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Through the Looking Glass Clearly: Accuracy and Assumed Similarity in Well-Adjusted Individuals' First Impressions

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Do well-adjusted individuals have particularly accurate insight into what others are like or are they biased, primarily seeing their own characteristics in others? In the current studies, the authors examined how psychologically adjusted individuals tend to see new acquaintances, directly comparing their levels of distinctive accuracy (accurately perceiving others' unique characteristics), normative accuracy (perceiving others as similar to the average person), and assumed similarity (perceiving others as similar to the self). Across two interactive, round-robin studies, well-adjusted individuals, compared with less adjusted individuals, did not perceive new acquaintances' unique characteristics more accurately but did perceive new acquaintances, on average, as similar to the average person, reflecting an accurate understanding of what people generally tend to be like. Furthermore, well-adjusted individuals had a biased tendency to perceive their own unique characteristics in others. Of note, both pre-existing perceiver adjustment and target-specific liking independently predicted greater accuracy and assumed similarity in first impressions. In sum, well-adjusted individuals see through the looking glass clearly: although they erroneously see others as possessing their own unique characteristics, they accurately understand what others generally tend to be like.

Keywords: accuracy, assumed similarity, psychological adjustment, person perception, first impressions

> In short, a mature person will be in close touch with what we call the "real world." He will see objects, people, and situations for what they are.
>
> —Gordon Allport, *Patterns and Growth in Personality*

> Introspectively the self is extended and widened; objectively a personality is evolved and matured.
>
> —Gordon Allport, *Personality: A Psychological Interpretation*

How do well-adjusted, mature individuals view others? The quotes from Gorden Allport highlight two key aspects of adjustment—an accurate perception of the world and an extended sense of self—that may have important implications for how well-adjusted individuals view new acquaintances. On the one hand, being in close touch with the real world should promote accurate perceptions of others. On the other hand, an extended sense of self that overlaps with others should promote biased perceptions of others by enhancing assumed similarity, the tendency to ascribe one's own personality traits to others (Cronbach, 1955).[1] Thus, these two critical features of adjustment have potentially contradictory implications for the ways in which well-adjusted individuals tend to see others. In the current research, we examined this possibility by exploring whether well-adjusted individuals are able to see through the looking glass clearly in first impressions of personality, simultaneously seeing others more accurately and as more similar to the self.

Psychological adjustment is a broad, complex construct that is composed of at least two main factors: hedonic well-being, or a happy life (Kahneman, Diener, & Schwartz, 1999), and eudaimonic well-being, a meaningful life involving a sense of purpose

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[1] G. Allport's (1937, 1961) notion of extension of the self is a more general concept reflecting a broad tendency of well-adjusted, mature individuals to move beyond self-interest to become an active participant in life, feeling connected to and inseparable from other people, social groups, hobbies, objects, work, and ideas. The current article, however, is specifically focused on the implications of experiencing an extended sense of self with other individuals. This aspect of self-extension is akin to Aron, Aron, Tudor, and Nelson's (1991) concept of self-expansion, the tendency for the boundaries of the self to overlap with one's romantic partner, although note that the current article is concerned with self-expansion with people in general rather than with only close others. In this way, we are concerned with a blend of G. Allport's more general notion of self-extension and Aron et al.'s more specific concept of self-expansion, which may underlie a tendency for well-adjusted individuals to assume similarity with others in general.

and satisfying interpersonal relationships (Keyes, Schmotkin, & Ryff, 2002; Ryan & Deci, 2001; Waterman, 1993). Of note, despite these theoretical distinctions, hedonic and eudaimonic aspects of adjustment have been shown to have similar empirical correlates and outcomes (e.g., Kashdan, Biswas-Diener, & King, 2008; Nave, Sherman, & Funder, 2008; Ryan & Deci, 2001), indicating that these different aspects of adjustment may in practice function as a rather unified whole. Nonetheless, in the current research, we examined various aspects of hedonic and eudaimonic adjustment individually in order to obtain a detailed picture of how well-adjusted individuals perceive others.

Defining Accuracy and Assumed Similarity

What does it mean to view others accurately? Funder's (1995) realistic accuracy model (RAM) outlines the process through which accurate impressions of personality are formed, which requires perceivers to detect and appropriately utilize the relevant cues made available by targets. Should this process occur successfully, perceivers will achieve *distinctive accuracy*, which refers to understanding a given target's unique differentiating profile of traits. As such, distinctive accuracy entails understanding how a given target differs from the average person and others on specific traits, that is, Jill's ability to accurately determine whether Jack scores higher or lower on the items "is helpful and unselfish with others" and "is outgoing, sociable" than the average person and other targets.

A more general result of accurate detection and utilization of cues is *normative accuracy*, which refers to understanding what people generally tend to be like (Biesanz, 2010; Cronbach, 1955; Furr, 2008). Normative accuracy is assessed by how closely one's impressions of others, on average, map onto the average person's standing on the traits "is helpful and unselfish with others" and "is outgoing, sociable." To the extent that one's impressions do generally map onto what the average person is like, one is considered to have applied accurate normative knowledge—an understanding of the average person's profile of traits.[2] Of note, because the normative profile is very positive in nature (Borkenau & Zaltauskas, 2009; Edwards, 1957; Wood, Gosling, & Potter, 2007), normative accuracy also entails viewing others very positively. In sum, both of these forms of perceptive accuracy, distinctive and normative, require a perceiver to have knowledge about others, either regarding a specific individual or people in general.

In contrast, *assumed similarity* only requires knowledge about the self and refers to the extent to which individuals use self-information to form impressions about others (Cronbach, 1955). In some cases, assumed similarity may also involve knowledge of others, such as when a perceiver realizes a target is similar to the self and uses self-information to form a more accurate impression. In the current studies, however, we are concerned with the biased tendency to see others as similar to the self, controlling for any actual personality similarity between the perceiver and target. Thus, assumed similarity is explicitly defined here as the similarity between the perceiver's personality and his or her perceptions of others above and beyond actual similarity (e.g., Kenny & Acitelli, 2001). That is, assumed similarity reflects a tendency to project one's own unique traits onto others, those that make the perceiver different from the specific target and from the average person. Specifically, in assuming similarity with others, Jill will assume others share her own unique standing on the items "Is helpful and unselfish with others" and "Is outgoing, sociable."

Traditionally, researchers have assessed assumed similarity by comparing a perceiver's impressions of others with the perceiver's own self-reports—that is, does the perceiver see others in a way that is similar to the way the perceiver sees the self? Such an index of assumed similarity, however, could be interpreted as a rating shortcut or as a result of shared method variance, rather than a psychologically meaningful indicator of the extent to which the perceiver views others as similar to the self. In the present studies, therefore, we will index assumed similarity by comparing a perceiver's impressions of others with a composite index of what the perceiver is like that is based not only upon perceiver self-reports but also knowledgeable informant reports. Thus, the assumed similarity validation measure involves both the perceiver's self-perceptions and the perceptions of others who know the perceiver well, providing a more realistically accurate indicator of the perceiver's personality (e.g., Funder, 1995). It has become increasingly common practice for accuracy validation measures to include combinations of self- and informant-reports (e.g., Letzring, Wells, & Funder, 2006; Vazire & Gosling, 2004) in order to provide a more realistically accurate picture of an individual (Funder, 1995, 1999) and to benefit from aggregating personality ratings (Hofstee, 1994). Thus, just as it is ideal to obtain the most realistic and reliable measure of the target's personality when assessing accuracy, it seems ideal to obtain a similarly realistic and reliable measure of the perceiver's personality when assessing assumed similarity.

In sum, our conceptualization of assumed similarity is distinct from past measures in a number of ways: (a) because the target's personality and the normative profile are controlled for, our conceptualization reflects projection of an individual's unique traits, not those shared with the target or the average person; (b) it is person- rather than variable-centered, reflecting a projection of an individual's distinct patterning of traits rather than mean levels on traits; and (c) because informant reports are combined with self-reports, our conceptualization reflects projection of not just the person that an individual thinks he or she is but of the person that the individual actually is, as defined by both the self and close others.

