

Big Five Predictors of Behavior and Perceptions in Initial Dyadic Interactions: Personality Similarity Helps Extraverts and Introverts, but Hurts “Disagreeables”

Ronen Cuperman and William Ickes
University of Texas at Arlington

The authors used the unstructured dyadic interaction paradigm to examine the effects of gender and the Big Five personality traits on dyad members' behaviors and perceptions in 87 initial, unstructured interactions. Most of the significant Big Five effects (84%) were associated with the traits of Extraversion and Agreeableness. There were several significant actor and partner effects for both of these traits. However, the most interesting and novel effects took the form of significant Actor \times Partner interactions. Personality similarity resulted in relatively good initial interactions for dyads composed of 2 extraverts or 2 introverts, when compared with dissimilar (extravert–introvert) pairs. However, personality similarity resulted in uniquely poor initial interactions for dyads composed of 2 “disagreeables.” In summary, the Big Five traits predict behavior and perceptions in initial dyadic interactions, not just in the form of actor and partner “main effects” but also in the form of Actor \times Partner interactions.

Keywords: Big Five, dyadic interaction, Actor-Partner Interdependence Model, personality similarity/dissimilarity, Actor \times Partner interaction effects

The first five decades of research on the Big Five were dominated by the factor analysts. From Cattell's (1943) early factor-analytic work through the many subsequent factor-analytic studies reviewed by John and Srivastava (1999), a hard-won consensus was finally achieved about the fundamental importance of five broad dimensions of human personality: Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience.

This consensus is by no means perfect, however. For example, Carl Jung's (1921) view of Extraversion emphasized a difference in chronic focus of attention, with extraverts being externally focused and introverts being internally focused, as the words *extravert* and *introvert* themselves imply. In contrast, Eysenck's (1959) view of Extraversion emphasized facets such as sociability, impulsivity, and liveliness, whereas Watson and Clark's (1997) view emphasized the “positive affective core” of the extraversion construct (see also Tellegen, 1985). Similar conceptual differences have been debated and discussed with regard to the other Big Five

dimensions—in particular, with regard to Openness to Experience (e.g., Digman & Inouye, 1986; Goldberg, 1981; Norman, 1963; Tupes & Christal, 1961).

Although some areas of difference and dispute still remain among those working in the factor-analytic tradition (see John & Srivastava, 1999, for a review), the focus of Big Five research has gradually begun to shift away from factor-analytic studies and toward an exploration of the predictive utility of the Big Five dimensions. One early sign of this shift came during the 1990s, with the publication of reviews of research by industrial-organizational psychologists that showed that Conscientiousness (and, to a lesser extent, Agreeableness and Emotional Stability) could be used to predict measures of employee performance across a range of workplace settings (see, e.g., Barrick & Mount, 1991, 1993, and Hogan & Ones, 1997). A second and more conclusive sign of this shift was evident with the publication of a review by Ozer and Benet-Martínez (2006) of studies in which the Big Five dimensions had been empirically linked to such “consequential outcomes” as happiness and subjective well-being, criminality and psychopathology, physical health and longevity, occupational choice and performance, and volunteerism and community involvement.

This new focus on prediction has been slow to develop, however. Despite the fact that by 2006 there were, by one estimate, 1,672 publications that referred to the Big Five,¹ Ozer and Benet-Martínez's (2006) review cited only 104 relevant articles. Although there must be many more articles that they rejected for their review because the outcome measures did not meet their criteria for being “consequential outcomes,” it is probably safe to say that

Ronen Cuperman and William Ickes, Department of Psychology, University of Texas at Arlington.

We would like to express our appreciation to our research assistants, who devoted many hours to coding the behavioral data reported in this study. In alphabetical order, they are Sade Boyd, Veronica Carbajal, Cheryl Donaldson, Aaron English, Monireh Escobar, Shana Fleming, Ashley Greene, Nora Hammonds, Maisa Khatib, Mirela Kukulj, Lindsay McWilliams, LaQuanda Morris, Eman Nachawati, Paul Nulisch, Grace Onuma, Christy Robertson, Shilpa Samji, Rene Sharma, Holly Smith, Tiffany Stevens, Gina Stevens-Growden, Penny Suggs, Katherine Viggiano, Amy Waite, Whitney Wheeler, Robert White, and Wayne Woelk.

Correspondence concerning this article should be addressed to Ronen Cuperman or William Ickes, Department of Psychology, University of Texas at Arlington, Room 213 Life Sciences Building, Box 19528, Arlington, TX 76019-0528. E-mail: ickes@uta.edu

¹ This estimate was obtained from a search of the PsycInfo database through 2006 in which *Big Five* was used as the keyword.

work on the predictive utility of the Big Five dimensions is still in its infancy.²

There is a strong consensus among the factor analysts, supported by common-sense intuition, that the dimensions of Extraversion and Agreeableness are particularly relevant to people's social behavior (see Goldberg, Sweeney, Merenda, & Hughes, 1998; John, 1990; John & Srivastava, 1999; McCrae & Costa, 1989), whereas the remaining dimensions are more relevant to their work behavior (Conscientiousness), their affective experience (Neuroticism), and their intellectual life (Openness) (see Peabody & Goldberg, 1989). Accordingly, one domain of interest for studying the predictive utility of the Big Five is the domain of human social behavior.

Although some studies within this domain were cited in the review by Ozer and Benet-Martínez (2006), these studies were primarily concerned with linking the Big Five dimensions to the perceived quality of peer, family, and romantic relationships. In our more focused search, we were able to find several studies (Berry & Hansen, 2000; Campbell & Rushton, 1978; Cunningham & Strassberg, 1981; Funder & Sneed, 1993;³ Graziano, Jensen-Campbell, & Hair, 1996; Iizuka, 1992; Mobbs, 1968; Rutter, Morley, & Graham, 1972; Simpson, Gangestad, & Biek, 1993) that tested the ability of Big Five measures to predict specific social interaction behaviors such as the frequency of talking, smiling, gazing, verbal acknowledgments, nonverbal acknowledgments (head nods), and so on.⁴ However, to the best of our knowledge, only two of these studies (Berry & Hansen, 2000; Funder & Sneed, 1993) included all of the Big Five personality traits as predictors.

