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Are some people more accurate than others about the unique impressions they make on close others?☆

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ABSTRACT

Some meta-perceivers have more insight than others into the impressions they make, but what is this meta-accuracy about? Do good meta-perceivers have insight into the unique impressions they make (dyadic meta-accuracy), or do they simply understand their reputation (generalized meta-accuracy)? In two studies, we tested individual differences in dyadic and generalized meta-accuracy among close others, as well as potential mechanisms and correlates. Results suggest that, among close others, there are good meta-perceivers of dyadic and generalized meta-accuracy. Good meta-perceivers of dyadic meta-accuracy form more differentiated meta-perceptions, while good meta-perceivers of generalized meta-accuracy make and think they make consistent impressions that align with their self-views. Thus, among close others – unlike in first impressions – there are good meta-perceivers who perspective-take.

1. Introduction

People tend to know the impressions they make on others, a type of insight called meta-accuracy (Carlson & Kenny, 2012), and some people seem to have more insight into the impressions they make than other people do (Carlson & Furr, 2009; Elsaadawy et al., 2021; Mosch & Borkenau, 2016). For example, after Maya and Mark meet a group of new acquaintances, Maya is more aware of the impressions she makes than Mark is, suggesting that she is a better meta-perceiver. However, recent work raises questions about what this accuracy is about. Are good meta-perceivers like Maya especially aware of their reputation (generalized meta-accuracy), or are they especially aware of the unique impressions they make on specific people (dyadic meta-accuracy; Hater et al., 2023)? This distinction is important because dyadic meta-accuracy requires more perspective-taking skill than generalized meta-accuracy, which can often be attained using broad heuristics (Kenny & DePaulo, 1993). In an initial test of this question within a first impression context, Hater at al. (2023) found that individual differences in meta-accuracy are largely due to generalized meta-accuracy, whereas dyadic meta-accuracy seems to be a skill that people struggle with to a similar degree.

We argue that it might be possible to observe individual differences in dyadic meta-accuracy under the right conditions – specifically when people make varying impressions. In many first impression contexts (e.g., having short conversations with several new acquaintances), people behave similarly and likely subjectively experience the conversations as one general social situation. These factors in turn likely constrain variability in the impressions one makes as well as the meta-perceptions one forms (Hater et al., 2023). However, when people *do* make different impressions, dyadic meta-accuracy tends to emerge (Carlson & Furr, 2009). Based on this logic, we explore whether there are good dyadic meta-perceivers of close others, a context where people have more opportunities to make unique impressions. If there is a good meta-perceiver of dyadic meta-accuracy, we then aim to identify how accuracy is attained as well as who these individuals might be. Further, given that the pathways to meta-accuracy are different in a first impression context versus a close other context (Elsaadawy & Carlson, 2022), we also explore if and how the good meta-perceiver of generalized meta-accuracy among close others mirrors that of a good meta-perceiver of generalized meta-accuracy in a first impression context.

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1.1. Individual differences in dyadic and generalized Meta-Accuracy

Both in first impressions and among close others, people seem to know their reputation (e.g., how Tim, Tara, and Tom view them) but they struggle to figure out the unique impressions they make on specific people (e.g., how Tim's impression differs from Tara's and Tom's; Carlson & Kenny, 2012). The main explanation for this pattern has been that meta-perceivers assume that others see them in the same way, mainly as they see themselves (Kenny & DePaulo, 1993). This assumption fosters generalized meta-accuracy because people's reputations align somewhat with how they see themselves, but it hurts dyadic meta-accuracy because undifferentiated meta-perceptions limit people's ability to figure out the unique impressions they make on specific others. This pattern has also led to the assumption that meta-perception does not involve perspective-taking but rather is a process dominated by an egocentric heuristic (Kenny & DePaulo, 1993).

Until recently, work on generalized and dyadic meta-accuracy focused on which attributes people are accurate about (e.g., are people more meta-accurate about extraversion or agreeableness?) rather than on *who* is especially accurate (e.g., is Maya more accurate than Mark?). However, the introduction of the Social Meta-Accuracy Model (SMAM; Hater et al., 2023) offers a new way to test overall accuracy across traits and individual differences in both forms of meta-accuracy. In the initial demonstration of SMAM within a first impression context, people tended to know their reputation but struggled to attain dyadic meta-accuracy, and more importantly, there were individual differences in generalized meta-accuracy but no individual differences in dyadic meta-accuracy. Further, the people who were more aware of their reputation tended to make similar impressions on new acquaintances, impressions that aligned with their self-views. While there was evidence for a good meta-perceiver who could figure out their reputation using information other than their global self-perception, this work mainly suggests that the good meta-perceiver is someone who correctly applies the same egocentric heuristic people generally use, not someone who has a fine-tuned perspective-taking ability.

