, .51 for Conscientiousness, .36 for Emotional Stability, and .43 for Openness.² Averaged across the five dimensions examined in this study, the informant ratings correlated .47 with self-ratings and .40 with each other, values similar to those reported in previous research (Gosling et al., 2002; John & Robins, 1993). We obtained accuracy estimates by correlating the aggregated website ratings with the aggregated self- and informant ratings.

Ideal-Self Ratings

Criterion measures for impression management were derived from self-reports of ideal-self views from 79 of the website authors. These self-ratings were completed along with the self-reports of personality described above. To test whether authors were using websites in the service of impression management, we correlated the ideal-self ratings with the aggregated website ratings, after controlling for accuracy (i.e., self- and informant ratings of personality).

Instruments

We assessed the five factors of the five-factor model (FFM; McCrae & Costa, 1999), which allowed us to capture a broad range of personality

traits and at the same time make this research comparable with the substantial body of research using the FFM. Website ratings, self-ratings, and informant ratings of personality were assessed using the 44-item Big Five Inventory (BFI; John & Srivastava, 1999). The self-report version of the BFI shows high convergent validity with other self-report scales and with informant ratings of the FFM (Gosling, Rentfrow, & Swann, 2003). The BFI items were rated on a 7-point Likert scale ranging from 1 (*disagree strongly*) to 7 (*agree strongly*). In the present sample, alpha reliabilities for Extraversion, Agreeableness, Conscientiousness, Emotional Stability, and Openness to Experience averaged .87, .86, .88, .76, and .84, respectively, across the 11 observers; averaged .87, .88, .84, .84, and .85, respectively, across the two informants; were .85, .80, .86, .74, and .81, respectively, for the self-reports; and were .71, .81, .82, .75, and .84, respectively, for the ideal-self reports. These values are typical of those reported for the BFI (John & Srivastava, 1999). We also calculated the reliability of the aggregate of the 11 website ratings, ICC(2, k), and of the accuracy criterion, ICC(1, k) (Shrout & Fleiss, 1979). The reliabilities for Extraversion, Agreeableness, Conscientiousness, Emotional Stability, and Openness to Experience were .84, .81, .80, .71, and .84, respectively, for the aggregate of the 11 website ratings; and .68, .52, .63, .49, and .62, respectively, for the accuracy criterion (the aggregate of the self and two informants).

Results

Question 1: Do Personal Websites Provide a Coherent, Interpretable Message to Observers?

We predicted that website raters would agree about the targets' personalities solely on the basis of the targets' websites. To test this prediction, we calculated the level of agreement among website raters using ICCs, which assess rating reliability by comparing the variability of different ratings of the same subject to the total variation across all ratings and all subjects. The ICCs were positive and significant for all of the FFM dimensions, mean ICC(2, 1) = .27.

We further predicted that inter-rater consensus would vary across traits. To test this prediction, we computed inter-rater consensus separately for the five FFM dimensions. The mean pairwise consensus correlations for each trait are shown in the first data column of Table 1. Inter-rater consensus varied substantially across the traits. Of the FFM dimensions, Openness and Extraversion showed the strongest consensus, followed by Agreeableness and Conscientiousness. Consensus for Emotional Stability was significant but weaker.

Another way of conceptualizing consensus is in terms of target variance (Kenny, 1994). Therefore, we also measured consensus

² One reviewer noted that if authors and informants are similar in personality, and the informants are basing their ratings on assumed similarity, this could inflate the agreement between self- and informant ratings. That is, if extraverted targets tend to have extraverted informants, then target-informant agreement could be strong because the extraverted informants assume that others (in this case the target) are similar to themselves. Of course, this would result in an accurate appraisal of the target by the informant (through the mechanism of assumed similarity rather than accurate perception). However, Funder, Kolar, and Blackman (1995) have shown that people are not more similar to their friends and acquaintances than they are to strangers. With no reason to believe that targets and informants have particularly similar personalities, this correlation cannot be attributed to assumed similarity and is best interpreted as an accurate reflection of the agreement between the authors and their informants.

