

# Meta-Insight: Do People Really Know How Others See Them?

Erika N. Carlson and Simine Vazire  
Washington University in St. Louis

R. Michael Furr  
Wake Forest University

Although people can accurately guess how others see them, many studies have suggested that this may only be because people generally assume that others see them as they see themselves. These findings raise the question: In their everyday lives, do people understand the distinction between how they see their own personality and how others see their personality? We examined whether people make this distinction, or whether people possess what we call *meta-insight*. In 3 studies, we assessed meta-insight for a broad range of traits (e.g., Big Five, intelligent, funny) across several naturalistic social contexts (e.g., first impression, friends). Our findings suggest that people can make valid distinctions between how they see themselves and how others see them. Thus, people seem to have some genuine insight into their reputation and do not achieve meta-accuracy only by capitalizing on the fact that others see them similarly to how they see themselves.

*Keywords:* meta-perception, interpersonal perception, personality

I've always known that there's more going on inside me than finds its way into the world, but this is probably true of everyone. Who doesn't regret that he isn't more fully understood?

—Richard Russo, *Bridge of Sighs*

Like Richard Russo's character, many people have likely had the experience of feeling that others do not see them the way they see themselves. People's beliefs about how others see them, called meta-perceptions, guide their behavior and affect their relationships. Given the significance of these beliefs, an important issue is whether meta-perceptions are accurate, or whether people achieve meta-accuracy (Kenny, 1994). Although there are several ways to conceptualize and measure meta-accuracy, overall it appears that people do have some insight into the personality impressions they make on others (e.g., Carlson & Furr, 2009; Carlson & Kenny, in press; Levesque, 1997; Malloy, Albright, Kenny, Agatstein, & Winkquist, 1997). Intuitively, such findings suggest that people are capable of perspective taking or even mind reading. However, there is convincing evidence that instead of picking up on cues from others, people base their meta-perceptions primarily on their self-perceptions (e.g., Chambers, Epley, Savitsky, & Windschitl, 2008; Kaplan, Santuzzi, & Ruscher, 2009; Kenny & DePaulo, 1993; Shrauger & Schoeneman, 1979). In other words, meta-accuracy can be achieved without ever looking outside of the self. Such findings raise the question, Do people know the difference between how they see themselves and how others see them?

The goal of the present research was to investigate whether people understand the distinction between how they see their own

personality and how others see their personality, a new form of self-knowledge we call *meta-insight*. Specifically, meta-insight reflects the relationship between the beliefs people have about the impressions they make on others (i.e., their meta-perceptions) and others' actual impressions, independent of how people see themselves. To our knowledge, no study has systematically examined meta-insight. Yet an overview of meta-insight is necessary for at least two reasons. First, some have argued that "because meta-perceptions are so highly correlated with self-perceptions, the validity of the process of meta-perceptions has been called into question" (Albright, Forest, & Reiseter, 2001, p. 919). Evidence for meta-insight would suggest that people do (successfully) engage in the process of meta-perception and that meta-perceptions are more than self-perceptions. Second, if people never look outside of themselves to form meta-perceptions, evidence for meta-accuracy might simply reflect cases when people correctly assume that others see them as they see themselves instead of reflecting a genuine understanding of how they are actually seen. For this reason, an index of meta-insight should supplement raw meta-accuracy correlations in research designed to assess self-knowledge and the accuracy of interpersonal perception. The research presented here provides indices of meta-accuracy and meta-insight for many traits across different social contexts to examine if and when meta-perceptions reflect a genuine understanding of social reality.

## Meta-Insight

We predicted that in their everyday lives, people can distinguish between how they see themselves and how others see them. However, our prediction that people possess meta-insight contradicts two popular conclusions in the field: (a) When people achieve meta-accuracy, they do so without ever looking beyond themselves (i.e., they rely only on their self-perceptions), and (b) looking outside of the self only leads people astray (i.e., trying to read others' reactions hurts meta-accuracy). Below, we review the evidence for these two objections to meta-insight.

---

This article was published Online First June 20, 2011.

Erika N. Carlson and Simine Vazire, Department of Psychology, Washington University in St. Louis; R. Michael Furr, Department of Psychology, Wake Forest University.

We would like to thank Kathryn Bollich, Brittany Solomon, Juliane Stopfer, and Dustin Wood for their insightful comments.

Correspondence concerning this article should be addressed to Erika N. Carlson, Department of Psychology, Campus Box 1125, One Brookings Drive, St. Louis, MO 63130-4899. E-mail: encarlso@wustl.edu

### Are Meta-Perceptions Distinct From Self-Perceptions?

As mentioned above, the general consensus among researchers is that people usually assume that others see them as they see themselves. This is perhaps best illustrated by Bella DePaulo's claim that "we have a fairly stable view of ourselves. . . . We expect other people to see that same view immediately" (quoted by Flora, 2005, para. 7). Likewise, in their highly influential meta-analysis of meta-accuracy, Kenny and DePaulo (1993) concluded that "we think that people's beliefs about how others view them are based primarily on their perceptions of themselves" (p. 154). Another team of researchers concluded that people "typically rely on their default self-perceptions to infer others' views of them" and that "individuals generally look inward, not outward, and infer that their interaction partners view them as they view themselves" (Kaplan et al., 2009, pp. 601–602). Yet another group of researchers argued that "self-perceptions contaminate [people's] estimates of how they are viewed by another person" (Cameron & Vorauer, 2008, p. 1094). Not surprisingly, in his review of the meta-perception literature, Wilson concluded that

People have a fairly accurate picture of how others view their personalities. . . . But this accuracy mostly reflects the fact that we project our self-theories onto other people, and not because we are good at reading what other people really think about us. (Wilson, 2002, p. 196)

These conclusions are based on evidence that self- and meta-perceptions are highly correlated and that meta-perceptions are more strongly correlated with self-perceptions than they are with others' perceptions (e.g., Campbell & Fehr, 1990; Christensen, Stein, & Means-Christensen, 2003; Kenny, 1994; Malloy, Albright, Diaz-Loving, Dong, & Lee, 2004; Malloy et al., 1997; Preuss & Alicke, 2009; Shrauger & Schoeneman, 1979). Thus, meta-perceptions may be so heavily influenced by self-perceptions that people do not make a distinction between their beliefs about how others see them and their beliefs about themselves. Although we agree that self- and meta-perceptions are highly correlated, we believe there is enough of a difference to suggest that people may have meta-insight. To support our claim, we review the evidence regarding the similarity between self- and meta-perception here.

Why are self- and meta-perceptions so similar? Basing perceptions of others on self-perceptions is a common, practical strategy people use in interpersonal perception. For instance, when estimating what others are like, people often use their own self-perceptions to rate hard-to-read individuals (Ready, Clark, & Watson, 2000). Similarly, when engaging in the difficult task of guessing the impression one makes on others, basing meta-perceptions on self-perceptions is especially practical. People probably assume that others see them as they see themselves, because they assume that their self-perceptions are valid and that others can see their true personality. Given that observers do tend to form quite accurate impressions (e.g., Ambady, Hallahan, & Rosenthal, 1995; Back et al., 2010; Funder, 1980; Naumann, Vazire, Rentfrow, & Gosling, 2009; Vazire, 2010; Watson, Hubbard, & Wiese, 2000), it is a reasonable strategy for people to assume that others see what they see. In fact, self-perceptions tend to be an accurate reflection of one's reputation (Kenny & DePaulo, 1993; Malloy et al., 1997, 2004), and meta-perceptions based on self-perceptions of behavior also tend to be accurate (Albright et

al., 2001; Albright & Malloy, 1999; Kenny & West, 2008). That is, people are often correct when they assume others see them as they see themselves. However, such findings suggest that the strong correlation between self- and meta-perceptions reflects a practical way to form a fairly accurate meta-perception instead of ignorance of one's reputation.

The important question is whether people are able to adjust their meta-perceptions when necessary. There is some evidence that people fail in this regard because they do not take into account the fact that others have different information than they do (Chambers et al., 2008; Epley, Keysar, Van Boven, & Gilovich, 2004; Garcia, 2002; Gilovich, Savitsky, & Medvec, 1998; Vorauer & Claude, 1998; Vorauer & Miller, 1997; Vorauer & Ross, 1999) or that others have idiosyncratic ways of perceiving people (Wood, Harms, & Vazire, 2010). However, many of the studies that have demonstrated people's failure to adjust their meta-perceptions away from their self-perceptions of personality did not assess meta-perceptions in naturalistic contexts. For example, these studies have tended to use hypothetical scenarios (e.g., Vorauer & Claude, 1998), one-sided interactions (e.g., videotaped responses; Vorauer, Cameron, Holmes, & Pearce, 2003), or artificial in-person interactions (e.g., individuals are instructed to not react to their interaction partner; Vorauer et al., 2003; but see Vorauer & Cameron, 2002). Such studies do not test people's ability to adjust their meta-perceptions in most real-life situations.

In fact, the available evidence suggests that people do adjust their meta-perceptions away from their self-perceptions in real-life situations. For instance, people correctly infer that individuals who know them in different social contexts (e.g., hometown friends vs. college friends) have different impressions of them (Carlson & Furr, 2009). Furthermore, people recognize the idiosyncrasies of their self-views. Robins and Beer (2001) found that people hold overly positive self-perceptions of their performance in a group activity but do not assume that others in their group share their self-perceptions. Finally, people do sometimes base their meta-perceptions on sources of information other than their self-perceptions, such as reactions from others (e.g., Elfenbein, Eisenkraft, & Ding, 2009; Jussim, Soffin, Brown, Ley, & Kohlhepp, 1992; Langer & Wurf, 1999).

In short, while we do not deny that self-perceptions are a strong influence on meta-perceptions, we believe evidence supports our prediction that people do make distinctions between how they see themselves and how they are seen by others. However, there is one more potential objection to meta-insight to address: If meta-perceptions are different from self-perceptions, are they different in the right way?

### Are Meta-Perceptions Closer to Others' Actual Impressions Than Are Self-Perceptions?

The second objection to meta-insight is the possibility that people fare worse when they look outside themselves to guess how others see them than when they rely on self-perceptions to guess how others see them. This objection is best illustrated by a quote from a popular psychology website: "Wondering what others think about us is mostly a complete waste of time. Because research shows that we are lousy at reading other people's minds—especially when it comes to how they see us" (Jaksch, 2010, para. 4). On one hand, some research supports this claim. People some-

times overthink the meaning of their own behavior (e.g., focus on their social blunders; Savitsky, Epley, & Gilovich, 2001), they overthink the meaning of others' behavior (e.g., read too much into others' reactions; Kaplan et al., 2009), or they do not detect or utilize feedback (e.g., Shechtman & Kenny, 1994).

On the other hand, at least two studies have suggested that people effectively use information beyond their self-perceptions. The study by Carlson and Furr (2009) described above found that people can detect the often-subtle differences between how they are seen by their college friends, their hometown friends, and their parents on the Big Five traits. This shows that people are correctly using information other than their global self-perception to form their meta-perceptions because they clearly adjust their meta-perceptions from one context to another (i.e., differentiated meta-perceptions cannot be driven solely by a global self-perception) and they do so in an accurate manner.

Perhaps the most direct evidence for meta-insight comes from a study examining personality pathology among military recruits. After 6 weeks of training, recruits were asked to describe themselves and their flight members on personality pathology traits and then estimate how they would be rated by their flight members on the same traits (Oltmanns, Gleason, Klonsky, & Turkheimer, 2005). Self- and meta-perceptions independently predicted other-perceptions, suggesting that "expected peer scores are not the same as self scores" (Oltmanns et al., 2005, p. 748). That is, military recruits understood how their reputation for pathological traits among coworkers differed from their self-perceptions of pathology.