1.2. Individual differences in Meta-Accuracy among close others

In the current work, we expand the initial test of SMAM to close others, which is a context that seems to give rise to dyadic meta-accuracy via more differentiated impressions and meta-perceptions (Carlson & Furr, 2009). Indeed, as outlined by Hater et al. (2023), the necessary conditions for dyadic meta-accuracy are differentiation in impressions and meta-perceptions (e.g., people tend to make and think they make unique impressions across acquaintances), and the necessary conditions for individual differences in dyadic meta-accuracy are variability in impression and meta-perception differentiation (e.g., Maya makes more differentiated impressions and thinks she makes more differentiated impressions than Mark does). In first impression contexts, some people make more differentiated impressions than others do (Long et al., 2023) and some people believe they make more differentiated impressions than others do (Elsaadawy et al., 2023). However, the practical magnitude of differentiation is likely constrained when people know each other in the same way, such as in a first impression lab context (Hater et al., 2023). Thus, we test for individual differences in dyadic meta-accuracy among close others where impression variability and meta-perception differentiation are less constrained. We also test whether variability in impressions and meta-perceptions are indeed mechanisms that foster greater dyadic meta-accuracy among close others.

While our focus is on dyadic meta-accuracy, we also explore whether the good meta-perceiver of generalized meta-accuracy emerges among close others and whether the mechanisms mirror those of a first impression context (i.e., making consistent impressions that align with self-views; Hater et al., 2023). Given that there are individual differences in who is seen as they see themselves among close others (i.e., transparency; Human et al., 2021), we assume that these mechanisms will again emerge for close others. Thus, as in Hater at al. (2023), we test if meta-perceivers who a) make more consistent impressions (and think they make more consistent impressions) on their close others and b) are seen as they see themselves more than others tend to have higher generalized meta-accuracy. We also explore if self-perception is the main route for the good meta-perceiver by testing if individual differences in generalized meta-accuracy are observed when controlling for global self-perceptions (i.e., meta-insight; Carlson et al., 2011).

Finally, in addition to testing whether there are good meta-perceivers of dyadic and generalized meta-accuracy, we also explore *who* these meta-perceivers are by exploring the correlates of both forms of meta-accuracy. Most research exploring the correlates of meta-accuracy has not disentangled generalized and dyadic meta-accuracy. Some of this work suggests that people who have more insight into how they are seen tend to be more well-liked and adjusted (Carlson, 2016a; Carlson, 2016b; Tissera et al., 2021). However, Hater et al. (2023) found limited evidence that extraversion and being well-liked are linked to generalized meta-accuracy in a first impression. Given the dearth of research exploring correlates of both forms of meta-accuracy, we broadly explore their links to meta-perceivers' sex, personality traits, and relational variables.

2. Current research

In two studies, we explore whether there are individual differences in dyadic and generalized meta-accuracy among close others, as well as who these good meta-perceivers might be. In Study 1, participants nominated multiple close others who provided their impressions of the participant, but these informants did not necessarily know one another. This likely reflects real social networks where impressions naturally vary (Carlson & Furr, 2009). In Study 2, participants were part of small groups of mutual acquaintances, which provides a more stringent test of individual differences in dyadic meta-accuracy given the potentially reduced impression variability. In both studies, we also explore potential mechanisms for dyadic and generalized meta-accuracy, namely impression and meta-perception variability and the role of self-perception as a source. We also explore potential correlates of dyadic and generalized meta-accuracy. Overall, the current research has important implications for whether there is a type of good meta-perceiver who engages in perspective-taking and whether meta-accuracy unfolds in the same way across first impressions and close others.

3. Methods

3.1. Participants

Study 1 participants were from a university in the Midwestern United States who participated in one of two larger studies.[1] Participants received $20 USD or course credit for their participation. Participants nominated up to 3 or 6 close others. Of the 591 participants, 292 had three or more responding informants and were included in the final analyses. Informants were not compensated (Vazire, 2006).

Study 2 participants were students at a German university who received 25 Euro for their participation. Participants were recruited in groups of four mutual acquaintances.

3.2. Measures

Study 1 participants reported their self-perceptions and their meta-

[1] Data from these studies have been analyzed in the past (see OSF for list of publications that analyzed these data), but the current research questions and analyses are novel.

perceptions of their close others on the Big Five Inventory (John & Srivastava, 1999) on a scale of 1 (*strongly disagree*) to 7 (*strongly agree*). In turn, participants' close others provided impressions of the participants on the same items. Participants and their close others also answered the following questions about one another: "How much do you like this person?" and "How well do you know this person?" on a scale of 1 (*not at all*) to 7 (*very much*).