The Relationship Between Accuracy and Assumed Similarity

It seems intuitive that accuracy and assumed similarity would be at odds with one another: while accuracy involves accurate utilization of the information others provide, assumed similarity involves inaccurate utilization of self-information. If one is able to form an accurate impression, why would one also rely on self-

[2] Note that for the present studies, the term *average person* is operationally defined as the mean target self-report from the current sample, which was composed of University of British Columbia undergraduates, mostly psychology majors. Although undergraduates are unlikely to adequately represent the general population, given that all perceivers come from this population themselves and all their impressions were formed regarding individuals drawn from this population, we feel that this is an appropriate validation measure for normative accuracy in the current studies.

information? If one does predominantly utilize self-information, how is it possible to also be accurate? Indeed, empirical research findings thus far confirm these intuitions, demonstrating an inverse association between accuracy and assumed similarity (Beer & Watson, 2008; Watson, Hubbard, & Weise, 2000). Specifically, traits that are generally viewed more accurately tend to be viewed with less assumed similarity and vice versa. Such findings are in line with informational accounts of assumed similarity (such as the self-based heuristic; Ready, Clark, Watson, & Westerhouse, 2000), which argue that assumed similarity tends to be greater than accuracy when information is low. That is, when information is limited, self-knowledge is argued to automatically "fill in the gaps," as the self is a salient and rich source of information upon which the perceiver can draw. As support, assumed similarity has been shown to be greater in first impressions than in impressions of better acquainted others (Beer & Watson, 2008; Funder, Kolar, & Blackman, 1995) and for low rather than high visibility traits (Watson et al., 2000). Accuracy, in contrast, tends to improve with more information, increasing with greater acquaintanceship (e.g., Biesanz, Millevoi, & West, 2007; Blackman & Funder, 1998; Letzring et al., 2006) and motivation (Biesanz & Human, 2010). Thus, empirical work so far supports the intuition that accuracy and assumed similarity are inversely related.

Despite empirical support for an inverse association between accuracy and assumed similarity, these are not inherently opposing processes. Theoretically and statistically, accuracy and bias have the potential to be independent of one another (Fletcher, 2002; Funder & Colvin, 1997; Gagné & Lydon, 2004; Kenny & Acitelli, 2001; Kenny et al., 2007). In fact, evidence for an inverse association between accuracy and assumed similarity has thus far been limited to traditional, variable-centered approaches, rather than examined with a person-centered approach (Asendorpf & van Aken, 1991; Block, 1971). That is, when examined across persons rating certain traits, these tendencies are negatively associated, but this finding does not provide information about the associations of these tendencies within individuals. Do people who generally view others accurately view others with less assumed similarity? Perhaps not, as what occurs at the aggregate level, or between persons, is not necessarily reflective of the process within an individual (i.e., the ecological fallacy; Epstein, 1983). Further, recent research has shown that individuals perceive close acquaintances with greater assumed similarity when rating traits of central importance to the perceiver (Lee et al., 2009). Because accuracy is also greater for close than new acquaintances, these processes are unlikely to always be inversely related, suggesting that the explanatory power of the informational hypothesis is limited. As such, an individual's general ability to view others accurately may have no relation to that individual's tendency to perceive others as similar to the self.

How might one simultaneously view others with accuracy and assumed similarity? If Jill perceives Jack with high levels of distinctive accuracy, she is able to see that Jack is more helpful and talkative than the average person. Jill herself is less helpful and talkative than the average person, and, unlike Jack, happens to be relatively more talkative than she is helpful. Thus, if Jill gives Jack high ratings on helpfulness and talkativeness, she is exhibiting distinctive accuracy—understanding how Jack is different from the average person. Yet there is also room for assumed similarity here, as Jill may actually rate Jack more highly on talkativeness than helpfulness, mirroring her own distinctive patterning of traits, rather than his. As a result, Jill is able to perceive Jack with both distinctive accuracy and assumed similarity simultaneously.[3] Meanwhile, Jill may also achieve high normative accuracy if her ratings of Jack and others on average are similar to the normative profile, that is, if she generally rates others as possessing similar levels of helpfulness and talkativeness as the average person. Thus, both forms of perceptive accuracy—distinctive and normative—have the potential to be independent of assumed similarity, making it possible for well-adjusted individuals to see others accurately and as similar to the self simultaneously.

Psychological Adjustment and Accuracy

Historically, having an accurate understanding of the world and those within it has been argued to be a central feature of psychological adjustment (G. Allport, 1961; Jahoda, 1958; see Colvin & Block, 1994, for a review). Further, the ecological approach to social perception posits that accurate interpersonal impressions have adaptive value (Gibson, 1979; Haselton & Funder, 2006; McArthur & Baron, 1983; Schaller, 2008; Zebrowitz & Montepare, 2006), and thus better adapted, well-adjusted individuals are expected to perceive others more accurately (Hall & Andrzejewski, 2008). In sum, accurately understanding others is not merely thought to be associated with adjustment, it is considered an integral, defining feature of psychological adjustment and a marker of one's adaptation to the social world.

Why would psychological adjustment promote more distinctively accurate impressions? In line with Funder's (1995) RAM, well-adjusted individuals should better detect and utilize the cues that targets emit. Specifically, well-adjusted individuals should be quite at ease and comfortable in social interactions, allowing cognitive resources to be available for both cue detection and utilization. This social ease is also argued to make targets more comfortable, which may then make more relevant cues available to well-adjusted individuals (Letzring, 2008). Further, higher levels of interpersonal adjustment may indicate greater attention and motivation to understand others. In turn, greater motivation to connect with others (Maner, DeWall, Baumeister, & Schaller, 2007; Pickett, Gardner, & Knowles, 2004) and to accurately understand others (Biesanz & Human, 2010) enhances accuracy. Indeed, greater relationship adjustment is associated with more accurate perceptions in romantic relationships (e.g., De La Ronde & Swann, 1998; Kilpatrick, Bissonnette, & Rusbult, 2002; Kobak & Hazan, 1991; Neff & Karney, 2005; Swann, De La Ronde, & Hixon, 1994; Thomas & Fletcher, 2003) and also roommate dyads (Katz & Joiner, 2002). Of course, more accurate perceptions of relationship partners may in fact foster relationship adjustment (e.g., Bernieri, 2001; Ickes & Simpson, 1997) rather than the

[3] At their theoretical limits, distinctive accuracy and assumed similarity must be inversely related. For instance, perfect assumed similarity—rating everyone exactly as one rates oneself—implies that accuracy on average across targets must be precisely zero. However, for values of distinctive accuracy and assumed similarity that are reasonably expected in actual data, even for moderate to large correlations, there is no mathematical necessity to expect their relationship to be negative, positive, or even independent. All three possibilities are feasible at realistic levels of accuracy and assumed similarity.

reverse. These pathways are not incompatible and likely operate simultaneously; yet by examining the role of pre-existing adjustment in first impressions, our primary focus in the current studies was on the extent to which personal and interpersonal adjustment influence impressions.

Psychological adjustment should also foster greater normative accuracy. If well-adjusted individuals generally attend more to others and are motivated to better understand others, they should over the long term develop a solid understanding of what people generally tend to be like, enhancing their normative accuracy. Such information may be especially useful in first impressions, when information and time are limited, allowing well-adjusted individuals to form generally accurate impressions when more distinctive information is harder to obtain. As noted earlier, the normative profile is very desirable (Borkenau & Zaltauskas, 2009; Edwards, 1957; Wood et al., 2007), and so normative perceptions are necessarily also positive perceptions. Thus, it is possible that well-adjusted individuals view others more normatively not because of normative knowledge but because of a tendency to view others more positively. Indeed, psychological well-being is associated with positively biased perceptions of the self, relationships, and the future (Taylor & Brown, 1988). Therefore, in Study 2, we addressed this potential confound by controlling for the positivity of perceivers' impressions of others. Overall, psychological adjustment should facilitate each stage of RAM, allowing well-adjusted individuals to form more distinctively and normatively accurate impressions of others.

