Research Article

Friends Know Us Even When They Are Different From Us

Accuracy and Bias in Self–Other Perceptions of the Big Five

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Abstract: Friendships pervade people's social lives across their lifespans. But how accurately can friends perceive each other's personalities? Person perceptions are typically a mixture of fact and fiction, but as friends share a lot of information, they should be able to form relatively accurate assessments. We referred to the truth and bias model of judgment to study accuracy in friendship dyads (N = 190). Participants completed self- and peer-rating versions of the Big Five Inventory-10. Actor-partner interdependence models were used to decompose truth and bias forces: Friends achieved significant perceptual accuracy on each Big Five trait. Friends were actually rather similar in conscientiousness and also assumed they were similar to each other in this trait. For agreeableness, there was no actual but there was assumed similarity. There was neither actual nor assumed similarity for openness, extraversion, or neuroticism. Moreover, there was a considerable directional bias for all traits: Friends' peer-ratings were positively biased: They assessed their friends as being more open, and conscientious, et cetera, than the friends did themselves. This research adds to the similarity-dissimilarity debate in social and personality psychology and the social perception literature in employing a sophisticated assessment of accuracy.

Keywords: Big Five, accuracy, self–other agreement, APIM, friendship

Consider two friends named Ben and Lucy. They have known each other for several years, have supported each other when one was sad or needed help, and have spent time together regularly. Whereas Ben is a reliable, calm, and nice person, Lucy is also reliable but also very outgoing and sometimes hot-tempered. Both friends think of each other fondly. Moreover, Ben thinks he knows Lucy's personality quite well, whereas Lucy from time to time observes behaviors in Ben that surprise her because his behavior does not match the image she has of him.

The two friends demonstrate specific phenomena: They are dissimilar in some characteristics but similar in others. They evaluate each other positively, and whereas Ben assumes he perceives Lucy accurately, Lucy might not possess accurate judgments about Ben. Much research in social and personality psychology concerns questions about the validity of partner perceptions – often between romantic partners or friends (e.g., Connelly & Ones, 2010; Overall et al., 2015). Actually, major portions of our leisure time are spent not only with family and romantic partners but also with friends (Zimmer-Gembeck, 1999). From childhood to old age, friendships are a ubiquitous and central part of our social lives (Bukowski, 2009). If friendships are such a central part of human life, one question that arises is: How well do we actually know our friends?

In other words, how accurate are our perceptions of our friends' traits?

Results suggest that personality judgments between friends seem accurate (e.g., Cohen et al., 2013), but theoretical arguments about perceptual biases suggest the opposite (Gagné & Lydon, 2004). Further, there is an ongoing debate on how similar friends are (Cohen et al., 2013; Curry & Dunbar, 2013; Huelsnitz et al., 2020; Youyou et al., 2017). Thus, we addressed the following questions: Do people think their friends are similar to themselves? Do people perceive their friends more positively than they are in reality? Overall, how accurate are people's impressions of their friends' personalities? The present study was designed as a first step toward addressing these questions using a truth and bias model and investigating accuracy and bias in social perceptions of friends' personalities.

Accurate Personality Judgments

Accuracy in personality judgments is usually studied by relating self-ratings to peer ratings. Typically, among close acquaintances, there is good convergence between self- and peer ratings (e.g., Connolly et al., 2007; Funder & Colvin, 1988, for an overview, see Vazire & Carlson,

