Article

Social Curiosity and Interpersonal Perception: A Judge × Trait Interaction

Freda-Marie Hartung[1] and Britta Renner[1]

Abstract

The present study examined the impact of social curiosity on the utilization of social information and the accuracy of personality judgments. In total, 182 individuals who never met each other before were asked to interact for 10 minutes and afterwards to evaluate the personality (Big Five) of their interaction partner. High socially curious judges were more accurate in evaluating the degree of Extraversion and Openness of their interaction partners. Interestingly, high and low curious judges differed significantly in the utilization of verbal and nonverbal cues displayed by their interaction partner. Specifically, high socially curious judges more often used valid cues for inferring Extraversion and Openness. No differences in interpersonal accuracy and cue utilization were found for Neuroticism, Conscientiousness, and Agreeableness. The results suggest that high socially curious individuals are more accurate in judging visible traits and that this higher accuracy is grounded in a more comprehensive utilization of valid cues.

Recent theoretical conceptions of human functioning such as the "cultural animal" conception by Baumeister (2005; Baumeister, Zhang, & Vohs, 2004) emphasize that humans are designed by nature to participate in and belong to a community and culture. Accordingly, building and maintaining social relationships represent central human tasks (Baumeister & Leary, 1995; Dunbar, 2004).

However, our social world is highly complex and constantly changing. To function efficiently in such a challenging environment, humans need to learn the culture's knowledge and rules for behavior. To acquire the necessary social knowledge there has to be some innate eagerness for new information and willingness to learn about what other people in a community think, how they behave, and what they are likely to do next. Thus, the interest in gaining new information and knowledge about the social and cultural world appears to be a basic requirement for survival and adaptation. In line with this notion, already newborn babies show exploratory behavior (Ross, Rheingold, & Eckerman, 1972), and in contrast to other species, humans retain the interest and motivation to explore their environment across the life span (Baumeister, 2005; Giambra, Camp, & Grodsky, 1992). Accordingly, "social curiosity," defined as the desire to acquire new information about how other people behave, think, and feel, motivating exploratory behaviors, represents a basic motivational-behavior system (Renner, 2006)

that drives learning and development across the life span (e.g., Baumeister, 2005; Trudewind, 2000).

People might use various strategies to satisfy their social curiosity (Renner, 2006). For instance, they may take active steps to acquire information about other persons by asking them probing questions in the hope of unearthing hidden secrets. People can also use less intrusive methods for acquiring information about a person they are curious about, such as talking to the person's acquaintances or becoming especially attentive when others describe the person (Swann, Stephenson, & Pittman, 1981). People might also use covert, even privacy-violating strategies such as eavesdropping on conversations or observing people surreptitiously.

The attention to, and the active seeking for, new information facilitates and directs learning and understanding of new information (Berg & Sternberg, 1985; Raine, Reynolds, Venables, & Mednick, 2002; Trudewind, 2000). Accordingly, one could assume that greater social curiosity facilitates a

[1]University of Konstanz, Konstanz, Germany

Corresponding Authors:
Freda-Marie Hartung or Britta Renner, University of Konstanz,
Department of Psychology, Psychological Assessment & Health Psychology,
PO Box 47, 78457 Konstanz, Germany
Email: freda-marie.hartung@uni-konstanz.de or britta.renner@uni-konstanz.de

more accurate detection and utilization of available social information and as a consequence leads to more accurate perceptions of the social environment such as a more accurate perception of personality characteristics of one's interaction partners.

Social Curiosity and Interpersonal Perception: Detection and Utilization of Valid Social Information

Personality traits cannot be perceived through our senses—we cannot touch, smell, see, or feel them. Therefore, they need to be inferred through observable "cues" such as physical attributes and behaviors visibly or verbally displayed by the observed person. For forming an accurate impression about the personality of social interaction partners, it is essential that the judge attends to and utilizes cues that are valid indicators of the respective trait (Funder, 1999). In Brunswik's lens model, the actual relationship between observable cues on one hand (e.g., smiling) and a personality trait (e.g., Extraversion) on the other hand is called *cue validity*, whereas the relationship between cues (e.g., smiling) and the personality trait judgment given by the judge (e.g., "I have the impression, she is an outgoing person") is named *cue utilization*. The greater the match between cue validity and cue utilization, the greater the accuracy of the personality judgment (Borkenau & Liebler, 1992; Funder & Sneed, 1993; Gosling, Ko, Mannarelli, & Morris, 2002; Mehl, Gosling, & Pennebaker, 2006; Neyer, 2006). However, "cue utilization" is a necessary but not a sufficient process for accurate interpersonal judgments. As Funder (1999) detailed in his realistic accuracy model, accurate interpersonal perceptions depend on four different premises: (a) the target in general needs to display relevant cues for the respective personality trait (e.g., smiling for Extraversion), (b) the cues must be potentially available for the judge (e.g., displayed either visibly or audibly), (c) the judge must detect the relevant cues, and (d) the judge must accurately use ("utilize") the previously detected, available, and relevant information (Funder, 1999; Neyer, 2006).

Theoretically, individual differences in social curiosity may affect interpersonal perception through different pathways. First, socially curious people are more likely to actively seek out social situations to satisfy their interest in new social information (Renner, 2006; also see Litman & Pezzo, 2005). Being more often in social situations increases the opportunity to learn about the relationship between observable cues and personality characteristics. Supporting this notion, it has been found that social experience facilitates the making and refining of social judgments (e.g., Funder, 1999; Marangoni, Garcia, Ickes, &

Teng, 1995; Vogt & Colvin, 2003). Second, within a social situation, socially curious individuals are more likely to actively seek for new social information. Specifically, individuals interested in others tend to ask more questions (Fichten, Tagalakis, Judd, Wright, & Amsel, 1992) and to use gossip more extensively to obtain new social information (Litman & Pezzo, 2005, 2007; Renner & Hartung, 2010). A more active information-seeking style in turn might also increase the detection rate of new social information. And third, socially curious individuals might also utilize the available information more accurately. Berg and Sternberg (1985) argue that the process of dealing with novelty comprises both the preference for new stimuli and the ability to deal with it competently. Curious children do not only have a stronger preference for new stimuli, but they also develop more strategies of information extraction, focus their attention unerringly on informative aspects of situations, and attempt to explore these situations (Berg & Sternberg, 1985). Similarly, Trudewind (2000) showed that curious children concentrated more often on problem-relevant information and demonstrated a more appropriate problem-solving behavior. In a similar vein, adults with a higher trait interest show a more pronounced deep-level learning (Schiefele, 1999; Silvia, 2006). Accordingly, high socially curious individuals might detect more social information when they are in social situations, and they might utilize the new social information more accurately.

The Present Study

The central aim of the present study was to investigate the impact of individual differences in social curiosity on the process and accuracy of interpersonal perceptions. In a first step, we examined the accuracy of interpersonal perceptions for personality characteristics (Extraversion, Neuroticism, Openness, Conscientiousness, and Agreeableness). Specifically, we tested whether socially curious participants evaluate basic personality characteristics of their interaction partner more accurately than less socially curious participants based on self–other agreements.[1] In a second step, we examined the judgment process and tested whether individual differences in social curiosity affect the cue detection rate and cue utilization. In particular, we tested whether socially curious participants used more cues (cue detection rate) and whether they used more often valid cues (validity of cue utilization). Differences in social curiosity should be most pronounced in new social situations such as when meeting for the first time an unacquainted person. Therefore, in the present study, participants were asked about their impression of a person they just met for the first time and with whom they had previously briefly interacted to form an impression.

Method

Participants

A total of 202 citizens of the city of Bremen (Germany) were recruited for the study. Out of the 202 participants, the data sets of 10 participants and their respective interaction partners were excluded from further data analyses because they completed less than 70% of the questionnaire. For the remaining 182 participants, missing values were imputed prior to forming scales using the EM method in SPSS 14 (see Schafer & Graham, 2002). The 182 participants (74% women) were on average 55 years old (SD = 12, range = 18–85 years). More than half of the participants (54%) had a vocational training, 35% had a university degree, 5% had a high school degree, and 5% had no vocational training. Two participants did not indicate the kind of vocational training they had. In total, 39 mixed-sex dyads, 48 female dyads, and 4 male dyads took part in the study.

Procedure

All participants were recruited via a local newspaper. They responded to a short newspaper article promoting a study about "Social Relationships and Personality." The study was conducted at the Jacobs University Bremen. All participants were volunteers and were paid 5 EUR as compensation for their participation. The arriving participants were led into two separate rooms to ensure that they do not meet by occasion before the interaction took place. Each participant was given a questionnaire including self-report trait personality measures. After completing the preinteraction questionnaire, participants were led to another room where they met each other for the first time. Participants were told that they would have the possibility to get to know each other in the next 10 minutes before the study would continue. After about 10 minutes of interaction, they were led back to two separate rooms, where they filled in a second questionnaire. On the postinteraction questionnaire, they were asked to evaluate the personality traits of their interaction partner and to rate her or him on a list of cues.

Measures

Each participant provided self-ratings ("How would you describe yourself?"; preinteraction questionnaire) and rating for her or his interaction partner ("How would you describe your interaction partner?"; postinteraction questionnaire) on selected personality traits. All personality ratings were provided on a 4-point scale ranging from 1 (*definitely not true*) to 4 (*definitely true*). Item examples given below are translations from German.

Big Five. Personality traits for the self and for the interaction partner were measured by using the German version of

Table 1. Means (*M*) and Standard Deviations (*SD*) for the Big Five Traits

	Self-rating		Other-rating	
	M	*SD*	*M*	*SD*
Extraversion	2.80	0.45	2.71	0.41
Openness	3.15	0.38	2.79	0.41
Neuroticism	2.03	0.50	2.17	0.45
Conscientiousness	3.18	0.39	3.25	0.35
Agreeableness	3.19	0.35	3.17	0.36

the NEO-Five Factor Inventory (Borkenau & Ostendorf, 1993). Neuroticism (e.g., "feels often tense and jittery"; α = .84 and α =.85, for self- and other-ratings, respectively), Extraversion (e.g., "cheerful, high-spirited person"; α = .81 and α = .80), Openness (e.g., "is intrigued by patterns found in art and nature"; α = .69 and α = .77), Conscientiousness (e.g., "keeps belongings clean and neat"; α = .77 and α = .80), and Agreeableness (e.g., "tries to be courteous to everyone"; α = .71 and α = .78) yielded comparable Cronbach's alphas to those reported by Borkenau and Ostendorf (1993; Neuroticism α = .85, Extraversion α = .80, Openness α = .71, Conscientiousness α = .85, and Agreeableness α = .71). Means and standard deviations are displayed in Table 1.