## Summary

The literature provides some support for the two objections to meta-insight, but we believe that the evidence is not overwhelming and leaves room for the possibility that people do possess meta-insight. Our goal was to provide conclusive evidence for meta-insight by directly testing whether people make valid distinctions between how they see themselves and how others see them for a broad range of traits across several naturalistic social contexts (e.g., first impressions and close friends). We also aimed to test the limits of meta-insight by explicitly examining whether meta-perceptions are distinct not just from global self-perceptions but from contextualized self-perceptions and self-perceptions of behavior as well. This strong test was crucial because meta-accuracy may be driven by how people see themselves in specific situations instead of global self-perceptions. For acquaintances or close others, meta-accuracy might be driven by context-specific self-perceptions (Slatcher & Vazire, 2009; Wood & Roberts, 2006) or fluctuations in behavior across situations (e.g., Furr & Funder, 2004; Hasler, Mehl, Bootzin, & Vazire, 2008). For new acquaintances, meta-accuracy might be driven by self-perceptions of behavior (Albright et al., 2001; Albright & Malloy, 1999), or the way people see themselves during a brief interaction with a stranger.

Regardless of the outcome of our studies, we believed it important to investigate whether people have meta-insight. The vast majority of meta-accuracy studies have operationalized meta-accuracy as the raw correlation between meta-perceptions and others' actual impressions. While this makes sense for a number of reasons, this correlation cannot answer one important question: Do people have genuine insight into their reputation, or are they achieving meta-accuracy simply by capitalizing on the fact that

others see them similarly to how they see themselves? We believe that true self-knowledge of one's reputation (i.e., meta-insight) requires that a person be aware of the differences between how the person sees him- or herself and how others see the person. The goal of the research described in this article was to determine whether people have this skill.

## Research Overview

In the following three studies, we provide a strong test of meta-insight. In Study 1, we provide a broad overview of meta-insight by examining whether people make valid distinctions between the way they see themselves and the way a new acquaintance and close other see them for a variety of traits. In Studies 2 and 3, we provide a stronger test of meta-insight by examining whether people make valid distinctions between how they see themselves when they are with a specific person and how that specific person sees them. In Study 2, we examine the role of contextual self-perceptions for several close others, and in Study 3, we examine the role of self-perceptions of behavior for a new acquaintance.

In each study, we first report the correlation between self- and meta-perceptions, self-other agreement (the correlation between self-perceptions and others' perceptions), and meta-accuracy (the correlation between meta-perceptions and others' perceptions). Next, we report results from simultaneous multiple regressions that include both self- and meta-perceptions (independent variables) as predictors of others' perceptions (dependent variable). From these regressions, we report the standardized beta weights for self- and meta-perceptions. If meta-perceptions are associated with others' perceptions in ways that differ from self-perceptions, then the beta weights for meta-perceptions should be significant.

Next, we report the incremental change in  $R^2$  from two hierarchical regression models to examine whether meta-perceptions explain more unique variance in others' perceptions than do self-perceptions. In one model, we predict others' perceptions from meta-perceptions in Step 1 and self-perceptions in Step 2. The change in  $R^2$  reveals how much unique information self-perceptions explain above and beyond meta-perceptions. In the other model, we predict others' perceptions from self-perceptions in Step 1 and meta-perceptions in Step 2. The change in  $R^2$  in this model reveals how much unique information meta-perceptions explain above and beyond self-perceptions when all of the shared variance between self- and meta-perceptions is attributed to self-perceptions. We can then compare this to the change in  $R^2$  in the first model. If meta-perceptions explain more unique variance in others' perceptions than do self-perceptions, the incremental change in  $R^2$  should be greater for the second model than the first. Together, these regression analyses address our central question of whether people know the difference between their self-perceptions and how others see them.

## Study 1

Study 1 provided a broad overview of meta-insight. Specifically, we assessed whether people know how a new acquaintance and a close other see their personality across a variety of traits.

## Method

**Participants.** Participants ( $N = 198$ ; 75 men, 123 women;  $M_{\text{age}} = 19.53$  years) were undergraduates at Washington Univer-

sity in St. Louis (St. Louis, MO) who were given course credit for their participation. Approximately 63.2% were Caucasian, 20.8% were Asian American, 10.8% were African American, 2.6% were Latin American, less than 1% were Native American or Middle Eastern, and about 1.3% described themselves as other.

Participants nominated 693 close others, 469 of whom responded (67.7% response rate). We followed the approach described by Vazire (2006a), and as such, informants were not compensated for their participation. For the current analyses, we randomly selected a single informant for each participant to make results comparable to results for new acquaintances. Of these informants ( $n = 198$ ), 21.4% were friends, 13.0% mothers, 8.4% roommates, 4.6% romantic partners, 3.1% fathers, 3.1% sisters, 1.5% brothers, and the rest were other or not specified. On average, participants had known their informant for 2.27 years.<sup>1</sup>

**Procedure.** Unacquainted participants came to the lab in pairs and completed a self-perception measure in separate rooms. Next, they were told that they would engage in a brief getting-acquainted exercise with a new acquaintance (i.e., the other participant). They were escorted into an interaction room and were instructed to talk about whatever topics they wished for 5 min.<sup>2</sup> Afterward, participants were escorted back into their separate rooms where they provided other-perceptions and meta-perceptions about their new acquaintance.

After completing measures about their new acquaintance, participants were asked to nominate three informants who knew them well and to provide meta-perceptions for each person. With participants' permission, informants were contacted via e-mail, informed that the participant had nominated them as someone who could describe his or her personality, and asked to describe the participant's personality using an online personality measure.

**Measures.** Self-perceptions, other-perceptions, and meta-perceptions were measured using the same 61-item questionnaire. The questionnaire included the 44-item Big Five Inventory (John & Srivastava, 1999) and additional items not captured by the Big Five (see Table 1). In addition to the Big Five scales, we computed two additional personality scales: (a) Narcissistic, which comprised the items "Exaggerates his/her skills," "Likes to be the center of attention," "Is arrogant, thinks too much of him/herself" and "Is power-oriented, values power in self and others," and (b) Well-Being, which comprised the items "Is happy, satisfied with life," "Has high self-esteem," "Is depressed," and "Is lonely" (with the latter two items reverse-scored). Items were rated on a 7-point Likert-type scale from 1 (*strongly disagree*) to 7 (*strongly agree*). The internal consistency reliabilities (i.e., alphas) were acceptable and were similar, on average, for each type of perception (see Table 1). Given that some traits were assessed with multiple items whereas others were assessed with single items, it is not appropriate to compare the absolute magnitude of effects across traits. Instead, the focus should be on the relative magnitude of correlations (i.e., self-other agreement vs. meta-accuracy) and regression weights (i.e., incremental validity of self-perceptions over meta-perceptions vs. incremental validity of meta-perceptions over self-perceptions) for each trait.

Instructions were adapted for each respective perception (self-, other-, and meta-perception). For example, the prompt for other-perceptions for a new acquaintance was "How do you think your partner typically thinks, feels, and behaves in everyday life? Please use the following items to rate your partner's personality. This may

or may not be the same as how he/she behaved in the interaction," whereas the prompt for the meta-perception questionnaire was "How do you think your partner perceives your personality? Specifically, how do you think your partner perceives the way you typically think, feel, and behave in everyday life?"

## Analyses

New acquaintances rated and were rated by each other. To account for nonindependence, the data were analyzed at the level of the dyad using multilevel modeling in SPSS (i.e., actor-partner independence model; Kenny, Kashy, & Cook, 2006). The dyads included opposite- and same-sex dyads, and individuals were not differentiated on any meaningful characteristic; therefore, dyad members were treated as interchangeable. In addition, intercepts were allowed to vary randomly, but slopes were held constant across dyads (Kenny et al., 2006). Some participants did not rate a new acquaintance because their interaction partner did not attend the scheduled session or because participants were already acquainted. Thus, the new-acquaintance sample ( $n = 180$ , or 90 dyads) reflected a subset of the close-other sample.

For new acquaintances, the relationships between self- and meta-perceptions, self- and other-perceptions (i.e., self-other agreement), and meta- and other-perceptions (i.e., meta-accuracy) were modeled as correlations by standardizing each variable before conducting multilevel modeling analyses. For close others, these relationships were modeled as Pearson correlations.

To evaluate the extent to which meta-perceptions provide information above and beyond self-perceptions when predicting others' perceptions, we predicted others' perceptions (dependent variable) from participants' self- and meta-perceptions (independent variables) separately for each trait. For new acquaintances, effects were modeled in multilevel modeling with standardized predictors. For close others, effects were modeled with ordinary least squares (OLS) regression. The change in  $R^2$  was not reported for new acquaintances due to constraints in estimating  $R^2$  change in the actor-partner independence model.

## Results

Table 2 shows that, as expected, the relationship between self- and meta-perceptions was strong for a new acquaintance (mean  $\beta = .45$ ) and close other (mean  $r = .65$ ). Self-other agreement was descriptively (but not statistically significantly) weaker for a new acquaintance (mean  $\beta = .12$ ) than for a close other (mean  $r = .35$ ). Meta-accuracy was also descriptively weaker for a new acquaintance (mean  $\beta = .21$ ) than for a close other (mean  $r = .42$ ). More importantly, meta-accuracy for a new acquaintance was significant for all but four traits (i.e., emotional stability, assertive, likeable, and honest), and meta-accuracy for a close other was significant for all traits.

Did meta-perceptions remain significant predictors of others' perceptions after controlling for self-perceptions? Table 2 shows

<sup>1</sup> Data from this data set were reported in Carlson, Furr, and Vazire (2010) and Carlson, Vazire, and Oltmanns (2011), but the current results were not reported in those studies.

<sup>2</sup> Before and after the interaction, participants also completed several questionnaires unrelated to the current study. The interactions were videotaped with participants' knowledge.

Table 1  
*Study 1: Descriptive Statistics for New Acquaintances and Close Others*

Trait	New acquaintances						Close others			
	Self-perception		Other-perception		Meta-perception		Other-perception		Meta-perception	
	<i>M (SD)</i>	$\alpha$	<i>M (SD)</i>	$\alpha$	<i>M (SD)</i>	$\alpha$	<i>M (SD)</i>	$\alpha$	<i>M (SD)</i>	$\alpha$
Extraversion	4.55 (1.11)	.90	4.27 (1.29)	.92	4.81 (1.18)	.92	5.04 (1.10)	.88	4.98 (1.09)	.88
Agreeableness	5.14 (0.90)	.81	5.12 (0.88)	.86	4.94 (0.74)	.81	5.51 (1.12)	.88	5.11 (0.97)	.88
Conscientiousness	4.72 (0.97)	.85	4.85 (0.83)	.88	4.38 (0.73)	.86	5.27 (1.04)	.87	4.77 (1.02)	.85
Emotional Stability	4.26 (1.12)	.86	4.63 (0.92)	.82	4.76 (0.96)	.86	4.51 (1.16)	.88	4.12 (1.19)	.86
Openness	5.04 (0.95)	.85	4.68 (0.93)	.89	4.45 (0.86)	.88	5.13 (1.03)	.88	5.10 (0.95)	.88
Well-Being	5.03 (1.10)	.78	5.37 (0.90)	.81	5.46 (0.97)	.83	5.49 (1.13)	.75	5.33 (1.11)	.83
Narcissistic	3.78 (1.08)	.62	3.33 (1.14)	.73	3.95 (1.04)	.71	3.22 (1.10)	.66	3.86 (1.14)	.66
Assertive	4.62 (1.40)		4.36 (1.43)		4.61 (1.28)		4.91 (1.60)		4.77 (1.56)	
Intelligent	5.72 (0.91)		5.80 (0.73)		5.14 (0.81)		6.55 (0.66)		6.10 (0.85)	
Impulsive	4.18 (1.59)		3.57 (1.34)		3.97 (1.25)		3.81 (1.70)		4.18 (1.73)	
Need for Achievement	5.85 (1.06)		5.76 (0.91)		4.95 (1.11)		6.28 (0.96)		6.10 (1.03)	
Need for Affiliation	4.04 (1.86)		4.00 (1.60)		4.26 (1.39)		4.05 (1.76)		4.28 (1.76)	
Likeable	5.64 (0.88)		5.71 (0.90)		5.26 (0.91)		6.41 (0.75)		6.28 (0.79)	
Honest	5.72 (1.06)		5.52 (0.97)		5.29 (0.87)		6.17 (1.03)		5.94 (1.08)	
Attractive	4.93 (1.19)		4.79 (1.31)		4.73 (1.21)		6.04 (1.18)		5.69 (1.14)	
Funny	5.16 (1.04)		4.72 (1.13)		4.42 (1.06)		5.91 (1.01)		5.77 (0.99)	
Mean $\alpha$		.81		.84		.84		.83		.83

*Note.* Self-perception alphas are based on the new-acquaintance subsample. Reliability was not computed for single items. Self-perception and close others *Ns* = 198, new acquaintances *N* = 90 dyads.

that the overall partial effect for meta-perception was similar in strength to overall raw meta-accuracy correlations for a new acquaintance (mean partial meta-perception  $\beta = .20$  vs. meta-accuracy  $\beta = .21$ ) and a close other (mean partial meta-perception  $\beta = .33$  vs. meta-accuracy  $r = .42$ ). Moreover, the partial effect for meta-perception remained significant for all traits that showed significant meta-accuracy, with only one exception (i.e., the trait intelligent for a new acquaintance).