2010). The highest coefficients in self-other agreement for the Big Five pertain to extraversion and openness to experience (Connolly et al., 2007), and in previous studies, participants were often roommates (Paunonen & Hong, 2013) or spouses (e.g., Watson & Humrichouse, 2006). Also, research on friends has suggested that judgments may be accurate (e.g., Cohen et al., 2013; Huelsnitz et al., 2020). In an extensive meta-analysis, self-other agreement between friendship dyads was high for all traits with coefficients of .39 for agreeableness, .42 for neuroticism, .50 for openness, and .51 for extraversion and conscientiousness (Connolly & Ones, 2010). Comparable high levels of agreement were found in subsequent studies (Beer et al., 2013; Cohen et al., 2013; Wilson et al., 2015). Extraversion was shown to have the highest accuracy in friendship dyads (Cohen et al., 2013; Watson et al., 2000). However, research has mainly used correlations to evaluate accuracy (i.e., self-other agreement, which we use interchangeably; e.g., Cohen et al., 2013; Lee et al., 2009). Some recent studies have used more complex approaches (e.g., profile correlations) and estimated distinctive accuracy (e.g., Huelsnitz et al., 2020), that is, a person's unique trait profile, which distinguishes that person from the average person.

With respect to actual similarity, many studies have suggested that friends do not resemble each other in personality (e.g., Beer et al., 2013; Cohen et al., 2013; Watson et al., 2000; van Zalk & Denissen, 2015) despite the similarity in sociodemographics and attitudes (McPherson et al., 2001) and despite the fact that similarity facilitates friendship formation (Selfhout et al., 2009). For example, only small correlations were found for friends' actual similarity in extraversion, neuroticism, and psychoticism (Rushton & Bons, 2005). The highest similarity coefficients have typically been found for openness and conscientiousness, but they have still been small and have been interpreted as not indicating substantial similarity (Lee et al., 2009; Youyou et al., 2017). Note, however, that with behavioral personality measures, a higher similarity between friends was found than with self-reports (Youyou et al., 2017).

Assumed similarity (sometimes called perceived similarity, self-based heuristic, self-anchoring, or projection) typically shows stronger correlations than actual similarity does (Cohen et al., 2013). But even for assumed similarity, correlations have been very small for the Big Five traits. Small effects have been found for certain traits in some studies but not in others. Effects have been reported for agreeableness and conscientiousness (Cohen et al., 2013), openness (Lee et al., 2009; Thielmann et al., 2020), and neuroticism (Beer et al., 2013), but there has been no consistency across these findings.

We aim to complement these findings by employing an approach that simultaneously assesses accuracy and similarity by employing the truth and bias model of judg-

ment (West & Kenny, 2011). The major advantage of this model is that biases (e.g., assumed similarity) and accuracy are viewed as coexisting forces that together form social perception. This approach makes it possible to test whether and how strongly biases affect accurate personality judgments. Further, it accounts for nonindependence between the two members of a friendship dyad. The model provides a theoretical and empirical basis from which to consider that we often want to be accurate but simultaneously want to feel good in relationships and thus assume similarity.

In this model, truth and biases are considered interrelated concepts that form our judgments. In applying these concepts to our study, the truth criterion is a person's personality self-rating, and biases are variables to which judgments (e.g., peer ratings) are attracted. They can include valid and invalid information (i.e., biases can be detrimental but also beneficial to accuracy). The model decomposes several forces that influence accuracy (see Figure 1). We studied *direct accuracy* ("I see you how you see yourself"; A's peer-report of B converges with B's self-report) by regressing the respondent's rating of the partner on the partner's self-rating; *actual similarity* ("I see myself as you see yourself"; A's self-report converges with B's self-report) as the covariance between the two friends' self-ratings; and *assumed similarity* (also called bias or projection; "I see you how I see myself"; A's peer-report of B converges with A's self-report) by regressing the respondent's rating of the partner on the respondent's self-rating. We also assessed *directional bias*, that is, how much people are attracted to a particular end of the response scale (West & Kenny, 2011), which is reflected in the intercept of peer ratings. Finally, the total truth force (*overall accuracy*) can be determined by mediation testing: Assumed and actual similarity together form an indirect effect that can be added to the direct effect (direct accuracy; Kenny & Acitelli, 2001) to obtain an overall accuracy index. Thus, friends can be accurate even when they are biased (Gagné & Lydon, 2004; West & Kenny, 2011). For example, if a respondent projects their own personality onto a friend and the two people are actually similar, the judgment is accurate even if it was driven by bias. The truth and bias model is a powerful framework that allows the simultaneous assessment of several forces that influence personality judgments and thus seems useful for more closely examining self and other perceptions in the context of friendship.

