



## Brief Report

# Let me read your mind: Personality judgments based on a person's natural stream of thought

Shannon E. Holleran \*, Matthias R. Mehl

*Department of Psychology, University of Arizona, Tucson, AZ 85721, USA*

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### Abstract

Past research on the accuracy of personality judgments has largely focused on person perception scenarios that are public in nature (e.g., face-to-face interactions, personal websites). This study investigated the accuracy of personality judgments on the basis of highly private information: a person's natural stream of thought. Nine naïve judges rated the personality of 90 targets on the basis of their 20-min stream-of-consciousness essays. Judges' level of accuracy was significant and substantial for all Big Five dimensions. The substantial and relatively uniform accuracy across all Big Five dimensions suggests that a person's moment-to-moment thoughts provide good information for the accurate judgment of personality in general rather than specific diagnostic information for the accurate judgment of private traits such as Neuroticism.

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### 1. Introduction

Research on the accuracy of personality judgments has recently received considerable scientific attention. Yet, in this research, the selection of person perception scenarios on which the personality judgments are based has been driven largely by ecological and less by theoretical considerations. One important theoretical dimension along which person perception contexts differ is their private versus public nature (Vazire & Gosling, 2004). This dimension captures the degree to which information is directed toward and readily

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\* Corresponding author.

*E-mail address:* [shollera@email.arizona.edu](mailto:shollera@email.arizona.edu) (S.E. Holleran).

accessible to the self (private) or others (public). Several studies have investigated the accuracy of personality impressions based on relatively public contexts such as personal websites (Vazire & Gosling, 2004), face-to-face or email interactions (Funder, Kolar, & Blackman, 1995; Gill, Oberlander, & Austin, 2006) and office spaces (Gosling, Ko, Manarelli, & Morris, 2002). So far, however, very few studies have investigated the accuracy of personality judgments based on relatively private information about a person (Bernstein & Roberts, 1995).

Conceptually, it is reasonable to study personality judgments first and foremost within public contexts. Clearly, in the real world people have greater access to public (e.g., clothing or interaction styles) than private (e.g., arrangement of bedrooms, content of dreams) reflections of the self. Therefore, it is generally a person's public behavior that anchors people's first impressions. Consistent with this idea, research has shown that the observability of behavior is related to greater degrees of observer accuracy (John & Robins, 1993). It is in the nature of public behavior, however, that it is subject to forces that can constrain the natural expression of personality and consequently undermine the accuracy of person perceptions. Arguably the most important such force is the concern for impression management. For example, Jane may be aware that she is somewhat sloppy, but she may decide to dress up for an interview. Similarly, Mark may be aware that he gets easily anxious, but he may try to come across as relaxed and easy going on a date.

Studying personality judgments within person perception contexts that are public is therefore potentially limited in that public contexts may not provide the full array of information that is necessary to know what a person truly is like. Compared to publicly displayed behavior, private contexts can provide less readily visible yet important cognitive (e.g., current concerns), emotional (e.g., worries), and behavioral (e.g., peculiar habits) information that may facilitate the accurate judgment of personality. Thus, to develop a better understanding of the processes underlying accurate personality judgments, it is important to identify what personality relevant information is contained in private person perception contexts.

Two different predictions can be made regarding the information that is contained in private contexts. The first prediction assumes that private contexts contain information that selectively facilitates the accurate judgment of specific traits. Specifically, private contexts may provide information especially diagnostic information for the accurate judgment of private traits because an individual's uncensored, personal thoughts and feelings contain a unique amount of privileged private information (John & Robins, 1993). Support for this prediction would be obtained if judgments based on private information showed differential accuracy across the Big Five dimensions with accuracy being highest for Emotional Stability as a relatively private trait, lower for Agreeableness, Conscientiousness, and Openness, and lowest for Extraversion as a relatively public trait (John & Robins, 1993). Consistent with this prediction, Park and Judd (1989) found that Extraversion was overall easier to judge than Conscientiousness, but when the taped interviews focused on Conscientiousness-related information such as honesty and dependability, the difference between the judgments of Extraversion and Conscientiousness was minimized.