The specific focus of Funder and Sneed's (1993) study was how the Big Five personality traits are manifested in initial dyadic interactions. To answer this question, they videotaped 70 interactions between opposite-sex strangers. Big Five scores for each participant were derived from their responses to the California Q-sort (Block, 1961/1978), and impressionistic ratings for 62 different interaction behaviors were obtained from groups of trained raters. When Funder and Sneed correlated scores on each of the Big Five traits with the 62 rated behaviors, they found a large number of significant correlations with Extraversion, Agreeableness, and Conscientiousness and a smaller number of correlations with Neuroticism and Openness to Experience. We review the most relevant of their findings below.

Using the Funder and Sneed (1993) data as our point of departure, we wanted to see whether we could replicate and extend their findings in four important ways. First, Funder and Sneed examined only opposite-sex dyads. In our study, we extended our sample to include same-sex (male–male and female–female) dyads as well.

Second, Funder and Sneed (1993) examined many subjectively rated interaction behaviors such as *is talkative*, *acts irritable*, and *expresses warmth*, but they did not examine any objectively coded interaction behaviors such as talking, gazing, smiling, and laughing. In contrast, we coded these and other objectively measured behaviors from the videotapes we collected. Research examining objectively measured behaviors (e.g., number of mutual gazes, percentage of first-person singular pronouns) is needed to resolve important theoretical issues—for example, whether Extraversion is associated with an outward focus (as Jung's, 1921, original conception assumes) or with an egocentric self-focus (as some of the work on narcissism suggests; see Egan & McCorkindale, 2007,

and Lee & Ashton, 2005; but see also Graziano & Tobin, 2001, and Wink, 1991).

Third, Funder and Sneed (1993) examined only what Kenny (1996) has termed “actor effects”—effects of the actor's Big Five traits on the actor's own interaction behavior. In contrast, we used Kenny and Kashy's Actor-Partner Interdependence Model (APIM; Campbell & Kashy, 2002; Kashy & Kenny, 2000; Kenny, Kashy, & Cook, 2006) to test *actor effects*, *partner effects*, and *Actor × Partner interaction effects*, thereby enabling us to test for classes of effects that have not previously been examined. If significant partner effects and Actor × Partner interactions are found, then theoretical conceptions of Big Five traits such as Extraversion and Agreeableness will need to be modified to accommodate these findings.

Fourth, using the Big Five traits as multivariate predictors within the analytic framework of the APIM model enabled us to determine the unique effects of each of the Big Five predictors on the various outcome measures we studied, and to do so in a way that controlled appropriately for the level of *dyadic interdependence* in each of these outcome measures. These kinds of statistical controls have rarely, if ever, been applied in previous Big Five studies of dyadic interactions.

Obviously, our debt to the Funder and Sneed (1993) study is a large one, because we were able to draw on its rich and extensive set of findings to make our predictions. First, we predicted, consistent with Funder and Sneed's findings and with the consensus of the Big Five factor analysts, that the Big Five dimensions of Extraversion and Agreeableness would account for the largest number of correlations with the various outcome measures in our dyadic interaction study. Second, we selected from the large number of findings that Funder and Sneed reported the ones that had the most direct relevance to our measures, and we used these findings to make targeted predictions about the specific links we expected to find between each of the Big Five traits and specific measures that we obtained in our study.

Table 1 includes the set of selected findings reported by Funder and Sneed (1993) that we judged as having the most direct relevance to the set of outcome measures we collected.⁵ From these findings, we generated the following specific predictions for each of the Big Five dimensions:

Extraversion. The dyad members' Extraversion scores should be positively correlated with the amount of talking that occurs, with the amount of personal self-disclosure, and with the degree to which the dyad members rate the interaction as

² Of the 104 articles cited by Ozer and Benet-Martínez (2006), many provided theoretical and methodological background and did not report “consequential outcomes” themselves.

³ A study by Eaton and Funder (2003) used the same data set that Funder and Sneed (1993) had used.

⁴ Successful conflict resolution was the behavior examined in the Graziano et al. (1996) study. A study by Thorne (1987) is also of interest, though it did not include any measures of objectively coded interaction behaviors. Finally, Asendorpf and Wilpers (1998) reported the results of an excellent “interaction diary” study in which the Big Five were used to predict self-reported aspects of students' social relationships.

⁵ This is only a fraction of the total number of significant findings reported by Funder and Sneed (1993).

Table 1
Selected Findings From the Funder and Sneed (1993) Study That Were Used to Generate Predictions for the Present Study

Observed-rated behavior	Correlations of rated behavior with the Big Five variable			
	Extraversion	Agreeableness	Conscientiousness	Neuroticism
Is talkative	.40			
Speaks in a loud voice	.31			
Seems to enjoy interaction	.20	.27		
Is reserved and unexpressive	-.55			
Volunteers little information regarding self	-.26			
Has awkward interpersonal style	-.52			
Expresses warmth		.33		
Behaves in a cheerful manner		.36		
Laughs frequently		.31		
Seems interested in what partner says			.27	
Engages in constant eye contact			.29	
Shows signs of tension or anxiety				.36
Has awkward interpersonal style				.34
Expresses insecurity or sensitivity				.36
Appears relaxed and comfortable				-.37

“smooth, natural, and relaxed” as opposed to “forced, awkward, and strained.”

Agreeableness. The dyad members' Agreeableness scores should be positively correlated with social behaviors that express interpersonal warmth and positive affect. These behaviors should include smiling, laughing, and eye contact. Agreeableness scores should also be positively correlated with the degree to which the interaction is rated as enjoyable.

Conscientiousness. The dyad members' Conscientiousness scores should be positively correlated with behaviors indicating greater attentiveness and responsiveness to the interaction partner.⁶ These behaviors should include eye contact, verbal acknowledgments (“Uh-huh,” “Right,” “I see”), and nonverbal acknowledgments (head nods).

Neuroticism. The dyad members' Neuroticism scores should be positively correlated with their perceptions of the interactions as being “forced, awkward, and strained” and negatively correlated with their perceptions of the interactions as being “smooth, natural, and relaxed.” The dyad members' Neuroticism scores should also be positively correlated with ratings of feeling self-conscious during the interaction.

Openness to Experience. In the Funder and Sneed (1993) study, higher scores on the Openness dimension were associated with interest in discussing intellectual and philosophical topics, including fantasies and daydreams. We were unable to test those associations with the data that we collected. However, we could (and did) test the prediction that people who scored higher on Openness to Experience would initiate more conversation sequences as a way of introducing new topics and thereby encouraging their interaction partners to share more of their personal insights and experiences.