The Friendship Context

Friendships are dyadic relationships, often between people of similar ages and over long time periods (Blieszner & Adams, 2013). They are characterized by voluntariness, exchange, trust, support, and closeness (Wrzus et al., 2015). Yet, they have less closeness, interdependency, and
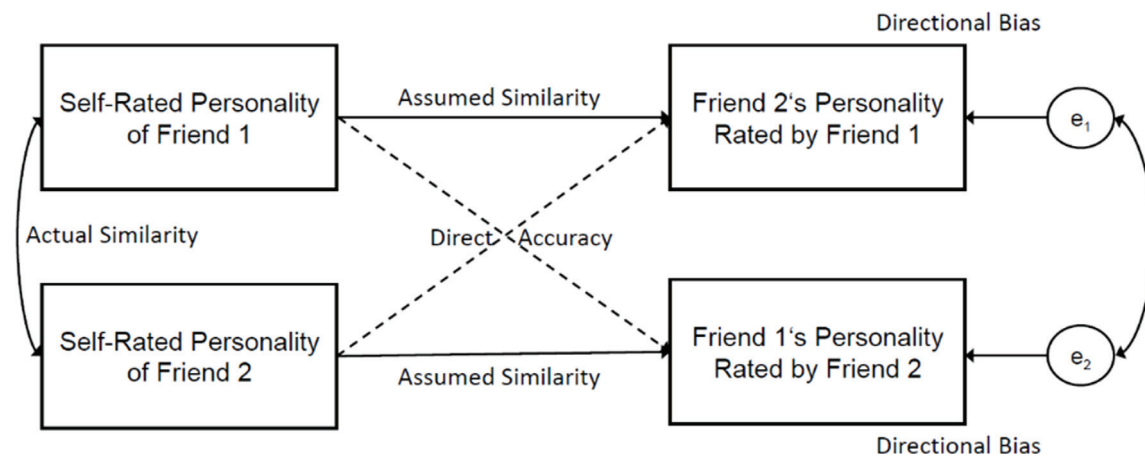
Figure 1. Model specification for the APIM estimating accuracy and bias.

exclusivity than romantic relationships (Harris & Vazire, 2016). Friends are viewed as significant others for leisure activities and sources of instrumental and social support. They often share values and interests (Blieszner & Adams, 2013). In line with this reasoning, friendships were found to typically develop among people with similar traits and values (McPherson et al., 2001). The similarity-attraction hypothesis (Byrne, 1971) further posits that people with similar attitudes and beliefs like each other ("birds of a feather flock together"), and perceived similarity predicts friendship formation (Selfhout et al., 2009; van Zalk & Denissen, 2015).

To analyze the accuracy and similarity between friends, we referred to the Big Five as the most widely used personality model (Costa & McCrae, 1992) because personality is a critical variable for friendships (Cooper, 2002). The Big Five are predictive of various outcomes, such as physical and mental health (Oshio et al., 2018) and relationship processes (Weidmann et al., 2017), thus explaining why accurate perceptions of friends' personalities may be adaptive (e.g., not being disappointed or angry if a less open friend refuses to go to an art gallery or knowing that a friend will help with a project because the friend is reliable and conscientious). Still, biases may also be adaptive because seeing close others positively and as similar to oneself can increase relationship satisfaction and well-being and bolster self-esteem (Schütz & Baumeister, 2017).

Hypotheses

Typically, when assessing Big Five traits among friendship dyads, there is high accuracy between self- and peer ratings (Connelly & Ones, 2010). We, therefore, expected to find significant direct accuracy coefficients for each Big Five trait (Hypothesis 1).