An alternative prediction assumes that private contexts contain diagnostic information about all traits because the information that is normally suppressed in public contexts can be expressed freely in private contexts. In other words, with no reason to filter the expression of certain traits, all traits will be perceived relatively accurately on the basis of private information. Private person perception scenarios, then, may provide good information for

the accurate judgment of personality because an individual's uncensored, personal thoughts and feelings may be saturated with personality-relevant information. Support for this prediction would be obtained if judgments based on private information showed strong accuracy for an array of both public (e.g., Extraversion) and private (e.g., Neuroticism) personality dimensions. Consistent with this prediction, Anderson (1984) demonstrated that listening to a person's thoughts and feelings leads to more accurate personality judgments than listening to a person's activities and hobbies presumably because thoughts and feelings are more relevant to personality than activities and hobbies. Also, Letzring, Wells, and Funder (2006) recently found that unstructured compared to structured getting-acquainted interactions allowed for greater displays of personality relevant information and lead to more accurate personality judgments.

The purpose of the current study was to examine what kind of personality-relevant information is contained in one important private context—a person's natural stream of thought. Our first goal was to determine the extent to which the information contained in a person's natural stream of thought allows for accurate personality judgments. The second goal was to test two competing predictions regarding the accuracy of personality judgments based on such information: that accuracy will be generally strong across all traits versus that accuracy will be selectively strong for private traits such as Neuroticism. To test these predictions, a group of naïve judges read stream-of-consciousness (SOC) essays written by a group of target participants. The SOC essays tracked targets' momentary thoughts over a period of 20 min. Finally, because the targets' SOC essays naturally varied along the dimension of how private versus public they were, our third goal was to test the extent to which the judges' accuracy was related to the relative privacy of the essays. Because our research questions focused on the judgment of personality at a broad and general level and because we wanted to maximize comparability with prior research in this area (e.g., Gill et al., 2006; Vazire & Gosling, 2004), we assessed personality at the level of the Big Five.

## 2. Method

### 2.1. Participants

Ninety undergraduate students (45 females, mean age  $M = 18.7$ ,  $SD = .9$ ) participated in the study for course credit. The students are a sub-sample of the 96 participants reported in Mehl, Gosling, and Pennebaker (2006) and Mehl (2006) for which SOC essays were available.<sup>1</sup> A team of 9 research assistants (8 females) served as naïve personality judges. None of the judges had any prior contact with the target participants.

### 2.2. Procedure

Each target completed a 20-min SOC writing exercise as part of a larger study introduced as an investigation into the psychological implications of the daily lives of college students (Mehl et al., 2006). The SOC writing exercise was modeled after Pennebaker

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<sup>1</sup> The SOC writing samples of 6 (4 male, 2 female) participants did not get stored because of temporary server problems.

and King (1999). Specifically, the targets received the following instructions: “For the next 20 minutes, write about whatever comes to your mind. Think about what your thoughts, feelings and sensations are at this moment. Write about them as they come to you; follow where your mind naturally goes”. Targets were asked to write continuously without stopping and not to pay attention to grammar or spelling. Targets were seated in individual sound-dampened cubicles and typed directly into a computer. Each target provided explicit consent that their essay could be used in future studies, but it was emphasized that the privacy and confidentiality of the essays would be protected. On average the targets wrote 766 words ( $SD = 277$ ). Topic wise, most targets wrote about their current thoughts, plans of the day, recent salient experiences, and recent or planned leisurely or school related activities.<sup>2</sup>

The judges were instructed to rate the targets’ personality upon reading each target’s SOC essay. Twenty-six of the 90 targets were rated by 9 judges, 57 by 8 judges, 1 by 7 judges, and 6 by 6 judges. To control for the effect of prior experience, the order in which the judges read the SOC essays was counterbalanced. Both the targets’ ratings of their personalities and the judges’ ratings of the targets’ personalities were assessed using the 44-item Big Five Inventory (BFI; John & Srivastava, 1999). The alpha reliabilities for Extraversion, Agreeableness, Conscientiousness, Emotional Stability, and Openness to Experience were .93, .86, .92, .88, .87, respectively, for the targets’ self-ratings and .86, .91, .91, .69, and .91, respectively, for the judges’ ratings of the targets’ personalities. In order to remove idiosyncrasies in scale use, personality impressions were standardized within judge and aggregated across all judges. Judges’ personality ratings were compared to targets’ ratings as an accuracy criterion.