Social curiosity was measured with the Social Curiosity Scale (SCS; Renner, 2006), which contains 10 items assessing a broad interest in the acquisition of new information about how other people behave, think, and feel that motivates exploratory behaviors ("is interested in other people," "likes to find out how other people 'work,'" "likes to listen to other people's conversation during train rides"; items are available at www.uni-konstanz.de/diagnostik/research _measures.htm). Each participant rated her or his interaction partner on the SCS. The internal consistency was good (α = .81) and comparable to previous results (α = .83; Renner, 2006). In accordance with Bernieri, Zuckerman, Koestner, and Rosenthal (1994; also see Funder, 1999), the sample was divided into high and low rated socially curious individuals on the basis of a median split of the SCS, with 97 high socially curious participants (M = 3.1, SD = 0.26) and 85 low socially curious participants (M = 2.4, SD = 0.26), t(180) = 15.21, p < .001.

The SCS has demonstrated in previous research, conducted with younger and older adults, satisfactory convergent validity with other curiosity measures (see Renner, 2006) and sufficient divergent validity to Neuroticism, Extraversion, and Agreeableness. For securing divergent validity for social curiosity and the Big Five traits (N, E, O, C, A) in the present study, a multitrait–multimethod perspective was taken (see Table 2). Social curiosity correlated positively with Extraversion and Openness whether the judge

Table 2. (Multimethod) Correlations Between Social Curiosity and Big Five Traits

Method	N	O	E	C	A
Target (SC)–Target (Big Five)[a]	.09	.12	.25	.00	.21
Judge (SC)–Target (Big Five)[b]	−.05	.09	.19	−.05	.02
Judge (SC)–Judge (Big Five)	−.16	.35	.39	.24	.09
Target (SC)–Judge (Big Five)	.00	.03	.13	−.01	.02

N = 182. N = Neuroticism; O = Openness; E = Extraversion; C = Conscientiousness; A = Agreeableness. Correlations greater than .15 are significant at *p* < .05.
a. Target (SC)–Target (Big Five) = correlation between target-rated social curiosity (SC) and target-rated Big Five trait.
b. Judge (SC)–Target (Big Five) = correlation between judge-rated SC and target-rated Big Five trait.

(other-rated) or the target (self-rated) perspective was taken. However, the correlations between social curiosity and the Big Five traits did not exceed in any case (respective method) *r* = .39. In addition, a joint factor analysis for the Big Five (N, E, O, C, A) and social curiosity indicated factorial validity for social curiosity: (a) the items of the SCS loaded on a factor separate from the items for the Big Five traits with loadings of .76 to .31 and (b) the SCS items showed no dominant loading on any of the Big Five factors. This holds true for both the judge and the target perspective. Taken together, the results consistently suggested that social curiosity is a distinct concept from the Big Five traits including Extraversion and Openness, and therefore the concept of social curiosity demonstrates sufficient divergent validity.

Cue ratings. To examine the process of personality judgments, all participants rated their interaction partner in respect to 63 physical attributes and behaviors after the interaction took place (see Tables 4 and 5). The 63 cues were extracted from previous studies on interpersonal perception and personality judgments (Borkenau & Liebler, 1992; Funder, Furr, & Colvin, 2000; Gifford & Hine, 1994; Hall, Coats, & Smith LeBeau, 2005). Specifically, the cue list included audible cues (e.g., deep–high voice), static visible cues (e.g., dark–light hair), dynamic visible cues (e.g., infrequent–frequent head movements), and conversational flow cues (e.g., failed to respond–responded to conversational advances). All cue ratings were provided on 7-point rating scales, whereby the item poles were labeled with the respective opposite terms (e.g., dark hair vs. light hair).

Emotional expressivity. Since targets can systematically differ in their expressivity, which affects the display of relevant cues for the respective personality trait (e.g., smiling for Extraversion), emotional expressivity was measured with the 15-item Emotional Expressivity Scale (EES) selected from the Social Skill Inventory (German version: Muck, 2003; original version: Riggio, 1986). Emotional expressivity reflects the ability to express, spontaneously and accurately, felt emotional states as well as the ability to nonverbally

express attitudes and cues of interpersonal orientation (Riggio, 1986). An example of an item is "facial expression is generally neutral." The coefficient alpha for the EES (α = .70) was comparable to the internal consistency reported by Muck (2003; α = .73).

Statistical Analysis

For examining the impact of individual differences in social curiosity on the accuracy of interpersonal perception, moderated regression analyses and correlation analyses were conducted. In line with numerous previous studies, accuracy of interpersonal perception was calculated on the basis of the correlation between the respective judge-rated and target-rated Big Five trait (see Beer & Watson, 2008; Borkenau & Liebler, 1992; Borkenau, Mauer, Riemann, Spinath, & Angleitner, 2004; Watson, Hubbard, & Wiese, 2000). To determine the differential effect of social curiosity on judgmental accuracy, differences between high and low socially curious judges were calculated using the effect size index Cohen's *q* (Cohen, 1992). Cohen has defined the following effect size conventions for *q*: small *q* = .1, medium *q* = .3, and large *q* = .5. According to previous research (see Kurtz & Sherker, 2003) moderated regression analyses were conducted with the judge-rated Big Five trait as dependent variable ("other-rated trait"). In three subsequent steps the independent variables were entered into the analyses: In the first step, the target-rated Big-Five trait ("self-rated trait") was entered, followed by social curiosity in the second step. In the third step, the interaction between social curiosity and target-rated Big Five trait, based on centered variables (Aiken & West, 1991), was entered. A significant interaction term indicates that judgmental accuracy, that is, the relationship between judge and target-rated Big Five trait, varied as a function of social curiosity.

Results
Accuracy of Interpersonal Perceptions

Each participant rated her or his interaction partner on Extraversion, Neuroticism, Openness, Conscientiousness, and Agreeableness. In accordance with previous research (e.g., Borkenau & Liebler, 1992; Watson et al., 2000) these other-rated personality characteristics (judge ratings) were correlated with the self-rated personality characteristics by the respective interaction partner (target ratings) to determine the accuracy of interpersonal perceptions. To control for differences in the emotional expressivity of interaction partners (targets), emotional expressivity was partialed out from the correlations between judge ratings and target ratings.

Across all participants, a significant correlation between judge ratings and target ratings emerged for Extraversion, *r*(179) = .37, *p* < .001, Openness, *r*(179) = .30, *p* < .001,
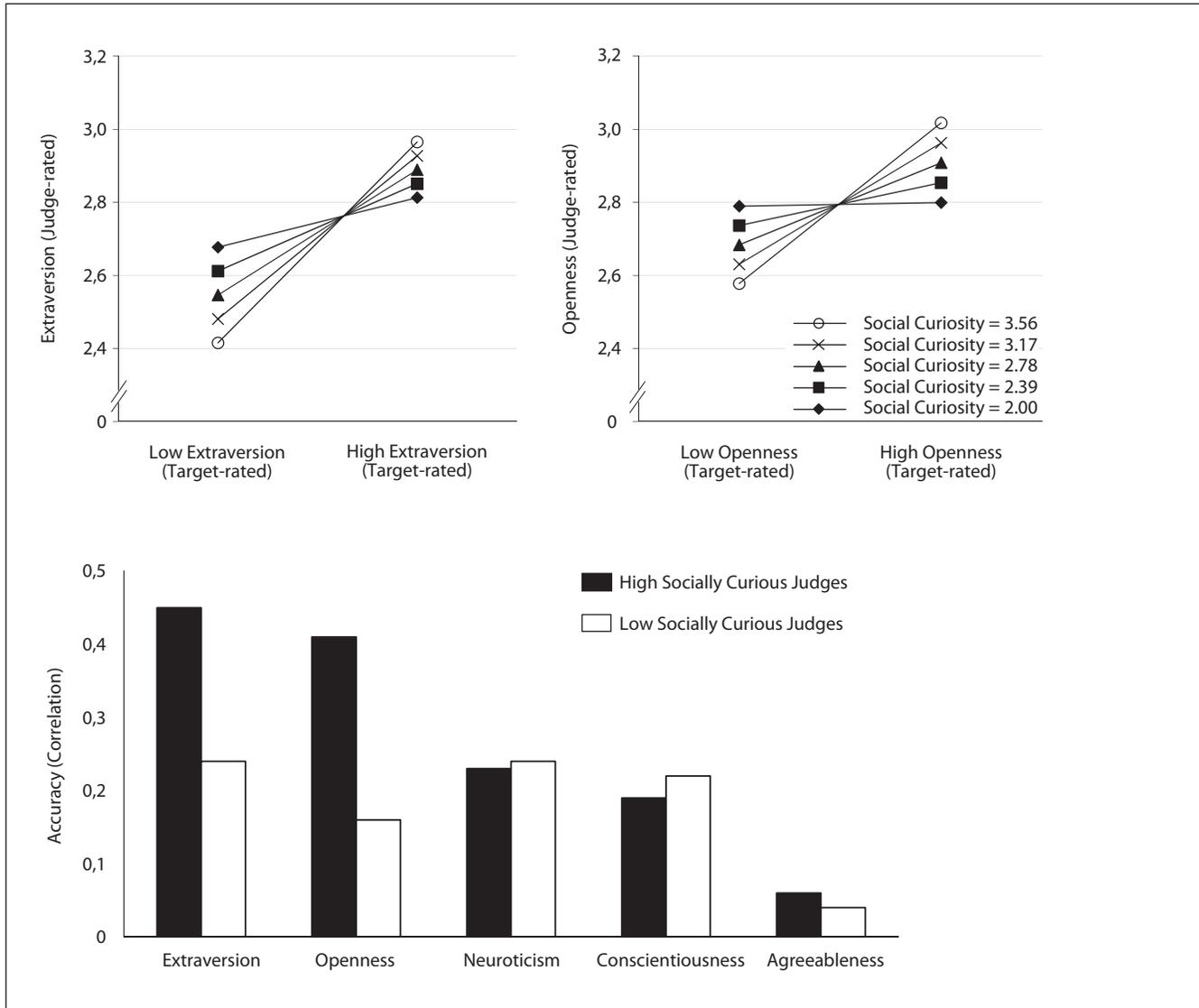
Figure 1. Judgmental accuracy (self–other agreement) as a function of social curiosity
Top: Moderated regression results; relationship between judge-rated Extraversion/Openness and target-rated Extraversion/Openness at different levels of social curiosity (simple slopes for ±2 *SD*, ±1 *SD* and *M*). Bottom: Discrete results; correlation between judge-rated and target-rated Big Five traits within high socially curious judges (*n* = 97) and low socially curious judges (*n* = 85).