According to the similarity-attraction hypotheses, friends should have similar attitudes. Furthermore, friends like each other: The reinforcement-affect model proposes that similarity reinforces the beliefs and opinions of individuals, which is why an implicit affective response increases attraction (Clore & Byrne, 1974). Moreover, people often use their self-perception as a blueprint for judging others (Gagné & Lydon, 2004) – thus, others are a mirror of the self but in an idealized fashion (Murray et al., 1996). From these perspectives, similarity seems to help friendships work out, and thus, we expected that there would be significant actual (Hypothesis 2a) and assumed similarity (Hypothesis 3a). On the other hand, most empirical studies have reported only negligible similarity coefficients for friendships (e.g., Beer et al., 2013; Cohen et al., 2013; Watson et al., 2000; van Zalk & Denissen, 2015). Similarity may help people form new relationships but may become less important in established friendships. Thus, as competing hypotheses, we did not expect robust actual (Hypothesis 2b) and assumed similarity (Hypothesis 3b) and tested their effects in an exploratory fashion.

As people often show some form of bias (e.g., positivity bias, Rusbult et al., 2000; Taylor & Brown, 1988; or mean-level bias, Fletcher & Kerr, 2010), it seems likely that such directional biases will also occur in the assessment of a friend's personality. Indeed, a meta-analysis found that participants do not evaluate themselves more positively than they are evaluated by others (Kim et al., 2019). Instead, the authors found some evidence for self-effacement, that is, judges rated participants more positively with respect to neuroticism, conscientiousness, and extraversion facets. We thus expected such biases to be favorable (negative for neuroticism and positive for the other traits; Hypothesis 4) because evaluating friends more positively than they actually are should aid relationship quality (Murray &

Holmes, 1997) as well as one's self-evaluation because friends reflect back on the self (Schütz & Baumeister, 2017).

In line with Hypothesis 1, the overall accuracy coefficients were also expected to be significant (Hypothesis 5). This coefficient is important for merging the effects of the truth and bias forces, which determine overall accuracy. It is possible that similarity perceptions contribute to overall accuracy (see West & Kenny, 2011), but we did not have a specific prediction about the extent to which the direct (accuracy) or the indirect (similarity) effects would contribute to overall accuracy. Yet, as direct accuracy should be large (Connelly & Ones, 2010), overall accuracy should also be large.

Method

Participants and Procedure

We advertised a study on friendship and perception via email lists, social networks, and word-of-mouth recommendations. We asked people to participate and to send a link to a friend. We found 421 participants. Out of these, we were able to identify 190 friendship dyads ($N = 380$; 26.3% male; $M_{age} = 27.56$, $SD_{age} = 12.57$, 18–87 years). As an incentive, we offered course credit or participation in a lottery for Amazon vouchers. On average, participants had been friends for 10 years ($Mdn = 7.00$, $SD = 10.96$). Participants completed an online survey taking approximately 10 min. The survey began with questions about demographics and a self-reported Big Five measure, followed by the same Big Five measure as a peer report regarding the friend. Each person responded independently, and a couple of code was generated to match partners. A post hoc power analysis showed that we were able to detect accuracy and bias effects of $\beta = .15$ with a power of .85 ($\alpha = .05$; Ackerman et al., 2020).

Measures

We employed the Big Five Inventory-10 (BFI-10; Rammstedt & John, 2007), which measures individuals' levels of openness (Cronbach's α coefficients in the present study were $\alpha_{self} = .55$, $\alpha_{peer} = .60$), conscientiousness ($\alpha_{self} = .43$, $\alpha_{peer} = .62$), extraversion ($\alpha_{self} = .77$, $\alpha_{peer} = .76$), agreeableness ($\alpha_{self} = .35$, $\alpha_{peer} = .33$), and neuroticism ($\alpha_{self} = .61$, $\alpha_{peer} = .63$; e.g., "I see myself as someone who get nervous easily") with two items each. Self- and peer-reported versions of the BFI-10 were used. Responses were provided on a scale ranging from 1 = *disagree strongly* to 5 = *agree strongly*. The scale has good test-retest reliability and constructs validity (Rammstedt & John, 2007). Internal consistencies for some subscales were rather low in the present

study (but comparable to the values reported in previous studies; see, e.g., Rammstedt & John, 2007) as would be expected when assessing broad constructs with only two items. However, because we computed group statistics, the low alpha coefficients were not a major concern (Gosling et al., 2003; Ziegler et al., 2014).