Is there empirical evidence to support this long-standing argument that well-adjusted individuals more accurately perceive others? Both a meta-analysis (Davis & Kraus, 1997) and a recent review (Hall & Andrzejewski, 2008) showed that good judges do indeed experience greater psychological adjustment (e.g., self-esteem, positive personality traits) as well as greater social functioning. The majority of the studies included in these reviews, however, were nonverbal decoding tasks that involved perceptions of another's specific emotions or social role, rather than personality impressions. Personality impressions are considered to involve a broader, more global ability to understand another's stable traits and general tendencies (Colvin & Bundick, 2001; Swann, 1984) and are not necessarily related to other, more circumscribed interpersonal perception tasks (Ambady, Hallahan, & Rosenthal, 1995; Hall, 2001). Indeed, research into whether well-adjusted individuals form more accurate personality impressions have yielded mixed results. While some early studies showed that good judges were more socially inclined and well-adjusted (G. Allport, 1961; Dymond, 1950; Taft, 1955), others found that good judges were actually quite asocial and introverted (Adams, 1927; Vernon, 1933). Inconsistency in early work, however, is difficult to interpret due to the methodological issues identified by Cronbach (1955). Unfortunately, more recent work has not clarified the role of perceiver adjustment in personality impressions. For instance, good judges in face-to-face interactions exhibit characteristics associated with social skills and personal well-being (Letzring, 2008), yet good judges in zero-acquaintance paradigms are less sociable (Ambady et al., 1995).

One explanation for these mixed findings may be due to inconsistencies in how accuracy is measured across studies. In studies examining first impressions of personality, accuracy is unrelated or negatively related to adjustment when accuracy is assessed in the traditional trait-centered approach, which isolates distinctive accuracy (e.g., Ambady et al., 1995). In contrast, accuracy is positively related to adjustment when accuracy is assessed as profile agreement across a series of traits, which is a blend of distinctive and normative accuracy (e.g., Letzring, 2008). Further, the nonverbal decoding tasks that are positively associated with adjustment (e.g., Davis & Kraus, 1997) are more likely to be a result of normative knowledge regarding how emotions are generally expressed, rather than a result of understanding a target's idiosyncratic emotion expressions (see Chan, Rogers, Parisotto, & Biesanz, 2010). Thus, positive associations between adjustment and accuracy may in fact be a result of normative, rather than distinctive, accuracy. Indeed, in a preliminary attempt to separate normative from distinctive information, Vogt & Colvin (2003) found that interpersonally oriented individuals drew upon normative information to form more accurate impressions. Thus, adjustment may be linked to greater normative accuracy, or general knowledge of what others are like, rather than distinctive accuracy, a more target-specific understanding of others in first impressions. Indeed, the general argument that well-adjusted individuals are more in touch with the real world does not require that these individuals understand every person's unique characteristics but could instead entail their superior understanding of what others tend to be like on average.

Why would normative but not distinctive accuracy be associated with adjustment in first impressions? One explanation is that there may be rather minimal individual differences in the ability to form distinctively accurate impressions (e.g., Kenny, 1994; see also Biesanz, 2010, Figure 5). Because obtaining correct impressions is such an important skill, it is crucial for most people to be reasonably accurate, which may result in less variability in this ability. Further, distinctive accuracy is likely to be a very difficult task, particularly in first impressions, as it requires not only that perceivers possess the skill and cognitive resources for cue detection and utilization but also that targets provide adequate information in the first place. In contrast, normative knowledge should build up over one's lifetime and could be applied even without any cues from the target. Thus, normative accuracy would be a much easier route to accuracy that would depend primarily on the perceiver's own knowledge of what people tend to be like. To directly address this concern regarding distinctive accuracy, in the current studies we compared the degree of individual differences in distinctive and normative accuracy, as well as assumed similarity, to determine the extent to which people vary in these perceptual tendencies in first impressions. In sum, psychological adjustment has long been considered to promote more accurate impressions of others, but in first impressions, this may take the form of better understanding people in general rather than specific individuals.

Psychological Adjustment and Assumed Similarity

In contrast to the accuracy-as-mental-health perspective, a more recent framework argues that biased perceptions of others and the self are associated with psychological adjustment (Taylor & Brown, 1988). Why would well-adjusted individuals view others as more similar to the self? According to G. Allport (1937, 1961), well-adjusted individuals may have an extended sense of self that causes them to feel more engaged in and connected to life in general, including with other individuals. Since G. Allport's time, numerous concepts have been developed to convey this idea of a

tendency toward or motivation to feel interconnected with others, such as self-expansion (Aron, Aron, Tudor, & Nelson, 1991), self-transcendence (Bilsky & Schwartz, 1994; Cloninger, Svrakic, & Przybeck, 1993), nonprejudice (Phillips & Ziller, 1997), communion (Bakan, 1966), and interdependent self-construals (Markus & Kitayama, 1991). In turn, a tendency toward connection with others may be expressed as assumed similarity, seeing one's own qualities in others (Fiedler, 1954; Fitzgerald, 1965; Manis, 1958). For instance, more satisfied romantic couples are thought to experience self-expansion (Aron et al., 1991), integrating one's partner within the self, which is then expressed as greater assumed similarity with one's romantic partner. In turn, the tendency to assume similarity with one's romantic partner is strongly linked to greater relationship adjustment (Arias & O'Leary, 1985; Hendrick, 1981; Levinger & Breedlove, 1966; Morry, 2005; Murstein, 1967; Preston, Peltz, Mudd, & Froscher, 1952; Thomas, Fletcher, & Lange, 1997) even after actual similarity has been controlled (Acitelli, Douvan, & Veroff, 1993; Lemay, Clark, & Feeney, 2007; Murray, Holmes, Bellavia, Griffin, & Dolderman, 2002; Ruvolo & Fabin, 1999; but see Saffrey, Bartholomew, Scharfe, Henderson, & Koopman, 2003). It is plausible that well-adjusted individuals have a more general tendency toward expansion of the self that is not limited to romantic partners, and thus they generally perceive others as more similar to the self.

Several recent studies have provided initial support for a link between psychological adjustment and assumed similarity, demonstrating that maladjusted individuals, such as those who experience chronic negative affect, assume less similarity with others (Lane & Gibbons, 2007; Moss, Garivaldis, & Toukhsati, 2007). However, in these studies, actual similarity was not controlled, making these findings inconclusive, as less adjusted individuals are likely to be less similar to the targets in these studies. As such, less adjusted individuals may be accurate in their perceptions of dissimilarity. Further, in both of these studies, hypothetical targets, such as the typical student, were used; a more naturalistic approach would be to examine perceivers' general tendencies toward assumed similarity across multiple, real interaction partners. Thus, we examined whether well-adjusted individuals do have a general tendency to assume new acquaintances are more similar to the self, controlling for actual similarity, during face-to-face meetings with multiple targets.

Summary

In the current research, we sought to explore whether well-adjusted individuals view others more accurately and as more similar to the self in first impressions. The present set of studies extends previous research on adjustment, accuracy, and assumed similarity both empirically and theoretically in a number of ways. First, utilizing the social accuracy model of interpersonal perception (SAM; Biesanz, 2010) to determine both distinctive and normative accuracy allowed us to directly examine whether adjustment is linked to normative rather than distinctive knowledge, potentially clarifying inconsistencies in past research. Second, we extended the SAM to include assumed similarity, which allowed direct comparison of individual differences in accuracy and assumed similarity within perceivers as well as exploration of how these processes are simultaneously associated with adjustment. Third, we indexed assumed similarity in a rather novel manner, in that assumed similarity reflects a tendency to see others as possessing one's unique patterning of traits as described by both the self and close others. Fourth, we assessed psychological adjustment much more broadly than it has been in past research by utilizing a range of hedonic and eudaimonic adjustment measures, that we examined separately to provide a complete picture of how adjustment is associated with each perceptual tendency. Fifth, we studied interpersonal perception through actual interactions with multiple targets, as opposed to contrived or artificial stimuli, allowing for more realistic and reliable estimates of individuals' perceptual tendencies. In two interactive round-robin studies, we examined the extent to which well-adjusted individuals view new acquaintances with distinctive accuracy, normative accuracy, and assumed similarity. Relative to less adjusted individuals, well-adjusted individuals were hypothesized to be more in touch with reality because of their superior understanding of what others generally tend to be like but be biased in their tendency to see others as more similar to themselves than they really are.

Study 1

Method

Overview. Participants in small groups engaged in a round-robin "getting-acquainted" design. After self-assessments of their own personalities, participants paired up and met with another group member for 3 min in an unstructured interaction before separating to provide their impressions of the other participant's personality. This process was repeated until all participants had met with and provided impressions of every other participant. After the round-robin session was completed, participants filled out measures of adjustment and provided contact information for a parent or guardian and two peers.

Participants. A total of 273 undergraduates (199 women, 74 men, M_{age} = 20.90 years, SD = 4.15) at the University of British Columbia participated in 44 groups, ranging in size from three to 12 participants (median = 6) in exchange for $20 or extra course credits.