Neuroticism, $r(179) = .24$, $p < .001$, and Conscientiousness, $r(179) = .20$, $p < .01$. For Agreeableness, no significant relationship was found, $r(179) = .05$, $p = .48$. Thus, for Extraversion, similar to previous studies, the highest interpersonal accuracy was observed, whereas for Neuroticism and Agreeableness a substantial lower accuracy was found (see Borkenau & Liebler, 1992). The pattern of results did not change substantially when emotional expressivity was not partialed out, with Extraversion, $r(180) = .40$, $p < .001$, Openness, $r(180) = .33$, $p < .001$, Neuroticism, $r(180) = .25$, $p < .001$, Conscientiousness, $r(180) = .20$, $p < .01$, and Agreeableness, $r(180) = .05$, $p = .48$.

Importantly, accuracy of interpersonal perception differed as a function of social curiosity (see Figure 1). Using a discrete approach based on a median split of social curiosity showed that high in comparison to low socially curious judges demonstrated a higher judgmental accuracy when evaluating their interaction partner in terms of Extraversion, $r(94) = .45$ vs. $r(82) = .24$, both $ps < .05$, Cohen's $q = .24$. When evaluating Openness of their interaction partner, high socially curious judges demonstrated again a higher accuracy in their judgments than low socially curious judges, $r(94) = .41$, $p < .001$, vs. $r(82) = .16$, $p = .15$, Cohen's $q = .28$. For the remaining three Big Five traits (N, C, A) no differences between

Table 3. Moderated Judgmental Accuracy: Hierarchical Regression Analyses With Other-Rated Big Five Trait as Dependent Variable

Interaction term	b		β		t-value	
Social curiosity × Extraversion	.31	(.32)	.14	(.14)	1.94*	(2.03)*
Social curiosity × Openness	.36	(.42)	.15	(.17)	1.98*	(2.32)*
Social curiosity × Neuroticism	−.15	(−.14)	−.07	(−.06)	−0.95	(−0.88)
Social curiosity × Conscientiousness	.00	(.00)	.00	(.00)	0.01	(−0.01)
Social curiosity × Agreeableness	.08	(.08)	.03	(.03)	0.42	(0.44)

N = 182. The interaction term was entered in a third step after main effects (self-rated Big Five trait; social curiosity) were controlled for; values not in parentheses were controlled for emotional expressivity of the target.
*$p < .05$.

high and low socially curious judges emerged, Neuroticism: $r(94) = .23$ vs. $r(82) = .24$, both $ps < .05$, Cohen's $q = −.01$; Conscientiousness: $r(94) = .19$, $p = .06$ vs. $r(82) = .22$, $ps < .05$, Cohen's $q = −.03$; Agreeableness: $r(94) = .06$, $p = .58$ vs. $r(82) = .04$, $p = .72$, Cohen's $q = .02$. A similar pattern of results emerged when emotional expressivity was not statistically controlled for.

Using moderated regression analyses for testing whether social curiosity moderated the degree of judgmental accuracy, replicated the pattern of results (see Figure 1 and Table 3). For Extraversion, the moderated regression analysis yielded a significant interaction term ($b = .31$, $p < .05$) indicating that the concordance between judge-rated and target-rated Extraversion varied in dependence of the social curiosity of the judge. As Figure 1 demonstrates, the more socially curious the judges were, the greater their judgmental accuracy when judging the degree of Extraversion of their interaction partner, with $b = .16, .28, .40, .53,$ and $.65$ for five levels of social curiosity (simple slopes were calculated for $−2\ SD$, $−1\ SD$, M, $+1\ SD$, and $+2\ SD$; see Aiken & West, 1991). Similarly, with increasing social curiosity the concordance between judge-rated and target-rated Openness increased as indicated by the significant interaction term ($b = .36$, $p < .05$). Plotting simple slopes for the different levels of social curiosity illustrates again that high socially curious judges demonstrated greater judgmental accuracy when evaluating the degree of Openness of their interaction partner than less socially curious judges ($b = .01, .16, .30, .45,$ and $.58$ for $−2\ SD$, $−1\ SD$, M, $+1\ SD$, and $+2\ SD$; see Figure 1). Conversely, judgmental accuracy for less visible traits such as Neuroticism, Conscientiousness, and Agreeableness was not moderated by social curiosity; all interaction terms $bs ≤ |.15|$, $ps > .33$. Moreover, a comparable pattern of results was observed when emotional expressivity was not statistically controlled for (see

Table 3). Thus, substantial differences in judgmental accuracy between high and low socially curious judges were found for Extraversion and Openness but not for Neuroticism, Conscientiousness, and Agreeableness.

Control Analyses

Similarity of trait characteristics and projection by the judge. Self–other agreement can artificially be inflated by projection or assumed similarity (Cronbach, 1955; Kenny, 1994). When the judge projects his or her own trait characteristics on the target, and the target actually possesses similar trait characteristics, judgmental accuracy is artificially increased. Similarity of trait characteristics also has methodological implications since within a reciprocal rating design each participant serves as both a judge and a target, potentially creating a nonindependence of the ratings (see Kurtz & Sherker, 2003). In the present study, interaction partners were unacquainted and were "combined" at random, which should theoretically prevent systematic dependencies in the data on a dyadic level. Nevertheless, interaction partners might have demonstrated substantial similarity, inflating accuracy through projection. However, pairwise intraclass correlations for participants' self-ratings within each Big Five trait determining similarity yielded no significant results, $r(180) = −.06$ to $.15$, $ps > .15$ (see Griffin & Gonzalez, 1995; Kenny, Kashy, & Cook, 2006). Moreover, a comparable pattern of accuracy across the Big Five traits emerged when the respective self-rated Big Five trait was statistically controlled for. Accordingly, dependencies within the present data were minimal, allowing analyses on the individual level and rendering inflated accuracy because of projection or assumed similarity processes as unlikely.

"Auto-trait" judgmental accuracy. Another alternative explanation for the present results could be that judges scoring high on a respective Big Five trait are particularly accurate in judging others on this specific trait (e.g., extraverts can better judge other extraverts; we would like to thank an anonymous reviewer for pointing out this idea). For testing this "auto-trait" judgmental accuracy, additional moderated regression analyses were conducted. However, no significant "auto-trait" judgmental accuracy was found. Moderated regression analyses yielded a nonsignificant interaction term for each of the Big Five traits, $bs < .15$, $ts(177) < 1.16$, $ps > .25$.

Emotional expressivity. To test whether high expressive targets were more accurately judged than low expressive targets, additional control analyses were conducted. Moderated regression analyses yielded no significant differences in judgmental accuracy in dependence of the emotionally expressivity of the respective target for Extraversion, Openness, Neuroticism, Agreeableness, or Conscientiousness, $bs < .31$, $ts(178) < 1.82$, $ps > .07$, for expressivity × trait interaction.

Process of Interpersonal Perception: Cue Detection Rate and Validity of Cue Utilization

In a second step, the process of interpersonal perception was examined. Specifically, the cue detection rate and the validity of cue utilization in dependence of interindividual differences in social curiosity were tested. Because the coding of the cues is arbitrary, a principal components analysis was conducted, and all cues were coded afterward as such that they loaded positively on the first factor. Emotional expressivity of interaction partners (targets) was controlled for through partial correlation.

Cue detection rate. We hypothesized that high socially curious judges might be more accurate when judging personality traits of their interaction partner than low socially curious judges because they detect more cues for inferring the respective personality trait. Accordingly, socially curious judges should detect more cues when judging Extraversion and Openness, and consequently, they should have based their judgment on more information. To determine the cue detection rate, the 63 assessed cues were correlated with the personality judgments provided by the judge. Tables 4 and 5 (right side) present the observed utilization of the 63 cues for Extraversion and Openness for high and low socially curious judges, respectively. Cues that correlated significantly with the personality judgments provided by the judge in relation to the total number of cues assessed represent the cue detection rate. Supporting the cue detection hypothesis, the results show that high socially curious judges used 46% of the 63 cues for inferring Extraversion (29 out of 63 cues). In contrast, low socially curious judges used only 27% of the 63 cues for inferring Extraversion (17 out of 63 cues). Thus, high socially curious judges based their personality judgment on more cues than low socially curious judges; however, this difference was only marginally statistically significant, $\chi^2(1) = 3.14$, $p < .08$. A similar picture emerged for Openness. High socially curious judges used 51% of the cues for inferring Openness (32 out of 63 cues), whereas low socially curious judges used only 25% (16 out of 63 cues) of the cues, $\chi^2(1) = 5.34$, $p < .05$. High socially curious judges in comparison to low socially curious judges also used more cues when inferring Neuroticism (25 vs. 8 out of 63 cues) or Conscientiousness (20 vs. 9 cues out of 63 cues), χ^2s$(1) > 4.17$, ps $< .05$. High and low socially curious judges showed no difference in the cue detection rate when inferring Agreeableness (16 vs. 17 cues out of 63 cues), $\chi^2(1) = 0.04$, $p = .86$.

Validity of cue utilization. In a second step, we tested whether the detected cues were actually valid, that is, predictive for the respective personality trait (see Figure 2 for an illustration). Thus, the match between cue utilization and cue validity was assessed (see Borkenau & Liebler, 1992; Gosling et al., 2002). Cue utilization was determined by the correlation

between a cue (e.g., unpleasant–pleasant voice) and the personality ratings provided by the judges (e.g., Extraversion). For example, interaction partners with a more pleasant voice were judged as being more extraverted by high socially curious judges, $r(179) = .26$, $p < .05$, whereas low socially curious judges did not use this cue to judge the degree of Extraversion of their interaction partners (see Table 4, right columns). Accordingly, cue utilization correlations indicate the extent to which the judges utilized the cue to judge the respective personality trait of their interaction partners. Cue validity was assessed by the correlation between cues and self-ratings provided by the interaction partners (see the first column of Tables 4 and 5). Thus, cue validity correlation coefficients show the extent to which cues were actually related to the respective trait of the targets. For example, targets with a more refined appearance rated themselves as being more extraverted, $r(179) = .24$, $p < .05$ (see Table 4, first column).

For assessing the validity of the cue utilization, cue validity coefficients were correlated with cue utilization coefficients (e.g., correlation between columns 1 and 3 of Table 4; also see Figure 2 for an illustration). These so-called vector correlations provide information on to what extent the rank ordering in cue validity correlation coefficients matches the rank ordering in cue utilization correlation coefficients. Consequently, a high vector correlation coefficient indicates that the more valid a cue is, the more it has been used by the judges. Thus, vector correlations reflect the extent to which judges infer the traits appropriately from the available cues (see Borkenau & Liebler, 1992; Funder & Sneed, 1993; Gosling et al., 2002). The present vector correlations are based on the 63 cue validity correlation coefficients that were correlated with the 63 cue utilization correlation coefficients. Taken together, for each personality trait 126 correlations were calculated, whereby 63 correlations represent the cue utilization side and 63 correlations represent the cue validity side. All correlations for cue utilization and cue validity were Fisher's Z transformed before vector correlations were calculated.