Data Analysis

First, we computed intraclass correlations using the pairwise correlational method (Kenny et al., 2006). Within-friend correlations (below the diagonal of the full table) reflect associations between Big Five ratings made by the same person (e.g., A's self-ratings and A's peer-ratings of B). Between-friend correlations (on and above the diagonal of the full table) reflect associations between the reports of the two friendship members (e.g., A's self-ratings and B's peer-ratings of A). In the upper right quarter of Table 1, the self-ratings of A were correlated with B's peer-ratings of A. The coefficients in the diagonal of this quarter present thus self-other-agreement. In the upper left quarter of Table 1, self-reports within the same person (below the diagonal) and between friends (on and above the diagonal) were correlated, which allows the assessment of actual similarity (in diagonal). In the lower left quarter, correlations between A's self-ratings and A's peer-ratings of B are presented. As these are within-friend correlations, they represent assumed similarity. Correlations between peer ratings within and between friends (lower right quarter) are not relevant for the present research as they are not included in the truth and bias model. We interpreted correlations of .10 as small, .20 as a medium, and .30 as large (Funder & Ozer, 2019).

Then, we computed a series of actor-partner interdependence models (APIMs) for indistinguishable dyads (Olsen & Kenny, 2006). To account for the arbitrariness in the assignment of dyads of friends, we set all corresponding paths, means, intercepts, and (residual) variances equal across partners. We grand-mean centered the self-reports and peer-reports of all personality traits with the mean of the self-reports. Partner effects represent direct accuracy. The correlation between self-ratings reflects actual similarity based on self-report. Actor effects denote assumed similarity (i.e., bias). The intercept of the peer ratings represents directional bias. Overall accuracy can be calculated as the sum of the direct effect (direct accuracy) and the product of the indirect effect (assumed similarity × actual similarity; Kenny & Acitelli, 2001). Note that we use the APIM and mediation terminology "effect," but this does not imply causality. We used structural equation modeling with Maximum Likelihood estimation in Mplus 7. We report unstandardized regression coefficients and bootstrapped 95% Confidence Intervals ($k = 5,000$ samples). Data and

Table 1. Descriptive statistics and intraclass correlations for the Big Five personality traits

Variable	O	C	E	A	N	O_{peer}	C_{peer}	E_{peer}	A_{peer}	N_{peer}
O	.12*	−.09	.02	−.05	.05	.55***	.00	.02	.08	.10
C	−.08	.26***	.03	.04	.01	−.07	.48***	.00	.03	.01
E	.05	.07	.09	−.01	.00	.00	−.12*	.65***	.01	−.25***
A	.09	.10	.15**	−.05	−.09	.13*	−.08	.11*	.45***	−.11*
N	.06	−.03	−.27***	−.11*	.01	.02	.08	−.28***	.02	.54***
O_{peer}	.13**	−.10	−.11*	−.08	−.02	.12*	.00	.01	−.05	−.01
C_{peer}	−.07	.23***	.10	.11*	−.02	.03	.03	.16**	.09	−.03
E_{peer}	.03	.05	.05	.03	.08	.08	−.07	.08	.01	.06
A_{peer}	−.09	.12*	.01	.11*	−.15**	.15**	.00	.09	−.05	−.06
N_{peer}	.01	−.05	−.05	−.10*	.01	.08	.10	−.33***	−.12*	.00
M	3.70	3.60	3.37	3.35	3.12	3.83	4.02	3.72	3.61	2.77
SD	1.02	0.91	1.12	0.88	1.07	0.93	0.92	1.08	0.89	1.10