Going further, in comparing the incremental validity provided by meta-perceptions and self-perceptions, we found that, descriptively, meta-perceptions explained more unique variance in others' perceptions than did self-perceptions for close others (mean self-perception  $\Delta R^2 = .01$ , mean meta-perception  $\Delta R^2 = .07$ ). In other words, meta-perceptions seemed to have more unique overlap with others' perceptions than did self-perceptions, at least for close others. Recall that we could not examine the change in  $R^2$  for new acquaintances.

**Discussion**

These results suggest that people possess meta-insight across a broad range of traits in very different social contexts. Despite a strong association between self- and meta-perceptions, meta-perceptions were associated with others' perceptions in a way that differed from self-perceptions. Thus, in contrast to the assumptions in the field that self-perceptions account for any observed meta-accuracy or that deviating from self-perceptions when forming meta-perceptions leads people astray, our findings suggest that people made valid distinctions between how they saw themselves and how others perceived them.

Although the effects for meta-insight were relatively small, our findings that people achieve meta-insight across a variety of traits and contexts suggest that people have an impressive level of insight into the impressions they make. The temptation to rely exclusively on self-perceptions when forming meta-perceptions in either context was

likely very strong. When guessing how a new acquaintance viewed them, participants might have believed that they had little information other than their self-perception, especially for traits that were not clearly visible after a short conversation (e.g., well-being, impulsive). Furthermore, intuition and research suggest that close others tend to see people as they see themselves (e.g., Connelly & Ones, 2010; Vazire & Carlson, 2010). Thus, it is especially likely that participants' self-perceptions easily came to mind when guessing how a close other viewed them. Of course, for either a new acquaintance or close other, the tendency to read too heavily into one's own or into others' behavior could have also led participants astray. Despite these obstacles, participants achieved meta-insight, suggesting a keen understanding of social reality.

These findings provide preliminary evidence that self-perceptions do not completely account for meta-accuracy and that people are not led astray when they look outside of themselves to detect the impressions they make. However, we have not eliminated the possibility that other forms of self-perception drive meta-accuracy. Next, we examine potential boundary conditions to meta-insight by controlling for other forms of self-perception for a close other (contextualized self-perceptions, Study 2) and new acquaintance (self-perceptions of behavior, Study 3).

**Study 2**

The main goal of Study 2 was to eliminate the possibility that accurate meta-perceptions observed for close others in Study 1 were driven by self-perceptions. First, although participants demonstrated meta-insight for a close other, we did not eliminate the possibility that global self-perceptions drive meta-accuracy for a specific type of close other, such as a friend or a family member. Some types of close others see people as they see themselves more so than other types of close others (e.g., Malloy et al., 1997). Thus, to eliminate the possi-

Table 2

## Study 1: Correlations Among Self-, Other-, and Meta-Perceptions and Multiple Regression Analyses

Trait	New acquaintances					Close others						
	Correlations			Multiple regression		Correlations			Multiple regression			
				Self-perception	Meta-perception				Self-perception	Meta-perception	$\Delta R^2$	
Self-meta	Self-other	Meta-other	$\beta$	$\beta$	Self-meta	Self-other	Meta-other	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	
Extraversion	<b>.56</b>	<b>.36</b>	<b>.37</b>	<b>.21</b>	<b>.25</b>	<b>.81</b>	<b>.63</b>	<b>.66</b>	<b>.29</b>	<b>.03</b>	<b>.42</b>	<b>.06</b>
Agreeableness	<b>.54</b>	<b>.17</b>	<i>.13</i>	.11	<i>.15</i>	<b>.77</b>	<b>.52</b>	<b>.59</b>	<i>.16</i>	<i>.01</i>	<b>.46</b>	<b>.09</b>
Conscientiousness	<b>.43</b>	.08	<b>.28</b>	-.03	<b>.30</b>	<b>.69</b>	<b>.47</b>	<b>.46</b>	<b>.29</b>	<b>.04</b>	<b>.26</b>	<b>.04</b>
Emotional Stability	<b>.51</b>	-.05	<i>.06</i>	-.12	<i>.14</i>	<b>.79</b>	<b>.52</b>	<b>.51</b>	<b>.30</b>	<b>.04</b>	<b>.27</b>	<b>.03</b>
Openness	<b>.61</b>	<b>.30</b>	<b>.43</b>	<i>.06</i>	<b>.38</b>	<b>.80</b>	<b>.43</b>	<b>.56</b>	-.07	.00	<b>.62</b>	<b>.14</b>
Well-Being	<b>.44</b>	-.02	<i>.13</i>	-.09	<b>.21</b>	<b>.75</b>	<b>.36</b>	<b>.43</b>	.08	.00	<b>.37</b>	<b>.06</b>
Narcissistic	<b>.39</b>	.23	<b>.34</b>	.11	<b>.31</b>	<b>.70</b>	<b>.38</b>	<b>.39</b>	<b>.21</b>	<b>.02</b>	<b>.25</b>	<b>.03</b>
Assertive	<b>.62</b>	.23	<i>.12</i>	<i>.06</i>	<i>.07</i>	<b>.66</b>	<b>.34</b>	<b>.39</b>	<i>.15</i>	<i>.01</i>	<b>.29</b>	<b>.05</b>
Intelligent	<b>.39</b>	<i>.06</i>	<i>.13</i>	<i>.01</i>	<i>.13</i>	<b>.31</b>	<i>.03</i>	<b>.31</b>	-.07	.00	<b>.33</b>	<b>.10</b>
Impulsive	<b>.36</b>	.12	<b>.23</b>	<i>.05</i>	<b>.20</b>	<b>.72</b>	<b>.31</b>	<b>.34</b>	<i>.14</i>	<i>.01</i>	<b>.24</b>	<b>.03</b>
Need for Achievement	<b>.34</b>	.09	<b>.27</b>	<i>.01</i>	<b>.25</b>	<b>.57</b>	<b>.32</b>	<b>.44</b>	.11	.01	<b>.38</b>	<b>.10</b>
Need for Affiliation	<b>.29</b>	.05	<b>.31</b>	-.02	<b>.29</b>	<b>.61</b>	<b>.23</b>	<b>.28</b>	.09	.01	<b>.22</b>	<b>.03</b>
Likeable	<b>.43</b>	<b>.23</b>	<i>.12</i>	<b>.21</b>	<i>.05</i>	<b>.43</b>	<b>.18</b>	<b>.34</b>	.04	.00	<b>.33</b>	<b>.09</b>
Honest	<b>.26</b>	-.10	-.02	-.10	.00	<b>.49</b>	<i>.13</i>	<b>.23</b>	.02	.00	<b>.22</b>	<b>.04</b>
Attractive	<b>.62</b>	<b>.25</b>	<b>.30</b>	.11	<b>.24</b>	<b>.46</b>	<b>.26</b>	<b>.42</b>	.09	.01	<b>.38</b>	<b>.11</b>
Funny	<b>.35</b>	<b>.17</b>	<b>.21</b>	.11	<b>.21</b>	<b>.41</b>	<b>.31</b>	<b>.30</b>	<b>.23</b>	<b>.04</b>	<b>.21</b>	<b>.04</b>
Overall mean	.45	.12	.21	.04	.20	.65	.35	.42	.13	.01	.33	.07

Note. New acquaintances  $N = 90$  dyads, close others  $N = 198$ . Bold correlations are significant ( $p < .05$ , two-tailed); italicized correlations are marginally significant ( $p < .10$ , two-tailed). Average correlations were computed by first transforming correlations using the Fisher  $r$ -to- $z$  transformation. Mean correlations reflect Fisher  $z$  scores that have been transformed back into correlations. Self-perception betas and meta-perception betas are the standardized beta weights from the simultaneous multiple regression model where self- and meta-perceptions were predictors of others' perceptions (new acquaintance or close other). Self-meta = the correlation between self- and meta-perceptions; Self-other = the correlation between self- and other-perceptions; Meta-other = the correlation between meta- and other-perceptions; self-perception  $\Delta R^2$  = amount of unique variance in other's perception explained by self-perceptions (i.e., when meta-perceptions were entered in Step 1 and self-perceptions were entered in Step 2); meta-perception  $\Delta R^2$  = amount of unique variance in other's perception explained by meta-perceptions (i.e., when self-perceptions were entered in Step 1 and meta-perceptions were entered in Step 2).

bility that global self-perceptions drive meta-accuracy for a specific type of close other, such as for a friend, we examined meta-insight for several types of close others. Second, people see themselves differently in different social contexts (Wood & Roberts, 2006). Thus, we did not eliminate the possibility that contextual self-perceptions drive meta-accuracy. To eliminate this possibility, participants in the current study also described how they perceive their personality when they are with specific close others (i.e., a college and hometown friend, a parent, and a romantic partner), and we controlled for these perceptions when testing for meta-insight.

## Method

**Participants.** Undergraduates ( $N = 110$ ; 41 men, 69 women;  $M_{\text{age}} = 19.7$  years) were students in a personality course at Washington University in St. Louis (St. Louis, MO) who participated as part of a class activity.<sup>3</sup> Approximately 72% were Caucasian, 16% were Asian American, 5% were African American, 5% were Latin American, and the rest described themselves as other.

Participants were asked to provide e-mail addresses for up to six informants: one parent, two hometown friends, two college friends, and a romantic partner. We randomly selected one informant from the contexts that included two potential informants (i.e., college and hometown friends). On average, participants had known their college friend ( $n = 70$ ) for 1.78 years, their hometown friend ( $n = 62$ ) for

8.86 years, their parent ( $n = 80$ ) for 20 years, and their romantic partner ( $n = 23$ ) for 2.37 years.

**Procedure.** In the beginning of the semester, participants provided their global self-perceptions of personality, and a few weeks later, they provided meta-perceptions and e-mail addresses for each of their six informants. Toward the end of the semester, participants described how they perceived themselves when with each informant (i.e., contextualized self-perceptions). We used the names and e-mail addresses provided by participants to send potential informants e-mail invitations explaining that the participant had listed the recipient as knowing him or her well enough to describe the participant's personality and also including a link to the online personality measure (Vazire, 2006a).<sup>4</sup>

**Measures.** Global self-perceptions, contextualized self-perceptions, other-perceptions, and meta-perceptions were measured with the Ten-Item Personality Inventory (TIPI; Gosling, Rentfrow, & Swann, 2003) and six additional traits not captured by the Big Five (e.g., arrogant; see Table 3). Instructions for contextualized self-perceptions were as follows:

<sup>3</sup> First-impression data collected from these participants were reported in Carlson et al. (2011). The current results were not reported in that study.

<sup>4</sup> Participants took part in other, unrelated activities throughout the semester.