The Present Investigation

To test these predictions, not only as actor effects but also as potential partner effects and Actor \times Partner interaction effects, we collected data from the initial, unstructured interactions of 87 dyads. Fifty-five same-sex dyads (25 male–male and 30 female–female) and 32 opposite-sex dyads were included in our study, which used the unstructured dyadic interaction paradigm developed by Ickes and his colleagues (Ickes, Bissonnette, Garcia, & Stinson, 1990; Ickes, Robertson, Tooke, & Teng, 1986). In this paradigm, the experimenter seats the participants in a waiting-room situation and then has to leave the room on an “errand” while the dyad members' interaction is covertly audio- and videotaped. Because the participants are not instructed to interact and are not informed until later that their interaction was the major focus of the study, this procedure (along with a careful debriefing that probes for suspicion) helps to ensure that they interact in a relatively spontaneous way that allows the impact of their respective personalities to emerge (see Ickes, 1994).

Method

Participants

Participants in the present study were 82 male and 92 female students who were randomly assigned into 55 same-sex and 32 mixed-sex dyads. All participants were enrolled in introductory-level psychology courses at the University of Texas at Arlington (UT-Arlington). They were recruited by an undergraduate research assistant over the phone as well as through e-mail using the

⁶ This hypothesis was empirically derived from the large body of research that reports a positive relationship between conscientiousness and greater attentiveness and responsiveness to social expectations in the workplace (e.g., Barrick & Mount, 1991, 1993). We are positing that analogous effects occur in the context of initial, unstructured interactions as well.

Experiment Management System (Sona Systems; Fidler, 1997). Participants were compensated either with experimental participation credit in their introduction to psychology course or with extra credit in a different introductory-level psychology course. All of the procedures used in this study were reviewed and approved by the UT-Arlington Institutional Review Board.

Setting and Materials

The study was conducted in the UT-Arlington Social Interaction Lab, which consists of a suite of unlabeled rooms that include an observation room, a control room, a storage room, and two cubicles that are adjacent to the control room. The dyad members' interaction took place in the observation room. This room contained a couch (which concealed a transmitting microphone), a coffee table, and bookcase. The storage room, which was located directly across the hall from the observation room, contained a video camera that was hidden in one of several boxes that appeared to be stored in the room. The control room was located between the observation room and the cubicles. It contained all the video, audio, and computer equipment used to record different aspects of the dyad members' interactions. Finally, the two cubicles were adjacent to the control room and were entered through an outside corridor. The cubicles were used as private areas in which the participants could complete the self-report measures that are described below.

To determine the participants' standing on the Big Five personality traits, they were asked to complete the 44-item Big Five Inventory (BFI; John, Donahue, & Kentle, 1991).⁷ This inventory was used to measure the five broad dimensions of Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience (Paunonen & Ashton, 2001; see Table 2 for the correlations between these personality measures). Previous research has established that the BFI is both reliable and valid, with individual subscale reliabilities in the range of .75–.90 and excellent convergent validity with regard to alternative Big Five measures such as Costa and McCrae's (1992) Revised NEO Personality Inventory and Goldberg's (1992) Big Five marker variables (see Benet-Martínez & John, 1998).

Procedure

Once the 2 participants for each session had arrived at their respective waiting areas, the experimenter met them separately and then escorted each of them into one of the two cubicles used for the experiment. There, each participant was asked to complete a set of "survey items" that included the 44-item BFI.⁸ While the participants were completing these measures in their respective cubicles, the experimenter initiated the VCR recording in the observation room in preparation for the upcoming interaction. (By starting the VCR before the participants entered the observation room, the experimenter was able to capture all of the participants' interaction while they were in the room.) After both participants had completed the personality measures, they were brought together for the first time and then escorted into the observation room.

After being instructed to place their belongings on the empty shelf of a bookcase, the participants were asked to take a seat on the couch. The experimenter then began searching through a folder of papers, appearing to have misplaced some forms intended for

the participants. Appearing to be frustrated, the experimenter concluded that he would have to get the copies he needed from his office. After apologizing for the mix-up, the experimenter informed the participants that he would return in a few minutes with the forms. The experimenter then left the room and walked down the hall, audibly closing the outside door to the research suite behind him. During the next 6 min, until the door was audibly opened again, the 2 dyad members were left alone in the observation room. All of their behavior during this time—verbal and nonverbal—was recorded by the microphone concealed behind the couch and by the hidden video camera that was concealed in the storage room across the hall.

When the experimenter returned precisely 6 min later (the sound of the outer door opening marked the end of the observation period), the participants were asked a series of increasingly more specific questions to identify any suspicion of being recorded. If either participant showed substantial evidence of such suspicion, the data obtained from that particular dyad were excluded from the data analyses (this happened in only 2 of the study's 90 dyads, i.e., in 2% of them). Because the goal of this study was to record the participants' naturally occurring behavior, it would have not been appropriate to use the data from dyads in which one or both members had an active suspicion that their interaction was being recorded—a suspicion that would cause them to behave in a more guarded and less spontaneous way.

If neither of the dyad members showed any signs of suspicion, the experimenter then debriefed them regarding the covert audio- and videotaping of the interaction in which they had just participated. The experimenter explained that he could not inform them about the taping in advance because that knowledge would likely have altered their interaction in a way that made it less natural and spontaneous. The experimenter then assured the dyad members that their recorded interaction would not be viewed by anyone without the participants' written consent.

Each participant was then given a videotape consent form. It gave them the option to permit their recorded interaction to be used for data analysis or to have the videotape erased and to discontinue further participation in the study. The experimenter informed the participants that they would receive credit for their participation no matter how they chose to proceed. If at least one of the participants felt uncomfortable and chose not to consent to the use of their recorded interaction, the experimenter brought them into the control room and allowed them to watch as their videotape was erased. This happened in 1 of the 90 dyads (i.e., in 1% of them).

Once the dyad members had given their written consent to use their tape as a source of data, they were separately escorted to one of the two cubicles to complete the final phase of the experiment.

⁷ The 44 items of the BFI were ordered in a relatively random way (i.e., they were not grouped according to the personality dimension being measured).

⁸ The participants' scores on the Rosenberg (1965) Self-Esteem Scale and the Sense of Self Scale (Flury & Ickes, 2007) were also measured before their dyadic interactions took place. However, because the results for these measures had virtually no bearing on the results for the Big Five measures that are the focus of the present study, they are not reported or discussed here. The "survey items" were not identified as measuring specific personality constructs.