To measure differences in the degree to which the SOC essays were relatively private versus public in their content, two new judges (who were not involved in the rating of the targets’ personalities) rated them on 5 items using a scale from 1 (not very much) to 7 (very much). Specifically, they rated (1) how private or personal the essay was, (2) how public the essay was (reverse coded), (3) how much the essay resembled a person’s natural stream of thought, (4) how aware the participant was that someone else was going to read the essay (reverse coded) and (5) how much the participant addressed an audience. Inter-judge agreement was high (average intraclass correlation ( $ICC[2, k]$ )  $r = .62$ ). The composite measure based on these 5 items (standardized within judge and aggregated across both judges) had good internal consistency ( $\alpha = .83$ ).

### 3. Results

Table 1 shows the consensus and accuracy correlations for judges’ personality ratings. Intraclass correlations (ICC) were calculated to determine the level of agreement among the judges. Inter-judge agreement was positive and significant for all Big Five dimensions (mean ( $ICC[2, 1]$ ) = .39). Consensus was highest for Openness to Experience (.53) and lowest for Extraversion (.25).

To determine the degree of accuracy of the judges’ ratings of the targets’ personalities based on the SOC essays, we correlated the aggregated personality ratings made by all nine raters with the targets’ personality self-reports. Across all Big Five dimensions, the mean

<sup>2</sup> Examples of SOC essays are available upon request from the first author.

Table 1  
Interobserver consensus and accuracy (judge–target agreement) for the stream-of-consciousness based personality judgments

Five-factor model dimension	Interjudge consensus	Judge accuracy	Single-judge accuracy
Extraversion	.25**	.37**	.25**
Agreeableness	.36**	.45**	.31**
Conscientiousness	.38**	.50**	.36**
Emotional Stability	.42**	.40**	.27**
Openness to Experience	.53**	.29**	.21*
Average	.39**	.40**	.28**

Note. SOC, stream of consciousness essays;  $N = 90$ ; Interobserver consensus is the intraclass correlation ICC [2, 1] for the 9 raters; judge accuracy is the correlation between the aggregated judges' ratings and the targets' self reports; single judge accuracy is the average correlation between each of the 9 judges and the accuracy criterion; average correlations were calculated using Fisher's  $r$ -to- $z$  transformation; \* $p < .05$ , one-tailed. \*\* $p < .01$ , one-tailed.

level of accuracy for the aggregated composite measure of the judges' impressions was .40. Consistent with the prediction that accuracy will be generally strong across all traits, the accuracy correlations were substantial and not higher for relatively private traits (e.g., Emotional Stability:  $r = .40$ ) than for relatively public traits (e.g., Extraversion:  $r = .37$ , Conscientiousness:  $r = .50$ ). Because the accuracy correlations based on a composite measure of nine judges do not provide information about the level of accuracy that a single judge achieved, we also computed the average accuracy for a single judge by averaging the bivariate correlations between each of the judges and the targets' self-reported trait ratings. The single-judge accuracy was significant and substantial across all Big Five dimensions (mean  $r = .28$ ).

Finally, to explore how differences in the relative private versus public nature of the essays affected the accuracy of the judges' ratings, we compared the average-judge correlations for essays that were below versus above the median on the privacy composite measure. Consistent with the notion that private information facilitates accurate judgments of personality, accuracy was (descriptively) higher for Extraversion ( $r_{\text{high}} = .43$  vs.  $r_{\text{low}} = .31$ ), Agreeableness ( $r_{\text{high}} = .56$  vs.  $r_{\text{low}} = .38$ ), and Emotional Stability ( $r_{\text{high}} = .48$  vs.  $r_{\text{low}} = .36$ ). Accuracy for Conscientiousness ( $r_{\text{high}} = .52$  vs.  $r_{\text{low}} = .51$ ) and Openness to Experience ( $r_{\text{high}} = .24$  vs.  $r_{\text{low}} = .29$ ) was not noticeably affected by the relative privacy of the essays.

#### 4. Discussion

A number of studies have investigated the accuracy of personality judgments using information contained within relatively public person perception scenarios (e.g., face-to-face interactions, handshakes, personal websites). In an attempt to complement these studies empirically and conceptually, the current project examined what information is contained in a prototypical private person perception context: a person's natural stream of thought. Naive judges formed impressions about targets' personality on the basis of short SOC essays. The level of accuracy was substantial and relatively uniform across all Big Five dimensions.