Table 3  
Study 2: Means and Reliabilities of Global and Contextual Self-, Other-, and Meta-Perceptions

Trait	College friend			Hometown friend			Parent			Romantic partner			
	Global self <i>M</i> ( $\alpha$ )	Self <i>M</i> ( $\alpha$ )	Other <i>M</i> ( $\alpha$ )	Meta <i>M</i> ( $\alpha$ )	Self <i>M</i> ( $\alpha$ )	Other <i>M</i> ( $\alpha$ )	Meta <i>M</i> ( $\alpha$ )	Self <i>M</i> ( $\alpha$ )	Other <i>M</i> ( $\alpha$ )	Meta <i>M</i> ( $\alpha$ )	Self <i>M</i> ( $\alpha$ )	Other <i>M</i> ( $\alpha$ )	Meta <i>M</i> ( $\alpha$ )
Extraversion	9.51 (.86)	11.43 (.78)	5.09 (.87)	10.22 (.82)	11.36 (.79)	5.14 (.79)	10.35 (.83)	10.59 (.77)	4.65 (.65)	9.74 (.72)	10.67 (.50)	4.88 (.70)	10.12 (.60)
Agreeableness	10.95 (.25)	10.51 (.38)	4.98 (.50)	10.60 (.46)	10.86 (.31)	5.00 (.50)	10.51 (.44)	8.90 (.08)	5.39 (.26)	9.62 (.49)	10.81 (.16)	5.38 (.46)	10.43 (.04)
Conscientiousness	10.68 (.60)	10.43 (.50)	5.29 (.69)	10.52 (.64)	11.24 (.51)	5.89 (.68)	10.98 (.54)	10.28 (.56)	5.91 (.52)	10.62 (.66)	10.81 (.25)	5.40 (.54)	10.33 (.74)
Emotional Stability	10.22 (.71)	10.32 (.74)	4.66 (.70)	9.61 (.66)	10.82 (.71)	4.80 (.50)	9.83 (.67)	9.46 (.66)	5.17 (.63)	9.13 (.66)	9.31 (.91)	4.88 (.72)	9.69 (.70)
Openness	10.81 (.56)	10.87 (.64)	5.14 (.59)	10.62 (.60)	11.00 (.62)	5.23 (.69)	11.02 (.63)	10.51 (.62)	5.79 (.36)	11.40 (.69)	11.31 (.35)	5.00 (.66)	11.52 (-.02)
Arrogant	5.32	5.22	2.35	5.13	5.30	2.66	4.93	6.19	1.84	5.19	6.45	2.20	5.40
Intelligent	12.17	11.60	6.07	11.85	12.70	6.36	13.26	13.20	6.72	13.96	12.10	6.48	12.81
Funny	10.80	11.34	5.53	10.93	11.85	5.71	11.48	11.44	5.46	11.44	12.05	6.05	12.29
Exaggerate Abilities	6.20	5.71	2.77	5.81	5.71	2.67	5.41	6.05	1.60	4.89	5.33	2.86	5.67
Likeable	11.77	12.30	6.36	12.54	12.92	6.21	13.13	12.49	6.65	13.33	13.33	6.57	13.95
Physically Attractive	10.58	10.86	5.70	11.30	11.15	5.50	11.48	11.90	6.65	13.16	13.19	6.52	13.91
Overall mean $\alpha$	.60	.61	.70	.63	.59	.64	.62	.54	.48	.64	.43	.62	.42

Note. College friend  $N = 70$ , hometown friend  $N = 62$ , parent  $N = 80$ , romantic partner  $N = 23$ . Reliabilities were not computed for single items. Global self = global self-perception; Self = contextual self-perception; Other = other's perception; Meta = meta-perception.

Although you have a general way of thinking, feeling, and behaving in your everyday life, sometimes your personality is different around different people. Think about what you are like when you are with different people. In particular, think about the people you listed a few weeks ago as "informants." What are you like, or how do you typically think, feel, and behave when you are with each person?

The internal consistency reliabilities of traits were acceptable (see Table 3). Again, given that the number of items used to measure each trait varied, our focus is on the overall pattern of results rather than differences across traits.

### Analyses

The relationships between self-, other-, and meta-perceptions were computed as Pearson correlations. The multiple regression analyses were modeled with OLS regression. Correlation and regression analyses were conducted separately for global and contextual self-perceptions.

### Results

As expected, the relationship between self- and meta-perceptions was strong for both global self-perceptions (mean  $r$  ranging from .51 to .57) and contextual self-perceptions (mean  $r$  ranging from .56 to .64; see Table 4). Notably, for both forms of self-perceptions, these mean correlations were not especially strong for any single context. In other words, participants generally did not assume that a particular type of informant saw them as they saw themselves more so than any other type of informant. Self-other agreement based on global self-perceptions (mean  $r$  ranging from .29 to .35) was similar to self-other agreement based on contextual self-perceptions (mean  $r$  ranging from .28 to .36). Meta-accuracy was also moderate (mean  $r$  ranging from .36 to .42). Moreover, meta-accuracy was significant for every trait except for intelligent (hometown friend, parent, and romantic partner) and likeable (parent and romantic partner). Given the small sample size of romantic partner informants, meta-accuracy for a romantic partner was not significant for a few additional traits (i.e., agreeableness, openness, funny, and exaggerates abilities).

Did meta-perceptions predict others' perceptions in each context after controlling for global self-perceptions? Table 5 shows that the overall partial effects for meta-perceptions were moderate (i.e., the weakest mean  $\beta = .26$  for a parent) and not much weaker than overall meta-accuracy (e.g., the largest drop was for a college friend: mean meta-accuracy  $r = .42$ , partial effect  $\beta = .28$ ). Moreover, of the traits that showed significant meta-accuracy, the partial effects for meta-perceptions remained significant for all but two or three traits in each context. Going further, in comparing the incremental validity provided by meta-perceptions and self-perceptions, we found that, descriptively, meta-perceptions explained more unique variance in others' perceptions than did global self-perceptions in each context (e.g., parent mean self-perception  $\Delta R^2 = .02$ , parent mean meta-perception  $\Delta R^2 = .07$ ). In other words, although self- and meta-perceptions were highly correlated, meta-perceptions seemed to have more unique overlap with others' perceptions than did self-perceptions.

Table 4  
Study 2: Correlations Among Self-, Other-, and Meta-Perceptions for Global and Contextual Self-Perceptions

Trait	College friend					Hometown friend					Parent					Romantic partner				
	Self-meta		Self-other		Meta-other	Self-meta		Self-other		Meta-other	Self-meta		Self-other		Meta-other	Self-meta		Self-other		Meta-other
	G	C	G	C		G	C	G	C		G	C	G	C		G	C	G	C	
Extraversion	<b>.76</b>	<b>.55</b>	<b>.62</b>	<b>.32</b>	<b>.71</b>	<b>.67</b>	<b>.74</b>	<b>.54</b>	<b>.42</b>	<b>.57</b>	<b>.74</b>	<b>.59</b>	<b>.51</b>	<b>.34</b>	<b>.60</b>	<b>.65</b>	<b>.78</b>	<b>.76</b>	<b>.52</b>	<b>.59</b>
Agreeableness	<b>.60</b>	<b>.54</b>	<b>.32</b>	<b>.43</b>	<b>.58</b>	<b>.64</b>	<b>.53</b>	<b>.36</b>	<b>.25</b>	<b>.44</b>	<b>.51</b>	<b>.60</b>	<b>.31</b>	<b>.27</b>	<b>.52</b>	<b>.68</b>	<b>.62</b>	<b>.33</b>	<b>.22</b>	<b>.24</b>
Conscientiousness	<b>.63</b>	<b>.61</b>	<b>.48</b>	<b>.38</b>	<b>.49</b>	<b>.53</b>	<b>.45</b>	<b>.46</b>	<b>.47</b>	<b>.40</b>	<b>.59</b>	<b>.64</b>	<b>.42</b>	<b>.40</b>	<b>.43</b>	<b>.72</b>	<b>.71</b>	<b>.58</b>	<b>.53</b>	<b>.56</b>
Emotional Stability	<b>.55</b>	<b>.62</b>	<b>.21</b>	<b>.34</b>	<b>.42</b>	<b>.58</b>	<b>.71</b>	<b>.33</b>	<b>.42</b>	<b>.48</b>	<b>.54</b>	<b>.71</b>	<b>.48</b>	<b>.44</b>	<b>.52</b>	<b>.58</b>	<b>.65</b>	<b>.52</b>	<b>.36</b>	<b>.67</b>
Openness	<b>.62</b>	<b>.63</b>	<b>.32</b>	<b>.34</b>	<b>.39</b>	<b>.61</b>	<b>.74</b>	.23	.14	<b>.24</b>	<b>.53</b>	<b>.49</b>	<b>.28</b>	<b>.37</b>	<b>.22</b>	<b>.62</b>	<b>.49</b>	<b>.46</b>	<b>.55</b>	<b>.23</b>
Arrogant	<b>.50</b>	<b>.61</b>	.15	<b>.31</b>	<b>.44</b>	<b>.46</b>	<b>.62</b>	.08	<b>.24</b>	<b>.36</b>	<b>.50</b>	<b>.52</b>	<b>.19</b>	<b>.30</b>	<b>.31</b>	<b>.45</b>	<b>.46</b>	.06	<b>.36</b>	<b>.52</b>
Intelligent	<b>.30</b>	<b>.48</b>	<b>.34</b>	<b>.39</b>	<b>.19</b>	<b>.21</b>	.21	.17	<b>.31</b>	.03	<b>.43</b>	<b>.49</b>	.11	<b>.34</b>	.18	<b>.60</b>	<b>.69</b>	.12	<b>.06</b>	<b>.05</b>
Funny	<b>.42</b>	<b>.51</b>	<b>.28</b>	<b>.23</b>	<b>.38</b>	<b>.47</b>	<b>.70</b>	.12	<b>.27</b>	<b>.33</b>	<b>.45</b>	<b>.60</b>	<b>.26</b>	<b>.27</b>	<b>.48</b>	.28	<b>.05</b>	-.05	<b>.56</b>	<b>.22</b>
Exaggerates Abilities	<b>.59</b>	<b>.50</b>	<b>.32</b>	<b>.20</b>	<b>.24</b>	<b>.59</b>	<b>.58</b>	<b>.32</b>	<b>.30</b>	<b>.41</b>	<b>.61</b>	<b>.36</b>	<b>.24</b>	.14	.16	<b>.50</b>	<b>.79</b>	-.02	<b>.22</b>	<b>.16</b>
Likeable	<b>.51</b>	<b>.53</b>	<b>.34</b>	<b>.23</b>	<b>.20</b>	<b>.46</b>	<b>.66</b>	<b>.42</b>	<b>.39</b>	<b>.53</b>	<b>.30</b>	<b>.50</b>	<b>.22</b>	.16	.13	<b>.39</b>	<b>.52</b>	-.15	.00	<b>.11</b>
Physically Attractive	<b>.64</b>	<b>.60</b>	<b>.44</b>	<b>.36</b>	<b>.44</b>	<b>.48</b>	<b>.82</b>	.15	<b>.51</b>	<b>.41</b>	<b>.27</b>	<b>.55</b>	.17	<b>.06</b>	<b>.25</b>	<b>.31</b>	<b>.70</b>	<b>.23</b>	<b>.42</b>	<b>.57</b>
Overall mean	.57	.56	.35	.32	.42	.53	.64	.30	.34	.39	.51	.56	.30	.28	.36	.54	.61	.29	.36	.38

Note. College friend  $N = 70$ , hometown friend  $N = 62$ , parent  $N = 80$ , romantic partner  $N = 21$ . Bold correlations are significant ( $p < .05$ , two-tailed); italicized correlations are marginally significant ( $p < .10$ , two-tailed). Average correlations were computed by first transforming correlations using the Fisher  $r$ -to- $z$  transformation. Mean correlations reflect Fisher  $z$  scores that have been transformed back into correlations. Self-meta = the correlation between self- and meta-perceptions; Self-other = the correlation between self- and other-perceptions; Meta-other = the correlation between meta- and other-perceptions; G = global self-perception; C = contextualized self-perception.

Did meta-perceptions predict others' perceptions in each context after controlling for contextualized self-perceptions? Table 6 shows that, for most traits, the overall partial effects for meta-perception were moderate in strength across traits (e.g., the weakest mean partial effect was  $\beta = .30$ ) and not much weaker than overall meta-accuracy (e.g., the largest drop was for a hometown friend: mean meta-accuracy  $r = .39$ , partial effect  $\beta = .31$ ). Moreover, only a few of the traits that showed significant meta-

accuracy did not show a significant partial effect for meta-perception when controlling for contextualized self-perceptions. Finally, in comparing the incremental validity provided by meta-perceptions and self-perceptions, we found that, descriptively, meta-perceptions explained more unique variance in others' perceptions than did contextualized self-perceptions (e.g., parent mean self-perception  $\Delta R^2 = .03$ , parent mean meta-perception  $\Delta R^2 = .08$ ).