Table 2
Zero-Order Intercorrelations of the Big Five Traits

Variable	EXTRA	AGREE	CONSC	NEUR	OPEN
EXTRA	—	.26***	.31***	.28***	.17*
AGREE		—	.25**	-.38***	.12
CONSC			—	-.33***	.10
NEU				—	-.12
OPEN					—

Note. The degrees of freedom for these correlations were 169. EXTRA = Extraversion; AGREE = Agreeableness; CONSC = Conscientiousness; NEUR = Neuroticism; OPEN = Openness to Experience.

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

In this part, each participant filled out a “Perception of Interaction” questionnaire. This questionnaire contained 27 items that required the participants to rate various aspects of their interaction experience. These aspects included the perceived quality of the interaction (e.g., “To what degree did the interaction seem smooth, natural, and relaxed to you?”), the degree of rapport they felt they had with the other person (e.g., “To what degree did you feel accepted and respected by the other person?”), and the degree to which they liked the other person (e.g., “To what extent would you like to interact more with the other person in the future?”).

After completing this measure, the participants were fully debriefed and given full credit for their participation in the study. They were also asked not to discuss the study with other students in introductory psychology classes in order to help ensure that any future participants would have no prior knowledge about the actual purpose of the study.

Behavioral Measures

A number of verbal as well as nonverbal behavioral measures were coded from the recorded interactions by a team of undergraduate research assistants who were divided into pairs to code different interaction behaviors. Each rater coded only one behavior at a time and was instructed to separately code the responses of each dyad member for those variables that were not dyadic in nature (i.e., not common to both members). Each rater had the ability to stop and review different parts of the tape as many times as needed, which tended to increase the accuracy of the data coding.

The seven verbal behavior measures that were coded included (a) the number of questions asked by each participant ($\alpha = .94$); (b) who spoke first during the interaction ($\alpha = 1.00$); (c) the number of subsequent conversation sequences initiated by each participant ($\alpha = .86$) after pauses lasting at least 10 s; (d) the number of verbal acknowledgments—such as “Yeah,” “Uh-huh,” or “Right”—that were used by each participant ($\alpha = .87$), (e) and the number of times each participant disclosed personal information about themselves ($\alpha = .76$). The research assistants also coded for (f) the total frequency and (g) duration (measured in seconds) of each dyad member’s verbalizations (speaking turns; $\alpha = .93$ and $\alpha = .95$, respectively) during the interaction.

The nine nonverbal behaviors measured for each participant included (a) their body posture (open, closed, or intermediate; $\alpha = .67$); (b) their body orientation (toward, away, or parallel; $\alpha = .58$) relative to their partner; and (c) the total number of head nods ($\alpha = .72$) they

each displayed. They also included (d) the total number of mutual gazes that each dyad member initiated (i.e., the number of times they met their partner’s gaze, thereby creating an episode of mutual gaze; $\alpha = .82$) and (e) the total number of mutual gazes that each dyad member terminated (i.e., the number of times they looked away first and thereby broke off, or terminated, the mutual gaze episode; $\alpha = .86$). The remaining nonverbal behavioral measures were (f) the total frequency and (g) duration of their directed gazes ($\alpha = .98$ and $\alpha = .99$, respectively); and (h) the total frequency and (i) duration of their smiles/laughs ($\alpha = .94$ and $\alpha = .80$, respectively).

Finally, there were three dyad-level measures of the participants’ nonverbal behavior. Two of them were our measures of the total frequency and duration of the mutual gazes that occurred between the partners during their interaction ($\alpha = .98$ and $\alpha = .99$, respectively). The third was the measure of the interpersonal distance between the partners as they sat on the couch. Interpersonal distance was measured by placing a flexible, transparent ruler on the TV screen and using it to measure the distance in centimeters from the left-participant’s shoulder to the right-participant’s proximal shoulder. This measure was taken twice during the interaction, once near the start of the interaction ($\alpha = .95$) and again near the end ($\alpha = .94$).

Self-Report Measures

The self-report measures that are relevant to the present study were the 44-item BFI (John et al., 1991) and the 27-item Perception of Interaction questionnaire. In the present sample, the alpha reliabilities of the subscales of the BFI were comparable to those reported by John et al. (1991): Extraversion (.86), Agreeableness (.73), Conscientiousness (.78), Neuroticism (.84), and Openness to Experience (.79). To retain as much of the interpretive nuance as the item content of the Perception of Interaction questionnaire permitted, the decision was made not to reduce these items to a smaller set of factors but to report the findings for the individual items instead. In this decision, the similar precedent set by Funder and Sneed (1993) was followed.

Measures of Personal Pronoun Usage

Each participant’s personal pronoun usage during the conversation was coded by undergraduate assistants using tally marks on a customized coding form. The coding form, originally developed for use in a study by Ickes, Reidhead, and Patterson (1986),

organized the pronouns by *person* (first-, second-, or third person; $\alpha = .96$, $\alpha = .95$, and $\alpha = .92$, respectively), *number* (singular, plural), and *case* (nominative, objective, possessive, reflexive).⁹ Whenever a participant used a particular pronoun in his or her videotaped conversation, the data coder placed a tally mark on the coding form next to the appropriate pronoun. The percentage of personal pronouns used in each category was subsequently calculated for each participant by dividing the raw number of pronouns they used per category by the total number of pronouns they used during the entire interaction.¹⁰

Results

Statistical Model Used

To analyze our data, we used the Actor-Partner Interdependence Model (APIM), which can be run using the PROC MIXED statement in SAS (Campbell & Kashy, 2002; Kenny et al., 2006). In this model, each dyad is treated as a group of two individuals, so respondents are nested within their dyad. The APIM model enables the researcher to separate the effects of the “actor” from that of the “partner.” It assumes that a person’s score on a given outcome measure can be affected by the same person’s score on a given predictor variable (an actor effect). It further assumes that a person’s score on a given outcome measure can also be affected by his or her partner’s score on the same predictor variable (a partner effect). Finally, the APIM model also allows for tests of interactions between the actor’s and the partner’s score on a given predictor variable. According to Kenny et al. (2006, p. 150), the interaction term can take different forms—each of them valid as a test of the “interaction effect.” We used the most common, multiplicative form in the present analyses.