Table 1
Website Ratings: Consensus and Agreement With Accuracy Criterion, Self-Ratings, and Informants

Five-factor model dimension	Interobserver consensus (mean $N = 87$)	Observer accuracy ($N = 81$)	Single-observer accuracy (mean $N = 80$)	Observer–self r ($N = 79$)	Observer–informant r ($N = 81$)
Extraversion	.32**	.38**	.26**	.26*	.39**
Agreeableness	.28**	.28**	.17	.31**	.22*
Conscientiousness	.27**	.43**	.27**	.35**	.39**
Emotional Stability	.18*	.31**	.19*	.21*	.31**
Openness to Experience	.32**	.63**	.46**	.42**	.60**
<i>M</i>	.27**	.42**	.27**	.31**	.39**

Note. Interobserver consensus is the intraclass correlation, ICC(2, 1), for all 11 website raters. Accuracy is the correlation between the aggregated website ratings and the accuracy criterion (aggregated self and informant ratings). Single-observer accuracy is the average correlation between each observer and the accuracy criterion. The sample size varies across analyses because website ratings were available for 89 participants, informant reports were available for 81 participants, and self-reports were available for 79 participants.

* $p < .05$, one-tailed. ** $p < .01$, one-tailed.

by computing the target variance of the website ratings for each trait. To provide a comparison sample against which to interpret the magnitude of target variances in our study, we also report the target variances in zero-acquaintance studies (Kenny, 1994) in parentheses: The target variances were .27 (.27) for Extraversion, .19 (.03) for Agreeableness, .19 (.13) for Conscientiousness, .10 (.09) for Emotional Stability, and .22 (.07) for Openness.

Question 2: Is the Message Conveyed by Personal Websites Accurate?

To obtain an index of accuracy independent of the idiosyncrasies of any single rater (Block, 1961), we correlated the aggregated website ratings with the accuracy criterion (the aggregate of self- and informant ratings). Consistent with our hypothesis, the accuracy correlations were all positive and significant, averaging .42 across the FFM dimensions.

We further predicted that accuracy would vary across traits. To test this prediction, we computed accuracy separately for each of the FFM dimensions. The mean accuracy correlation for each trait is shown in the second data column of Table 1. Accuracy varied substantially across traits. Specifically, accuracy was strongest for Openness, followed by Conscientiousness, Extraversion, and Emotional Stability, and significant but weaker for Agreeableness.

These accuracy correlations were based on an accuracy criterion composed of both self- and informant reports. We argue above that this combined measure is the best available criterion for assessing observer accuracy. However, arguments could be made in favor of using either the self-reports alone or the informant reports alone as accuracy criteria. Therefore, the last two columns of Table 1 show what the accuracy correlations are when these alternative criteria are used. According to both criteria, the most accurately judged trait is still Openness and the second most accurately judged trait is Conscientiousness. However, the self-based criterion suggests Emotional Stability is the least accurately judged trait, and the informant-based criterion suggests Agreeableness is the least accurately judged. Despite these slight differences, all five traits are accurately judged regardless of which criterion is used.

We next examined two possible explanations for these strong accuracy correlations: information overlap and stereotype use. The first possible explanation is that the self-, informant, and website ratings were all based on the same information (i.e., the websites). That is, the informants and even the self may base their ratings not on their recollection of the target's behaviors but instead on the information contained in the websites. If both website raters and informants base their ratings on the websites, then rater–informant correlations should be stronger when both the raters and informants have access to the websites than when the informants have not seen the websites. To test this possibility, we correlated the aggregated website ratings with ratings from informants who had not seen the author's website ($n = 13$) and, separately, with ratings from informants who had seen the author's website ($n = 138$). These two accuracy correlations were almost identical (averaging .34 across the five dimensions for the first group and .35 for the second). Furthermore, moderator analyses revealed that the informant's familiarity with the author's website did not moderate the accuracy of the website ratings (all t s < 1.5 , all p s $> .15$). These results suggest that informants get their information from sources other than websites (e.g., from behavior) and that the accuracy findings are not conceptually circular.

Another potential explanation for these accuracy findings is that website raters were using accurate stereotypes. For example, if website raters hold and use the stereotype that older people are more conscientious than younger people, and if that stereotype is accurate, then accurate impressions should result. That is, rather than directly inferring Conscientiousness from the information on the website, the website rater could be using the website to estimate the age of the author and then judge the author's level of Conscientiousness from the author's estimated age.