Table 5  
Study 2: Multiple Regression Analyses for Global Self-Perceptions Across Social Contexts

Trait	College friend				Hometown friend				Parent				Romantic partner			
	Self-perception		Meta-perception		Self-perception		Meta-perception		Self-perception		Meta-perception		Self-perception		Meta-perception	
	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$
Extraversion	.19	.01	<b>.57</b>	<b>.14</b>	<b>.27</b>	<b>.04</b>	<b>.40</b>	<b>.09</b>	.14	.01	<b>.51</b>	<b>.12</b>	<b>.61</b>	<b>.21</b>	.24	.03
Agreeableness	.03	.00	<b>.48</b>	<b>.15</b>	.13	.01	<b>.37</b>	<b>.08</b>	.07	.00	<b>.46</b>	<b>.16</b>	.36	.07	-.04	.00
Conscientiousness	<b>.29</b>	<b>.05</b>	<b>.30</b>	<b>.06</b>	<b>.32</b>	<b>.07</b>	<b>.26</b>	<b>.05</b>	<b>.26</b>	<b>.04</b>	<b>.27</b>	<b>.05</b>	.32	.05	.36	.06
Emotional Stability	.02	.00	<b>.35</b>	<b>.08</b>	.12	.01	<b>.37</b>	<b>.09</b>	<b>.23</b>	<b>.04</b>	<b>.38</b>	<b>.11</b>	.14	.01	<b>.66</b>	<b>.29</b>
Openness	.14	.01	<b>.29</b>	<b>.05</b>	.13	.01	.16	.02	<b>.26</b>	<b>.05</b>	.05	.00	.50	.16	-.07	.00
Arrogant	-.01	.00	<b>.34</b>	<b>.09</b>	-.10	.01	<b>.38</b>	<b>.12</b>	.05	.00	<b>.27</b>	<b>.06</b>	-.25	.05	<b>.69</b>	<b>.38</b>
Intelligent	<b>.31</b>	<b>.09</b>	.08	.01	.17	.03	.00	.00	.02	.00	.20	.03	.14	.01	-.03	.01
Funny	.15	.02	<b>.30</b>	<b>.08</b>	-.06	.00	<b>.38</b>	<b>.11</b>	.05	.00	<b>.48</b>	<b>.18</b>	-.11	.01	.22	.05
Exaggerates Abilities	.19	.03	.12	.01	.12	.01	<b>.34</b>	<b>.07</b>	.24	.04	.00	.00	-.19	.03	.35	.09
Likeable	<b>.40</b>	<b>.12</b>	-.12	.01	<b>.25</b>	<b>.05</b>	<b>.37</b>	<b>.11</b>	.22	.04	.03	.00	-.15	.02	.00	.00
Physically Attractive	.26	.04	<b>.29</b>	<b>.05</b>	-.05	.00	<b>.41</b>	<b>.13</b>	.13	.02	.16	.02	.10	.01	<b>.43</b>	<b>.17</b>
Overall mean	.18	.03	.28	.07	.12	.02	.32	.08	.15	.02	.26	.07	.15	.06	.28	.10

Note. College friend  $N = 70$ , hometown friend  $N = 62$ , parent  $N = 80$ , romantic partner  $N = 21$ . Bold correlations are significant ( $p < .05$ , two-tailed); italicized items are marginally significant ( $p < .10$ , two-tailed). Self-perception betas and meta-perception betas are the standardized beta weights from the simultaneous multiple regression model where self- and meta-perceptions were predictors of others' perceptions. Self-perception  $\Delta R^2$  = amount of unique variance in other's perception explained by self-perceptions (i.e., when meta-perceptions were entered in Step 1 and self-perceptions were entered in Step 2); meta-perception  $\Delta R^2$  = amount of unique variance in other's perception explained by meta-perceptions (i.e., when self-perceptions were entered in Step 1 and meta-perceptions were entered in Step 2).



Table 6  
 Study 2: Multiple Regression Analyses for Contextual Self-Perceptions Across Social Contexts

Trait	College friend				Hometown friend				Parent				Romantic partner			
	Self-perception		Meta-perception		Self-perception		Meta-perception		Self-perception		Meta-perception		Self-perception		Meta-perception	
	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$
Extraversion	-.10	.01	<b>.76</b>	<b>.41</b>	.00	.00	<b>.57</b>	<b>.14</b>	-.02	.00	<b>.61</b>	<b>.24</b>	.15	.01	.48	.09
Agreeableness	.17	.02	<b>.49</b>	<b>.17</b>	.02	.00	<b>.42</b>	<b>.13</b>	-.07	.00	<b>.56</b>	<b>.20</b>	.12	.01	.16	.02
Conscientiousness	.13	.01	<b>.41</b>	<b>.11</b>	<b>.37</b>	<b>.11</b>	.23	.04	.21	.03	<b>.30</b>	<b>.05</b>	.28	.04	.36	.07
Emotional Stability	.13	.01	<b>.34</b>	<b>.07</b>	.16	.01	<b>.37</b>	<b>.07</b>	.22	.03	<b>.36</b>	<b>.07</b>	-.13	.01	<b>.76</b>	<b>.34</b>
Openness	.16	.02	<b>.29</b>	<b>.05</b>	-.07	.00	.29	.04	<b>.35</b>	<b>.09</b>	.05	.00	<b>.57</b>	<b>.25</b>	-.05	.00
Arrogant	.07	.00	<b>.40</b>	<b>.10</b>	.03	.00	<b>.34</b>	<b>.07</b>	.21	.03	.19	.03	.15	.02	.45	.16
Intelligent	<b>.39</b>	<b>.12</b>	.01	.00	<b>.32</b>	<b>.10</b>	-.04	.00	<b>.33</b>	<b>.08</b>	.02	.00	.05	.00	.02	.00
Funny	.04	.00	<b>.36</b>	<b>.10</b>	.08	.00	.28	.04	-.03	.00	<b>.50</b>	<b>.16</b>	<b>.55</b>	<b>.30</b>	.19	.03
Exaggerates Abilities	.11	.01	.19	.03	.09	.01	<b>.36</b>	<b>.09</b>	.10	.01	.12	.01	.23	.02	-.02	.00
Likeable	.16	.02	.12	.01	.07	.00	<b>.49</b>	<b>.14</b>	.13	.01	.07	.00	-.08	.00	.15	.02
Physically Attractive	.15	.01	<b>.35</b>	<b>.08</b>	<b>.52</b>	<b>.09</b>	-.01	.00	-.11	.01	<b>.31</b>	<b>.07</b>	.06	.00	.53	.15
Overall mean	.13	.02	.36	.10	.15	.03	.31	.07	.12	.03	.30	.08	.19	.06	.30	.08

Note. College friend  $N = 70$ , hometown friend  $N = 62$ , parent  $N = 80$ , romantic partner  $N = 21$ . Bold correlations are significant ( $p < .05$ , two-tailed); italicized items are marginally significant ( $p < .10$ , two-tailed). Self-perception betas and meta-perception betas are the standardized beta weights from the simultaneous multiple regression model where self- and meta-perceptions were predictors of others' perceptions. Self-perception  $\Delta R^2 =$  amount of unique variance in other's perception explained by self-perceptions (i.e., when meta-perceptions were entered in Step 1 and self-perceptions were entered in Step 2); meta-perception  $\Delta R^2 =$  amount of unique variance in other's perception explained by meta-perceptions (i.e., when self-perceptions were entered in Step 1 and meta-perceptions were entered in Step 2).

Discussion

The goal of the current study was to eliminate the possibility that meta-insight for close others observed in Study 1 was driven by self-perceptions. The current results, in conjunction with findings from Study 1, provide strong evidence against the possibility that global self-perceptions drive meta-accuracy for a close other. Specifically, global self-perceptions did not account for the meta-accuracy we observed for any of the types of close other we examined (i.e., college friend, hometown friend, parent, and romantic partner). Furthermore, the current results suggest that the way people see themselves when they are with a specific person (i.e., contextualized self-perceptions) did not account for meta-accuracy. Finally, although the effects were relatively small, these findings provide more evidence that self-perceptions do not completely drive meta-accuracy and that people effectively use information above and beyond their self-perceptions to achieve meta-accuracy.

Despite the strong evidence for meta-insight observed in the current study, we still have not eliminated the possibility that the meta-accuracy we observed for a new acquaintance in Study 1 was driven by self-perceptions other than a global self-perception. Study 3 was designed to provide a direct examination of the role self-perceptions play in meta-accuracy for a new acquaintance.

Study 3

Results from Study 2 suggest that people can make a distinction between how they see themselves while they are with a particular close other and how that close other sees them. Study 3 was designed to extend this finding by examining whether people make a valid distinction between how they see themselves while they are with a new acquaintance (i.e., self-perceptions of behavior) and how their new acquaintance sees their behavior.

Method

**Participants.** Undergraduates ( $N = 136$ ; 68 men, 68 women;  $M_{age} = 19$  years) from Wake Forest University (Winston-Salem, NC) participated for course credit. Approximately 82% were Caucasian, 5% were African American, 4% were Asian American, 2% were Latin American, 1% were Native American, 1% were Middle Eastern, 1% selected other, and 3% did not indicate their ethnicity.<sup>5</sup>

**Procedure.** Participants were randomly assigned to opposite-sex, unacquainted dyads. After a brief introduction, they completed the self-perception measure in separate rooms. Next, the experimenter escorted participants to an interaction room where they engaged in a 5-min, unstructured conversation with each other.<sup>6</sup> Afterward, the experimenter escorted the participants back to their separate rooms and assigned the dyad members the role of either the judge or the target. Judges described their actual perceptions of the targets' personality and behavior during the interaction, and targets provided their self-perceptions and meta-perceptions of behavior during the interaction as well as their meta-perceptions of their personality.

**Measures.** Self-, other-, and meta-perceptions of personality and behavior were measured using a 20-item measure of Big Five characteristics. Each Big Five characteristic was assessed with four items.<sup>7</sup> Items were short definitions with adjectives describing the

<sup>5</sup> Data from this data set were reported in Carlson et al. (2010), but the current results were not reported in that study.

<sup>6</sup> Before and after the interaction, participants completed several questionnaires unrelated to the current study. The interactions were videotaped with participants' knowledge.

<sup>7</sup> One item from the agreeableness personality scale (polite) was dropped due to low reliability (i.e., four-item self-perception  $\alpha = .52$ ). The agreeableness personality scale for self-, other-, and meta-perceptions consisted of three items.

poles of the dimension (e.g., “Irritable: easily angered or made impatient” was rated from “1: *Easygoing*” to “7: *Irritable*”). Similar to Studies 1 and 2, each type of perception included the same 20 items, but participants were prompted with different instructions. For example, the self-perception of personality prompt was “In general, who are you? How would you describe the way you typically think, feel, and act?”, whereas the self-perception of behavior prompt was as follows:

How do you think you behaved in the interaction you just had with your partner? Please rate how you think you presented yourself. *Note:* this is not how you think your partner saw you, but how you think you acted.

We computed Big Five scale scores separately for traits and behaviors. Internal consistency reliabilities were acceptable and similar across self- and meta-perceptions (see Table 7).

### Analyses

Unlike Study 1, each dyad member was assigned the role of either target or judge (i.e., the data were independent). Thus, correlations between self- and meta-perceptions, self–other agreement, and meta-accuracy were modeled as Pearson correlations, and the multiple regression analyses were modeled with OLS regression. Correlation and regression analyses were conducted separately for behavior and personality ratings.

### Results

Replicating findings from Study 1, the mean correlation between self- and meta-perceptions of personality traits was fairly strong (mean  $r = .43$ ); however, the correlation was notably descriptively stronger for behavior (mean  $r = .80$ ; see Table 7). Self–other agreement was also descriptively weaker for personality traits (mean  $r = .05$ ) than for behavior ratings (mean  $r = .14$ ), but meta-accuracy was similar for personality traits (mean  $r = .24$ ) and behavior ratings (mean  $r = .22$ ). Furthermore, meta-accuracy was significant for four of the five personality traits and three of the five behavior ratings.