Across all participants, a substantial vector correlation between cue utilization and cue validity emerged for Extraversion, $r(61) = .64$, $p < .001$, Openness, $r(61) = .51$, $p < .001$, Neuroticism, $r(61) = .59$, $p < .001$, and Conscientiousness, $r(61) = .33$, $p < .01$.[2] For Agreeableness, no significant relationship was found, $r(61) = .19$, $p = .14$. Thus, similar to previous studies, the highest vector correlation was observed for Extraversion (see Borkenau & Liebler, 1992).

To assess the validity of cue utilization as a function of social curiosity, validity of cue utilization was determined separately for high and low socially curious judges (see Figure 3). For statistically comparing vector correlations, correlation coefficients were Fisher's Z transformed and Fisher's Z tests were conducted.

Table 4. Cue Validity and Cue Utilization Correlations for Extraversion

		Cue utilization correlations	
Cue validity correlations	Cues	High socially curious judges	Low socially curious judges
Audible cues			
.05	Weak–powerful voice	**.34**	.18
.13	Voice wavers–calm voice	**.30**	.04
.15	Unpleasant–pleasant voice	**.26**	.15
−.01	Deep–high voice	−.02	.09
.01	Loud-voiced–soft-voiced	−.03	.04
.10	Haltingly–fluently speaking	**.41**	**.37**
−.06	Difficult–easy to understand	.19	.11
.01	Mumbles–articulates	.15	.10
.03	Strong dialect–standard language	−.02	.08
.03	Hectic–calm speaking	−.05	.10
Static visible cues			
.13	Unfashionable–fashionable dress	**.41**	.14
.24	Unrefined–refined appearance	**.40**	**.30**
.27	Plain–showy dress	**.21**	.18
.10	Not made-up–made-up face	.19	−.14
−.10	Usual–unusual appearance	.14	.02
.05	Light–dark garments	−.06	.01
−.05	Formal–informal dress	−.11	**.41**
.10	Unstylish–stylish hair	**.35**	**.29**
.04	Dark–light hair	.15	.04
−.01	Short–long hair	.09	.05
.04	Ill–well-proportioned body	**.38**	**.24**
.05	Less–more muscular physique	**.31**	.15
−.04	Short–tall stature	.01	.01
−.05	Stout–slim physique	.00	−.03
.20	Timid–self-assured expression	**.58**	**.32**
.23	Serious–unconcerned expression	**.39**	**.26**
.12	Grumpy–friendly expression	**.38**	**.31**
.23	No smiling–extensive smiling	**.33**	**.39**
.03	Thin–full lips	**.28**	−.11
.08	Inexpressive–expressive face	.13	.17
.01	Small–big eyes	.11	.00
.11	Childlike–mature face	.03	.14
.02	Hard–soft facial lineaments	.03	**.24**
−.05	Round–thin face	−.04	.00
.08	Controlled–relaxed sitting	**.28**	**.38**
.04	Avoided–looked into the camera	.05	.05
−.01	Closed–open arms while sitting	−.03	.10
Dynamic visible cues			
.18	Infrequent–frequent head movements	**.38**	.03
.11	Infrequent–frequent hand movements	**.28**	.20
.08	Slow–fast movements	**.28**	.01
.02	Moved around a little–a great deal	**.24**	**.25**
.05	Stiff–relaxed walking	.17	.10
.10	Nervous–relaxed movements	.15	**.22**
.09	Touched own body rarely–frequently	.12	.12
.02	Dragged–lifted feet while walking	.10	−.11
−.04	Small steps–long strides	−.12	.08
.01	Degree of arm swinging while walking	−.16	−.09
Conversational flow cue			
.24	Had to be asked for information about self–volunteers a large amount of information about self	**.48**	−.06
.09	Told not much about self–told a lot about self	**.36**	.04

Table 4. (continued)

Cue validity correlations	Cues	Cue utilization correlations	
		High socially curious judges	Low socially curious judges
.17	Expressed affect rarely–expressed affect frequently	**.35**	.10
−.03	Avoided–engaged in eye contact	**.30**	.08
.16	Let conversation break off–kept conversation going	**.28**	**.36**
.03	Failed to respond–responded to conversational advances	**.23**	.03
.13	Did not make compliments–made compliments	**.20**	−.12
.08	Had not spoken much–had spoken a lot	**.20**	**.27**
.01	Talked rather at–talked rather with me	**.20**	.21
.13	Asked few questions–asked many questions	.19	**.28**
.10	Had few back-channel questions–had a lot of back-channel questions	.17	.05
−.05	Ignored–was responsive to what I had to say	.13	**.27**
.07	Replied shallowly–replied in detail to questions	.12	.16
.01	Expressed agreement rarely–expressed agreement frequently	.11	.05
.11	Avoided–approached physical contact	.10	.04
−.13	Interrupted me frequently–rarely	−.11	.00

All significant correlations ($p < .05$) are displayed in bold.

High socially curious judges demonstrated a high validity of cue utilization for Extraversion, vector correlation $r(61) = .67, p < .001$. Thus, their cue utilization corresponded highly with the actual cue validity (also see Figure 4). Conversely, low socially curious judges demonstrated a comparable lower validity of cue utilization for Extraversion, vector correlation $r(61) = .30, p < .05$. Thus, high socially curious judges demonstrated a significantly better match between cue utilization and cue validity than did low socially curious judges, $Z = 2.75, p < .01$, Cohen's $q = .50$. A similar pattern was found for Openness. High socially curious judges, vector correlation $r(61) = .57, p < .001$, were more able to use the available cues in a more valid way than low socially curious judges, vector correlation $r(61) = .14, p = .26; Z = 2.78, p < .01$, Cohen's $q = .51$ (also see Figure 4). High and low socially curious judges demonstrated an equal validity of cue utilization in the context of Neuroticism, $r(61) = .50$ vs. $r(61) = .40, ps < .001; Z = 0.69, p = .49$, Cohen's $q = .13$, Conscientiousness, $r(61) = .30, p < .05$ vs. $r(61) = .23, p = .07; Z = 0.41, p = .68$, Cohen's $q = .08$, and Agreeableness, $r(61) = .15, p = .25$ vs. $r(61) = .16, p = .20; Z = −0.06, p = .96$, Cohen's $q = −.01$. Thus, high and low socially curious judges differed substantially in terms of their general validity of cue utilization in the case of Extraversion and Openness, but not for the other three personality traits, mirroring the results found for judgmental accuracy.

Differential validity of cue utilization. In a third step, it was examined whether the greater validity of cue utilization found for high socially curious judges was grounded in a general better valid cue utilization independent of the specific cue type used (e.g., audible, static visible cues) or whether it was caused by a better valid cue utilization specific to certain cue types. For these analyses, the 63 cues were divided into four cue categories: (a) audible cues (e.g., unpleasant vs. pleasant voice; $n = 10$ cues), (b) static visible cues (e.g., plain vs. showy dress; $n = 27$ cues), (c) dynamic visible cues (e.g., infrequent vs. frequent hand movements; $n = 10$ cues), and (d) conversational flow cues (e.g., let conversation break off vs. kept conversation going; $n = 16$ cues; for cue categorization also see Borkenau & Liebler, 1992).

As Figure 5 depicts, high socially curious judges used more cues in any of the four cue categories for judging Extraversion or Openness in comparison to low socially curious judges, whereby the difference was most pronounced for audible and conversational cues. For Openness, the percentage of used cues increased to 70% for audible cues and to 75% for conversational flow cues within high socially curious judges. Conversely, low socially curious judges demonstrated a percentage rate of used cues of 40% for audible cues and 38% for conversational cues. Thus, they also used a greater percentage of audible and conversational cues when judging Openness but to lesser degree than high socially curious judges.

Moreover, high socially curious judges demonstrated a higher validity of cue utilization for Extraversion and Openness within all four cue categories (vector correlations $r = .49$ to $.79, dfs < 25$) in comparison to low socially curious judges (vector correlations $r = −.05$ to $.48, dfs < 25$; also see Table 6). Thus, high socially curious judges demonstrated a significantly better match between cue utilization and cue validity than low socially curious judges within each of the four different cue categories.

Table 5. Cue Validity and Cue Utilization Correlations for Openness

Cue validity correlations	Cues	High socially curious judges	Low socially curious judges
		Cue utilization correlations	
Audible cues			
−.09	Weak–powerful voice	.04	.11
.04	Voice wavers–calm voice	**.35**	.11
.14	Unpleasant–pleasant voice	**.53**	**.25**
.03	Deep–high voice	−.06	.06
.18	Loud-voiced–soft-voiced	**.32**	.14
−.02	Haltingly–fluently speaking	**.26**	**.28**
.00	Difficult–easy to understand	**.21**	.05
.15	Mumbles–articulates	**.37**	**.22**
.08	Strong dialect–standard language	.18	.12
.07	Hectic–calm speaking	**.21**	**.31**
Static visible cues			
.13	Unfashionable–fashionable dress	**.30**	.17
.07	Unrefined–refined appearance	**.22**	**.35**
.01	Plain–showy dress	**.22**	.08
.13	Not made-up–made-up face	.01	−.12
.10	Usual–unusual appearance	**.23**	−.03
.06	Light–dark garments	.05	.04
−.05	Formal–informal dress	−.06	**.37**
.02	Unstylish–stylish hair	**.21**	.21
−.04	Dark–light hair	.00	−.14
.14	Short–long hair	.16	.15
−.01	Ill–well-proportioned body	**.38**	.14
−.08	Less–more muscular physique	.05	.15
−.01	Short–tall stature	.06	.15
.08	Stout–slim physique	.19	−.03
.12	Timid–self-assured expression	**.35**	**.34**
−.04	Serious–unconcerned expression	−.10	.19
.16	Grumpy–friendly expression	**.24**	**.45**
.07	No smiling–extensive smiling	**.31**	**.25**
.03	Thin–full lips	.13	−.02
−.01	Inexpressive–expressive face	**.21**	**.23**
.03	Small–big eyes	**.23**	.08
−.06	Childlike–mature face	.02	.21
.14	Hard–soft facial lineaments	**.29**	.19
.01	Round–thin face	.16	−.11
−.05	Controlled–relaxed sitting	.13	.18
.04	Avoided–looked into the camera	.15	−.14
.11	Closed–open arms while sitting	.11	.08
Dynamic visible cues			
−.09	Infrequent–frequent head movements	.13	−.02
−.04	Infrequent–frequent hand movements	.17	.09
.04	Slow–fast movements	.07	−.01
−.04	Moved around a little–a great deal	.00	.19
.03	Stiff–relaxed walking	.16	.07
.14	Nervous–relaxed movements	**.30**	.12
−.06	Touched own body rarely–frequently	−.04	.05
−.02	Dragged–lifted feet while walking	−.01	.09
−.11	Small steps–long strides	−.10	.01
.19	Degree of arm swinging while walking	.05	.03
Conversational flow cues			
.00	Had to be asked for information about self–volunteers a large amount of information about self	**.31**	−.01
.03	Told not much about self–told a lot about self	**.23**	.13