Measures.

Personality measures. To assess participants' personalities, we used a 21-item abbreviated version of the Big Five Inventory (BFI; John & Srivastava, 1999)[4] and included three additional items to assess intelligence: "Is intelligent," "Is bright," and "Receives good grades." This scale was used for both self- and other-ratings; all items were scored on a 1 (*disagree strongly*) to 7 (*agree strongly*) rating scale.[5]

Parent and peer personality reports. Questionnaires were mailed or e-mailed to a parent or guardian and two peers of each participant, with a request to rate the personality of their child or friend on the same abbreviated version of the BFI that participants

[4] The 21 items correspond to Items 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15, 16, 17, 21, 26, 31, 34, 36, and 38 of the original 44-item Big Five Inventory presented in John and Srivastava (1999).

[5] Portions of these data, specifically the self-report and impressions data, also appear in Biesanz (2010, Study 2) to illustrate the social accuracy model and in Chan et al. (2010, Study 2) for examination of gender effects. The primary analyses with adjustments do not overlap with either of these articles, and analyses with the peer and parent validation measures have not been previously reported.

filled out. The mailed questionnaire packets included a handwritten note from the participant and an addressed and stamped envelope. Multiple mailings and e-mails were sent if responses were not received within the expected time frame. Overall, 161 complete parental reports (59%) were returned, while 178 (65%) of participants had at least one peer report. For 218 (80%) participants, we received at least one informant report (from one peer or parent) to combine with the self-report in creating composite validation measures for distinctive accuracy and assumed similarity, while the validation measures for the remaining 20% consisted of only self-reports.[6]

Adjustment. Participants completed multiple measures of adjustment, including Rosenberg's (1965) Self-Esteem Scale (M = 5.38, SD = 1.01, α = .88) and Diener, Emmons, Larsen, and Griffin's (1985) Satisfaction with Life Scale (M = 4.80, SD = 1.27, α = .86) for assessment of subjective well-being; both measures were scored with the same 1–7 rating scale as described earlier. A subset of participants (n = 156) also completed the Center for Epidemiologic Studies–Depression Scale (CES-D; Radloff, 1977), which is measured on a scale ranging from 0 (*not at all*) to 3 (*very often*), with total scores summed such that higher scores indicate higher levels of depression (M = 15.24, SD = 10.05, α = .91). This same subset also completed the more eudaimonic Positive Relations With Others subscale of the Psychological Well-Being Scale (Ryff, 1989) on the same 1–7 scale as described earlier (M = 5.35, SD = .84, α = .86). Both these latter scales were added to the study approximately halfway through data collection.

Data analytic procedure. Following the SAM procedures outlined by Biesanz (2010; for similar empirical examples, see also Biesanz & Human, 2010; Lorenzo, Biesanz, & Human, 2010), we examined several multilevel regression models with three predictors of perceiver impressions: the distinctive accuracy validation measure (the average of the target's self-, parent, and peer reports on each item after the mean self-report for that item had been subtracted), the normative accuracy validation measure (the mean target self-report on each item), and the assumed similarity validation measure (the average of the perceiver's self-, parent, and peer reports on each item after the mean self-report for that item had been subtracted). Each perceptual tendency was allowed to vary randomly across perceivers and targets as follows:

$$Y_{ijk} = \beta_{0ij} + \beta_{1ij}TVal_{jk} + \beta_{2ij}Mean_k + \beta_{3ij}PVal_{ik} + \varepsilon_{ijk} \quad (1.1)$$

$$\beta_{0ij} = \beta_{00} + \beta_{01}\mathrm{Adj}_i + u_{0i} + u_{0j}$$

$$\beta_{1ij} = \beta_{10} + \beta_{11}\mathrm{Adj}_i + u_{1i} + u_{1j}$$

$$\beta_{2ij} = \beta_{20} + \beta_{21}\mathrm{Adj}_i + u_{2i} + u_{2j}$$

$$\beta_{3ij} = \beta_{30} + \beta_{31}\mathrm{Adj}_i + u_{3i} + u_{3j}. \quad (1.2)$$

Here Y_{ijk} is Perceiver i's rating of Target j on Item k, and $TVal_{jk}$ is the average of Target j's self-, peer, and parent reports on Item k after the normative profile is partialled out. The regression coefficient β_{1i} thus represents the average level of distinctive accuracy for Perceiver i across targets,[7] as $Mean_k$, an estimate of the normative profile based on the mean self-report on Item k across all participants, is partialled out. Thus, β_{1i} reflects distinctive accuracy, the extent to which targets' unique characteristics (i.e., the traits that differentiate the target from the average person) predict the perceiver's ratings of that target. In turn, β_{2i} reflects the extent to which the mean self-report predicts a perceiver's ratings of targets on average, or their average level of normative accuracy.[8] Items are not reverse coded, resulting in a strong relationship between $Mean_k$ and social desirability (see Borkenau & Zaltauskas, 2009; Edwards, 1957). Indeed, the mean self-reported response profile on the BFI correlates very strongly, $r(42) = .86$, $p < .00001$, with mean social desirability response profile based on a separate sample (n = 486; Paulhus, 2009). Higher levels of normative accuracy are thus associated with social desirability and more positive impressions (Wood et al., 2007). Finally, $PVal_{ik}$ is the average of Perceiver i's self-, peer, and parent reports on Item k, after the normative profile is partialled out. Thus, the regression coefficient β_{3i} is reflective of Perceiver i's average level of assumed similarity, the extent to which the perceiver's own unique traits predict the perceiver's ratings of others, on average, after actual similarity (the average of Target j's self-, peer, and parent reports on Item k) and normative similarity (the mean target self-report) are controlled. A graphical depiction of this analytical model, without adjustment as a moderator, is presented in Figure 1, and Table 1 provides definitions and interpretation of the pathways and interpersonal perceptual components.

Given the round-robin design, assessments of distinctive and normative accuracy and assumed similarity in Equations 1.1 and 1.2 represent measures that are averaged across perceivers and targets (i.e., main effects). For instance, a perceiver with a high level of distinctive accuracy has high levels of distinctive accuracy on average across the different targets that he or she met. A perceiver with a high level of normative accuracy is viewing others as similar to the normative profile on average across the different targets that he or she met. Similarly, a perceiver with a high level of assumed similarity is viewing others as very distinctively similar to self on average across the different targets that he or she met.

[6] In the present analyses, we used composites of all available informant reports and based the normative profile on the complete set of self-reports. In extensive additional analyses, we used multiple imputation to account for missing informant reports and to create a normative profile based on the average of the self, peer, and parent report composites, after accounting for missing data. These analyses provided results that were essentially identical to those presented in Table 3, and thus missing informant reports had no material impact on the presented results.

[7] We discussed the coefficient β_{1i} for didactic purposes. In reality, given Equations 1.1 and 1.2, $\beta_{1i} = \beta_{10} + \beta_{11}\mathrm{Adj}_i + u_{1i}$, which depends on the perceivers' level of adjustment and the perceivers' random (unobserved) effect (u_{1i}). Consequently, a specific perceiver's level of accuracy or assumed similarity is not assessed directly. The estimate $\beta_{10} + \beta_{11}\mathrm{Adj}_i$ provides the value of distinctive accuracy, on average across perceivers, all of whom have the same specific value of adjustment Adj_i.

[8] We estimated all models using R's lme4 package (Bates & Sarkar, 2007). All perceiver and target random effects were estimated in both models, and dyadic and group random effects were examined and included when needed. Tables present unstandardized parameter estimates (bs) and normal theory standard errors. For inferences, we present the asymptotic z test (parameter estimate divided by normal theory standard errors).

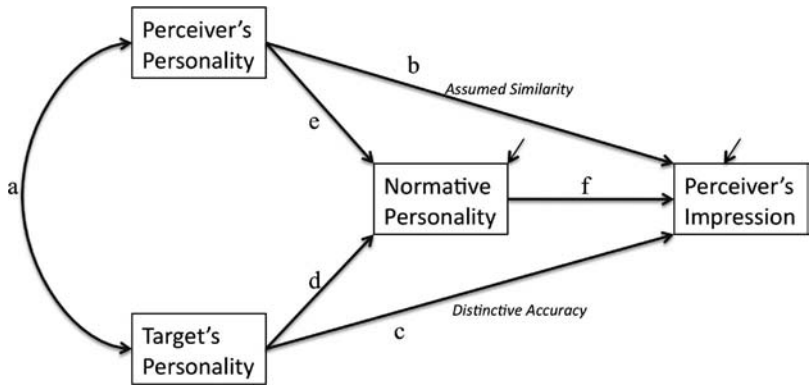

Figure 1. The social accuracy model of interpersonal perception extended to include assumed similarity. Pathways: a = actual similarity; b = assumed similarity; c = distinctive accuracy; d = target normativeness; e = perceived normativeness; f = normative accuracy.