Did meta-perceptions predict others’ perceptions after controlling for self-perceptions? Table 7 shows that, similar to Study 1, the overall partial effect for meta-perceptions was moderate (mean partial effect of meta-perception  $\beta = .26$ ). The partial effects were significant for every trait that showed significant meta-accuracy, with one exception (openness). Also similar to results from Study 1, descriptively, meta-perceptions of personality explained more unique variance in others’ perceptions than did self-perceptions (mean self-perception  $\Delta R^2 = .01$ , mean meta-perception  $\Delta R^2 = .06$ ).

Did meta-perceptions of behavior predict others’ perceptions after controlling for self-perceptions of behavior? Table 7 reveals that, similar to personality ratings, the strength of the relationship between meta-perceptions and others’ perceptions, controlling for self-perceptions, was moderate (mean meta-perception  $\beta = .27$ ). Moreover, the partial effects were significant for every trait that showed significant meta-accuracy, with one exception (emotional stability). Table 7 also shows that, despite the very strong relationship between self- and meta-perceptions of behavior ratings, meta-perceptions still provided more incremental validity than did self-perceptions. That is, descriptively, meta-perceptions of behavior explained slightly more unique variance in others’ perceptions

than did self-perceptions of behavior (mean self-perception  $\Delta R^2 = .01$ , mean meta-perception  $\Delta R^2 = .03$ ).

### Discussion

Findings from the current study provide even more support for meta-insight. First, results replicated the finding from Study 1 that meta-perceptions of personality traits are unique and valid predictors of a new acquaintance’s perception, even after controlling for global self-perceptions. Furthermore, meta-perceptions were unique and valid predictors of a new acquaintance’s perception for some behaviors despite the very strong association between self- and meta-perceptions. Thus, although the effects were relatively small, the current study provides evidence that self-perceptions of context-specific behavior did not account for meta-accuracy. In sum, after a 5-min conversation with a stranger, people were able to make some accurate distinctions between how they perceived their own personality and behavior and how the other person perceived their personality and behavior.

### General Discussion

In their everyday lives, do people detect the differences between how they see themselves and how others see them? The goal of the current research was to determine whether people possess this form of self-knowledge, which we call meta-insight. Results from three studies suggest that people possess some degree of meta-insight for a broad range of traits that capture key facets of personality (e.g., the Big Five, negative traits, and well-being) and play a central role in interpersonal perception (e.g., funny, intelligent, and physically attractive). Moreover, we found that people possess some meta-insight in a wide range of social contexts, specifically for a new acquaintance, friends, family members, and a romantic partner. Finally, results suggest that people make valid distinctions between how they see themselves while they are with a specific person and how that person sees them. Although the magnitude of the effect was small, it was very consistent and persisted when we conducted increasingly conservative tests (i.e., when controlling for context-specific self-perceptions). Overall, these results provide strong evidence that people do make valid distinctions between how they see themselves and how others see them in their everyday lives.

To provide even more evidence that people possess meta-insight in their everyday lives, we conducted a meta-analysis of past studies that assessed meta-accuracy for personality and behavior in naturalistic settings (Hedges’s fixed-effects model procedure; Field & Gillett, 2010).<sup>8</sup> Given that only one study directly measured meta-insight effects (i.e., the partial effects for meta-perceptions when controlling for self-perceptions; Oltmanns et al., 2005), we estimated meta-insight from past studies in two ways. First, we compared the mag-

<sup>8</sup> We conducted our literature search with PsycINFO (EBSCO) using the keywords *meta-perception*, *reflected appraisal*, *perceived regard*, *interpersonal perception*, and *social relations model*. Studies and/or effects were not included if they assessed meta-stereotypes, interpersonal characteristics such as liking (i.e., liking a specific person instead of the trait likeable), communications that were not in person (e.g., e-mail, personal webpage), or interactions that were hypothetical (e.g., vignettes) or that involved experimental manipulation (e.g., acting).

Table 7  
 Study 3: Descriptive Statistics, Correlations, and Multiple Regression Analyses For Personality and Behavior

Trait	Descriptives						Multiple regression						
	Self-perception		Other-perception		Meta-perception		Correlations			Self-perception		Meta-perception	
	<i>M</i>	$\alpha$	<i>M</i>	$\alpha$	<i>M</i>	$\alpha$	Self-meta	Self-other	Meta-other	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$
Personality													
Extraversion	4.42	.75	4.71	.76	4.84	.77	.53***	.27*	.44***	.05	.00	.41**	.12**
Agreeableness	5.43	.68	5.50	.81	5.48	.66	.33***	.02	.21*	-.06	.00	.23†	.05†
Conscientiousness	4.69	.65	5.06	.71	4.68	.74	.38***	-.12	.25*	-.25*	.05*	.34**	.10**
Emotional Stability	4.75	.70	5.04	.80	5.05	.78	.45***	-.02	.12	-.09	.01	.16	.02
Openness	4.97	.62	5.02	.72	4.88	.71	.47***	.10	.16†	.04	.00	.14	.02
Personality mean		.68		.76		.73	.43	.05	.24	-.06	.01	.26	.06
Behavior													
Extraversion	4.85	.69	4.90	.77	4.75	.79	.85***	.41**	.47***	.05	.00	.42*	.05*
Agreeableness	5.67	.78	5.73	.80	5.49	.73	.83***	.16	.25*	-.15	.01	.37†	.04†
Conscientiousness	4.47	.68	4.76	.71	4.46	.73	.77***	-.03	.10	-.25	.03	.29	.03
Emotional Stability	5.10	.82	4.57	.76	4.88	.80	.81***	.20*	.19†	.14	.01	.08	.00
Openness	4.73	.63	4.91	.60	4.72	.76	.72***	-.04	.05	-.15	.01	.16	.01
Behavior mean		.72		.73		.76	.80	.14	.22	-.07	.01	.27	.03

Note. *N* = 68. Average correlations computed using the Fisher *r*-to-*z* transformation. Self-perception and meta-perception betas are from the simultaneous regression model. Self-meta = correlation between self- and meta-perceptions; Self-other = correlation between self- and other-perceptions; Meta-other = correlation between meta- and other-perceptions; self-perception  $\Delta R^2$  = amount of unique explained by self-perceptions; meta-perception  $\Delta R^2$  = amount of unique variance explained by meta-perceptions.

† *p* < .10. \* *p* < .05. \*\* *p* < .01. \*\*\* *p* < .001, two-tailed.

nitudes of zero-order meta-accuracy correlations to the magnitude of self-other agreement correlations. Conceptually, if meta-accuracy is stronger than self-other agreement, then meta-perceptions are closer to the other's actual perception than are self-perceptions. In other words, such a finding would suggest that meta-perceptions are better predictors of others' perceptions than are self-perceptions. Second, similar to the regression analyses presented in our studies, we estimated the semipartial correlation between self-perception and other-perception, controlling for meta-perception (i.e., a partial effect for self-perception), and the semipartial correlation between meta-perceptions and other-perceptions, controlling for self-perceptions (i.e., a partial effect for meta-perception). These partial effects were estimated from the zero-order correlations between self- and meta-perceptions, self-other agreement correlations, and meta-accuracy correlations. Results from our meta-analysis of past studies are presented in Table 8 (see the Appendix for descriptions of each study). To place these results in the context of our current findings, we also conducted a mini meta-analysis of our three studies. The results from both meta-analyses are presented in Figure 1.

As shown in Figure 1, the correlation between self- and meta-perceptions is strong for new acquaintances (mean past findings *r* = .51, current findings *r* = .58) and well-acquainted others (mean past findings *r* = .72, current findings *r* = .60). Consistent with the prediction that people have meta-insight, self-other agreement for a new acquaintance (mean past findings *r* = .27, current findings *r* = .11) and a well-acquainted other (mean past findings *r* = .26, current findings *r* = .33) was descriptively weaker than meta-accuracy for a new acquaintance (mean past findings *r* = .33, current findings *r* = .23) and a well-acquainted other (mean past findings *r* = .32, current findings *r* = .40).

Are meta-perceptions better than self-perceptions in predicting others' perceptions? A Wilcoxon signed-ranks test of past findings revealed that for most studies, meta-accuracy was stronger than self-other agreement (15 out of 21; *Z* = -2.49, *p* = .01).<sup>9</sup> Our studies showed a similar pattern. For new acquaintances, meta-accuracy was stronger than self-other agreement in Study 1 (13 out of 16 traits; *Z* = -2.73, *p* = .006) and in Study 3 (five out of five traits; *Z* = -2.02, *p* = .04). Meta-accuracy was also stronger than self-other agreement for first-impression behavior ratings in Study 3 (four out of five traits; *Z* = -1.75, *p* = .08). For a close other, meta-accuracy was stronger than self-other agreement in Study 1 (12 out of 16 traits; *Z* = -3.11, *p* = .002), and Study 2 revealed a similar pattern for global and contextual self-perceptions for specific types of close others. For global self-perceptions, the difference was in the expected direction for a college friend (seven out of 11 traits; *Z* = -1.33, *p* = .19), a parent (eight out of 11 traits; *Z* = -1.60, *p* = .11), and a romantic partner (six out of 11 traits; *Z* = -0.93, *p* = .35), although the difference was only significant for a hometown friend (nine out of 11 traits; *Z* = -2.09, *p* = .04). Similarly, for contextual self-perceptions, the difference was in the expected direction for a hometown friend (eight out of 11 traits; *Z* = -1.25, *p* = .21), a parent (eight out of 11 traits; *Z* = -1.51, *p* = .13), and a romantic partner (seven out of 11 traits; *Z* = -0.80, *p* = .42), although the difference was only significant for a college friend (nine out of 11 traits; *Z* = -1.96, *p* = .05).

<sup>9</sup> All sign tests' significance tests were two tailed.

Table 8  
*Meta-Analysis of Naturalistic Studies That Include Meta-Accuracy and Self-Other Agreement*

Study	N	Self-meta	Self-other	Meta-other	Semipartial correlation	
					Self-perception	Meta-perception
New acquaintance						
Back et al. (2009)	93	.49	.13	.24	.01	.20
Carlson, Vazire, & Livingston (2011)	74	.40	.06	.18	-.01	.17
Ichiyama (1993)	99	.84	.52	.61	.01	.32
Kenny & DePaulo (1990)	48	.98	.46	.35	.59	-.51
Levesque (2007)	168	.66	.18	.33	-.05	.28
Malloy & Janowski (1992)	68		.74	.72		
Peters, Kinsey, & Malloy (2004)	48	.75	.52	.44	.29	.08
Reno & Kenny (1992)	102	.57	.30	.35	.12	.22
Ohtsubo, Takezawa, & Fukuno (2009)	58	.32	.09	.15	.04	.12
Shechtman & Kenny (1994)	154	.34	.24	.31	.14	.24
Vazire (2006b)	118	.37	.11	.10	.08	.06
Total N and means	1,030	.51	.27	.33	.13 (.07) <sup>a</sup>	.12 (.19) <sup>a</sup>
Well-acquainted						
Carlson & Furr (2009)	101	.65	.39	.46	.12	.27
Carlson, Vazire, & Livingston (2011)	96	.46	.21	.23	.12	.15
Levesque (1997)	65	.94	.65	.74	-.13	.38
Malloy & Albright (1990)	84		.43	.60		
Malloy, Albright, Diaz-Loving, Dong, & Lee (2004)	40	.68	.29	.33	.09	.18
Malloy, Albright, Kenny, Agatstein, & Winquist (1997)	31		.37	.44		
Oltmanns, Gleason, Klonsky, & Turkheimer (2005)	1,503	.80	.19	.26	-.03	.18
Vazire (2006b)	118	.48	.32	.30	.20	.17
Vazire & Mehl (2008)	80	.83	.43	.46	.09	.18
Vazire, Naumann, Rentfrow, & Gosling (2008)	152	.72	.46	.46	.19	.19
Total N and means	2,270	.72	.26	.32	.08	.21
Overall total N and means	3,300	.66	.26	.32	.11 (.08) <sup>a</sup>	.16 (.19) <sup>a</sup>

Note. Self-meta =  $r$  between self- and meta-perceptions; Self-other =  $r$  between self- and other-perceptions; Meta-other =  $r$  between meta- and other-perceptions; Self-perception = semipartial  $r$  with other-perception, controlling for meta-perception; Meta-perception = semipartial  $r$  with other-perception, controlling for self-perception.