The APIM model that we used to analyze our data simultaneously tested the actor effect, the partner effect, and the Actor \times Partner interaction effect of each of the six individual-difference predictors of gender, Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience.¹¹ We tested these effects for each of the various outcome measures (behavioral and self-report) that we obtained in the present study. For each outcome measure, our APIM model tested a total of 18 different effects: the actor and partner effects for each of the six individual-difference variables (for a total of 12 “main effects”) and the Actor \times Partner interaction effect for each of the six individual-difference variables (for a total of six Actor \times Partner interaction effects).

Our model represents a standard APIM analysis according to the guidelines provided by Kenny et al. (2006). Although it is possible to set up an alternative model in which all possible two-, three-, four-, and five-way interaction terms are tested, such a model would be overwhelmingly complex. It would also be an “impossible model” in the sense that it would require many more than the total available degrees of freedom (173) to test all of the 1,585 potential main and interaction effects for each criterion measure. Even if it could be run, organizing and interpreting the results generated by such a model would be overwhelming and unmanageable. Finally, such a model would violate Kenny et al.’s (2006) recommendation that nonstandard APIM models should be used only when tests of the additional interaction terms have a strong a priori theoretical justification. Lacking such a justification, and for the other reasons noted above, we elected to use the standard APIM model instead.

Effects of Gender

Actor effects. We found significant actor effects for both behavioral and self-report measures. Behavioral differences between male and female actors were found for their posture, $F(1, 151) = 50.32$, $p < .0001$, and the extent to which they reported attempting to get “in sync” with their partners, $F(1, 150) = 4.51$, $p < .05$. Male actors displayed a more open and relaxed body posture ($M = 1.09$, $SD = 0.44$) than female actors ($M = 0.45$, $SD = 0.39$), and also reported that they made more of an effort to get “in sync” with their partners ($M = 17.96$, $SD = 7.59$) than the female actors did ($M = 17.01$, $SD = 6.59$).

When we examined the data from the postinteraction questionnaire, we found differences between the male and female actors in how self-conscious they believed their partners felt, $F(1, 144) = 11.11$, $p < .01$, and the extent to which they believed their partners used the actor’s behavior as a guide for their own, $F(1, 147) = 4.18$, $p < .05$. Specifically, male actors were more likely to report that their interaction partners seemed self-conscious ($M = 4.21$, $SD = 2.28$) than the female actors did ($M = 3.28$, $SD = 2.30$). In addition, male actors were more likely to believe that their partners used the participants’ behavior as a guide for their own ($M = 4.38$, $SD = 2.56$) than the female actors did ($M = 3.78$, $SD = 2.33$).

Partner effects. We found significant partner effects for the behavioral measures of the duration of directed gazes, $F(1, 143) = 5.55$, $p < .02$; the number of verbal acknowledgments, $F(1, 131) = 3.93$, $p < .05$; and the percentage of third-person pronouns used during the interactions, $F(1, 134) = 5.23$, $p < .05$. Actors tended to look at their partners for longer periods of time when their partner was a woman ($M = 124.17$, $SD = 95.21$) rather than a man ($M = 81.07$, $SD = 63.27$). In addition, actors gave their partners more verbal acknowledgments (“Yeah,” “Uh-huh,” “Right,” etc.) when their partners were women ($M = 12.63$, $SD = 9.01$) than when their partners were men ($M = 8.45$, $SD = 6.56$), and also used a smaller percentage of third-person pronouns (*he, she, they, them, their*, etc.) when their partners were women ($M = 0.20$, $SD = 0.10$) than when their partners were men ($M = 0.24$, $SD = 0.12$).

Collectively, the patterns of actor and partner effects for gender suggest that male actors were, more uncertain and uncomfortable

⁹ The use of this coding form in several previous studies revealed that significant effects are rarely if ever found for the personal pronoun dimensions of *number* and *case*. For that reason, we computed and analyzed the data for the percentages of first-person, second-person, and third-person pronouns, breaking down the first-person pronouns into first-person singular (*I, me*, etc.) and first-person plural (*we, our*, etc.) pronouns.

¹⁰ By this point, it should be obvious that dyadic interaction studies of this type require a great deal of planning, person hours, and patience. In the present case, the data collection for this study took three semesters to complete. The data coding extended over three additional semesters, and the data analysis and write-up required another 6 months of work.

¹¹ In an SAS-based APIM analysis, the Satterthwaite approximation is specified to estimate the degrees of freedom that are available for the observed level of dyadic interdependence (Satterthwaite, 1946). This approximation arrives at a *df* estimate that is somewhere between the number of individuals in the study and the number of dyads (Campbell & Kashy, 2002). Degrees of freedom with fractions are also commonly found in APIM analyses.

in these initial interactions than female actors were, and that actors generally tended to have closer and more involving interactions with female partners than with male partners.

Actor × Partner interactions. We found only one significant Actor Gender × Partner Gender interaction effect for the extent to which participants reported liking each other on the postinteraction questionnaire, $F(1,72.2) = 4.86, p < .05$. A close examination of this effect revealed that female actors reported liking their partners significantly more when they were women ($M = 7.62, SD = 2.08$) than when they were men ($M = 6.45, SD = 2.01$). Male actors, however, reported liking their partners more when they were men ($M = 7.16, SD = 1.52$) than when they were women ($M = 6.81, SD = 2.33$). These data again suggest that although female actors felt closer to female partners than to male partners in these initial dyadic interactions, male actors preferred interacting with male partners more than with female partners.

Number of Effects for Each of the Big Five Personality Traits

Our first hypothesis was based on the common-sense expectation that the number of significant effects should be greater for the Big Five traits of Extraversion and Agreeableness than for the remaining traits of Conscientiousness, Neuroticism, and Openness to Experience. This prediction followed from the general consensus among Big Five theorists and researchers that Extraversion and Agreeableness are the Big Five traits that have the greatest direct relevance to social relations because they index the socially relevant characteristics of sociability, interpersonal ascendance, friendliness, and warmth (Goldberg et al., 1998; John, 1990; McCrae & Costa, 1989).