Study 2 participants reported on their self-perceptions and their meta-perceptions and impressions of each group member on the Minimum Redundancy Scales, which measures the Big Five personality domains using 30 bipolar German adjective scales (e.g., 1 - very quiet to 6 - very talkative). Participants also reported how much they liked each other (1- *not at all* to 5-*very much*) and how well they knew each other (1- *not at all* to 5-*very well*).

See Table 1 for additional study and measure details.

3.3. Open practices

All analyses were conducted using R v.4.2.1. Data, R code, and supplemental materials from the present research are available at https://osf.io/vr5ah/. The analyses from Study 2 were pre-registered at https://osf.io/b8mx5 prior to work on the SMAM (Hater et al., 2023). Following the publication of the SMAM, we chose to deviate slightly from this pre-registration and model meta-perceiver variance only, in line with Hater et al (2023).

3.4. Analytic plan

Meta-accuracy was indexed using profile similarity coefficients (Biesanz, 2019), which reflect the extent to which meta-perceivers knew that they were seen, for example, as more sociable than considerate or creative. In line with SMAM (Hater et al., 2023), we used multilevel modeling to index profile agreement and a componential approach to tease apart dyadic and generalized meta-accuracy. We used the *lmerTest* package in R for all multilevel modelling (Kuznetsova et al., 2017).

Notably, profile agreement can be artificially inflated by chance agreement about what people are generally like, which also tends to be socially desirable (Wood & Furr, 2016). Thus, in line with profile agreement approaches in general and SMAM in particular (Hater et al., 2023), we control for this source of chance agreement, called normativity, by centering impressions on the average impression in the sample. This corrected index of meta-accuracy is called distinctive meta-accuracy and reflects meta-perceivers' insight into the distinctive impressions they made beyond a normative impression.[2] For simplicity, we refer to distinctive meta-accuracy as meta-accuracy.

To model dyadic and generalized meta-accuracy, we set up a model where meta-perceivers' (*m*) meta-perceptions of a given perceiver (*p*) on a given item (*i*) (MP_{mpi}) were predicted by: a) the distinctive impression a meta-perceiver made on a specific perceiver on that item ($Pwmc_{mi}$), b) the meta-perceiver's distinctive reputation on that item (i.e., the average impression a meta-perceiver made on perceivers on the item; Pc_i), and c) the average ratings on that item across the sample ($NORMc_i$). Thus, this meta-accuracy model (Equation (1) indexes dyadic meta-accuracy (γ_{1m}), generalized meta-accuracy (γ_{2m}), and normativity (γ_{3m}).

$$MP_{mpi} = \gamma_{0m} + \gamma_{1m}Pwmc_{mi} + \gamma_{2m}Pc_i + \gamma_{3m}NORMc_i + \varepsilon_{mpi} \quad (1)$$

$$\gamma_{0m} = \gamma_{00} + \mu_{0m}$$

$$\gamma_{1m} = \gamma_{10} + \mu_{1m}$$

$$\gamma_{2m} = \gamma_{20} + \mu_{2m}$$

$$\gamma_{3m} = \gamma_{30} + \mu_{3m}$$

In Study 2, the round-robin data structure requires the addition of another predictor: how perceivers tend to see others (Hater at al., 2023). This is in part a statistical necessity (i.e., within-person centering in MLM) but also has important conceptual meaning. Imagine that Pat sees her friend group as more kind than outgoing or anxious whereas Polly sees their friends as more outgoing than anxious or kind. Maya might know that Pat and Polly see others in this way and use this information to infer how they see her. However, it is unclear if Maya's insight is about how Pat and Polly uniquely see her or instead about Maya's understanding of their global perceptions of the group. By controlling for perceivers' general perceptions of the group (PEc_i), we can be sure dyadic meta-accuracy is about meta-perceivers' understanding of the unique impressions they make on specific people. Thus, in Study 2, the meta-accuracy model (Equation (2) indexes dyadic meta-accuracy (γ_{1m}), generalized meta-accuracy (γ_{2m}), normativity (γ_{3m}), and perceiver effects (γ_{4m}).

$$MP_{mpi} = \gamma_{0m} + \gamma_{1m}Pwmc_{mi} + \gamma_{2m}Pc_i + \gamma_{3m}NORMc_i + \gamma_{4m}PEc_i + \varepsilon_{mpi} \quad (2)$$

$$\gamma_{0m} = \gamma_{00} + \mu_{0m}$$

$$\gamma_{1m} = \gamma_{10} + \mu_{1m}$$

$$\gamma_{2m} = \gamma_{20} + \mu_{2m}$$

$$\gamma_{3m} = \gamma_{30} + \mu_{3m}$$

Table 1
Study Methods and Measures.