Two attributes that can easily be discerned from websites and are commonly associated with stereotypes are sex and age. To test whether accuracy was driven by the website raters' use of accurate age and sex stereotypes, we conducted regressions using the demographic variable (author's age or sex) and the accuracy criterion to predict the website ratings. When the author's age was entered into the regression with the accuracy criterion, age did not predict

the website ratings on any of the five dimensions. However, when the author's sex was entered as a predictor variable along with the accuracy criterion, sex did significantly predict the website ratings on Agreeableness and Openness. These results suggest that accuracy for Agreeableness and Openness may have been partially driven by the website raters' use of correct sex stereotypes on these traits, with the women being accurately perceived as more agreeable and more open than the men in the sample. It is important to note, however, that the sex stereotypes account for only some of the accuracy; the accuracy criterion was a significant predictor of the website ratings in all analyses, despite the inclusion of the age and sex variables.

Note that these accuracy correlations are based on the aggregated website ratings, so they do not tell us how accurate a single observer would be when forming an impression on the basis of a personal website. To test this question, we computed 11 pairwise correlations between each website rater and the accuracy criterion. The means of the 11 pairwise correlations are presented in the third data column of Table 1. As shown in the last row of that column, the overall mean of these correlations is .27, showing that even the impressions of single observers were quite accurate.

Overall, the results provide strong evidence that impressions based on identity claims alone accurately reflect what the author is actually like. Considering that other than viewing the websites, the website raters had no contact whatsoever with the targets or the informants, the levels of accuracy are substantial.

Question 3: Is the Message Conveyed by Personal Websites Overly Positive?

We next tested the possibility that the websites were also providing information about the authors' ideal-self views and not just the authors' personalities. To do this, we computed the correlation between the targets' ideal-self ratings and the website ratings and compared these with the correlation between the accuracy criterion and the website ratings. Even after disaggregating the accuracy criterion,³ the website ratings still correlated more strongly with the accuracy criterion than with the ideal-self ratings. Nevertheless, the ideal-self ratings did correlate with the website ratings for Extraversion, Agreeableness, and Openness. However, there was considerable conceptual overlap in the two measures (accuracy criterion and ideal self). Ideal-self ratings probably have a reality component in addition to the bias components. Thus, we needed to isolate and test just the bias component to determine the degree to which website authors were going beyond accurate portrayals of themselves in the service of impression management. To do this, we conducted a series of regression analyses to remove the "reality" component and provide a purer measure of bias. These analyses would determine how much ideal-self views contributed to the website ratings, above and beyond what was contributed by the author's real personality (as measured by the aggregated accuracy criterion). Thus, for each FFM dimension, we conducted a regression of the website ratings on ideal-self ratings, controlling for the accuracy criterion: The accuracy criterion was entered in the first block of the regression equation, and ideal-self ratings were entered in the second block.

The results, presented in Table 2, show only moderate evidence for impression management over and above accurate self-portrayals. The first data column of Table 2 shows the regression

Table 2
Regressions of Website Ratings on Ideal-Self Ratings and Accuracy Criterion: Standardized Beta Weights

Five-factor model dimension	Step 1	Step 2	
	Accuracy criterion	Accuracy criterion	Ideal-self ratings
Extraversion	.38**	.31**	.24*
Agreeableness	.28*	.12	.34**
Conscientiousness	.43**	.43**	.03
Emotional Stability	.31**	.32**	-.04
Openness to Experience	.63**	.67**	-.07

Note. The first data column of this table is identical to the second data column of Table 1.

* $p < .05$. ** $p < .01$.

coefficients for the accuracy criterion alone (Step 1); these numbers are, of course, the same as the zero-order correlation coefficients shown in the second data column of Table 1. The second and third data columns of Table 2 show the regression coefficients for the accuracy criterion and the ideal-self ratings, respectively, when entered together. After removing the reality component from ideal-self ratings, the only traits that showed strong evidence of impression management were Extraversion and Agreeableness. That is, website raters saw the authors' levels of Extraversion and Agreeableness as the authors would like to be. It is also noteworthy that for four of the five characteristics, the beta weight for the accuracy criterion was stronger than the beta weight for the ideal-self ratings.

Discussion

In demonstrating that personal websites convey an accurate message about what a person is like, we have accomplished two goals. First, we have provided the first exploration of personality impressions based on this increasingly prevalent form of self-expression. Second, we have established that identity claims play an important role in interpersonal perception. It appears that the website raters in our study reaped the benefits of relying on the explicit symbols and easily interpretable messages provided by identity claims.