Consistent with our first hypothesis, we found that—of the Big Five predictors—Extraversion and Agreeableness accounted for most of the significant effects related to interactional involvement and perceived interaction quality in the present study. Of the 75 significant Big Five effects reported below, 33% of these effects were associated with Extraversion; 51% were associated with Agreeableness; and only 4%, 8%, and 4% were associated with Conscientiousness, Neuroticism, and Openness to Experience, respectively.¹²

Specific Effects of Each of the Big Five Personality Traits

In the subsections below, we report the actor effects, the partner effects, and the Actor × Partner interaction effects for the six predictor variables of gender, extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience. Whenever an obtained effect is relevant to one or more of our research hypotheses, we note this relevance and provide a preliminary interpretation. All of the actor effects tested are reported in Table 3. All of the partner effects tested are reported in Table 4. The significant Actor × Partner interaction effects are graphically represented in Figures 1–5. The standardized beta coefficients for these interactions appear above the particular figure to which they apply.

Effects of Extraversion

Actor effects. Although there were dyad-level effects of Extraversion on the number and duration of mutual gazes that are reported below, the only effect of the actor's extraversion on the actor's own

behavior was found for the percentage of first-person singular pronouns (see Table 3, upper portion). It showed that the more extraverted actors used fewer self-reference pronouns such as *I, me, mine, myself*, and the like. With regard to the different theoretical views of Extraversion that we have noted above, this finding is most consistent with Carl Jung's (1921) view that extraverts are individuals whose attention is chronically directed outward, away from themselves (i.e., Jung's chosen word, *extraverted*, literally means "turned outward"). In contrast, introverts are individuals whose attention is chronically directed inward, onto the self (i.e., Jung's chosen word, *introverted*, literally means "turned inward").

The lack of self-conscious awareness on the part of extraverts was further indicated by several significant actor effects that were found for a number of the postinteraction items. The extraverted actors were more likely to report that they attempted to take the lead in the conversation; did not feel self-conscious; perceived their interaction to be smooth, natural, and relaxed; and felt comfortable around their interaction partner (see Table 3, lower portion). The standardized betas for these actor effects ranged from $-.18$ to $-.26$, with the strongest effects found for the actors' reported level of self-consciousness and the degree to which they reported attempting to take the lead in the conversation.

Partner effects. Significant partner effects for the behavioral measures indicated that, as their partner's level of extraversion increased, the actors tended to look at them for longer periods of time and acknowledge them more often through the use of verbal acknowledgments (see Table 4, upper portion). Because the more extraverted partners felt more comfortable taking the lead in the conversation, the actors who were paired with them may have tended to adopt a more reactive role that led them to spend more time looking, listening attentively, and providing verbal acknowledgments. That adopting this more passive role was not an entirely pleasant experience is suggested by the additional finding that the actors tended to smile less often as their partner's level of extraversion increased (see Table 4, upper portion). The standardized betas for these partner effects ranged from $-.17$ to $.18$, with the strongest effect found for the number of verbal acknowledgments used during an interaction.

Actor × Partner interactions. A series of Actor × Partner interaction effects revealed a similar pattern for both the behavioral and self-report measures (see Figures 1 and 2).¹³ The "strong" component of this pattern was the tendency for the interactions to be objectively and subjectively better in the dyad types in which the members had similar personalities (i.e., those composed of 2 extraverts and those composed of 2 introverts) than in the dyad type in which one member was an extravert and the

¹² A total of 600 effects were tested for the Big Five predictors. They included actor, partner, and Actor × Partner interactions effects on 39 individual-level criterion variables ($5 \times 3 \times 39 = 585$ effects). They also included dyad-level main effects for each of the Big Five predictors on three dyad-level criterion variables ($5 \times 3 = 15$ effects). The total number of significant Big Five effects (75) was 2.5 times greater than the number that would be expected by chance. A complete breakdown is available in the Appendix.

¹³ To graph these interaction effects, we followed the conventions prescribed by Aiken and West (1991). Specifically, we plotted high and low points for each actor and partner predictor at one standard deviation above and below its respective mean.

Table 3

Actor Effects: Associations (Using Standardized Beta Coefficients) of the Actor's Behavioral and Self-Report Outcome Measures With the Actor's Big Five Personality Measures

Outcome measure	Actor effects: Associations of the outcome measures with the Big Five variable				
	Extraversion	Agreeableness	Conscientiousness	Neuroticism	Openness
Observer-coded behavior					
Number of speaking turns (talking)	.03	.26	.01	.03	-.09
Duration of talking	.16	.21	-.08	.08	-.05
Number of conversation sequences initiated	-.09	-.05	-.06	-.15	.19
Number of smiles/laughs	-.16	.23	-.12	-.04	.03
Duration of smiles/laughs	-.12	.24	-.12	.12	.00
Number of verbal acknowledgments	.00	.23	.06	.01	-.15
Number of head nods	-.02	.22	.16	.11	-.06
Percentage of 1st-person singular pronouns	-.18	.10	.01	.00	.11
Self-reported perceptions					
Perceived rapport with partner	.13	.28	.02	.01	.02
Attempted to get "in sync" with partner	-.11	-.04	-.05	.25	.00
Need to communicate with partner	.06	.26	-.01	-.01	.04
Attempted to take the lead in the conversation	.25	.10	-.05	.04	.06
Used partner's behavior as a guide for own behavior	.02	.00	-.02	.21	.03
Belief that partner used actor's behavior as a guide for his/ her own behavior	.14	.08	.01	.20	.08
Rating of one's self-consciousness during the interaction	-.26	-.07	.00	.20	.02
Perceived that partner felt self-conscious	-.05	-.07	.08	.20	-.03
Rating of the interaction as "smooth, natural, and relaxed"	.21	.21	-.02	-.10	-.04
Perceived the interaction as involving	.12	.20	-.05	.03	-.03
Felt accepted and respected by partner	.08	.24	.05	.00	.01
Desire to interact more with partner in the future	.08	.27	.03	.09	.11
Belief that partner wants to interact more in the future	.19	.23	.04	.09	.02
Rating of the interaction as enjoyable	.06	.27	.02	.04	.02
Felt comfortable interacting with partner	.18	.19	.07	-.08	-.01
Perceived partner as likable	.05	.23	.04	.06	.04
Belief that partner perceived actor as likable	.18	.19	.06	.03	.04

Note. All of the boldfaced unitalicized standardized beta coefficients in this table are significant beyond $p < .025$, whereas the boldfaced italicized standard beta coefficients are significant only beyond $p < .05$ and not beyond $p < .025$. If the same beta value is significant for one effect but not for another, it is because of a difference in the degrees of freedom. The degrees of freedom ranged from 81 to 150, primarily because of the Satterthwaite (1946) correction used in the Actor-Partner Interdependence Model analysis.

other member was an introvert. This component can be seen in its most pronounced form in the data for the graph of the actor's number of speaking turns (see Figure 1), though it is also evident in the data from the remaining graphs in Figures 1 and 2 (e.g., for measures such as the actor's self-disclosures and the actor's perception of the interaction as involving).