	Study 1	Study 2
Network details	United States undergraduate students nominated diverse informants	Small groups of well-acquainted German undergraduate students
Sample size		
Participants	292	208
Informants	$M = 3.71$ informants per participant	4 students per group
Demographics		
Age	$M = 19.58$ years, $SD = 1.37$ years	$M = 22.43$ years, $SD = 2.25$ years
Sex	63 % female, 36 % male, 1 % chose not to answer	69 % female, 31 % male
Informants	Friends (66.8 %), family members (23.8 %), romantic partners (8 %), and other relationships (1.4 %)	Mean length of acquaintanceship = 34.19 ($SD = 39.72$) months
Personality ratings	Big Five Inventory (BFI); 44 items	Minimum Redundancy Scales (MRS); 30 items
Extraversion	$M = 4.82$, $SD = 0.99$	$M = 4.51$, $SD = 0.57$
Agreeableness	$M = 5.31$, $SD = 0.72$	$M = 4.49$, $SD = 0.58$
Conscientiousness	$M = 5.01$, $SD = 0.83$	$M = 4.17$, $SD = 0.79$
Emotional Stability	$M = 4.42$, $SD = 0.93$	$M = 4.02$, $SD = 0.73$
Openness	$M = 5.19$, $SD = 0.70$	$M = 4.24$, $SD = 0.58$
Being Well-liked	$M = 6.56$, $SD = 0.49$	$M = 4.43$, $SD = 0.42$
Being Well-known	$M = 6.03$, $SD = 0.53$	$M = 3.96$, $SD = 0.53$
Liking Others	$M = 6.54$, $SD = 0.50$	$M = 4.43$, $SD = 0.46$
Knowing Others	$M = 6.11$, $SD = 0.58$	$M = 3.96$, $SD = 0.57$

Note. Participants' levels of extraversion, agreeableness, conscientiousness, emotional stability, and openness were calculated as the average of their self-reports (50% weight) and informant reports (50% weight). In Study 1, personality ratings were reported on a scale of 1 (*strongly disagree*) to 7 (*strongly agree*) and liking and knowing ratings were reported on a scale of 1 (*not at all*) to 7 (*very much*). In Study 2, personality ratings were reported on a scale of 1 to 6 (e.g., 1 - very quiet to 6 - very talkative), while liking ratings were reported on a scale of 1 (*not at all)* to 5 (*very much*) and knowing ratings were reported on a scale of 1 (*not at all)* to 5 (*very well*).

[2] The normative profiles in the current research were strongly related to social desirability (Study 1 $r = 0.90$ [0.82, 0.94]; Study 2 $r = 0.95$ [0.90, 0.98]). For results from models that include both the normative and the socially desirable profiles, see supplemental Table S1.

$\gamma_{4m} = \gamma_{40} + \mu_{4m}$

3.4.1. Individual differences

We tested individual differences by modelling meta-perceiver variance for dyadic (μ_{1m}) and generalized meta-accuracy (μ_{2m}). While not our primary focus, we also modeled meta-perceiver variance for the other components of meta-accuracy (e.g., meta-normativity, perceiver effects), given that meta-perceivers use these sources in unique ways (Hater et al., 2023). In the case that any of the models failed to converge due to a lack of significant variance in a particular component(s), we fixed the random effects for one component at a time until the model converged, starting with the intercept and then the slope(s) with the smallest variance. We tested the significance of meta-perceiver variance for each component with likelihood-ratio tests that compared a model that included random effects for a given component to a model that excluded it. In line with other interpersonal perception research (Biesanz, 2019), we used standard deviations (*SD*) as effect size estimates of meta-perceiver variance for each component.

While it is difficult to calculate the exact power needed to detect random effects in SMAM given that power depends on multiple unknown parameters, one important source of power is how many perceivers rated each participant (Biesanz, 2019). In the current studies, at least three perceivers rated each meta-perceiver, which is comparable to past work that has found random effects (with *SD*s ranging from 0.01 to 0.71) in SMAM (Hater et al., 2023).

3.4.2. Mechanisms for dyadic and generalized Meta-Accuracy

We tested three mechanisms: consistency of impressions, consistency of meta-perceptions, and transparency. To index the consistency of a participant's impressions across perceivers, we calculated an interclass correlation (ICC) between the distinctive impressions they made on their close others using the two-way mixed effects model (*ICC3k*) in the *psych* R package (Revelle, 2022). Likewise, to index the consistency of a participant's meta-perceptions, we calculated an ICC between their distinctive meta-perceptions across perceivers. To test if good meta-perceivers made consistent impressions and/or meta-perceptions, we correlated participants' consistency scores (transformed using Fisher's *r*-to-*z*) with their dyadic and generalized meta-accuracy scores, which were the exported Empirical Bayes estimates of the Level 2 slopes for dyadic and generalized meta-accuracy.