(continued)

Table 5. (continued)

Cue validity correlations	Cues	Cue utilization correlations	
		High socially curious judges	Low socially curious judges
.06	Expressed affect rarely–expressed affect frequently	**.40**	−.04
.11	Avoided–engaged in eye contact	**.32**	.13
.02	Let conversation break off–kept conversation going	.08	**.38**
.07	Failed to respond–responded to conversational advances	**.26**	.20
.07	Did not make compliments–made compliments	.18	−.11
−.14	Had not spoken much–had spoken a lot	−.12	**.23**
.10	Talked rather at–talked rather with me	**.30**	**.30**
.10	Asked few questions–asked many questions	**.22**	**.28**
.07	Had few back-channel questions–had a lot of back-channel questions	**.27**	.14
.10	Ignored–was responsive to what I had to say	**.33**	**.24**
.15	Replied shallowly–replied in detail to questions	.20	**.24**
.02	Expressed agreement rarely–expressed agreement frequently	**.26**	.11
.02	Avoided–approached physical contact	**.33**	.02
.04	Interrupted me frequently–rarely	**.23**	.09

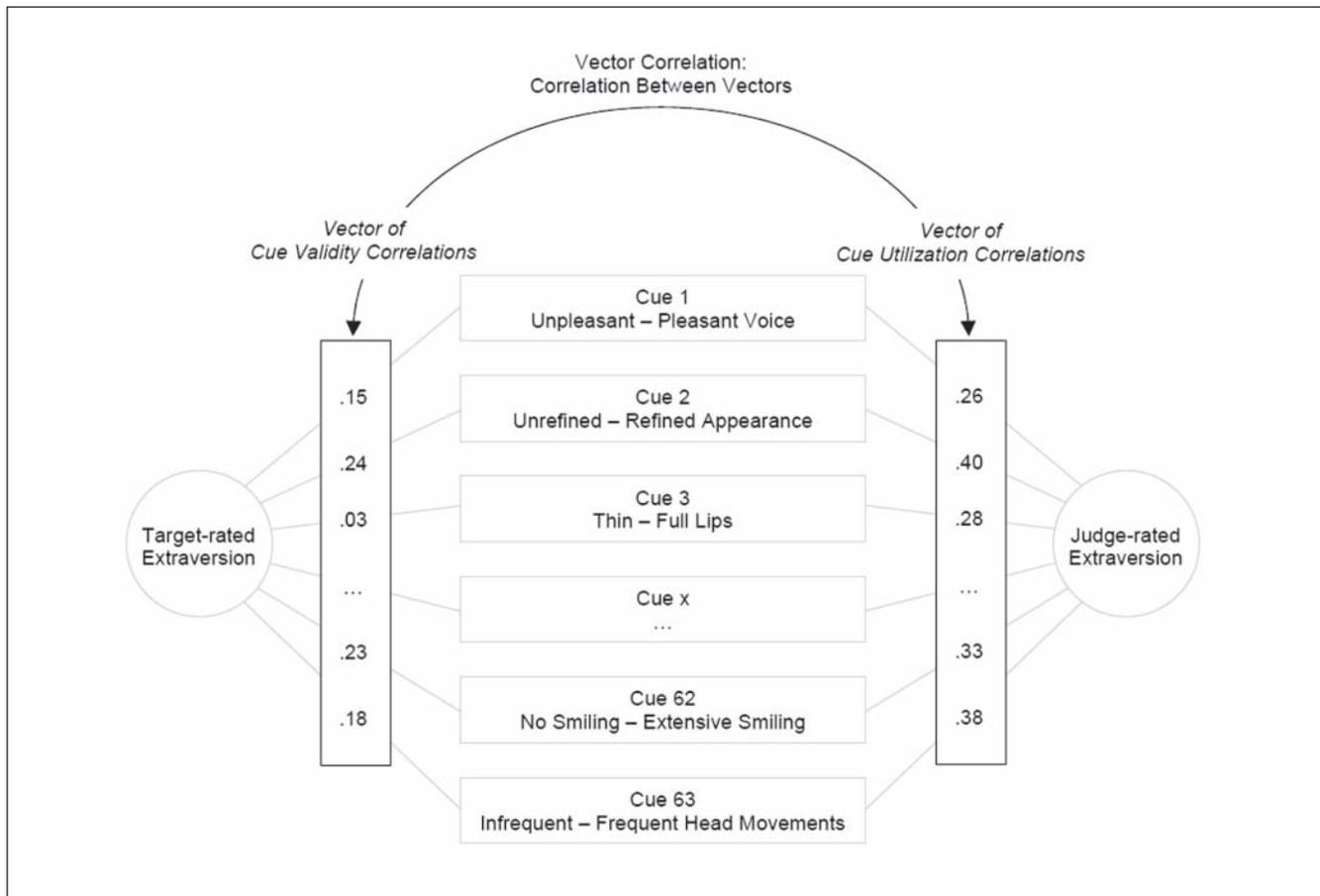All significant correlations (*p* < .05) are displayed in bold.

Figure 2. Illustration of a vector correlation between cue validity correlations (first vector) and cue utilization correlations (second vector)
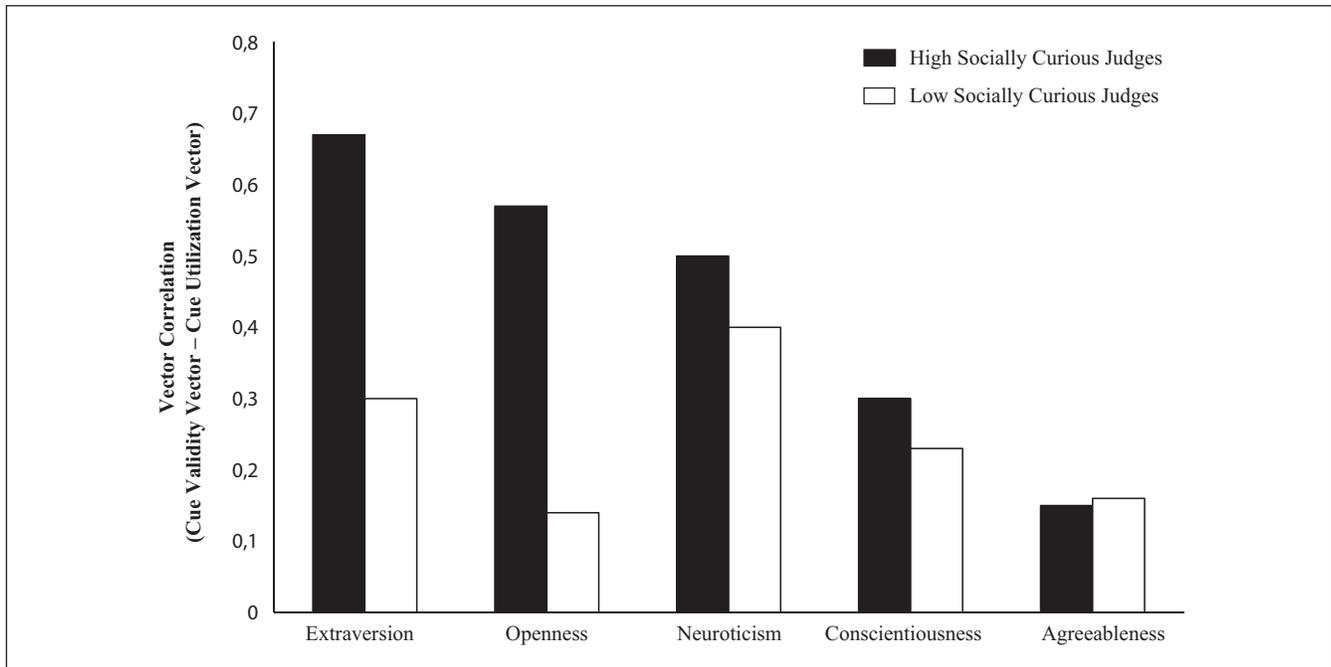
Figure 3. Vector correlations (*N* = 63) as a function of social curiosity
Vector correlations are based on the correlation between the 63 cue validity correlations and the 63 cue utilization correlations.

Discussion

The present results show differential judgmental accuracy across the Big Five. For Extraversion the highest self–other agreement emerged, whereas for Agreeableness accuracy was negligible. This pattern of differential accuracy has also been reported in previous studies (see Ames & Bianchi, 2008; Beer & Watson, 2008; Borkenau, Brecke, Möttig, & Paelecke, 2009; Connolly, Kavanagh, & Viswesvaran, 2007; Hall, Andrzejewski, Murphy, Schmid Mast, & Feinstein, 2008; Kenny, 1994). While replicating previous results, the present findings also extend previous research by showing that accuracy varied as a function of social curiosity of the judge.

Interestingly, high socially curious judges were clearly in advantage when judging the degree of Extraversion and Openness of a person with whom they interacted only briefly and for the first time before forming their judgment. However, no differences in judgmental accuracy were found between high and low socially curious judges when they evaluated the degree of Neuroticism, Conscientiousness, or Agreeableness of their interaction partner. Thus, socially curious judges do not seem to exhibit a general better judgmental accuracy when judging the personality of their interaction partners but appear to show evidence for a greater trait-specific judgmental accuracy. Formally, this equates to a judge × trait interaction (Funder, 1999) and indicates that socially curious judges are not "generalists" or "good judges"

but rather "specialists." This leads to the question, why are socially curious judges better in judging Extraversion and Openness in first impressions of others? To disentangle this judge × trait interaction, we first focus on the mechanisms underlying differential trait accuracy (trait effect) and then proceed to the question of why socially curious judges may judge Extraversion and Openness with higher accuracy (judge × trait interaction).