The "weaker" and more subtle component of this similar pattern was the tendency for the interactions to be the best in the dyad type in which the actor and partner were both extraverts. This trend appears in its most pronounced form in the graph of the actor's rating of the interaction as "smooth, natural, and relaxed" (see Figure 2). It is sufficiently weak, however, that it may be premature to talk about what might be characterized as a positive synergy in the initial interactions of two extraverts.

The standardized betas for these Actor \times Partner interaction effects ranged from .19 to .39, with the strongest effects found for the actor's ratings of perceived rapport with the partner and feeling accepted and respected by the partner (see Table 5 for a complete summary of these effects).

*Dyad-level effects.*¹⁴ Surprisingly, although being talkative is generally regarded as a key behavioral marker of extraversion, extraversion was not a unique predictor of the dyad members' average level of talking in this study ($\beta = .12, p > .05$). Instead, extraversion

(along with conscientiousness) was a unique predictor in a dyad-level analysis of the number and duration of mutual gazes that occurred. The standardized beta coefficients for these dyad-level effects were .23 and .29, respectively. These effects are consistent with the previous findings which indicated that extraversion is associated with a confident, assertive, and *unself-conscious* interaction style. There were no other dyad-level effects for extraversion.

Effects of Agreeableness

Actor effects. Significant actor effects for various behavioral measures revealed that the more agreeable actors smiled and laughed more and also provided their partners with more head nods and verbal acknowledgments. The more agreeable actors also spoke more often and reported having achieved a greater sense of rapport with their interactions partners (see the data in the top portion of Table 3).

¹⁴ For dyad-level behaviors such as interpersonal distance and the number of mutual gazes, an APIM analysis cannot be used because the two dyad members cannot have different scores on such variables. In such cases, we used a standard multiple regression model in which the average personality score of the 2 dyad members on each of the Big Five traits was used to predict their common score on the outcome measure.

Table 4

Partner Effects: Associations (Using Standardized Beta Coefficients) of the Actor's Behavioral and Self-Report Outcome Measures With the Partner's Big Five Personality Measures

Outcome measure	Partner effects: Associations of the outcome measures with the Big Five variable				
	Extraversion	Agreeableness	Conscientiousness	Neuroticism	Openness
Observer-rated behavior					
Open and relaxed body posture	.03	-.03	-.06	-.10	.14
Number of speaking turns (talking)	.00	.19	.00	-.03	-.04
Number of gazes	.10	.22	.07	.20	-.08
Number of smiles/laughs	-.05	.26	-.05	.02	-.03
Duration of smiles/laughs	-.17	.25	-.01	.10	.00
Number of verbal acknowledgments	.18	.18	-.06	.07	-.13
Number of head nods	-.03	.19	.06	.05	-.14
Self-reported perceptions					
Perceived rapport with partner	.04	.20	.04	.00	.02
Perceived that partner felt self-conscious	-.08	-.04	.19	-.06	-.07
Perceived the interaction as involving	.00	.18	-.01	.00	.04
Belief that partner wants to interact more in the future	.06	.19	.12	.02	.05
Rating of the interaction as enjoyable	-.06	.25	.03	-.02	.09
Felt comfortable interacting with partner	.09	.21	-.02	.08	-.10
Perceived partner as likable	.08	.19	-.01	.05	.01

Note. All of the boldfaced unitalicized standardized beta coefficients in this table are significant beyond $p < .025$, whereas the boldfaced italicized standard beta coefficients are significant only beyond $p < .05$ and not beyond $p < .025$. If the same beta value is significant for one effect but not for another, it is because of differences in the degrees of freedom. The degrees of freedom ranged from 81 to 150, primarily because of the Satterthwaite (1946) correction used in the Actor-Partner Interdependence Model analysis.

Because the trait of Agreeableness has consistently been associated with friendliness, warmth, and sociability in previous research (see Graziano & Eisenberg, 1997, and John & Srivastava, 1999, for reviews), it is not surprising that these associations are found even in the initial interactions between pairs of strangers.

Similar effects were seen in the data for certain items on the postinteraction questionnaire. Specifically, the more agreeable actors reported that they had experienced better quality interactions in which they felt more rapport with their partners, along with greater acceptance and respect (see the data in the bottom portion of Table 3). The standardized betas for these actor effects ranged from $-.17$ to $.28$, with the strongest effects found for the degree of perceived rapport with one's partner and the extent to which actors wanted to interact more with their partners in the future.

Partner effects. When we examined how the participants were influenced by the agreeableness of their interaction partners, the behavioral data revealed a number of significant effects. Specifically, as their partner's agreeableness score increased, the actors showed more forms of acknowledgment and friendliness through an increased use of eye contact, smiles, head nods, and verbal acknowledgments (see the data in the top portion of Table 4).

Conceptually similar partner effects were found in the postinteraction questionnaire data (see the bottom portion of Table 4). Specifically, participants whose partners were agreeable reported having developed a greater sense of rapport with them. In addition, they reported increased levels of comfort during their interactions with more agreeable partners, greater liking for such partners, and a greater desire to interact with them in the future. The standardized betas for these partner effects ranged from $.16$ to $.26$, with the strongest effects found for the number and duration of smiles.

Actor \times Partner interactions. The significant Actor \times Partner interactions for Agreeableness revealed a common pattern for both the behavioral and the self-report measures. However, this pattern was

different from the one that characterized the significant Actor \times Partner interactions for Extraversion. This new pattern revealed a *negative synergy* in the interactions of two "disagreeables." The least pleasant and involving interactions took place when both the actor and the partner were disagreeable, and these interactions were distinctive in relation to other Actor \times Partner pairings (see Figures 3 and 4). Specifically, when both participants were disagreeable, they disclosed less personal information about themselves, used fewer verbal acknowledgments and first-person singular pronouns, and reported a relatively low sense of rapport with each other. Furthermore, these participants felt less accepted and respected by each other, they felt less comfortable around each other, and they had relatively little desire to interact more with each other in the future.

Beyond the "negative synergy effect" that results when two disagreeable people interact for the first time, the data in Figures 3 and 4 are also striking in their implication that the presence of just one agreeable person in the dyad (either the actor or the partner) was sufficient to produce a relatively pleasant and involving initial interaction. Apparently, agreeable individuals can get along as well with disagreeable partners as they can with more agreeable ones¹⁵—at least in a brief initial interaction.