To test transparency as a mechanism of generalized meta-accuracy, we first tested if good meta-perceivers of generalized meta-accuracy were also good targets. We indexed distinctive self-other agreement using the Social Accuracy Model (Biesanz, 2010; see supplemental Table S2) and exported the Empirical Bayes estimates of the Level 2 slopes for distinctive self-other agreement as target scores for each participant. Then, we tested the correlation between participants' target scores and their generalized meta-accuracy scores. To test if transparency is the primary route to generalized meta-accuracy, we added meta-perceivers' self-perceptions (centered on the average impression and then grand-mean centered) as a predictor in the meta-accuracy model. This predictor indexes transparency bias, or the extent to which meta-perceivers overestimate how much they are seen in line with their self-perceptions, and its addition means that the model now indexes generalized and dyadic meta-insight, or the insight meta-perceivers have into their reputation and the unique impressions they made on close others independent of their self-perceptions. If there is significant meta-perceiver variance in generalized meta-insight, then good meta-perceivers use cues other than their global self-perceptions to understand their reputation among close others.

3.4.3. Correlates of dyadic and generalized Meta-Accuracy

To better understand who good meta-perceivers are, we tested the following meta-perceiver attributes as correlates of generalized and dyadic meta-accuracy: sex, Big Five traits, being well-liked (i.e., how much meta-perceivers were liked on average), being well-known (i.e., how well meta-perceivers were known on average), liking others (i.e., how much meta-perceivers liked their close others on average), and knowing others (i.e., how well meta-perceivers knew their close others on average). Notably, given the group structure of Study 2, we used the *TripleR* package (Schönbrodt et al., 2012), which conducts Social Relations analyses (Kenny, 1984), to calculate the group-mean centered averages of how much participants were liked by their group members (target effect of liking), how well participants were known by their group members (target effect of knowing), how much participants liked their group members (perceiver effect of liking), and how well participants knew their group members (perceiver effect of knowing). We added correlates as *z*-standardized moderators for the meta-accuracy components that had significant variance; this included dyadic and generalized meta-accuracy, as well as meta-normativity. Given that we are exploring several correlates, we applied a False Discovery Rate (FDR; Benjamini & Hochberg, 1995) correction to the *p*-values of these moderation tests.

4. Results

4.1. Individual differences in Meta-Accuracy

As shown in Table 2, participants in both studies had insight into their reputation among their close others (generalized meta-accuracy) and into the unique impressions they made on their close others beyond their reputation (dyadic meta-accuracy). Critically, in both studies, there was meaningful variability in both forms of meta-accuracy. Notably, the distributions of generalized meta-accuracy scores were wide and normally distributed (supplemental Figure S1), suggesting this variance was not driven by especially poor or good meta-perceivers. In contrast, there was much less variability in dyadic meta-accuracy such that scores were extremely narrow and not normally distributed (supplemental Figure S1).

Table 2
Dyadic and Generalized Meta-accuracy Effects.

	Study 1		Study 2	
	Estimate b (SE)	Meta-perceiver variance (SD)	*Estimate b (SE)*	Meta-perceiver variance (SD)
Meta-accuracy model				
Dyadic meta-accuracy	0.10*** (0.01)	0.07***	0.09*** (0.01)	0.08*
Generalized meta-accuracy	0.62*** (0.02)	0.30***	0.61*** (0.03)	0.35***
Meta-normativity	0.89*** (0.02)	0.38***	0.87*** (0.03)	0.35***
Perceiver effects	–	–	0.25*** (0.02)	0.19***
Meta-insight model				
Dyadic meta-insight	0.10*** (0.01)	0.08***	0.08*** (0.01)	0.10***
Generalized meta-insight	0.33*** (0.01)	0.21***	0.36*** (0.02)	0.27***
Meta-normativity	0.97*** (0.02)	0.27***	0.90*** (0.02)	0.23***
Transparency bias	0.45*** (0.01)	0.15***	0.43*** (0.01)	0.19***
Perceiver effects	–	–	0.15*** (0.01)	0.12***

Note. * $p < .05$, ** $p < .01$, ***$p < .001$.

4.2. Mechanisms for dyadic Meta-Accuracy

Did making and thinking one made a less consistent impression predict dyadic meta-accuracy? First, participants tended to make somewhat consistent impressions on their close others (Study 1 *mean ICC* = 0.49, *SD* = 0.24; Study 2 *mean ICC* = 0.51, *SD* = 0.25), but metaperception consistency was stronger (Study 1 *mean ICC* = 0.86, *SD* = 0.12; Study 2 *mean ICC* = 0.79, *SD* = 0.17), a pattern similar to Hater at al (2023). Thus, as in past work, people thought they were seen in more similar ways than they really were (Kenny & DePaulo, 1993).