Note. The values below the diagonal are within-friend correlations. The values above and on the diagonal are between-friends correlations. O = Openness; C = Conscientiousness; E = Extraversion; A = Agreeableness; N = Neuroticism; Peer = Peer-rating version of personality traits. With gray shading, we present actual similarity (upper left quarter), self-other-agreement (upper right quarter), and assumed similarity (lower left quarter). *p < .05; **p < .01; ***p < .001 (all two-tailed).

analysis code are available in the Open Science Framework (OSF) at https://osf.io/f4k7r/ (Körner & Schütz, 2022).

Results

Preliminary Analyses

Table 1 presents descriptive statistics and intraclass correlations for all variables. The self-other agreement was high for all traits and ranged from ICC = .45 for agreeableness to ICC = .65 for extraversion. The actual similarity correlation was small for openness (ICC = .12), medium-sized for conscientiousness (ICC = .26), and very small or almost zero for the other traits. The assumed similarity correlations were small for openness (ICC = .13) and agreeableness (ICC = .11), medium-sized for conscientiousness (ICC = .23), and trivial for extraversion and neuroticism.

Truth and Bias Analyses

For each trait, the APIM model showed a good fit. Hypothesis 1 was supported, as we found statistically significant accuracy coefficients (see Table 2) for all Big Five traits. The actual similarity coefficient missed conventional levels of significance for openness, but friends were similar in their self-reports of conscientiousness, so these findings supported Hypothesis 2a for conscientiousness but not for openness. Further, Hypothesis 2a was not supported (Hypothesis 2b was supported) for extraversion, agreeableness, or neuroticism because no actual similarity was found for these traits. For Hypothesis 3a, we expected to observe assumed similarity, that is, we expected participants to project their self-perceptions onto their friends. The hypothesis

was supported for conscientiousness and agreeableness but not for openness, extraversion, or neuroticism. The latter three traits were in line with the competing Hypothesis 3b, as they did not show significant assumed similarity. Further, for conscientiousness, there was not only actual but also assumed similarity. Hypothesis 4 was supported because the directional bias values were all positive (negative for neuroticism), indicating that participants assessed their friends as more open-minded, conscientious, extraverted, agreeable, and emotionally stable than the friends assessed themselves (e.g., for conscientiousness, respondents assessed their friends on average as 0.42 points higher on the 5-point Likert scale than the friends assessed themselves). Finally, Hypothesis 5 was supported because overall accuracy was considerable for all Big Five traits. Yet, overall accuracy was primarily identical to direct accuracy because the indirect effects (assumed similarity × actual similarity) contributed to accuracy only for conscientiousness – and only 5% of the accuracy in conscientiousness was due to the bias of similarity.

Discussion

In this study, we assessed the accuracy of personality perceptions among friends using the truth and bias model (West & Kenny, 2011). The zero-order intraclass correlations suggest that friends are relatively accurate in judging their friends' Big Five traits but that actual and assumed similarity occurs only for openness and conscientiousness. Thus, biases can contribute to a more accurate personality judgment only for these two traits. The APIM models testing the full truth and bias model simultaneously provide support for Hypothesis 1. We found that people are relatively accurate in assessing their friends' openness,