Further, the degree of individual differences in distinctive accuracy, normative accuracy, and assumed similarity can be directly assessed by examination of the random effects, or degree of reliable variability, due to perceivers around these mean levels of accuracy and bias. For instance, how much do perceivers differ from one another in their average levels of distinctive accuracy, normative accuracy, and assumed similarity? These are reported as the estimated random effect standard deviations across perceivers $\hat{\tau}_{1i}$, $\hat{\tau}_{2i}$, and $\hat{\tau}_{3i}$, respectively. Next, the associations between each form of accuracy and assumed similarity can be assessed by examination of the correlations among these random effects. That is, is the general ability to view others with distinctive accuracy associated with individuals' general tendency to view others with assumed similarity? Thus, SAM allows a direct assessment of both the degree of individual differences in each tendency and how these individual differences are associated with one another.

To examine if adjustment explains some of the individual differences in each of these tendencies, we introduced potential moderators of distinctive and normative accuracy and assumed similarity as predictors of the random regression coefficients in Equation 1.2. Here Adj_i is a measure of Perceiver i's adjustment (e.g., perceiver subjective well-being). The unstandardized coefficients β_{11}, β_{21}, and β_{31} represent the interaction between perceiver adjustment and distinctive accuracy, normative accuracy, and assumed similarity, respectively. Specifically, positive values for estimates of β_{11}, β_{21}, and β_{31}, reported as bs, would indicate that perceivers with higher levels of adjustment (e.g., subjective well-being) view others with greater distinctive accuracy, normative accuracy, and assumed similarity, respectively.

In sum, we utilized SAM in both studies to examine (a) the overall mean levels of distinctive accuracy, normative accuracy, and assumed similarity; (b) the degree of individual differences in each of these tendencies; (c) the associations among individual differences in each of these tendencies; and (d) the extent to which well-adjusted individuals view others with distinctive accuracy, normative accuracy, and assumed similarity.

Results

Mean levels and variability in accuracy and assumed similarity. Overall, participants demonstrated significant levels of distinctive accuracy, $b = 0.16$, $z = 10.73$, $p < .0001$; normative accuracy, $b = 0.85$, $z = 34.16$, $p < .0001$; and assumed similarity, $b = 0.11$, $z = 6.62$, $p < .0001$ (see Table 2, column 1). Thus, perceivers were able to pick out targets' unique characteristics, generally viewed targets as being highly normative, and also projected their own unique characteristics onto others. By utilizing composite validation measures for both distinctive accuracy and assumed similarity, we found that perceivers are picking up not only the distinctive characteristics that the targets perceive in themselves but also those that the targets' close others report, and they are projecting not just their self-perceived distinctive traits but their actual distinctive traits onto others.

Table 1
Social Accuracy Model Pathway Definitions for Figure 1

Pathway	Term	Definition
a	Actual similarity	Degree of similarity between the perceiver's personality and targets' personalities.
b	Assumed similarity	Extent to which the perceiver views targets on average as possessing the perceiver's own unique characteristics.
c	Distinctive accuracy	Extent to which the perceiver views targets on average in line with the targets' own unique characteristics.
d	Target normativeness	Degree of similarity between a target's personality and the normative profile.
e	Perceiver normativeness	Degree of similarity between the perceiver's personality and the normative profile.
f	Normative accuracy	Extent to which the perceiver views the targets, on average, as being similar to the normative profile.

Note. These definitions apply for a given perceiver rating multiple targets in a round-robin design. As the normative profile is partialled from both the perceiver's and targets' personalities, the expected value of *a*, *d*, and *e* across perceiver and targets is 0.

Table 2
Initial Multilevel Model of Accuracy and Assumed Similarity Without Moderators

	Fixed effects		Random effects			
				Correlation		
Model parameters	*b*	*SE*	$\hat{\tau}$	1	2	3
Study 1						
1. Distinctive accuracy	0.16**	0.015	0.07**	—		
2. Normative accuracy	0.85**	0.025	0.32**	.15	—	
3. Assumed similarity	0.11**	0.017	0.24**	−.08	.33**	—
Study 2						
1. Distinctive accuracy	0.16**	0.023	0.07**	—		
2. Normative accuracy	0.86**	0.038	0.31**	.10	—	
3. Assumed similarity	0.15**	0.028	0.24**	.17	.11	—

Note. Study 1 $N = 273$; Study 2 $N = 107$. Study 1 residual $SD = 1.14$; Study 2 residual $SD = 1.11$. All measures were 1–7 scales. Intercept and target random effects were also modeled but are not presented. DA = distinctive accuracy; NA = normative accuracy; AS = assumed similarity.
** $p < .001$.

Next, we directly examined individual differences in each of these tendencies by looking at the random effects, or the degree of reliable variability around the mean levels. First of all, although significant, there were rather modest individual differences in distinctive accuracy, $\hat{\tau}_{1i} = .07$, $p < .0001$, indicating that participants did not vary substantially in the ability to discern the unique characteristics of others. Meanwhile, there were strong individual differences in normative accuracy, $\hat{\tau}_{2i} = .32$, $p < .0001$, indicating strong variability in the extent to which individuals viewed others as normative. Finally, there were also rather strong individual differences in assumed similarity, $\hat{\tau}_{3i} = .24$, $p < .0001$, indicating that participants varied meaningfully in the extent to which they viewed others as uniquely similar to the self.

How were individual differences in these tendencies associated with one another? Tendencies toward distinctive accuracy and assumed similarity were not significantly correlated, $r = -.06$, $z = -0.59$, $p = .55$. Meanwhile, the tendency to view others with normative accuracy was positively correlated with assumed similarity, $r = .33$, $z = 4.83$, $p < .0001$, but not signficantly with distinctive accuracy, $r = .15$, $z = 1.34$, $p = .18$. Overall, there is little evidence to support a strong inverse association between either form of accuracy and assumed similarity; indeed, the strongest and only significant association between accuracy and assumed similarity was actually a positive relationship between normative accuracy and assumed similarity. Thus, those who generally viewed others as more similar to the average person also tended to see others as more similar to the self.

Perceiver adjustment as moderators of accuracy and assumed similarity. How do well-adjusted individuals view others? Notably, well-adjusted individuals did not view others with greater distinctive accuracy than less adjusted individuals, all $|z|$s < 1.35 (see Table 3). Compared with less adjusted individuals, well-adjusted individuals did, however, view others with greater normative accuracy and greater assumed similarity, all $|z|$s > 2.02 (see Table 3 and Figure 2), although the association between depression and normative accuracy did not quite reach conventional levels of significance, $b = -0.01$, $d = -0.15$, $z = -1.81$, $p = .07$.[9] Thus, relative to less adjusted individuals, well-adjusted individuals tended to view others as more similar to the average person and to the self, evidencing accuracy in their understanding of what others generally tend to be like and bias in projecting their own unique characteristics onto others.

Discussion

Overall, well-adjusted individuals did view others with more accuracy and bias, accurately perceiving others on average as normative and inaccurately perceiving others on average as similar to the self. In Study 2, we sought to replicate this pattern of results while addressing several limitations of Study 1. First, in order to assess adjustment as broadly as possible, in Study 2 we expanded upon the primarily hedonic measures of adjustment used in Study 1 by including more eudaimonic measures, going beyond assessing personal happiness to assess more general functioning, such as one's sense of meaning in life and productivity. Second, as noted in the introduction, relationship adjustment in close relationships is associated with greater accuracy and assumed similarity. Is it really well-adjusted individuals' pre-existing adjustment level that fosters assumed similarity, or is it their greater relationship satisfaction, even initially, that fosters accuracy and assumed similarity? To control for this latter possibility, we examined whether pre-existing adjustment was associated with normative accuracy and assumed similarity above and beyond a perceiver's liking for a target. Finally, because the normative profile is so positive, it is unclear whether well-adjusted individuals view others normatively because they understand what people are generally like or whether they simply see others more positively. Controlling for perceiver liking also helped us to address this issue; if well-adjusted individuals viewed others more normatively even after the extent that they liked each target was controlled, it would seem more likely

[9] We also conducted analyses using only the self-reports or informant reports; results with informant reports were weaker but were consistent with the composite- and self-reports-only results. This is may be (a) the result of the drop in sample size when only informant-reports were used, as not all participants had informant reports, or (b) an indication that perceivers' self-perceptions play a stronger role than their informants' perceptions in impacting how they see others.