<sup>a</sup> Effects in parentheses calculated without the Kenny and DePaulo (1990) data.

More importantly, past studies have replicated our current finding that meta-perceptions are associated with others' perceptions in a way that is unique from self-perception. As shown in Figure 1, the meta-analysis of previous findings shows that the estimated semipartial correlations between meta-perception and other-perception, controlling for self-perception, was .19 for a new acquaintance (i.e., similar to our mean partial effect for meta-perception,  $\beta = .24$ ) and .21 for a well-acquainted other (i.e., similar to our mean partial effect for meta-perception,  $\beta = .31$ ). These partial effects for meta-perception were descriptively stronger than the corresponding partial effects for self-perception.

Taken together, our findings, combined with past studies, suggest that the unique relationship between meta-perceptions and others' perceptions is a reliable effect. In other words, although the effect is relatively small, people seem to consistently have some genuine insight into their reputation for a variety of traits and social contexts and do not achieve meta-accuracy simply by capitalizing on the fact that others see them as they see themselves.

## Implications

The finding that people possess meta-insight across a broad range of social contexts and traits has theoretical implications for interpersonal perception and meta-accuracy research. Specifically, a major concern regarding evidence for meta-accuracy has been the possibility that people never look beyond their self-perceptions to achieve meta-accuracy; that is, any observed meta-accuracy might simply reflect the level of agreement that happens to exist between self-perceptions and others' perceptions. Our findings suggest otherwise. Instead, people do look beyond themselves, and they do so with some success. Thus, meta-accuracy appears to contain a component of true interpersonal perception skill.

Furthermore, our findings suggest that research designed to assess self-knowledge or the accuracy of interpersonal perception should assess both meta-accuracy and meta-insight. When the goal is to understand people's awareness of how others see them, a side-by-side analysis of meta-accuracy and meta-insight will re-

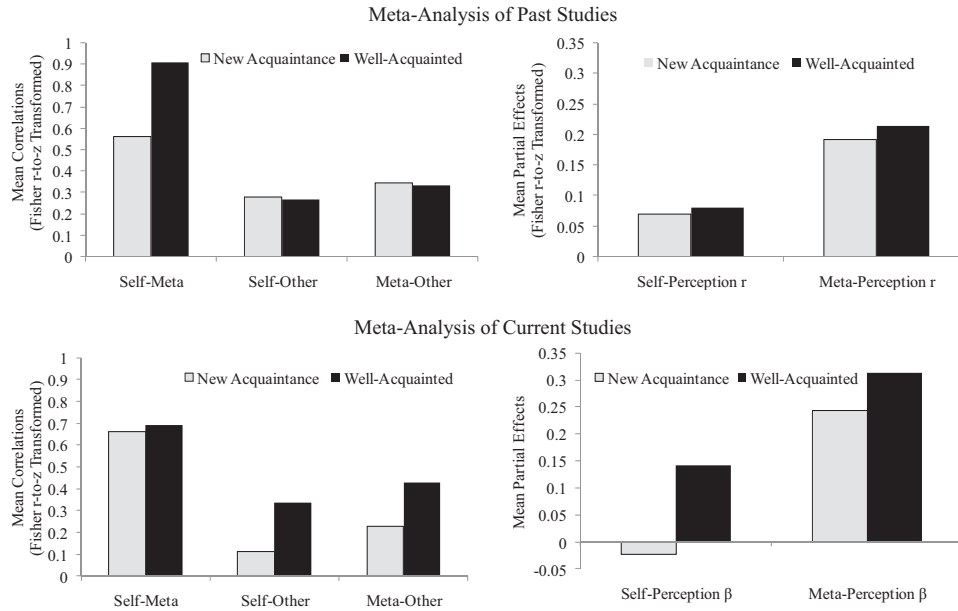


Figure 1. A meta-analysis of 21 past studies and a meta-analysis of the current three studies (Hedges’s fixed-effects model procedure; Field & Gillett, 2010). The left panels reflect the average correlations between the following perceptions: self–meta = self-perception and meta-perception; self–other = self-perception and other-perception; meta–other = meta-perception and other-perception. The right panels reflect the average partial effects for self-perceptions (i.e., the relationship between self- and other-perceptions, controlling for meta-perceptions) and meta-perceptions (i.e., the relationship between meta- and other-perceptions, controlling for self-perceptions).

veal whether people achieve meta-accuracy by using self-perceptions alone or whether they are drawing on other valid information. Perhaps future research might expand the current findings by examining meta-insight at the profile level. For instance, such an examination might reveal whether a specific individual’s meta-insight varies across contexts (e.g., Furr, 2008, 2009; Furr & Funder, 2004).

Although we suspect that the issue is complex, we also hope that future research will identify factors that affect meta-insight. For instance, meta-insight might depend on trait properties, on the social context, or on the meta-perceiver. With respect to traits, participants in our studies achieved meta-insight on most traits, but there were a few exceptions (e.g., intelligence, Study 1). We could not make meaningful comparisons across traits due to the differences in measurement reliability in our studies. However, future research might investigate whether meta-insight depends on trait features such as observability, evaluativeness, or even the extent to which a trait is defined by the self or by others. With respect to the context, meta-insight might be easier to achieve in certain situations where feedback, stereotype information (e.g., Vogt & Colvin, 2003), or other contextual cues are available or salient. For example, workplace environments might show higher meta-insight because individuals play distinct roles that are associated with specific stereotypes (e.g., supervisor). Finally, meta-insight might be more likely for certain types of individuals, such as people who have very positive (e.g., narcissists) or negative (e.g., low self-esteem individuals) self-perceptions.

Our findings may have important mental health implications. It appears that the typical person holds meta-perceptions that are

somewhat different from his or her self-perceptions. Yet meta-perceptions that deviate too much or too little from self-perceptions may have negative consequences for mental health. In some cases, self-perceptions might be much more positive than meta-perceptions (e.g., narcissists might believe that others do not recognize their greatness; Carlson et al., 2011), or in other cases, meta-perceptions might be much more positive than self-perceptions (e.g., people suffering from depression or low self-esteem). In either case, large discrepancies between self- and meta-perceptions might make people feel misunderstood, which may have negative inter- and intrapersonal consequences. Of course, people who show no difference between their self- and meta-perceptions might also experience inter- and intrapersonal problems. For example, people who think they are seen in the same way regardless of the social context might not pick up on important differences in their reputation across situations. We hope that future research identifies the optimal level of distinction between self- and meta-perceptions.

Finally, our finding that meta-perceptions are closer to others’ perceptions than are self-perceptions has an interesting assessment implication. Specifically, recent research has highlighted the fact that self- and other-perceptions provide unique information about personality (e.g., Oltmanns & Turkheimer, 2009; Vazire, 2010; Vazire & Carlson, 2011; Vazire & Mehl, 2008). Thus, to learn more about an individual’s personality, researchers have increasingly been incorporating informant reports into their research. Our findings suggest that when obtaining informant reports is not feasible, meta-perceptions might serve as a valuable alternative.

We hope that future research will explore the predictive validity of meta-perceptions for personality assessment.

## Conclusion

All people have had the experience of feeling that others do not see them as they see themselves. This experience may be especially acute when people feel that their reputation is far better than their true personality (e.g., Tiger Woods, from 2000 to 2009) or far worse (e.g., Ronald Cotton). Most of the time, however, the differences are more subtle. Under normal circumstances, do people detect the differences between how they see themselves and how others see them? Our findings suggest that people do have some insight into this difference. That is, as expressed in the opening quote, people understand that there are aspects of themselves that do not find their way into the world. Thus, the process of meta-perception is distinct from self-perception, and meta-accuracy seems to reflect some understanding of social reality.

## References

References marked with an asterisk indicate studies included in the meta-analysis.

- Albright, L., Forest, C., & Reiser, K. (2001). Acting, behaving, and the selfless basis of meta-perception. *Journal of Personality and Social Psychology, 81*, 910–921.
- Albright, L., & Malloy, T. E. (1999). Self-observation of social behavior in meta-perception. *Journal of Personality and Social Psychology, 77*, 726–734.
- Ambady, N., Hallahan, M., & Rosenthal, R. (1995). On judging and being judged accurately in zero-acquaintance situations. *Journal of Personality and Social Psychology, 69*, 518–529.
- \*Back, M. D., Krause, S., Hirschmüller, S., Stopfer, J. M., Egloff, B., & Schmukle, S. C. (2009). Unraveling the three faces of self-esteem: A new information-processing sociometer. *Journal of Research in Personality, 43*, 933–937.
- Back, M. D., Stopfer, J. M., Vazire, S., Gaddis, S., Schmukle, S. C., Egloff, B., & Gosling, S. D. (2010). Facebook profiles reflect actual personality, not self-idealization. *Psychological Science, 21*, 372–374.
- Cameron, J. J., & Vorauer, J. D. (2008). Feeling transparent: On meta-perceptions and miscommunications. *Social and Personality Psychology Compass, 2*, 1093–1108.
- Campbell, J. D., & Fehr, B. (1990). Self-esteem and perceptions of conveyed impressions: Is negative affectivity associated with greater realism? *Journal of Personality and Social Psychology, 58*, 122–133.
- \*Carlson, E. N., & Furr, R. M. (2009). Evidence of differential meta-accuracy: People understand the different impressions they make. *Psychological Science, 20*, 1033–1039.
- Carlson, E. N., Furr, R. M., & Vazire, S. (2010). Do we know the first impressions we make? Evidence for idiographic meta-accuracy and calibration of first impressions. *Social Psychological and Personality Science, 1*, 94–98.
- Carlson, E. N., & Kenny, D. A. (in press). Do we know how others see us? In S. Vazire & T. D. Wilson (Eds.), *Handbook of self-knowledge*. New York, NY: Guilford Press.
- \*Carlson, E. N., Vazire, S., & Livingston, J. (2011, January). Mindfulness as a path to self-knowledge. In C. Carlson & S. Vazire (Chairs), *Minding the self: How mindfulness improves self-reflection and self-knowledge*. Symposium conducted at the annual meeting of the Society of Personality and Social Psychology, San Antonio, TX.
- Carlson, E. N., Vazire, S., & Oltmanns, T. F. (2011). You probably think this paper's about you: Narcissists' perceptions of their personality and reputation. *Journal of Personality and Social Psychology*. Advance online publication. doi:10.1037/a0023781
- Chambers, J. R., Epley, N., Savitsky, K., & Windschitl, P. D. (2008). Knowing too much: Using private knowledge to predict how one is viewed by others. *Psychological Science, 19*, 542–548.
- Christensen, P. N., Stein, M. B., & Means-Christensen, A. (2003). Social anxiety and interpersonal perception: A social relations model analysis. *Behaviour Research and Therapy, 41*, 1355–1371.
- Connelly, B. S., & Ones, D. S. (2010). An other perspective on personality: Meta-analytic integration of observers' accuracy and predictive validity. *Psychological Bulletin, 136*, 1092–1122.
- Elfenbein, H. A., Eisenkraft, N., & Ding, W. W. (2009). Do we know who values us? Dyadic meta-accuracy in the perception of professional relationships. *Psychological Science, 20*, 1081–1083.
- Epley, N., Keysar, B., Van Boven, L., & Gilovich, T. (2004). Perspective taking as egocentric anchoring and adjustment. *Journal of Personality and Social Psychology, 87*, 327–339.
- Field, A. P., & Gillett, R. (2010). How to do a meta-analysis. *British Journal of Mathematical and Statistical Psychology, 63*, 665–694.
- Flora, C. (2005, May). Metaperceptions: How do you see yourself? *Psychology Today*. Retrieved from <http://www.psychologytoday.com/articles/200505/metaperceptions-how-do-you-see-yourself>
- Funder, D. C. (1980). On seeing ourselves as others see us: Self–other agreement and discrepancy in personality ratings. *Journal of Personality, 48*, 473–493.
- Furr, R. M. (2008). Framework for profile similarity: Integrating similarity, normativeness, and distinctiveness. *Journal of Personality, 76*, 1267–1316.
- Furr, R. M. (2009). Profile analysis in person–situation integration. *Journal of Research in Personality, 43*, 196–207.
- Furr, R. M., & Funder, D. C. (2004). Situational similarity and behavioral consistency: Subjective, objective, variable-centered, and person-centered approaches. *Journal of Research in Personality, 38*, 421–447.
- Garcia, S. M. (2002). Power and the illusion of transparency in negotiations. *Journal of Business and Psychology, 17*, 133–144.
- Gilovich, T., Savitsky, K., & Medvec, V. H. (1998). The illusion of transparency: Biased assessment of others' ability to read one's emotional states. *Journal of Personality and Social Psychology, 75*, 332–346.
- Gosling, S. D., Rentfrow, P. J., & Swann, W. B., Jr. (2003). A very brief measure of the Big Five personality domains. *Journal of Research in Personality, 37*, 504–528.
- Hasler, B. P., Mehl, M. R., Bootzin, R. R., & Vazire, S. (2008). Preliminary evidence of diurnal rhythms in everyday behaviors associated with positive affect. *Journal of Research in Personality, 42*, 1537–1546.
- \*Ichiyama, M. A. (1993). The reflected appraisal process in small-group interaction. *Social Psychology Quarterly, 56*, 87–99.
- Jaksch, M. (2010). Wonder how people see you? How to improve your mind-reading skills. *Goodlife Zen*. Retrieved from <http://goodlifezen.com/2010/03/15/wonder-how-people-see-you-how-to-improve-your-mind-reading-skills/>
- John, O. P., & Srivastava, S. (1999). The Big Five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Perlin & O. P. John (Eds.), *Handbook of personality: Theory and research* (pp. 102–138). New York, NY: Guilford Press.
- Jussim, L., Soffin, S., Brown, R., Ley, J., & Kohlhepp, K. (1992). Understanding reactions to feedback by integrating ideas from symbolic interactionism and cognitive evaluation theory. *Journal of Personality and Social Psychology, 62*, 402–421.
- Kaplan, S. A., Santuzzi, A. M., & Ruscher, J. B. (2009). Elaborative meta-perceptions in outcome-dependent situations: The diluted relationship between default self-perceptions and meta-perceptions. *Social Cognition, 27*, 601–614.
- Kenny, D. A. (1994). *Interpersonal perception: A social relations analysis*. New York, NY: Guilford Press.
- \*Kenny, D. A., & DePaulo, B. M. (1990). [Applicant–interviewer study]. Unpublished raw data.