Table 2. Results of APIM analyses concerning accuracy and bias

Variable	Coefficient	95% CI	SE	p
Openness				
Direct accuracy	**0.50**	[0.41, 0.59]	0.04	< .001
Actual similarity	0.13	[−0.01, 0.27]	0.07	.074
Assumed similarity	0.06	[−0.02, 0.14]	0.05	.138
Directional bias	**0.13**	[0.05, 0.21]	0.04	.002
Overall accuracy	**0.51**	[0.42, 0.60]	0.04	< .001
Conscientiousness				
Direct accuracy	**0.46**	[0.36, 0.55]	0.05	< .001
Actual similarity	**0.21**	[0.10, 0.34]	0.06	< .001
Assumed similarity	**0.11**	[0.02, 0.20]	0.05	.020
Directional bias	**0.42**	[0.23, 0.49]	0.04	< .001
Overall accuracy	**0.48**	[0.39, 0.57]	0.05	< .001
Extraversion				
Direct accuracy	**0.62**	[0.55, 0.70]	0.04	< .001
Actual similarity	0.11	[−0.06, 0.29]	0.09	.203
Assumed similarity	−0.01	[−0.09, 0.07]	0.04	.772
Directional bias	**0.35**	[0.27, 0.44]	0.05	< .001
Overall accuracy	**0.62**	[0.54, 0.70]	0.04	< .001
Agreeableness				
Direct accuracy	**0.46**	[0.37, 0.56]	0.05	< .001
Actual similarity	−0.04	[−0.15, 0.07]	0.06	.497
Assumed similarity	**0.14**	[0.05, 0.23]	0.05	.003
Directional bias	**0.27**	[0.20, 0.34]	0.04	< .001
Overall accuracy	**0.46**	[0.36, 0.55]	0.05	< .001
Neuroticism				
Direct accuracy	**0.56**	[0.48, 0.63]	0.05	< .001
Actual similarity	0.02	[−0.15, 0.18]	0.08	.861
Assumed similarity	0.00	[−0.09, 0.10]	0.04	.969
Directional bias	**−0.35**	[−0.45, −0.26]	0.05	< .001
Overall accuracy	**0.56**	[0.48, 0.63]	0.04	< .001

Note. Accuracy and assumed similarity reflect regression coefficients. Actual similarity is a covariance. Directional bias is an intercept. Overall accuracy is the sum of accuracy with the product of assumed similarity and actual similarity.

conscientiousness, extraversion, agreeableness, and neuroticism. This finding is in line with previous correlational research that observed good self-other agreement for personality traits (Connolly et al., 2007; Funder & Colvin, 1988; Vazire & Carlson, 2010; Watson & Humrichouse, 2006).

With respect to similarity, findings depend on the specific trait: Friends were actually rather similar in conscientiousness. However, the actual similarity was not found for openness, extraversion, agreeableness, or neuroticism. For openness, extraversion, and neuroticism, friends did not assume they were similar to each other. Yet, we found that participants projected their own conscientiousness and agreeableness onto their friends, and thus, this finding is in line with previous research that used correlations to study similarities between friends (Cohen et al., 2013).

Assuming that one is similar to friends in agreeableness may prevent conflicts. Perhaps if two people see themselves as differing in agreeableness (i.e., if one perceives the other as relatively hot-headed or uncooperative), this could be detrimental to healthy friendship functioning. In a similar vein, assuming that a friend is similar to oneself regarding conscientiousness can help people make and keep appointments, for example, if one person is on time, this person will likely value the other person's punctuality, and thus, there will not be a strain on the friendship.

These findings add to the ongoing debate on whether interpersonal relationships are characterized by similarity or dissimilarity. Although some theoretical stances favor the similarity hypothesis (e.g., similarity-attraction hypothesis, Byrne, 1971; reinforcement-affect model, Clore & Byrne, 1974), a recent meta-analysis found little similarity in different relationship types (Montoya et al., 2008), and our results show that similarity coefficients are small and differ across traits. As similarity is mainly relevant for friendship formation (Selfhout et al., 2009), but our sample of friends was characterized by long-term friendships, it makes sense that we did not find actual similarity for most traits. Further, as the traits for which we found significant assumed similarity were identical to those identified by Cohen et al. (2013; but see Thielmann et al, 2020), we assume that agreeableness and conscientiousness are the traits that are most likely to be projected onto others.