Differential Trait Accuracy

Using a broad range of person-based stimulus material ranging from photographs and videos to interactions, it was consistently found that Extraversion is the most easily and accurately judged Big Five dimension, whereas Agreeableness is generally found to be judged with negligible accuracy (e.g., Ames & Bianchi, 2008; Beer & Watson, 2008; Borkenau et al., 2004; Borkenau et al., 2009; Connolly et al., 2007; Hall et al., 2008; Kenny, 1994; Naumann, Vazire, Rentfrow, & Gosling, 2009; Paulhus & Bruce, 1992). In the present study it was also found that initial judgments of Extraversion had the highest accuracy, whereas judgments of Agreeableness had the lowest validity. From the perspective of the realistic accuracy model, the differential trait accuracy may derive from a differential "visibility" of traits (Funder, 1999). Traits that are rated as easier to observe tend to elicit more accurate judgments (Funder & Dobroth, 1987; Gosling,
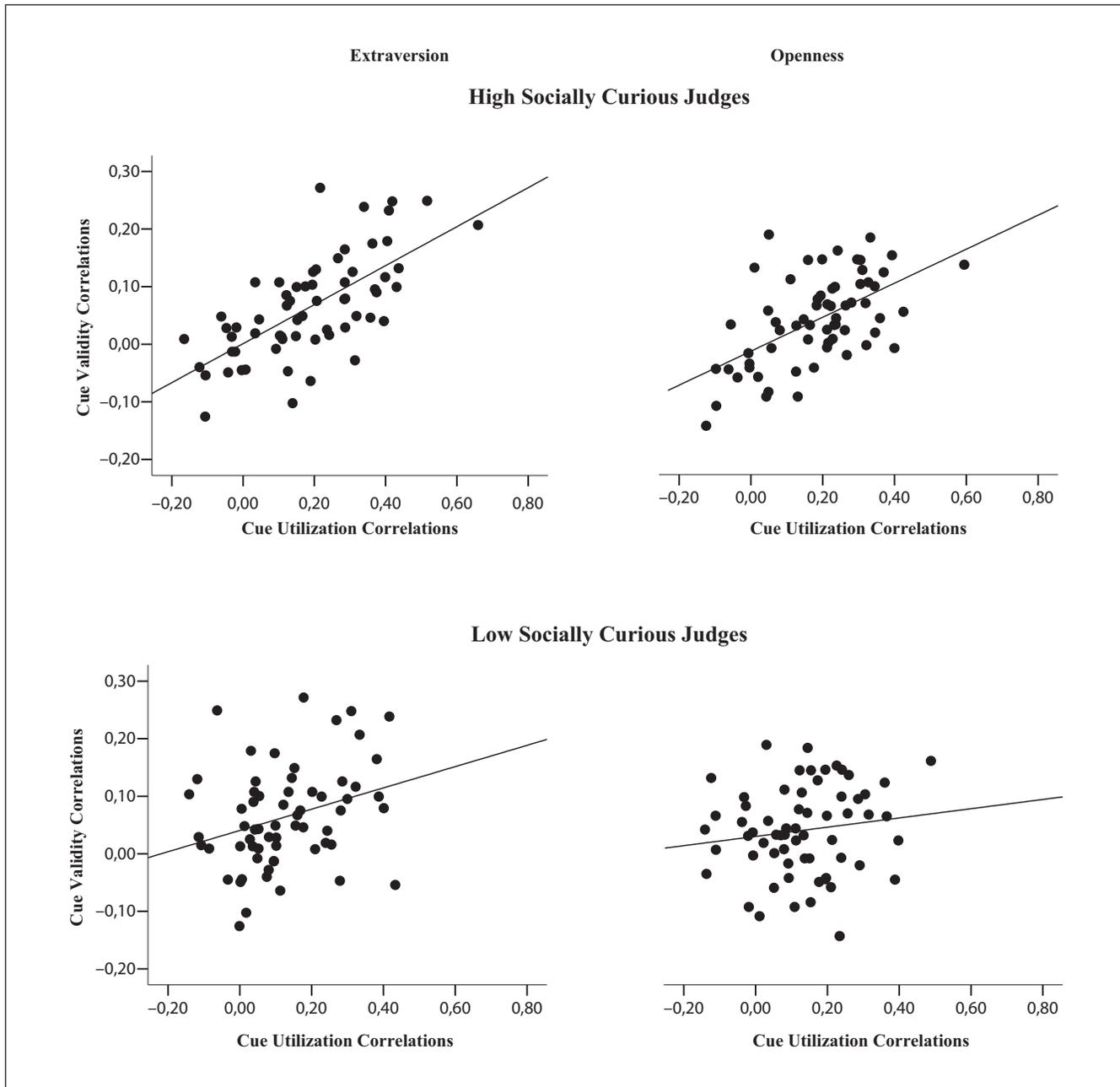
Figure 4. Correlation between cue validity correlations and cue utilization correlations for Extraversion (left side) and Openness (right side) within high and low socially curious judges

Cue validity and cue utilization correlations are Fisher's Z transformed.

John, Craik, & Robins, 1998; John & Robins, 1993). However, "felt" visibility and "actual" visibility might diverge considerably. A visible trait should theoretically be associated with relevant and available cues for inferring the trait (actual visibility). Extraversion, the trait with the highest judgmental accuracy, is typically rated as being highly visible (high felt visibility) and is associated with an array of visible and audible cues (high actual visibility; Borkenau &

Liebler, 1992). Conversely, Agreeableness is also rated as being important and visible but appears to be more often associated with "pseudo-diagnostic" cues leading to poor judgmental accuracy (Ames & Bianchi, 2008). Thus, Extraversion and Agreeableness diverge in their "actual" but not in their "felt" visibility, possibly leading to the observed differential judgmental accuracy within and across studies.
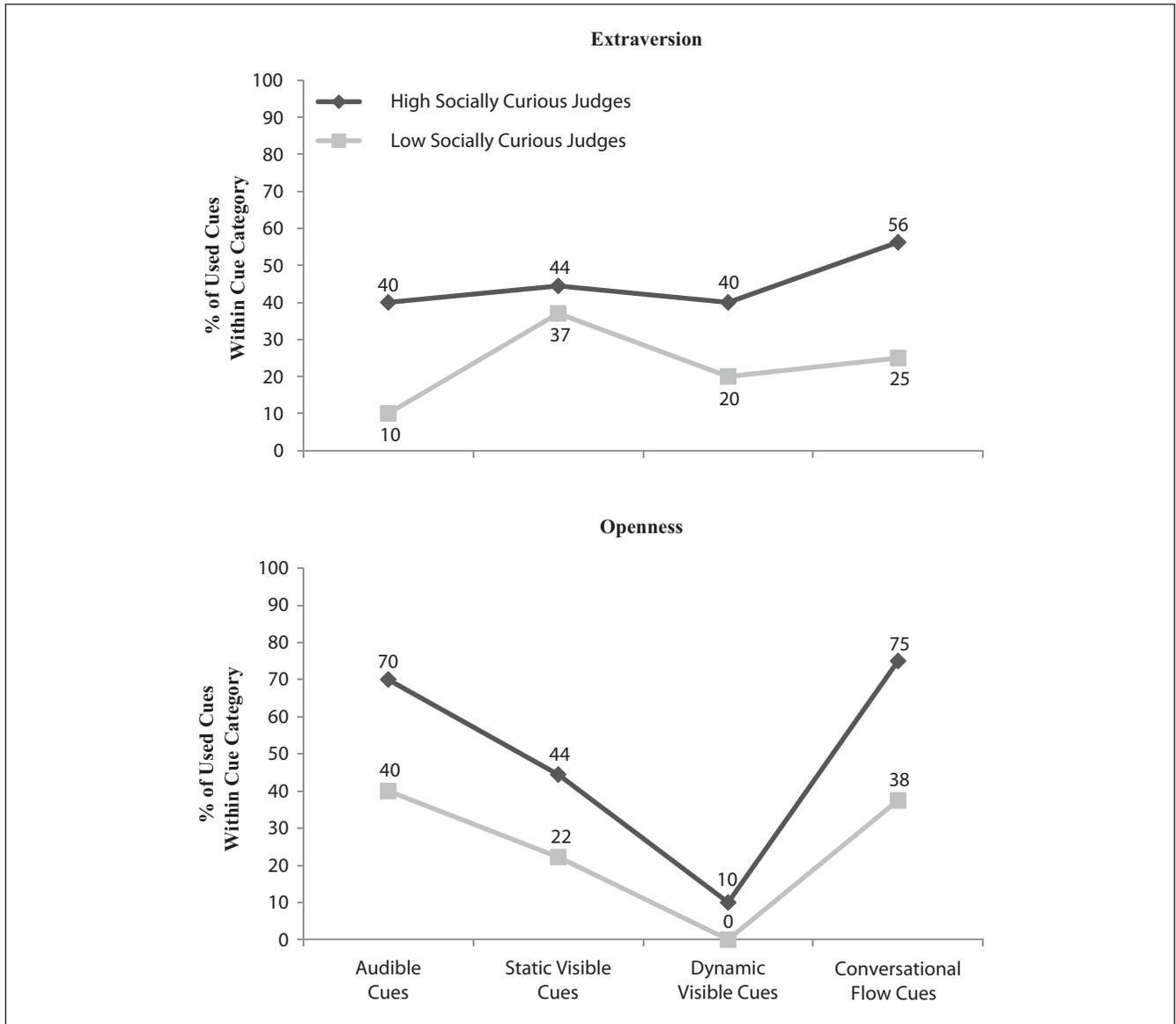
Figure 5. Percentage of detected cues within each cue category for Extraversion (top) and Openness (bottom), separately for high and low socially curious judges
Audible cues $n = 10$; static visible cues $n = 27$; dynamic visible cues $n = 10$; conversational flow cues $n = 16$.

Conversely, cues and behaviors associated with Openness are often rated as poorly visible (Funder & Dobroth, 1987; Gosling et al., 1998; John & Robins, 1993). Consequently, judging Openness in first impressions of others should be a challenging task for judges. In line with this notion, various studies report only a negligible accuracy for Openness (e.g., Connolly et al., 2007; Hall et al., 2008; Kenny, 1994). In contrast, other studies report a substantial accuracy (Borkenau et al., 2004) as found in the present study, and some studies even report a very high judgmental accuracy (Gosling et al., 2002). One possible

explanation for the inconsistent empirical results might be systematic differences in the experimental framework affecting the quality of available information for inferring Openness. Interestingly, studies using a zero-acquaintance framework, with no actual interaction between judge and target (e.g., providing only a photograph or video of the target), consistently found only a low judgmental accuracy for Openness (Beer & Watson, 2008, 2010; Borkenau et al., 2009). Studies based on actual although very brief interactions found a substantial accuracy for Openness comparable to the present study (Borkenau et al., 2004; Paulhus & Bruce,

Table 6. Vector Correlations Within Cue Categories

	High socially curious judges	Low socially curious judges	Cohen's q
Extraversion			
Audible cues	.55	.32	.29
Static visible cues	.69***	.48**	.32
Dynamic visible cues	.79**	.21	.86
Conversational flow cues	.72**	−.05	.96
Openness			
Audible cues	.63*	.27	.46
Static visible cues	.50**	.07	.48
Dynamic visible cues	.49	.11	.42
Conversational flow cues	.62**	.10	.63

Audible cues *n* = 10; static visible cues *n* = 27; dynamic visible cues *n* = 10; conversational flow cues *n* = 16
*p < .05. **p < .01. ***p < .001.