The Role of Identity Claims in Interpersonal Perception

The accuracy correlations in this study were statistically significant, but how should the magnitude of the correlations be interpreted? In order to provide a broader context for our findings, we compared our results with those of previous research in other domains of interpersonal perception. Specifically, we compared

³ To understand why we disaggregated the accuracy criterion, recall that the accuracy criterion was the aggregate of the self-report and two informant reports and as such would benefit from the effects of aggregation in terms of increased reliability. Therefore, to provide a fair comparison with the correlations between observer ratings and ideal-self ratings, we eliminated the effects of aggregation by recalculating the accuracy correlations from the mean of the three pairwise correlations between the observer ratings and each of the self- and informant reports.

the accuracy of impressions based on personal websites with the accuracy of personality impressions based on zero-acquaintance interactions and long-term acquaintanceships (Kenny, 1994; see Figure 1a) and with impressions based on offices and bedrooms (Gosling et al., 2002; see Figure 1b). Of these contexts, personal websites are the only ones that consist predominantly of identity claims. All other contexts contain substantial amounts of either behavior (i.e., in the face-to-face encounters plotted in Figure 1a) or behavioral residue (i.e., in the physical environments plotted in Figure 1b).

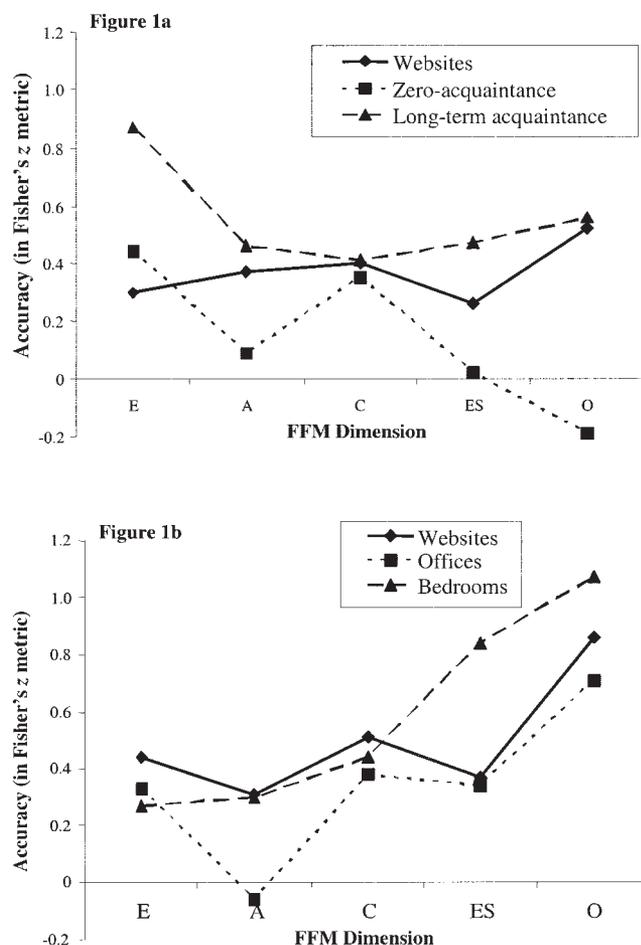


Figure 1. Observer accuracy across contexts. Figure 1a compares the accuracy of impressions based on personal websites (present study), zero-acquaintance contexts (Kenny, 1994), and long-term acquaintanceships (Kenny, 1994). To make comparisons with Kenny's (1994) data parallel, website accuracy has been recomputed as the agreement between website ratings and self-ratings. Figure 1b compares the accuracy of impressions based on personal websites (present study), offices (Gosling et al., 2002; Study 1), and bedrooms (Gosling et al., 2002, Study 2). Here, to make comparisons with Gosling et al.'s (2002) data parallel, accuracy is computed as the agreement between website ratings and the aggregate of self- and informant ratings. To make the findings comparable, all correlations have been corrected for unreliability. To provide a linear representation of the correlations on the y-axis, we report the correlation coefficients in terms of Fisher's z metric. E = Extraversion; A = Agreeableness; C = Conscientiousness; ES = Emotional Stability; O = Openness to Experience; FFM = five-factor model.