To benchmark our findings against findings from prior person perception research, we compared our results against other studies that employed a similar paradigm. Specifically,

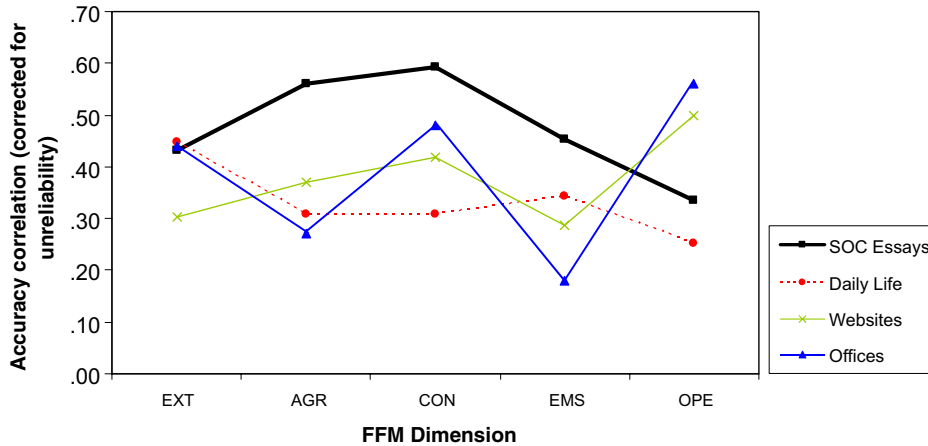


Fig. 1. The relative accuracy of personality judgments on the basis of stream-of-consciousness (SOC) essays (present study), daily life (same targets as present study; Mehl et al., 2006), websites (Vazire and Gosling, 2004), and offices (Gosling et al., 2002, Study 1). To make the findings comparable, all ratings have been corrected for unreliability; EXT, Extraversion; AGR, Agreeableness; CON, Conscientiousness; EMS, Emotional Stability; OPE, Openness to Experience, FFM, Five-factor model.

we compared our results with studies that used relatively public person perception contexts (Gosling et al., 2002; Mehl et al., 2006; Vazire & Gosling, 2004). Fig. 1 reveals that this study, compared to the selected studies, yielded somewhat higher levels of accuracy for judgments of Agreeableness, Conscientiousness, and Emotional Stability and comparable levels of accuracy for Extraversion and Openness to Experience.

To what extent do our findings support the two posited hypotheses? The first prediction stated that the level of accuracy for Emotional Stability would be uniquely high presumably because personal thoughts and feelings contain privileged private information that selectively facilitate the judgment of private traits. In contrast, the competing prediction stated that the level of accuracy would be substantial and relatively homogeneous across the Big Five dimensions presumably because a person's uncensored thoughts and feelings are saturated with personality-relevant information. As Fig. 1 shows, judges' accuracy when rating the targets' personality based on their natural stream of thought was high and relatively uniform across all Big Five dimensions and not selectively high for Emotional Stability. Therefore, the data support the idea that private information facilitates accurate personality judgments across a broad spectrum of traits. This hypothesis is further supported by the exploratory analysis that revealed that SOC essays that were judged as relatively private had higher accuracy correlations than essays that were judged as relatively public. This was true for all Big Five dimension except Openness.

Future research should expand on these findings by using an experimental approach to systematically manipulate private and public forms of self-expression (e.g., writing a private journal entry vs. a public online blog about oneself). Such an approach would allow directly contrasting the resulting patterns of accuracy and would provide stronger causal evidence regarding the role of public and private information in realistic personality judgments.

Judges' accuracy was relatively homogeneous but not the same across the Big Five dimensions. On a descriptive level, judges' accuracy was higher for Agreeableness, Consci-