In contrast to predictions, impression consistency was unrelated to dyadic meta-accuracy (Study 1 $r = 0.02$, 95 % CI [-0.09, 0.14], $p = .67$; Study 2 $r = 0.07$, 95 % CI [-0.07, 0.20], $p = .32$). However, participants who formed less consistent meta-perceptions tended to have higher levels of dyadic meta-accuracy in Study 1 (r = -0.20, 95 % CI [-0.30, -0.08], $p < .001$) but not Study 2 (r = 0.00, 95 % CI [-0.13, 0.14], $p = .95$). This pattern remained when both impression and meta-perception consistency were modelled simultaneously (supplemental Table S3). Thus, given two meta-perceivers who made similarly unique impressions across others in Study 1, the person who differentiated their meta-perceptions more tended to attain higher levels of dyadic meta-accuracy than the person who formed less differentiated meta-perceptions. A possible explanation for the discrepancy across studies is that Study 2 recruited mutual acquaintances, meaning that meta-perceivers presumably knew their close others from the same context, whereas Study 1 meta-perceivers may have known their close others from different contexts. Contextual differences may have made it easier for meta-perceivers to realize when they made more variable impressions across their close others, resulting in more differentiated meta-perceptions. Indeed, the correlation between impression variability and meta-perception variability was descriptively stronger in Study 1 ($r = 0.32$, 95 % CI [0.21, 0.42], $p < .001$) than in Study 2 ($r = 0.26$, 95 % CI [0.13, 0.38], $p < .001$).

4.3. Mechanisms for generalized Meta-Accuracy

Did making and thinking one made a more consistent impression predict generalized meta-accuracy? Consistent with Hater et al. (2023), the participants who made more consistent impressions tended to have more insight into their reputation (Study 1 r = 0.19, 95 % CI [0.08, 0.30], $p < .001$, Study 2 r = 0.25, 95 % CI [0.12, 0.37], $p < .001$). Likewise, participants who formed more consistent meta-perceptions tended to have more insight into their reputation (Study 1 r = 0.41 95 % CI [0.31, 0.50], $p < .001$; Study 2 $r = 0.28$, 95 % CI [0.15, 0.40], $p < .001$). When impression and meta-perception consistency scores were simultaneously entered as predictors, this pattern held in Study 2, but only meta-perception consistency predicted generalized meta-accuracy in Study 1 (supplemental Table S3). Overall, what likely set the good meta-perceiver of generalized meta-accuracy apart was making more similar impressions and forming more similar meta-perceptions.

In terms of transparency, we found that participants who tended to have higher generalized meta-accuracy were also seen as they see themselves more than others (Study 1 $r = 0.28$, 95 % CI [0.17, 0.38], $p < .001$; Study 2 $r = 0.18$, 95 % CI [0.05, 0.31], $p < .01$), suggesting that transparency was a mechanism of generalized meta-accuracy. However, there were still good meta-perceivers of generalized meta-accuracy who used information other than their self-perception given the signfiicant individual differences in generalized meta-insight (Table 2). Notably, these good metaperceivers of generalized meta-insight tended to make more similar impressions in both studies (Study 1 r = 0.13, 95 % CI [0.02, 0.24], $p = .03$; Study 2 $r = 0.16$, 95 % CI [0.02, 0.29], $p = .02$), and believe they made more similar impressions in Study 1 ($r = 0.20$, 95 % CI [0.09, 0.31], $p < .001$) but not Study 2 ($r = 0.10$, 95 % CI [-0.03, 0.24], $p = .13$). Taken together, there seems to be two types of good generalized meta-perceivers: a) people who are seen as they see themselves and b) people who can figure out how they are seen differently than how they see themselves in part because the impressions they make are consistent.

4.4. Correlates of dyadic and generalized Meta-Accuracy

There were no correlates of either type of meta-accuracy, but meta-normativity was moderated by each of the Big Five traits, as well as by liking and knowing others (see Table 3). Although the focus of the current work is meta-accuracy, this suggests that meta-perceivers with more socially desirable personalities (i.e., more extraverted, agreeable, conscientious, emotionally stable, and open) and meta-perceivers who liked and knew their close others more, tended to think that they were seen more positively than other meta-perceivers did.