1992). And finally, environment-based studies using behavior signatures (bedrooms, offices) for impression formation report the highest judgmental accuracy for Openness (Gosling et al., 2002). Thus, one might hypothesize that the type of experimental framework (zero acquaintance, social interaction, environment based) encompasses qualitatively different information, affecting the visibility of the trait Openness in the respective judgment situation. Thus, posters and pictures displayed in one's office might be more informative for inferring Openness (environment-based studies) than watching a video of the person while she or he is reading the weather forecast (zero-acquaintance studies). The interaction paradigm of the present study might represent a "middle ground" in terms of context that affords more information about targets than zero-acquaintance studies but less information than environment-based studies. Thus, only observing a person might not be enough to get an impression of her or his Openness, but a brief opportunity to talk to the person and in particular asking questions appear to make a remarkable difference. The present data appear to support this notion since participants generally used a greater proportion of conversational flow and audible cues when evaluating their interaction partner in terms of Openness in comparison to Extraversion. Moreover, findings from information sequencing in relationship development show that already at the very beginning of a conversation between unacquainted individuals topics occur that are relevant for the judgment of Openness (e.g., opinions, interests, attitudes, goals, and intentions; Berger, Gardner, Clatterbuck, & Schulman, 1976; Kellermann & Lim, 1990). Thus, even short social interactions may disclose informative cues,

turning Openness from a relatively invisible trait into a more visible trait.

Although trait visibility might be a major factor influencing differential trait accuracy, other trait characteristics might have had a substantial impact on it, too. Funder (1999), for examples, argues that a more pronounced evaluativeness could be associated with a lower judgmental accuracy. However, according to John and Robins (1993) Openness is the most evaluative trait, whereas Extraversion is the least evaluative trait, rendering evaluativeness for the present results as a less plausible explanation. Another trait characteristic discussed in the context of differential trait judgability is the base rate of behavior-act occurrence (see Gosling et al., 1998; but see Funder & Dobroth, 1987). However, the results for the impact of the base rate of behavior-act occurrence on self–other agreement are inconsistent. Gosling et al. (1998) found that the number of prototypical acts was associated with self–other agreement for Extraversion, Agreeableness, and Conscientiousness. Conversely, Funder and Dobroth (1987) found no relation between trait frequency and self–other agreement or interpeer agreement, suggesting that a higher base rate does probably not explain the present results. Finally, trait relevance and adaptive importance may vary for different situations and cause differential trait judgability (Funder, 1999). However, we assume that these two trait characteristics probably contribute to a higher trait visibility. Thus, trait visibility might be a core factor for trait judgability.

Why Were Socially Curious Judges More Accurate When Judging Extraversion and Openness?

A bright smile and a broad interest in different topics might certainly facilitate social interactions, particularly when meeting unacquainted people or strangers. Moreover, the tendency to get actively involved in new social and physical environments is particularly related to Extraversion and Openness (DeYoung, 2006, 2010). In view of that, one could argue that Extraversion and Openness might be the most observable traits in any new social encounter since they facilitate social interactions. Thus, one possible explanation for the greater judgmental accuracy displayed by socially curious judges for Extraversion and Openness might be that they have a greater opportunity to accumulate knowledge about valid cues particularly for Extraversion and Openness in first encounters since they seek out more often new social situations (Renner, 2006). Their greater exposure to new social situations and to a greater array of different people might provide them with more learning opportunities and experience how Extraversion and Openness are reflected in verbal and nonverbal behavior. Accordingly, they should be specialists for traits that are visible in social interactions with

unacquainted people. It is important to note that this "accurate encounter primacy" does not preclude that people do also form first impressions about other traits such as Agreeableness or Neuroticism. For example, research on face perceptions has repeatedly shown that faces are spontaneously categorized according to perceived trustworthiness (Todorov, Said, Engell, & Oosterhof, 2008). However, friendliness or emotional instability might be comparably more modulated through self-monitoring during first encounters, reducing their actual visibility.

Alternatively, one could propose that high socially curious judges are in general more attentive to their social environment and therefore tend to use a wider range of cues for inferring personality traits of other people. Since for visible traits, by definition, more valid cues are available for all judges, high socially curious judges should be more likely to detect and use valid cues. Phrased differently, high socially curious judges show a higher base rate of (any) detected cues, and in the case of visible traits, when in general more valid cues are available, they are more likely to arrive at more accurate judgments. According to this line of reasoning, high socially curious judges are no more sophisticated judges for Openness and Extraversion but rather show a trait unspecific judgment strategy that leads in the case of visible traits to a greater accuracy. Supporting this notion, high socially curious judges showed a higher cue detection rate for Extraversion and Openness but also for Neuroticism and Conscientiousness, although for the latter no advantage in accuracy was found. Only for Agreeableness, the trait with the poorest accuracy, no differential cue detection rate for high and low socially curious judges was found. Thus, high socially curious judges appear to generally use more information when judging other people's personality.

However, the greater use of available information does not necessarily imply that high socially curious judges use a "shot gun" strategy. Comparing the utilization of the cues through the judges with the validity of the cues shows that high and low socially curious judges differed in the extent to which they accurately inferred traits from the given cues. High socially curious judges inferred Extraversion and Openness more appropriately from the available cues than low socially curious judges as indicated by the higher vector correlations between cue utilization and cue validity. Thus, they detected not only more cues but also more often valid cues when evaluating Extraversion and Openness. Moreover, this holds true for different cue categories, since high socially curious judges showed a greater proportion of utilized cues and a more valid cue utilization within the four different cue categories. Interestingly, their advantage in judgmental accuracy for Openness appears to be partly grounded in a more extensive utilization of audible and conversational flow cues. When evaluating Neuroticism, Conscientiousness, and Agreeableness, however, high and low socially curious judges showed comparable vector correlations. Taken together, high socially curious judges detected and utilized more valid cues of Extraversion and Openness than low socially curious judges. This greater sensitivity to and utilization of valid cues facilitated more accurate judgments of these two visible personality traits. In the case of less visible traits, such as Neuroticism and Conscientiousness, high socially curious judges still detected more cues than low socially curious judges, but they did not turn this greater array of detected information into more accurate judgments.

One might speculate that good judges not only demonstrate a higher cue detection rate and are more capable to use valid cues but also facilitate more diagnostic behavior on the target side. Specifically, Letzring (2008) found significant positive correlations between judgmental accuracy and 10 behaviors of the judges (e.g., "engages in constant eye contact," "speaks in a loud voice"). The behavior most consistent with good judgmental accuracy was "engages in constant eye contact," which could be interpreted as an indicator for social interest. Likewise, the behaviors "enjoys the interaction" and "seems to be interested in what partners have to say" are consistent with the notion of social curiosity. Thus, socially curious individuals might induce through their behavior and greater attention toward the target an atmosphere for facilitating greater disclosure. Accordingly, socially curious judges might not be only "passively" better in detecting cues but might actively facilitate through their behavior toward the target the display of diagnostic cues. Thus, a differential impact on the target transmission rate of cues might be a possible underlying mechanism enabling greater judgmental accuracy. Admittedly, this is highly speculative, and for drawing firm conclusions, a round-robin design demonstrating that targets show more diagnostic cues when interacting with a "good judge" is needed.

Social Curiosity: New Wine in Old Wineskins?

One might argue that social curiosity might not be a distinct concept but is rather overlapping with Extraversion and Openness and thus artificially creates a differential higher judgmental accuracy for these traits. From a conceptual view, social curiosity assesses a general interest in social information via open or covert exploratory behavior. Previous studies with younger and older samples showed that social curiosity did not correlate significantly with Neuroticism, Agreeableness, or Social Anxiety and only to a moderate degree with Extraversion (Renner, 2006). Likewise, in the present sample, taking a multitrait–multimethod perspective, social curiosity correlated positively but only moderately with Extraversion and Openness, and an additional factor analysis indicated factorial validity for social curiosity. Thus, the results consistently suggested that social curiosity is a distinct concept from Extraversion and Openness and demonstrates convergent and divergent validity.

Vogt and Colvin (2003) demonstrated that social orientation is associated with greater judgmental accuracy. Thus, both the present study and the study by Vogt and Colvin build on the core idea that "social-oriented" people are more accurate in their interpersonal judgments. However, "social orientation" is a very broad concept encompassing various different aspects (Baumeister, 2005). The primary goal of Vogt and Colvin (2003) was to examine whether individuals who invest more in close interpersonal relationships provide more accurate personality judgments. Thus, they were interested in the effect of interpersonal orientation defined as the desire and need to have close interpersonal relationships ("has warmth towards others," "seeks closeness with others"). This "communion" facet of interpersonal orientation taps predominantly into Agreeableness and Extraversion, as shown by factorial analyses (see Lanning, 1994; McCrae, Costa, & Busch, 1986). Conversely, social curiosity correlates with Agreeableness consistently only to a low degree and, compared to communion, probably to a lower degree with Extraversion. Taken together, from a conceptual as well as an empirical view, social curiosity and communion appear to be two distinct concepts tapping into different aspects of the broad construct of social orientation.

Conclusion

Taken together, the higher accuracy of socially curious judges when judging Extraversion and Openness but not when judging Neuroticism, Conscientiousness, and Agreeableness indicates a higher expertise for traits that are prevalent and observable in initial interactions. Moreover, this higher accuracy appears to be grounded in a more comprehensive utilization of cues—thus is a more effective use of social information. Considered from a broader theoretical perspective the higher accuracy of socially curious individuals may help socially curious people to successfully steer initial social interactions. Perceiving others accurately may smooth the progress of interaction and might therefore facilitate relationship building. In the long run, socially curious individuals may therefore be more likely to reduce the risk of social exclusion and rejection.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interests with respect to the authorship and/or publication of this article.

Notes

1. Determining self–other agreement is a common method for measuring the accuracy of personality judgments. However, it is important to note that self–other agreement could be influenced by other factors, for example, assumed similarity increasing artificially the degree of agreement (see Funder, 1999). Thus, self–other agreement is a proxy for judgmental accuracy, but one cannot assume that it reflects the "true" accuracy score. For simplification reasons, however, the term *judgmental accuracy* for self–other agreement is used in the text.

2. Vector correlations were calculated across the 63 cues. Currently, there is no clear consensus in the literature about significance tests for vector correlations because of the ambiguity of procedure and degrees of freedom. Some studies report significance test for vector correlations (e.g., Back, Schmukle, & Egloff, 2008; Gosling, Ko, Mannarelli, & Morris, 2002; Rentfrow & Gosling, 2006) whereby the number of cues is the basis for the degrees of freedom. Conversely, in other studies either no statistical tests are reported (e.g., Beer & Watson, 2010; Borkenau & Liebler, 1995; Mehl, Gosling, & Pennebaker, 2006) or significance tests were conducted but the basis of the *df*s is not explicated (Borkenau & Liebler, 1992). Notwithstanding, the size and direction of the vector correlations are the most important and unambiguous pieces of information.