entiousness, and Emotional Stability and somewhat lower accuracy Extraversion and Openness to Experience. Interestingly, this pattern bears some resemblance to the recent work by DeYoung (2006) on higher order meta-traits. DeYoung (2006) factor-analytically derived two meta-traits from the Big Five personality dimensions which he labeled stability and plasticity. Stability is comprised of Agreeableness, Conscientiousness, and Emotional Stability and encompasses motivational and emotional components of stability. Plasticity is comprised of Extraversion and Openness to Experience and reflects exploration of the social world through actions (Extraversion) or perceptually and cognitively (Openness to Experience). To the extent that the motivational and emotional components of stability reflect relatively internal processes and the exploration of the social world reflect a more external process, the higher levels of accuracy for the stability-related Big Five dimensions and somewhat (though not significantly) lower levels of accuracy for the plasticity-related Big Five dimensions map in interesting ways onto the private-public dimension that inspired this study. Given the scarcity of prior research on the topic, this study deliberately adopted a broad definition of privacy. In line with this broad definition, the judges' ratings of how private the essays were included several facets of the theoretical construct (e.g., the personal nature of the essay, awareness that someone else might read the essay, the presence of an implied audience). Future research should identify what aspects of privacy most critically affect the accurate judgment of personality.

The private and public nature of scenarios, however, is ultimately only one dimension along which person perception contexts vary. Vazire and Gosling (2004), for example, also proposed a high versus low controllability dimension. Whereas dreams tend to be low in controllability, personal websites are usually the results of thorough deliberation and design. Future research should systematically investigate the degree to which the two dimensions of public versus private and high versus low controllability individually and jointly account for different accuracy profiles. Empirically, the findings from this study suggest that a person's private thoughts and feelings provide good information for the accurate judgment of personality in general as compared to selective information for the accurate judgment of private personality characteristics. Conceptually, they point to the need to further our understanding of the process of person perception by studying the role of contextual affordances: From websites, offices, and handshakes to diaries, dreams, and stamp collections—the spectrum of everyday person perception scenarios is broad. Where should we look when we want to get to know a person? It is time to begin finding out exactly how “it depends”.

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### References

- Anderson, S. M. (1984). Self-knowledge and social inference II: The diagnosticity of cognitive/affective and behavioral data. *Journal of Personality and Social Psychology*, 46, 294–307.
- Bernstein, D. M., & Roberts, B. (1995). Assessing dreams through self-report questionnaires: Relations with past research and personality. *Dreaming*, 5, 13–27.

- DeYoung, C. G. (2006). Higher order factors of the big five in a multi-informant sample. *Journal of Personality and Social Psychology*, *91*, 1138–1151.
- Funder, D. C., Kolar, D. C., & Blackman, M. C. (1995). Agreement among judges of personality: Interpersonal relations, similarity, and acquaintanceship. *Journal of Personality and Social Psychology*, *69*, 656–672.
- Gill, A. J., Oberlander, J., & Austin, E. (2006). Rating e-mail personality at zero-acquaintance. *Personality and Individual Differences*, *40*, 497–507.
- Gosling, S. D., Ko, S. J., Mannarelli, T., & Morris, M. E. (2002). A room with a cue: Personality judgments based on offices and bedrooms. *Journal of Personality and Social Psychology*, *82*, 379–398.
- John, O. P., & Robins, R. W. (1993). Determinants of interjudge agreement on personality traits: The big five domains, observability, evaluativeness, and the unique perspective of the self. *Journal of Personality*, *61*, 521–551.
- John, O. P., & Srivastava, S. (1999). The Big Five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality theory and research* (pp. 102–138). New York: Guilford Press.
- Letzring, T. D., Wells, S. M., & Funder, D. C. (2006). Information quality and quantity affect the realistic accuracy of personality judgment. *Journal of Personality and Social Psychology*, *91*, 111–123.
- Mehl, M. R. (2006). The lay assessment of sub-clinical depression in daily life. *Psychological Assessment*, *18*, 340–345.
- Mehl, M. R., Gosling, S. D., & Pennebaker, J. W. (2006). Personality in its natural habitat: Manifestations and implicit folk theories of personality in daily life. *Journal of Personality and Social Psychology*, *90*, 862–877.
- Park, B., & Judd, C. M. (1989). Agreement on initial impressions: Differences due to perceivers, trait dimensions, and target behaviors. *Journal of Personality and Social Psychology*, *56*, 493–505.
- Pennebaker, J. W., & King, L. A. (1999). Linguistic styles: Language use as an individual difference. *Journal of Personality and Social Psychology*, *77*, 1296–1312.
- Vazire, S., & Gosling, S. D. (2004). e-Perceptions: Personality impressions based on personal web-sites. *Journal of Personality and Social Psychology*, *87*, 123–132.