Interestingly, generalized meta-accuracy was positively related to dyadic meta-accuracy (Study 1 $r = 0.25$, 95 % CI [0.14, 0.35], $p < .001$; Study 2 $r = 0.18$, 95 % CI [0.05, 0.31], $p = .01$). The same effect was observed for generalized and dyadic meta-insight (Study 1 $r = 0.30$, 95 % CI [0.19, 0.40], $p < .001$; Study 2 $r = 0.16$, 95 % CI [0.02, 0.29], $p = .02$). This suggests that among close others, unlike in first impressions (Hater et al., 2023), some good meta-perceivers of generalized meta-accuracy were also good meta-perceivers of dyadic meta-accuracy (see scatterplots in supplemental Figure S2).

5. General discussion

The current research demonstrates that, similar to a first impression context (Hater et al., 2023), people tend to have insight into their reputation and some insight into the unique impressions they made on close others beyond their reputation (e.g., Maya is aware of her general reputation among her friends, as well as the unique impressions she makes on Pat versus Polly). However, unlike in a first impression, there seems to be individual differences in both generalized meta-accuracy (e.g., Maya is more aware of her reputation than Mark is) and dyadic meta-accuracy (e.g., Mark is more aware of the unique impressions he makes on Pat versus Polly than Matt is) among close others, as well as evidence that some people are good at both forms of meta-accuracy (e.g., compared to Matt, Maya is more aware of both her reputation and the unique impressions she makes on Pat and Polly).

Why might the good dyadic meta-perceiver emerge among close others but not among first impressions? We assumed that dyadic meta-accuracy and individual differences in this ability require meaningful variation in the impressions people make, a condition that is not often met in a first impression lab context. To the degree to which the close other contexts in our studies provided meaningful variability, it seems as though the factor that predicted dyadic meta-accuracy was a tendency to form differentiated meta-perceptions, not a tendency to make unique impressions. Thus, dyadic meta-accuracy seems to be in the hands of the meta-perceiver rather than dependant on perceivers forming unique impressions. Future work is needed to understand why and how these meta-perceivers form more differentiated meta-perceptions (e.g., do they observe their unique behavior with each close other?), as well as how knowing close others from the same social context might hinder this ability.

Similar to a first impression context, people have insight into their reputation among their close others, and there is meaningful variability in who is more or less accurate. Thus, at a sample level, having insight into one's reputation appears to be an important pathway to understanding the impressions one makes on both new acquaintances and close others. Also similar to a first impression context, good meta-perceivers of generalized meta-accuracy tended to be people who made consistent impressions across their close others and tended to be seen as they see themselves (e.g., Maya sees herself and is seen by Pat and Polly as kinder and more outgoing than she is punctual). This suggests that behaving consistently and in line with one's self-views (i.e., revealing one's "true self") are pathways to meta-accuracy not only in a first impression context (Hater et al., 2023) but also among close others.

Unlike in a first impression, we observed that some people were

Table 3
Moderator Effects of Meta-Perceiver Attributes on Dyadic and Generalized Meta-Accuracy and Meta-Normativity.

Moderator	Study 1			Study 2		
	Dyadic Meta-Accuracy Estimate (SE) *r*	Generalized Meta-Accuracy Estimate (SE) *r*	Meta-Normativity Estimate (SE) *r*	Dyadic Meta-Accuracy Estimate (SE) *r*	Generalized Meta-Accuracy Estimate (SE) *r*	Meta-Normativity Estimate (SE) *r*
Sex	-0.01 (0.01) *-0.04*	0.03 (0.04) *-0.05*	0.09 (0.05) *0.12*	0.01 (0.03) *0.02*	0.02 (0.06) *0.02*	0.11 (0.05) *0.14*
Extraversion	-0.02 (0.01) *-0.14*	0.01 (0.02) *0.05*	0.12*** (0.02) *0.32*	-0.01 (0.01) *-0.07*	-0.06 (0.03) *-0.15*	0.17*** (0.02) *0.46*
Agreeableness	0.01 (0.01) *0.06*	-0.04 (0.02) *-0.14*	0.10*** (0.02) *0.26*	0.00 (0.01) *-0.02*	-0.01 (0.03) *-0.03*	0.13*** (0.02) *0.34*
Conscientiousness	-0.01 (0.01) *-0.06*	-0.04 (0.02) *-0.14*	0.09*** (0.02) *0.23*	0.00 (0.01) *0.02*	-0.02 (0.03) *-0.05*	0.06* (0.02) *0.17*
Emotional Stability	-0.01 (0.01) *-0.08*	-0.03 (0.02) *-0.09*	0.09*** (0.02) *0.25*	-0.02 (0.01) *-0.09*	-0.03 (0.03) *-0.09*	0.12*** (0.02) *0.32*
Openness	0.00 (0.01) *-0.04*	0.02 (0.02) *0.06*	0.07*** (0.02) *0.18*	0.03 (0.01) *0.18*	0.02 (0.03) *0.04*	0.10*** (0.02) *0.29*
Being well-liked	0.00 (0.01) *-0.04*	-0.01 (0.02) *-0.03*	0.01 (0.02) *0.03*	0.02 (0.01) *0.11*	0.02 (0.03) *0.06*	0.00 (0.03) *0.01*
Being well-known	-0.01 (0.01) *-0.06*	0.02 (0.02) *0.07*	-0.02 (0.02) *-0.06*	0.03 (0.01) *0.14*	0.02 (0.03) *0.06*	0.03 (0.03) *0.08*
Liking others	-0.01 (0.01) *-0.05*	0.01 (0.02) *0.03*	0.10*** (0.02) *0.27*	0.01 (0.01) *0.06*	-0.01 (0.03) *-0.02*	0.07* (0.02) *0.19*
Knowing others	-0.01 (0.01) *-0.07*	0.06 (0.02) *0.19*	0.04 (0.03) *0.10*	0.02 (0.01) *0.13*	0.00 (0.03) *-0.01*	0.05* (0.03) *0.15*