Table 3
Perceiver Adjustment Moderating Accuracy and Assumed Similarity

	Distinctive accuracy			Normative accuracy			Assumed similarity		
Model parameters	*b*	*SE*	*d*	*b*	*SE*	*d*	*b*	*SE*	*d*
Study 1 ($N = 273$)									
Self-esteem	−0.01	0.007	−0.26	0.07**	0.021	0.42	0.06**	0.016	0.50
Well-being	0.01	0.006	0.26	0.05**	0.017	0.42	0.04**	0.013	0.46
Depression	0.00	0.001	0.12	−0.01†	0.002	−0.30	−0.01**	0.002	−0.44
Relationship well-being	0.01	0.013	0.24	0.07*	0.032	0.34	0.07**	0.022	0.52
Study 2 ($N = 107$)									
Self-esteem	0.00	0.011	0.12	0.08**	0.031	0.46	0.08**	0.023	0.72
Well-being	0.02*	0.009	0.62	0.07*	0.028	0.46	0.06**	0.021	0.64
Depression	−0.00	0.001	−0.12	−0.01**	0.004	−0.72	−0.01*	0.003	−0.42
Relationship well-being	0.01	0.013	0.24	0.10**	0.037	0.50	0.08**	0.014	0.70
Autonomy	−0.01	0.012	−0.32	0.07*	0.036	0.38	0.06*	0.028	0.46
Mastery	0.01	0.012	0.18	0.08*	0.038	0.40	0.12**	0.027	0.84
Personal growth	−0.00	0.015	−0.04	0.14**	0.044	0.58	0.09**	0.034	0.50
Purpose in life	−0.00	0.012	−0.12	0.10**	0.034	0.56	0.07**	0.027	0.56
Self-acceptance	0.00	0.010	0.04	0.09**	0.031	0.56	0.08**	0.024	0.68
Liking of target	0.02**	0.009	0.46	0.24**	0.013	1.04	0.08**	0.010	0.50

Note. All measures were 1–7 scales, except for depression, which was a 0–3 scale. All variables were grand mean centered. Standardized effect sizes, *d*, were calculated as the change in the respective slope for a 2-*SD* change in the measure of adjustment divided by the random effect estimate *SD* for that slope, $\hat{\tau}$ (see Gelman, 2008).
† $p < .10$. * $p < .05$. ** $p < .01$.

that normative knowledge, rather than positive bias, underlies this tendency. In Study 2, another round-robin study of first impressions, we examined the extent to which well-adjusted individuals viewed others with both normative accuracy and assumed similarity, utilizing a broader range of adjustment measures and controlling for perceiver liking.

Study 2

Method

Participants. A total of 107 undergraduates (79 women, 28 men; $M_{age} = 20.16$, $SD = 3.56$) at the University of British Columbia participated in 12 groups, ranging in size from seven to 11 participants (median = 8.5). As in Study 1, participants engaged in a standard round-robin design and received either $20 or extra course credits as compensation.

Measures.

Personality measures. Personality was assessed using the same abbreviated 24-item version of the BFI (John & Srivastava, 1999) as in Study 1. This scale was used to rate both self and others and ratings ranged from 1 (*disagree strongly*) to 7 (*agree strongly*).

Parent and peer personality reports. We following the same general procedure for obtaining peer and parent reports as in Study 1 and had 59 complete parental reports (55%) returned, while 81 (76%) of participants had at least one peer report. For 85% of participants, we had at least one informant report to combine with the self-report in the composite validation measures for distinctive accuracy and assumed similarity.

Adjustment. Participants completed the same adjustment measures as in Study 1, Rosenberg's (1965) Self-Esteem scale ($M = 5.43$, $SD = 1.02$, $\alpha = .91$), the Satisfaction with Life Scale ($M = 4.77$, $SD = 1.15$, $\alpha = .82$; Diener et al., 1985), the CES-D ($M = 14.20$, $SD = 8.19$, $\alpha = .85$; Radloff, 1977), and the Positive Relations with Others Scale ($M = 5.44$, $SD = 0.86$, $\alpha = .87$; Ryff, 1989), along with the remaining scales from Ryff's Personal Well-Being Scale to assess eudaimonic adjustment, namely, Autonomy ($M = 4.48$, $SD = 0.87$, $\alpha = .88$), Mastery ($M = 4.78$, $SD = 0.85$, $\alpha = .87$), Personal Growth ($M = 5.82$, $SD = 0.70$, $\alpha = .88$), Purpose in Life ($M = 5.25$, $SD = 0.90$, $\alpha = .88$), and Self-Acceptance ($M = 5.09$, $SD = 0.99$, $\alpha = .92$).

Perceiver liking. Participants also rated the extent to which they liked every other participant on a scale ranging from 1 (*not at all*) to 7 (*a great deal*; $M = 5.50$, $SD = 1.01$).

Results

Mean levels and variability in accuracy and assumed similarity. Replicating the findings from Study 1, participants on average demonstrated significant levels of distinctive accuracy, $b = 0.16$, $z = 7.10$, $p < .0001$; normative accuracy, $b = 0.86$, $z = 22.65$, $p < .0001$; and assumed similarity, $b = 0.15$, $z = 5.34$, $p < .0001$ (see Table 2, column 2). Once again, distinctive accuracy and assumed similarity were of a very similar magnitude, with participants perceiving the unique characteristics of others to a similar degree that they perceived their own unique characteristics in others. Meanwhile, normative accuracy was again very high, with perceivers generally viewing targets as highly similar to the average person.

As in Study 1, there were quite modest individual differences in distinctive accuracy, $\hat{\tau}_{1i} = .07$, $p = .0001$, indicating little variability in the ability to perceive others' unique characteristics. In contrast, there were again strong individual differences in both normative accuracy, $\hat{\tau}_{2i} = .31$, $p < .0001$, and assumed similarity, $\hat{\tau}_{3i} = .24$, $p < .0001$, demonstrating that participants differed substantially in the extent to which they viewed others as similar to the average person and as uniquely similar to the self, respec-