To make our accuracy results comparable to those reported by Kenny (1994), we recomputed our accuracy correlations in Figure 1a in terms of the agreement between website ratings and self-ratings. Figure 1a shows that the accuracy of impressions based on personal websites falls somewhere between the accuracy for the two extreme levels of acquaintanceship. That is, personal websites provide more information than brief interactions, but less than long-term acquaintanceships. For Extraversion, however, the FFM dimension most closely associated with styles of interpersonal behavior, websites contained less information than even very brief interactions. In contrast, for impressions of Openness, the FFM dimension most closely associated with values and interests, websites provide a great deal of information, about as much as is gained even from long-term acquaintanceship. The findings for Conscientiousness are interesting because they suggest that within the first few minutes of meeting someone, you know as much as you will ever know about that trait.

Figure 1b compares the accuracy of personality impressions based on virtual environments (i.e., personal websites) with the accuracy of impressions based on physical environments (i.e., offices and bedrooms). The accuracy criterion for these data is the aggregate of self-ratings and two informant ratings. Figure 1b shows that with a few exceptions (i.e., Agreeableness for offices and Emotional Stability for bedrooms), environments convey about the same amount of information across traits, whether they are physical or virtual environments.

Together, these graphs show that observers can learn at least as much about someone by viewing their website as they can from the person's bedroom, office, or a thin slice of behavior. This suggests that although some information is surely lost with the absence of behavioral residue, the identity claims in personal websites convey at least as much valid information about targets as do the identity claims, behavioral residue, and behaviors in the other contexts. This may reflect the fact that websites seem to be designed specifically for the purpose of self-expression and so provide a great deal of clear, interpretable information. In particular, identity claims are an especially valuable source of information when judging someone's Openness.

By highlighting the relative diagnosticity of the various contexts of interpersonal perception, these comparisons point to several important unanswered questions. What characteristics of bedrooms make them a particularly good context for judging Emotional Stability? What characteristics of personal websites make them a particularly good context for judging Openness? The current research on interpersonal perception in ecological contexts does not provide direct answers to these questions. However, interpersonal-perception contexts vary in the degree to which they share certain features. For example, both websites and physical appearance are relatively public forms of expression. Both websites and music preferences are subject to a high degree of control by an individual. By conceptualizing interpersonal-perception contexts in terms of such dimensions, commonalities can be identified and ultimately used to develop a general theory of the processes and parameters underlying the expression and perception of personality.

Two dimensions stand out as particularly important when comparing contexts: the public versus private and controlled versus uncontrolled dimensions. Figure 2 illustrates how these two dimensions can be combined to create a framework in which contexts can be placed. Identity claims are deliberate expressions