References

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.

Ames, D. R., & Bianchi, E. C. (2008). The agreeableness asymmetry in first impressions: Perceivers' impulse to (mis)judge agreeableness and how it is moderated by power. *Personality and Social Psychology Bulletin*, *34*, 1719-1736.

Back, M. D., Schmukle, S. C., & Egloff, B. (2008). How extraverted is honey.bunny77@hotmail.de? Inferring personality from e-mail addresses. *Journal of Research in Personality*, *42*, 1116-1122.

Baumeister, R. F. (2005). *The cultural animal: Human nature*, *meaning*, *and social life.* New York, NY: Oxford University Press.

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, *117*, 497-529.

Baumeister, R. F., Zhang, L., & Vohs, K. D. (2004). Gossip as cultural learning. *Review of General Psychology*, *8*, 111-121.

Beer, A., & Watson, D. (2008). Personality judgment at zero acquaintance: Agreement, assumed similarity, and implicit simplicity. *Journal of Personality Assessment*, *90*, 250-260.

Beer, A., & Watson, D. (2010). The effects of information and exposure on self–other agreement. *Journal of Research in Personality*, *44*, 38-45.

Berg, C. A., & Sternberg, R. J. (1985). Response to novelty: Continuity versus discontinuity in the developmental course of intelligence. In H. W. Reese (Ed.), *Advances in child development*

and behavior (Vol. 19, pp. 1-47). New York, NY: Academic Press.

Berger, C. R., Gardner, R. R., Clatterbuck, G. W., & Schulman, L. S. (1976). Perceptions of information sequencing in relationship development. *Human Communication Research*, *3*, 29-46.

Bernieri, F. J., Zuckerman, M., Koestner, R., & Rosenthal, R. (1994). Measuring person perception accuracy: Another look at self–other agreement. *Personality and Social Psychology Bulletin*, *20*, 367-378.

Borkenau, P., Brecke, S., Möttig, C., & Paelecke, M. (2009). Extraversion is accurately perceived after a 50-ms exposure to a face. *Journal of Research in Personality*, *43*, 703-706.

Borkenau, P., & Liebler, A. (1992). Trait inferences: Sources of validity at zero acquaintance. *Journal of Personality and Social Psychology*, *62*, 645-657.

Borkenau, P., & Liebler, A. (1995). Observable attributes as manifestations and cues of personality and intelligence. *Journal of Personality*, *63*, 1-25.

Borkenau, P., Mauer, N., Riemann, R., Spinath, F. M., & Angleitner, A. (2004). Thin slices of behavior as cues of personality and intelligence. *Journal of Personality and Social Psychology*, *86*, 599-614.

Borkenau, P., & Ostendorf, F. (1993). *NEO-Fünf-Faktoren Inventar (NEO-FFI)* [NEO-Five-Factor Inventory (NEO-FFI)]. Göttingen, Germany: Hogrefe.

Cohen, J. (1992). A power primer. *Psychological Bulletin*, *112*, 155-159.

Connolly, J. J., Kavanagh, E. J., & Viswesvaran, C. (2007). The convergent validity between self and observer ratings of personality: A meta-analytic review. *International Journal of Selection and Assessment*, *15*, 110-117.

Cronbach, L. (1955). Processes affecting scores on "understanding of others" and "assumed similarity." *Psychological Bulletin*, *52*, 177-193.

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.

DeYoung, C. G. (2010). Toward a theory of the big five. *Psychological Inquiry*, *21*, 26-33.

Dunbar, R. I. M. (2004). Gossip in evolutionary perspective. *Review of General Psychology*, *8*, 100-110.

Fichten, C. S., Tagalakis, V., Judd, D., Wright, J., & Amsel, R. (1992). Verbal and nonverbal communication cues in daily conversations and dating. *Journal of Social Psychology*, *132*, 751-769.

Funder, D. C. (1999). *Personality judgment: A realistic approach to person perception*. London, UK: Academic Press.

Funder, D. C., & Dobroth, K. M. (1987). Differences between traits: Properties associated with interjudge agreement. *Journal of Personality and Social Psychology*, *52*, 409-418.

Funder, D. C., Furr, R. M., & Colvin, C. R. (2000). The Riverside Behavioral Q-sort: A tool for the description of social behavior. *Journal of Personality*, *68*, 451-489.

Funder, D. C., & Sneed, C. D. (1993). Behavioral manifestations of personality: An ecological approach to judgmental accuracy. *Journal of Personality and Social Psychology*, *64*, 479-490.

Giambra, L. M., Camp, C. J., & Grodsky, A. (1992). Curiosity and stimulation seeking across the adult span: Cross-sectional and 6-8 year longitudinal findings. *Psychology and Aging*, *7*, 150-157.

Gifford, R., & Hine, D. W. (1994). The role of verbal behavior in the encoding and decoding of interpersonal dispositions. *Journal of Research in Personality*, *28*, 115-132.

Gosling, S. D., John, O. P., Craik, K. H., & Robins, R. W. (1998). Do people know how they behave? Self-reported act frequencies compared with on-line codings by observers. *Journal of Personality and Social Psychology*, *74*, 1337-1349.

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.

Griffin, D., & Gonzalez, R. (1995). Correlational analysis of dyad-level data in the exchangeable case. *Psychological Bulletin*, *118*, 430-439.

Hall, J. A., Andrzejewski, S. A., Murphy, N. A., Schmid Mast, M., & Feinstein, B. A. (2008). Accuracy of judging others' traits and states: Comparing mean levels across tests. *Journal of Research in Personality*, *42*, 1476-1489.

Hall, J. A., Coats, E. J., & Smith LeBeau, L. (2005). Nonverbal behavior and the vertical dimension of social relations: A meta-analysis. *Psychological Bulletin*, *131*, 898-924.

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.

Kellermann, K., & Lim, T.-S. (1990). The conversation MOP: III. Timing of scenes in discourse. *Journal of Personality and Social Psychology*, *59*, 1163-1179.

Kenny, D. A. (1994). *Interpersonal perception: A social relations analysis.* New York, NY: Guilford.

Kenny, D. A., Kashy, D. A., & Cook, W. L. (2006). *Dyadic data analysis*. New York, NY: Guilford.

Kurtz, J. E., & Sherker, J. L. (2003). Relationship quality, trait similarity, and self–other agreement on personality ratings in college roommates. *Journal of Personality*, *71*, 21-48.

Lanning, K. (1994). Dimensionality of observer ratings on the California Adult Q-set. *Journal of Personality and Social Psychology*, *67*, 151-160.

Letzring, T. D. (2008). The good judge of personality: Characteristics, behaviors, and observer accuracy. *Journal of Research in Personality*, *42*, 914-932.

Litman, J. A., & Pezzo, M. V. (2005). Individual differences in attitudes towards gossip. *Personality and Individual Differences*, *38*, 963-980.

Litman, J. A., & Pezzo, M. V. (2007). Dimensionality of interpersonal curiosity. *Personality and Individual Differences*, *43*, 1448-1459.

Marangoni, C., Garcia, S., Ickes, W., & Teng, G. (1995). Empathic accuracy in a clinically relevant setting. *Journal of Personality and Social Psychology*, *68*, 854-869.

McCrae, R. R., Costa, P. T., & Busch, C. M. (1986). Evaluating comprehensiveness in personality systems: The California Q-set and the five-factor model. *Journal of Personality*, *54*, 430-446.

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.

Muck, P. M. (2003). *Der Interpersonale Circumplex als Grundlage einer Eigenschaftstheorie der Interpersonalität im beruflichen Kontext* [The interpersonal complex as the base of an attitude theory of interpersonal relations in the occupational context]. Berlin, Germany: dissertation.de.

Naumann, L. P., Vazire, S., Rentfrow, P. J., & Gosling, S. D. (2009). Personality judgments based on physical appearance. *Personality and Social Psychology Bulletin*, *35*, 1661-1671.

Neyer, F. J. (2006). Informant assessment. In M. Eid & E. Diener (Eds.), *Handbook of multimethod measurement in psychology* (pp. 43-59). Washington, DC: American Psychological Association.

Paulhus, D., & Bruce, M. N. (1992). The effect of acquaintanceship on the validity of personality impressions: A longitudinal study. *Journal of Personality and Social Psychology*, *63*, 816-824.

Raine, A., Reynolds, C., Venables, P. H., & Mednick, S. A. (2002). Stimulation seeking and intelligence: A prospective longitudinal study. *Journal of Personality and Social Psychology*, *82*, 663-674.

Renner, B. (2006). Curiosity about people: The development of a social curiosity measure in adults. *Journal of Personality Assessment*, *87*, 305-316.

Renner, B., & Hartung, F.-M. (2010). *Social curiosity and gossip: Related but different drivers of social functioning.* Manuscript submitted for publication.

Rentfrow, P. J., & Gosling, S. D. (2006). Message in a ballad: The role of music preferences in interpersonal perception. *Psychological Science*, *17*, 236-242.

Riggio, R. E. (1986). Assessment of basic social skills. *Journal of Personality and Social Psychology*, *51*, 649-660.

Ross, H. S., Rheingold, H. L., & Eckerman, C. O. (1972). Approach and exploration of a novel alternative by 12-month-old infants. *Journal of Experimental Child Psychology*, *13*, 85-93.

Schafer, J. L., & Graham, J. W. (2002). Missing data: Our view of the state of the art. *Psychological Methods*, *7*, 147-177.

Schiefele, U. (1999). Interest and learning from text. *Scientific Studies of Reading*, *3*, 257-279.

Silvia, P. J. (2006). *Exploring the psychology of interest*. New York, NY: Oxford University Press.

Swann, W. B., Stephenson, B., & Pittman, T. S. (1981). Curiosity and control: On the determinants of the search for social knowledge. *Journal of Personality and Social Psychology*, *40*, 635-642.

Todorov, A., Said, C. P., Engell, A. D., & Oosterhof, N. N. (2008). Understanding evaluation of faces on social dimensions. *Trends in Cognitive Science*, *12*, 455-460.

Trudewind, C. (2000). Curiosity and anxiety as motivational determinants of cognitive development. In J. Heckhausen (Ed.), *Motivational psychology of human development: Developing motivation and motivating development* (pp. 15-38). New York, NY: Elsevier.

Vogt, D. S., & Colvin, C. (2003). Interpersonal orientation and the accuracy of personality judgements. *Journal of Personality*, *71*, 267-295.

Watson, D., Hubbard, B., & Wiese, D. (2000). Self–other agreement in personality and affectivity: The role of acquaintanceship, trait visibility, and assumed similarity. *Journal of Personality and Social Psychology*, *78*, 546-558.