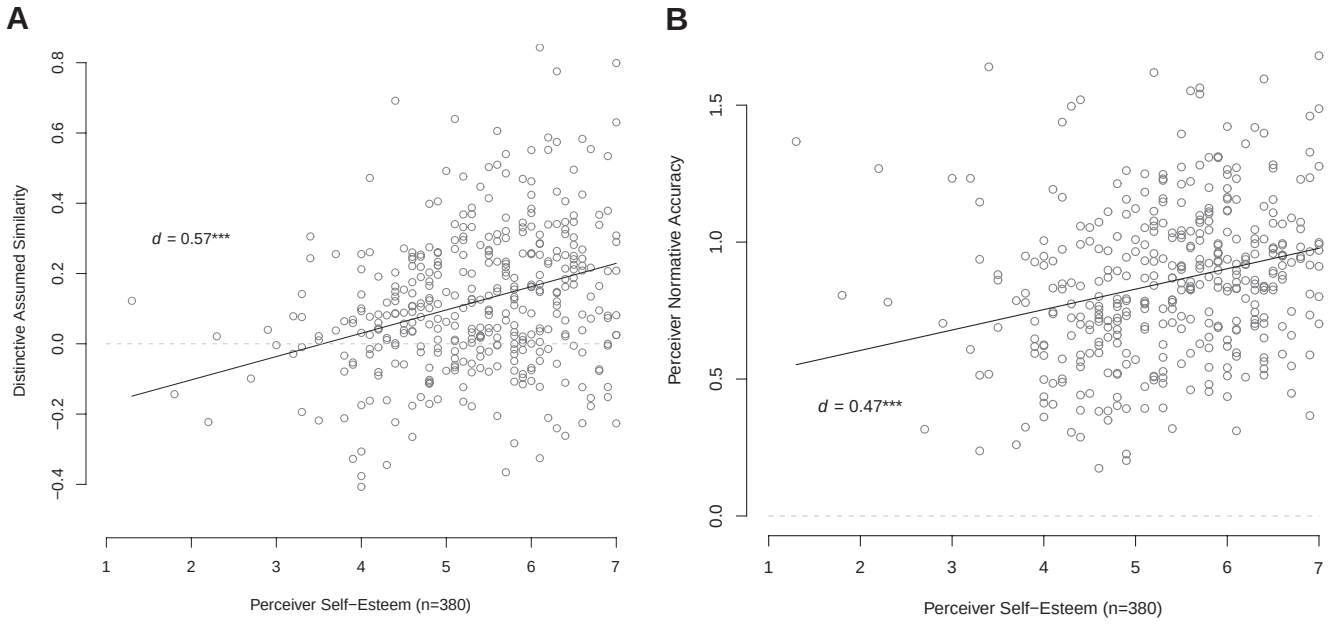

Figure 2. Distinctive assumed similarity and perceiver normative accuracy as a function of perceiver adjustment (self-esteem) for Studies 1 and 2 combined. Plotted points are the empirical Bayes estimates of the random slopes for distinctive assumed similarity and normative accuracy by perceiver self-esteem scale scores. The graphed lines are the model-implied linear relationship from the extended social accuracy model of interpersonal perception; effect sizes were calculated in the same manner as noted in Table 3.

tively. The degree of individual differences in each tendency was practically identical to those in Study 2, demonstrating remarkable consistency across studies and participants.

Examining the correlations among these individual differences, we found a nonsignificant positive association between an individual's tendency to view others with distinctive accuracy and assumed similarity, $r = .17$, $z = 1.35$, $p = .18$. Additionally, normative accuracy was again positively, though not significantly, associated with assumed similarity, $r = .11$, $z = 0.79$, $p = .43$, and distinctive accuracy, $r = .10$, $z = 1.13$, $p = .26$. Thus, there is no indication here that accuracy and assumed similarity are negatively related within individuals.

Perceiver adjustment as moderators of accuracy and assumed similarity. Once again, well-adjusted individuals did not view others with more distinctive accuracy, all $|z|$s < 1.16, with the exception of those high in subjective well-being who did view others with more distinctive accuracy, $b = 0.02$, $d = 0.31$, $z = 2.03$, $p < .05$ (see Table 3). Of note, well-adjusted individuals again showed a strong tendency to view others with greater normative accuracy and assumed similarity, all $|z|$s > 2.13, compared with less adjusted individuals (see Table 3 and Figure 2). The consistency of these results is quite striking given the broad range of both hedonic and eudaimonic adjustment measures. Such consistency supports arguments that despite conceptual and statistical distinctions (e.g., Gallagher, Lopez, & Preacher, 2009), empirically, these constructs overlap (Kashdan et al., 2008; Nave et al., 2008; Ryan & Deci, 2001). Overall, these results from a broader range of adjustment measures have shown clearly that compared with less adjusted individuals, well-adjusted individuals perceive others as being more similar to the average person while simultaneously assuming others are more similar to the self.

Of note, all associations remained significant above and beyond perceiver liking: even after controlling for how much a perceiver liked a given target, we found that well-adjusted individuals still perceived others with greater normative accuracy and assumed similarity, all zs > 2.12. After pre-existing adjustment was controlled, perceiver liking also independently predicted greater normative accuracy, assumed similarity, and even distinctive accuracy, all zs > 2.89. Thus, greater liking does not account for well-adjusted individuals' tendency to see others as similar to the self. Further, normative accuracy does not appear to solely be a positive illusion; if it were, the well-adjusted individual's tendency to view others more normatively would lessen after the extent to which they liked others had been controlled. In sum, perceiver adjustment and liking each independently predict more accuracy and assumed similarity in first impressions.

General Discussion

Overall, the current studies demonstrated that well-adjusted individuals do indeed view others more accurately while they simultaneously assume that others are similar to the self. Specifically, well-adjusted individuals accurately saw others in general as being similar to the average person and inaccurately saw others as being uniquely similar to the self. Thus, rather than being opposing processes, accuracy and assumed similarity are independent within individuals and are both positively related to psychological adjustment. In sum, findings from the current studies are consistent with G. Allport's (1937, 1961) insights that well-adjusted individuals are in close touch with the "real world," if defined as knowledge of what people generally tend to be like,

while also experiencing an extended sense of self, evidenced here by a tendency to see oneself in others.

Associations Between Accuracy and Assumed Similarity in First Impressions

The current research is the first to directly support the argument that individual differences in accuracy are independent of individual differences in assumed similarity (e.g., Kenny & Acitelli, 2001). Past research into accuracy and assumed similarity between persons has demonstrated inverse associations between assumed similarity and accuracy (Beer & Watson, 2008; Watson et al., 2000). Within persons, however, one's ability to accurately perceive others' unique characteristics was shown to be predominantly independent of one's tendency to assume similarity with others. In fact, the only significant association between assumed similarity and accuracy was a positive relationship between assumed similarity and normative accuracy in Study 1; that is, individuals who saw others as similar to the self also saw others as similar to the average person. Overall, rather than assumed similarity implying inaccuracy, assumed similarity may at times imply greater accuracy. Thus, accuracy and assumed similarity are free to both be positively associated with psychological adjustment.

Psychological Adjustment and Accuracy

In line with the long-standing theoretical perspectives that accurate perceptions are critical to mental health (e.g., G. Allport, 1961; Jahoda, 1958), well-adjusted individuals did have more accurate perceptions of others on average, generally perceiving others as being similar to the average person. That is, averaging across their ratings of all the people they met, well-adjusted individuals accurately perceived others as having a personality profile similar to the average person, demonstrating knowledge of how helpful and talkative people generally tend to be, for instance. Such normative impressions are also very positive in nature, as the average person possesses a very positive personality profile (Borkenau & Zaltauskas, 2009; Edwards, 1957; Wood et al., 2007), but normative accuracy was not simply a byproduct of a rosy view of others. Indeed, well-adjusted individuals tended to view others more normatively even after liking had been controlled, an indicator of how positively they viewed others. Although liking may not have entirely captured a perceiver's overall positivity in perceptions of others, controlling for it should have at the very least substantially reduced the relationship between adjustment and normative accuracy if positivity was the sole mechanism through which adjustment fosters normative accuracy. Indeed, liking was very strongly associated with normative accuracy and yet still did not account for well-adjusted individuals' tendency to view others more normatively. As such, this enhanced normative accuracy is most parsimoniously viewed as individuals utilizing normative knowledge to foster generally accurate impressions of others. Because, on average, people are by definition normative, viewing others on average as normative will result in accurate impressions. Thus, normative accuracy is likely a useful route through which to form accurate impressions, especially in first impressions, when time, information, and cognitive resources are limited. This suggests that well-adjusted individuals are more likely to have access to such normative knowledge or are more likely to appropriately utilize it in forming first impressions than less adjusted individuals. In future research, investigators will need to examine the mechanisms through which adjustment fosters acquisition and application of such knowledge in first impressions.

Despite better understanding what others are like on average, well-adjusted individuals did not have a better understanding of the unique, differentiating characteristics of specific targets. Thus, if Jill is very well adjusted, she understands how helpful and talkative most people are, but she is no better than a less adjusted individual at discerning Jack's unique standing on these traits. This is not surprising given the minimal variability observed in this ability—there were very modest individual differences in distinctive accuracy in the current studies, especially compared with the more substantial variability in both normative accuracy and assumed similarity. This lack of variability may be a result of our use of a college student sample or due to the limited amount of interaction; yet years of difficulty in establishing the characteristics of the "good judge" suggest this may be a more general issue (see Funder, 1999; Kenny, 1994). Determining whether distinctive accuracy does vary more under certain circumstances and whether it is at all relevant to psychological adjustment is a critical question for future research. For instance, perhaps examining this phenomenon under differing levels of acquaintance or motivation would reveal greater individual differences in distinctive accuracy. If so, it may be that when information and motivation are greater, psychological adjustment may indeed enhance distinctive accuracy.