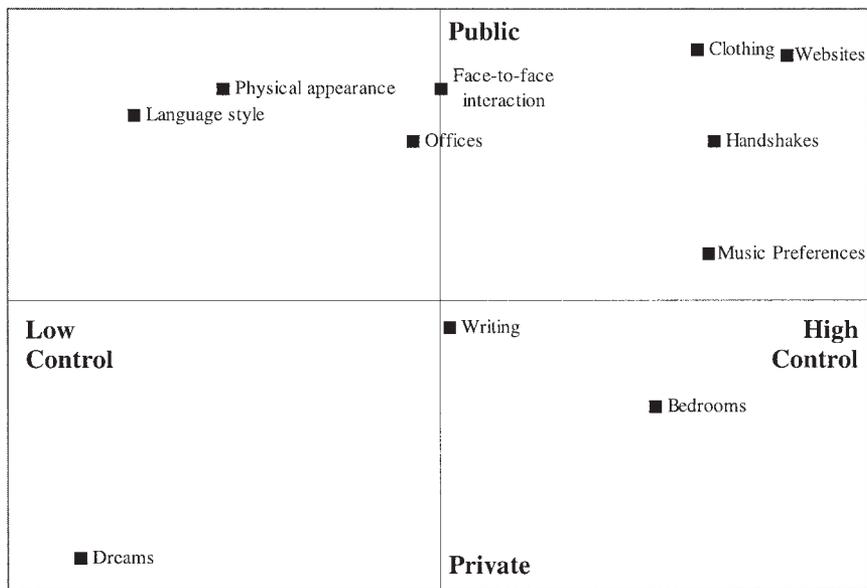


Figure 2. Dimensions of expression in everyday contexts: The properties of interpersonal-perception contexts can be conceptualized in terms of dimensions hypothesized to affect the expression of personality. Here we have placed several contexts within the space defined by crossing the public versus private and high-control versus low-control dimensions. These contexts are drawn from the literature: bedrooms (Gosling et al., 2002), clothing (Burroughs, Drews, & Hallman, 1991), dreams (Bernstein & Roberts, 1995), face-to-face interaction (Funder et al., 1995; Levesque & Kenny, 1993), handshakes (Chaplin et al., 2000), language style (Mehl & Pennebaker, 2003), music preferences (Rentfrow & Gosling, 2003), offices (Gosling et al., 2002), physical appearance (Berry & Finch-Wero, 1993), websites (present study), and writing (Pennebaker & King, 1999).

directed to the self and others. Therefore, we would expect them to be most common in contexts that are public and controlled, such as personal websites. We have included a number of example contexts from the literature and placed them where we think they might fit. As our example illustrates, not all areas of this model are equally full (e.g., there seem to be more high-control than low-control contexts). Dreams are one of the few private, low-control contexts that have been examined empirically (Bernstein & Roberts, 1995). However, empirical research is needed to determine where contexts fall on these dimensions and whether these dimensions affect the accuracy of personality judgment.

Another interesting dimension is anonymity. Previous research about the Internet (for a review, see McKenna & Bargh, 2000) is inconclusive about whether the anonymity and control provided by the Internet promotes more earnest self-disclosure (Gosling, Vazire, Srivastava, & John, 2004; Spears & Lea, 1994) or encourages people to present “false” selves (Turkle, 1994). Our results suggest that personal websites reflect both the authors’ “true” personalities and, to some extent, the authors’ ideal-self views. However, more research is necessary to determine whether accuracy in our study was achieved because or in spite of the anonymity, control, and public exposure of personal websites.

Future research should examine the influence of these and other dimensions on the expression and perception of personality in naturally occurring contexts. We predict that uncontrolled contexts should provide more information about evaluative traits than controlled contexts, because in controlled contexts people may alter their behavior and identity claims to present themselves in a more

positive light. For example, personality impressions based on audio recordings of daily life (mostly uncontrolled; Mehl & Pennebaker, 2003) should be more accurate on evaluative traits such as Agreeableness and Emotional Stability than impressions based on more controlled contexts (e.g., websites). In addition, we predict that because there are more identity claims in public than private contexts, ideal-self views should correlate more strongly with impressions based on one’s public spaces (e.g., living room) than with impressions based on one’s private spaces (e.g., bedroom). In addition to examining these predictions, future research should also examine questions that can best be tested experimentally. For example, researchers can examine how manipulating certain clues (e.g., adding or removing decorations in an office) can affect observers’ impressions, or whether people are able to manipulate their identity claims to elicit more or less positive impressions. Researchers may also want to examine narrower facets of personality; for example, it is possible that order or neatness (one facet of Conscientiousness) is conveyed through offices and bedrooms, whereas competence (another facet of Conscientiousness) is conveyed through interpersonal interactions.

Conclusion

We have established here that personal websites, which consist almost entirely of identity claims, can say a lot about a person. When viewing a website, observers form clear, coherent impressions of the author, and they tend to agree about what the author is like. Furthermore, their impressions are by and large correct.

Personality impressions based on websites agree with criterion ratings of what the authors are actually like, and accuracy is not affected by the informants' familiarity with the websites. The accuracy of these impressions is not due to the observers' use of sex or age stereotypes, and even a single observer's impression is considerably accurate. The website author's level of Openness to Experience is the easiest trait to judge accurately on the basis of a personal website. Ratings of Extraversion and Agreeableness, although accurate, tend to be enhanced.

With these findings in hand, we can now return to the questions with which we opened the article. Our findings suggest that Jessica's website-based impression of Ben as a quiet, intellectual, compulsively neat, politically liberal individual is probably close to the truth. Identity claims—at least those presented in personal websites—do convey accurate information about what people are like. Jessica can safely plan a date full of diverse cultural experiences and disclose her feminist political views, but she had better make sure she's tidied her chaotic apartment before inviting Ben in.

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