Moreover, we found that friends were biased in their peer ratings: They consistently evaluated their friends more positively than the friends evaluated themselves – with the largest coefficient for conscientiousness. This corresponds to the large literature on biases (e.g., Fletcher & Kerr, 2010; Rusbult et al., 2000) in relationships that show that partners and friends evaluate people more favorably than they do themselves (Murray et al., 1996). From a theoretical point of view, overestimating desirable traits in close others (i.e., seeing the friend as more agreeable, conscientious, etc. than the person actually is) may bolster one's own self-esteem (Schütz & Baumeister, 2017) and can benefit relationship functioning (Gagné & Lydon, 2004; Murray & Holmes, 1997). Such a tendency also parallels the phenomenon of basking in reflected glory (Cialdini et al., 1976; Schütz, 1997).

Finally, we found (as with Hypothesis 1) that friends' ratings corresponded well. They were accurate in a relative sense even when similarity effects were controlled for and even when they showed directional biases. For most personality traits, direct accuracy primarily determined overall accuracy – apparently, friends' accuracy was not influenced by assumed and actual similarity very much. Only for conscientiousness did the bias influence overall accuracy. In other words, friends assumed that they were similar in conscientiousness, but because they were actually

similar in this trait, these biases contributed to an accurate assessment of each other.

The coefficients of overall accuracy are a promising sign that friends can accurately perceive each other. As participants in our sample had been friends on average for 10 years, the relationships seem relatively successful. A prerequisite for successful relationships may be self-verification processes (i.e., relationship partners strive for accurate perceptions of each other; De La Ronde & Swann, 1998), and this is in line with what we found: Friends were relatively accurate in perceiving their (friendship) partners. Moreover, the high accuracy coefficients seem all the more striking as they have less shared method variance than the similarity coefficients.

A promising avenue for future research would be to assess facets of the Big Five traits using the truth and bias model. As many previous studies have done, we used a short scale to capture friends' personalities (e.g., Cohen et al., 2013; van Zalk & Denissen, 2015), but a longer scale would allow for more fine-grained analyses. For example, can facets such as impulsiveness or modesty also be accurately perceived among friends? Such an avenue would also allow an additional question to be addressed: Do variations in desirability and observability for certain traits moderate overall accuracy (e.g., Vazire, 2010)? Perhaps traits with low observability and high desirability will have lower direct accuracy coefficients and stronger bias. For example, the intellect facet of openness is highly desirable and might thus show lower accuracy (John & Robins, 1993). By contrast, extraversion is somewhat less evaluative and highly observable, and these qualities may explain why extraversion facets show high accuracy (Connelly & Ones, 2010).

Moreover, idealized self- and partner ratings could be used to test for additional sources of bias. In addition, longitudinal data might allow for inferences about whether accuracy regarding specific traits increases with the duration of friendships. Also, the present findings should be cross-validated in samples with other cultural backgrounds (e.g., collectivistic countries). A shortcoming of the present study is that stereotypic or normative effects were not accounted for. For example, accuracy might be achieved because friends in general are nice and agreeable, and peer ratings might reflect this general tendency. A final limitation pertains to possible self-selection processes: Perhaps people who are more open and agreeable were overrepresented in this research as they are typically more likely than others to volunteer for psychological studies (Marcus & Schütz, 2005).

Conclusion

All in all, this study contributes to the social perception literature on friendships by employing the truth and bias model to disentangle the effects of perceptual accuracy and perceptual bias. In a nutshell, when considering various forces that influence social perception, friends are much more accurate than chance and seem to actually know each other relatively well with respect to broad personality traits. The quote by Elbert Hubbard, "A friend is one who knows you" (1927, p. 112), seems to have a huge kernel of truth: For all Big Five personality traits, perceptions were accurate. By contrast, the quote "A friend is, as it were, a second self" (Cicero, 44 BCE/2020) does not seem to reflect the truth: Actual similarity was found only for conscientiousness. By contrast, friends were not similar in openness, extraversion, agreeableness, or neuroticism.

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