The current research, however, suggests that there are strong individual differences in the tendency to view others normatively in first impressions, which is consistently linked to greater psychological adjustment. Indeed, recent findings that women's advantage in interpersonal impressions is more a function of normative than distinctive accuracy (Chan et al., in press) are paralleled here with well-adjusted individuals. Perhaps past inconsistencies resulted from a failure to directly examine normative accuracy; past findings of no or negative associations between accuracy and adjustment may have been a result of removing normative accuracy (e.g., Ambady et al., 1995), while positive associations may have been driven by the normative component in blended accuracy measures (e.g., Davis & Kraus, 1997; Letzring, 2008). Thus, exploring the mechanisms underlying greater normative accuracy may be a fruitful area of research.

Psychological Adjustment and Assumed Similarity

Well-adjusted individuals showed a marked tendency to view others as more similar to the self than less adjusted individuals did. Thus, although Jill generally views others as being similar to the average person, she also projects her own unique patterning of traits onto others. That is, Jill generally rates others as being as helpful and talkative as the average person but is likely to see others as more talkative than helpful, if that is her own unique ordering of traits. Thus, on average, Jill's mean ratings of others will be highly similar to the average person's personality, but the ordering of those ratings will be highly similar to her own personality. As such, Jill is able to be accurate on average while also being biased in assuming others are more similar to the self than they actually are.

Why do well-adjusted individuals see others as more uniquely similar to the self than less adjusted individuals do? One possibility is that well-adjusted individuals possess an extended sense of self, in which the "boundaries of self are rapidly extended" (G. Allport, 1961, p. 283) to many aspects of one's life, including other people. Indeed, just as satisfied romantic partners come to see their selves merge with one another (Aron et al, 1991), well-adjusted individuals may more generally feel this connection to others, prompting them to see others as sharing similar characteristics to the self. Indeed, liking was significantly associated with assumed similarity, suggesting that this tendency is strongly linked to a feeling of positivity for another individual. However, well-adjusted individuals still viewed new acquaintances as more similar to the self than do less adjusted individuals, after liking was controlled. It is quite plausible that liking does not fully capture this general sense of connection with others, making it necessary to more directly examine the mechanisms through which adjustment fosters assumed similarity in future research.

Alternatively, self-enhancement accounts of assumed similarity argue that individuals view others as similar to the self as a means to further validate one's own characteristics (F. Allport, 1924; Marks & Miller, 1987; Ross, Greene, & House, 1977). Specifically, F. Allport (1924) argued that assumed similarity stemmed from a desire to receive support for one's views and self-concept; by assuming others have similar attitudes and traits, one is in essence justifying their own attitudes and traits. Thus, perhaps well-adjusted individuals' positive sense of self leads them to see their own qualities in others, so as to further validate their own qualities. However, it is unclear why well-adjusted individuals would be more likely to engage in this process than less adjusted individuals, who should have a greater need to bolster their sense of self. Indeed, egocentric accounts of assumed similarity, including Freud's (1927/1956) classic defense mechanism projection, suggest this tendency would be more characteristic of less adjusted individuals than well-adjusted individuals (see Marks & Miller, 1987). Nonetheless, the interconnection versus self-serving explanations for why well-adjusted individuals see the self in others should be tested in future research.

Interpersonal Consequences of Normative Accuracy and Assumed Similarity

What are the implications of the well-adjusted individual's tendency to view others with both normative accuracy and assumed similarity? First, normative accuracy fosters more accurate impressions on average across all the individuals whom well-adjusted individuals meet. Such normative perceptions in initial interactions are likely to arm well-adjusted individuals with accurate expectations for how others will behave and respond, potentially facilitating smoother and more effective communication (e.g., Kilpatrick et al., 2002). Second, on average, targets interacting with well-adjusted individuals will feel understood and receive self-verifying information, potentially fostering immediate intimacy and connection (Swann et al., 1994). Third, normative accuracy, although not explained by a more positive, rosy view of the world, does nonetheless entail this more positive view of others because of the desirability of the normative profile (Borkenau & Zaltauskas, 2009; Edwards, 1957; Wood et al., 2007). As more positive perceptions of the world are thought to foster adjustment (Taylor & Brown, 1988), seeing others more normatively may further benefit the well-adjusted individuals' well-being. Finally, targets should enjoy being perceived positively, and in turn react more positively to well-adjusted individuals, through processes such as self-fulfilling prophecies (Jussim, 1986) and mimicry (Chartrand & Bargh, 1999). Thus, normative accuracy provides the opportunity for both more accurate and more positive impressions, which should both result in positive interpersonal consequences.

Meanwhile, assumed similarity should also foster smooth interactions and promote relationship development. Specifically, perceiving someone as similar to the self leads to greater attraction to that person (Byrne, Griffit, & Stefaniak, 1967), and is linked to greater friendship intensity over time (Selfhout, Denissen, Branje, & Meeus, 2009). Furthermore, assuming others are similar to the self should lead well-adjusted individuals to feel more comfortable and disclose more personal information, which should in turn further facilitate intimacy and liking both of and by targets (Collins & Miller, 1994). Additionally, as with positive expectations, expectations of similarity may also be confirmed through self-fulfilling prophecies (e.g., Jussim, 1986) and mimicry (Chartrand & Bargh, 1999). In this way, assumed similarity may not be completely inaccurate, as during the interaction the target will likely exhibit greater similarity to the perceiver than perhaps exists outside that context. This experience of greater similarity, even if not applicable beyond the interaction, should further enhance liking and attraction (Byrne et al., 1967). Overall, both normative accuracy and assumed similarity should have very positive interpersonal consequences in first impressions. Such positive initial interactions and impressions should in turn foster greater relationship development in the long term (Sunnafrank & Ramirez, 2004). Indeed, rather than accuracy *or* bias being ideal in close relationships, a combination of accuracy *and* bias is associated with greater relationship satisfaction (Lackenbauer, Campbell, Rubin, Fletcher, & Troister, 2010; Luo & Snider, 2009). Through the processes outlined previously, this combination of normative accuracy and assumed similarity is also likely optimal in first impressions, potentially enhancing the quality and development of relationships with new acquaintances.

Liking, Accuracy, and Assumed Similarity

Independent of the perceptual pattern associated with individual adjustment, perceiver liking was also associated with greater accuracy and assumed similarity in first impressions. Specifically, greater liking was linked to greater normative accuracy, assumed similarity, and also distinctive accuracy. Similar to well-adjusted individuals then, if a perceiver liked a specific target, that target was perceived to be more similar to the average person and to the self. In contrast to well-adjusted individuals, however, greater liking was also associated with more accurately perceiving the target's unique characteristics. These findings parallel recent findings with romantic relationships, where greater relationship satisfaction was independently associated with more accuracy, positivity, and assumed similarity (Luo & Snider, 2009). This suggests that each of these perceptual tendencies are relevant to relationship adjustment even at the earliest stages of relationship development, not only at later stages when commitment and intimacy are stronger (Campbell, Lackenbauer, & Muise, 2006; Ickes & Simpson, 1997). The fact that liking was linked to greater distinctive accu-

racy but perceiver adjustment was not suggests that contextual factors, such as target-specific motivation and interpersonal connection, more strongly foster a greater understanding of others' unique characteristics than pre-existing characteristics of the perceiver. Alternatively, perhaps more accurate initial impressions foster greater liking, through processes such as self-verification (Swann et al., 1994) and processing fluency (Reber, Schwarz, & Winkielman, 2004). Most likely, these processes are bidirectional, much like assumed similarity, where perceptions of similarity foster attraction (Byrne et al., 1967), and attraction in turn promotes assumed similarity (Morry, 2005). This perceptual pattern within first impressions requires replication in future studies, and the mechanisms underlying these effects should be examined further. In sum, perceiver adjustment and liking of others are both associated with this potentially optimal combination of accuracy and assumed similarity in first impressions.

Conclusion

Overall, in line with G. Allport's (1937) intuition more than 70 years ago, well-adjusted individuals do have a keen sense of reality and appear to have an extended sense of self. In first impressions, this keen sense of reality manifests itself as normative accuracy, a solid understanding of what people generally tend to be like, rather than distinctive accuracy, a unique understanding of specific targets. Meanwhile, an extended sense of self was apparent in the well-adjusted individuals' tendency to perceive their own unique traits in others. Greater liking also independently predicted greater normative accuracy and assumed similarity in first impressions, as well as greater distinctive accuracy. In sum, well-adjusted individuals see through the looking glass clearly, assuming similarity with others while understanding what others generally tend to be like.

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