Note. Estimates are unstandardized interaction coefficients. *r* is the effect size estimate calculated using the t-value and degrees of freedom of the given coefficient. * $p < .05$, ** $p < .01$, *** $p < .001$. To account for the many tests conducted, a False Discovery Rate correction (FDR; Benjamini & Hochberg, 1995) was applied to the *p*-values of the tests in this table.

especially good at both dyadic and generalized meta-accuracy. While the mechanism for dyadic meta-accuracy (i.e., thinking one makes unique impressions) is opposite to the mechanism for generalized meta-accuracy (i.e., making and realizing one makes a similar impression that aligns with self-views), it is possible that these skills are not orthogonal. A meta-perceiver might appreciate the unique ways they relate to each of their close others while also realizing that their close others share certain impressions of their personality. For example, Maya might realize that she confides in Pat about her feelings more than she does in Polly and thus, while both Pat and Polly see her as kinder and more outgoing than she is punctual, Pat also sees her as more anxious and emotional than she is punctual. Overall, this finding suggests that there might be a broad type of good meta-perceiver who can appreciate both the generalities and nuances of the impressions they make. Future work is needed to identify who these broad good meta-perceivers might be.

5.1. Limitations and future directions

We examined meta-accuracy for close others, which is a broad context that includes a variety of different relationships (e.g., friends, family) and, as in past work (Wessels et al., 2020), is defined in the current research by high liking and knowing. However, meta-perceptions and impressions change in important ways when liking and knowing are not both high (Elsaadawy et al., 2023; Wessels et al., 2020), which might lead to stronger dyadic meta-accuracy and more variability in who is accurate. Further, to the degree to which dyadic meta-accuracy and variance in this ability are driven by self-observation of unique behaviors across relationships, future work might find stronger effects when perceivers come from more strongly defined social contexts (e.g., the workplace, family, dating). Across such contexts, the extent to which people like and know others might vary significantly, as might the types of relationships (e.g., employer-employee relationship versus colleagues). Such distinct relational factors might increase the variability in dyadic meta-accuracy. As such, disentangling generalized and dyadic meta-accuracy in other social contexts is an important avenue for future research.

In the current research, we tested the Big Five as personality correlates of meta-accuracy and found no effects. It's possible that particular facets of these broad traits are more relevant to dyadic and generalized meta-accuracy than the broad traits (e.g., high expressiveness – a facet of extraversion – might foster generalized meta-accuracy by allowing meta-perceivers to express their "true self"). As such, future work should explore personality correlates of generalized and dyadic meta-accuracy at the facet-level.

5.1.1. Constraints on generality

Participants from both studies in the present work were undergraduate students from Western populations. While there might be many factors that limit generalizability (e.g., the rating measures, an individualistic context), we think one of the most important limitations is the age group of our participants. Older adults might have different social networks with either less consistency in their reputations (e.g., they find themselves in more distinct contexts) or more (e.g., they select contexts that align with their personalities). Further, they might have more mentalizing abilities and be more able to appreciate how they are experienced differently by different people, or they might be more inclined to assume they are transparent. These potential age differences might result in differences in both the levels of and variability in generalized and dyadic meta-accuracy. Thus, whether the present results are generalizable to samples of other ages is an empirical question that requires future research.

CRediT authorship contribution statement

N. Elsaadawy: Writing – original draft, Formal analysis, Conceptualization. **E.N. Carlson:** Writing – review & editing, Funding acquisition, Conceptualization. **P. Borkenau:** Writing – review & editing, Funding acquisition, Data curation.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data, R code, and supplemental materials for the current research are available at https://osf.io/vr5ah/.

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