- Kenny, D. A., & DePaulo, B. M. (1993). Do people know how others view them? An empirical and theoretical account. *Psychological Bulletin*, *114*, 145–161.
- Kenny, D. A., Kashy, D., & Cook, W. (2006). *Dyadic data analysis*. New York, NY: Guilford Press.
- Kenny, D. A., & West, T. V. (2008). Self-perception as interpersonal perception. In J. V. Wood, A. Tesser, & J. G. Holmes (Eds.), *The self and social relationships* (pp. 119–137). New York, NY: Psychology Press.
- Langer, S. L., & Wurf, E. (1999). The effects of channel-consistent and channel-inconsistent interpersonal feedback on the formation of meta-perceptions. *Journal of Nonverbal Behavior*, *23*, 43–65.
- \*Levesque, M. J. (1997). Meta-accuracy among acquainted individuals: A social relations analysis of interpersonal perception and meta-perception. *Journal of Personality and Social Psychology*, *72*, 66–74.
- \*Levesque, M. J. (2007, October). On being a good judge: Gender as a moderator of interpersonal accuracy and meta-accuracy in mixed gender dyads. In J. Spain (Chair), *Interpersonal perception and the eye of the beholder: Understanding the role of personality, gender, and relationship variables in perceiver judgments*. Symposium conducted at the meeting of the Society of Southeastern Social Psychologists, Durham, NC.
- \*Malloy, T. E., & Albright, L. (1990). Interpersonal perception in a social context. *Journal of Personality and Social Psychology*, *58*, 419–428.
- \*Malloy, T. E., Albright, L., Diaz-Loving, R., Dong, Q., & Lee, Y. T. (2004). Agreement in personality judgments within and between non-overlapping social groups in collectivist cultures. *Personality and Social Psychology Bulletin*, *30*, 106–117.
- \*Malloy, T. E., Albright, L., Kenny, D. A., Agatstein, F., & Winquist, L. (1997). Interpersonal perception and meta-perception in nonoverlapping social groups. *Journal of Personality and Social Psychology*, *72*, 390–398.
- \*Malloy, T. E., & Janowski, C. L. (1992). Perceptions and metaperceptions of leadership: Components, accuracy, and dispositional correlates. *Personality and Social Psychology Bulletin*, *18*, 700–708.
- 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.
- \*Ohtsubo, Y., Takezawa, M., & Fukuno, M. (2009). Mutual liking and metaperception accuracy. *European Journal of Social Psychology*, *39*, 707–718.
- \*Oltmanns, T. F., Gleason, M. E., Klonsky, E. D., & Turkheimer, E. (2005). Meta-perception for pathological personality traits: Do we know when others think that we are difficult? *Consciousness and Cognition*, *14*, 739–751.
- Oltmanns, T. F., & Turkheimer, E. (2009). Person perception and personality pathology. *Current Directions in Psychological Science*, *18*, 32–36.
- \*Peters, S., Kinsey, P., & Malloy, T. E. (2004). Gender and leadership perceptions among African Americans. *Basic and Applied Social Psychology*, *26*, 93–101.
- Preuss, G. S., & Alicke, M. D. (2009). Everybody loves me: Self-evaluations and metaperceptions of dating popularity. *Personality and Social Psychology Bulletin*, *35*, 937–950.
- Ready, R. E., Clark, L. A., & Watson, D. (2000). Self- and peer-related personality: Agreement, trait ratable, and the “self-based heuristic.” *Journal of Research in Personality*, *34*, 208–224.
- \*Reno, R., & Kenny, D. A. (1992). Effects of self-consciousness on self-disclosure among unacquainted individuals: An application of the social relations model. *Journal of Personality*, *60*, 79–94.
- Robins, R. W., & Beer, J. S. (2001). Positive illusions about the self: Short-term benefits and long-term costs. *Journal of Personality and Social Psychology*, *80*, 340–352.
- Savitsky, K., Epley, N., & Gilovich, T. (2001). Do others judge us as harshly as we think? Overestimating the impact of our failures, shortcomings, and mishaps. *Journal of Personality and Social Psychology*, *81*, 44–56.
- \*Shechtman, Z., & Kenny, D. A. (1994). Metaperception accuracy: An Israeli study. *Basic and Applied Social Psychology*, *15*, 451–465.
- Shrauger, J. S., & Schoeneman, T. J. (1979). Symbolic interactionist view of self-concept: Through the looking glass darkly. *Psychological Bulletin*, *86*, 549–573.
- Slatcher, R. B., & Vazire, S. (2009). Effects of global and contextualized personality on relationship satisfaction. *Journal of Research in Personality*, *43*, 624–633.
- Vazire, S. (2006a). Informant reports: A cheap, fast, and easy method for personality assessment. *Journal of Research in Personality*, *40*, 472–481.
- \*Vazire, S. (2006b). *The person from the inside and outside* (Unpublished doctoral dissertation). The University of Texas at Austin.
- Vazire, S. (2010). Who knows what about a person? The self–other knowledge asymmetry (SOKA) model. *Journal of Personality and Social Psychology*, *98*, 281–300.
- Vazire, S., & Carlson, E. N. (2010). Self-knowledge of personality: Do people know themselves? *Social and Personality Psychology Compass*, *4*, 605–620.
- Vazire, S., & Carlson, E. N. (2011). Others sometimes know us better than we know ourselves. *Current Directions in Psychological Science*, *20*, 104–108.
- \*Vazire, S., & Mehl, M. R. (2008). Knowing me, knowing you: The accuracy and unique predictive validity of self-ratings and other-ratings of daily behavior. *Journal of Personality and Social Psychology*, *95*, 1202–1216.
- \*Vazire, S., Naumann, L. P., Rentfrow, P. J., & Gosling, S. D. (2008). Portrait of a narcissist: Manifestations of narcissism in physical appearance. *Journal of Research in Personality*, *42*, 1439–1447.
- Vogt, D. S., & Colvin, C. R. (2003). Interpersonal orientation and the accuracy of personality judgments. *Journal of Personality*, *71*, 267–295.
- Vorauer, J. D., & Cameron, J. J. (2002). So close, and yet so far: Does collectivism foster transparency overestimation? *Journal of Personality and Social Psychology*, *83*, 1344–1352.
- Vorauer, J. D., Cameron, J. J., Holmes, J. G., & Pearce, D. G. (2003). Invisible overtures: Fears of rejection and the signal amplification bias. *Journal of Personality and Social Psychology*, *84*, 793–812.
- Vorauer, J. D., & Claude, S. D. (1998). Perceived versus actual transparency of goals in negotiation. *Personality and Social Psychology Bulletin*, *24*, 371–385.
- Vorauer, J. D., & Miller, D. T. (1997). Failure to recognize the effect of implicit social influence on the presentation of self. *Journal of Personality and Social Psychology*, *73*, 281–295.
- Vorauer, J. D., & Ross, M. (1999). Self-awareness and feeling transparent: Failing to suppress one’s self. *Journal of Experimental Social Psychology*, *35*, 415–440.
- 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.
- Wilson, T. D. (2002). *Strangers to ourselves: Discovering the adaptive unconscious*. Cambridge, MA: Harvard University Press.
- Wood, D., Harms, P., & Vazire, S. (2010). Perceiver effects as projective tests: What your perceptions of others say about you. *Journal of Personality and Social Psychology*, *99*, 174–190.
- Wood, D., & Roberts, B. W. (2006). Cross-sectional and longitudinal tests of the Personality and Role Identity Structural Model (PRISM). *Journal of Personality*, *74*, 779–809.

(Appendix follows)

## Appendix

## Characteristics of the Studies Included in the Meta-Analysis

Study	Traits assessed	New-acquaintance activity	Well-acquainted relationship type
Back et al. (2009)	Attractive, Intelligent	Dating	
Carlson & Furr (2009)	Big Five		Parents, friends
Carlson, Vazire, & Livingston (2011)	Big Five, Evaluative	Getting acquainted	Friends
Ichiyama (1993)	Dominant, Friendly, Emotionally Expressive	Work group	
Kenny & DePaulo (1990)	Competent	Mock interview	
Levesque (1997)	Big Five, Interesting		Roommates
Levesque (2007)	Big Five, Sexy	Getting acquainted	
Malloy & Albright (1990)	Big Five		Roommates
Malloy, Albright, Diaz-Loving, Dong, & Lee (2004)	Big Five		Family, friends
Malloy, Albright, Kenny, Agatstein, & Winqvist (1997)	Big Five		Friends, coworkers, family
Malloy & Janowski (1992)	Leadership	Work group	
Ohtsubo, Takezawa, & Fukuno (2009)	Big Five, additional (e.g., wise)	Getting acquainted	
Oltmanns, Gleason, Klonsky, & Turkheimer (2005)	Personality pathology		Coworkers
Peters, Kinsey, & Malloy (2004)	Leadership	Getting acquainted	
Reno & Kenny (1992)	Interpersonal Warmth	Getting acquainted	
Shechtman & Kenny (1994)	Leadership, Communication Skills	Real interview	
Vazire (2006b)	Big Five, Evaluative, Well-Being	Getting acquainted	Friends
Vazire & Mehl (2008)	Big Five, Evaluative, Well-Being		Friends
Vazire, Naumann, Rentfrow, & Gosling (2008)	Big Five, Evaluative, Well-Being		Friends

*Note.* Evaluative = traits such as intelligent, attractive, funny; Well-Being = traits such as happy, high self-esteem, depressed.

Received October 19, 2010  
Revision received April 11, 2011  
Accepted April 20, 2011 ■