What is most remarkable about this pattern is the way that agreeable individuals were able to get more disagreeable individuals to open up and talk with them. Specifically, when interacting with a partner who was highly agreeable, participants who were

¹⁵ And, according to some behavioral measures, like the number of self-disclosures, the number of verbal acknowledgments, and the percentage of first-person singular pronouns (see Figure 3 for details), agreeable people had slightly better interactions with disagreeable partners than with agreeable ones. This pattern was evident in some of our self-report measures as well (see Figure 4 for details).

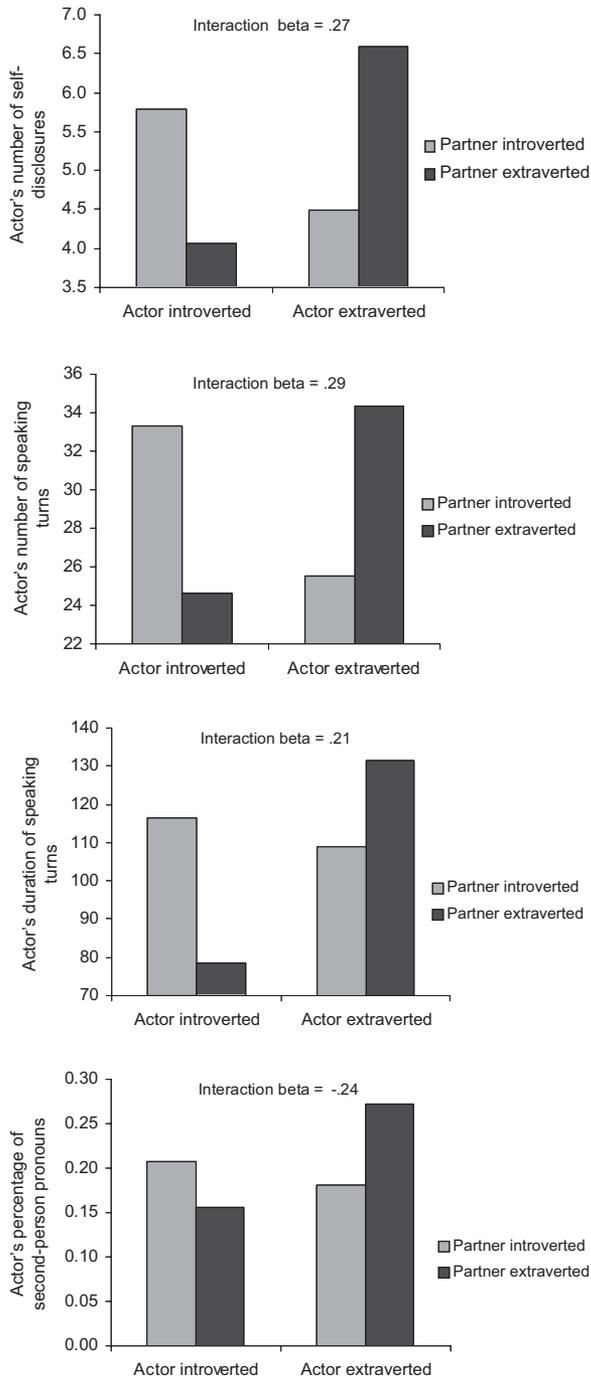


Figure 1. Significant behavioral Actor × Partner interaction effects for Extraversion.

disagreeable disclosed more personal information about themselves, used a greater number of verbal acknowledgments as well as a greater percentage of first-person singular pronouns, and reported developing a greater sense of rapport with them (see Figure 3). In addition, participants who were relatively disagreeable reported feeling more acceptance and respect by their agreeable partners, along with greater feelings of comfort during the

interaction, and greater feelings of liking for their agreeable partners (see Figure 4).

To summarize the pattern of these Actor × Partner interaction effects, disagreeable individuals clearly preferred interacting with someone who was the opposite of them (i.e., with an agreeable partner), whereas agreeable individuals appeared to interact well with anybody, regardless of their partner's level of agreeableness. However, having similar personalities was a major disadvantage when the dyad members were both disagreeable; both objectively and subjectively, their interactions were uniquely poor.

The standardized betas for these interaction effects ranged from $-.17$ to $-.29$, with the strongest effects found for the number of times one disclosed personal information about oneself, the percentage of first-person singular pronouns used, the extent to which participants reported wanting to interact more with their partners in the future, and the extent to which participants enjoyed their interactions (see Table 5 for a complete summary of these effects).

Dyad-level effects. The only significant dyad-level correlate of agreeableness was the measure of interpersonal distance. As the dyad members became more agreeable, the interpersonal distance between them decreased. This finding is consistent with the other behavioral correlates of agreeableness: In addition to talking, smiling/laughing, and acknowledging their partners more often, two agreeable partners also sat closer to each other during their interaction when compared with dyads with one agreeable and one disagreeable partner and dyads with two disagreeable partners. The standardized beta coefficient for this dyad-level effect was $-.24$.

Effects of Conscientiousness

Contrary to our predictions, there were no significant actor effects for Conscientious (but see the dyad-level effects reported below, which were consistent with the first of our predictions for this variable). There were also no significant Actor × Partner interaction effects for Conscientiousness.

Partner effects. The only significant partner effect was for one of the items in the postinteraction questionnaire (see the bottom portion of Table 4). This effect revealed that as one's partner's level of conscientiousness increased, the degree to which participants perceived their partner as being self-conscious also increased, $F(1, 146) = 4.63, p < .05$. The standardized beta coefficient for this effect was $.19$. This finding suggests that greater conscientiousness results in more "self-conscious" behavior during initial interactions and that this behavior is noticed by one's interaction partner.

Dyad-level effects. The only significant dyad-level correlates of Conscientiousness were found for the measures of the number and duration of mutual gazes. Consistent with Funder and Sneed's (1993) data, and with a view of conscientious people as being attentive and responsive to their interaction partners, the dyads' conscientiousness scores were positively correlated with their average number and duration of mutual gazes (i.e., eye contact) that occurred during the initial interactions we studied. The standardized betas for these dyad-level effects were $.25$ and $.34$, respectively.

Effects of Neuroticism

Actor effects. The actor effects for this trait revealed a similar pattern across several of the items in the postinteraction question-

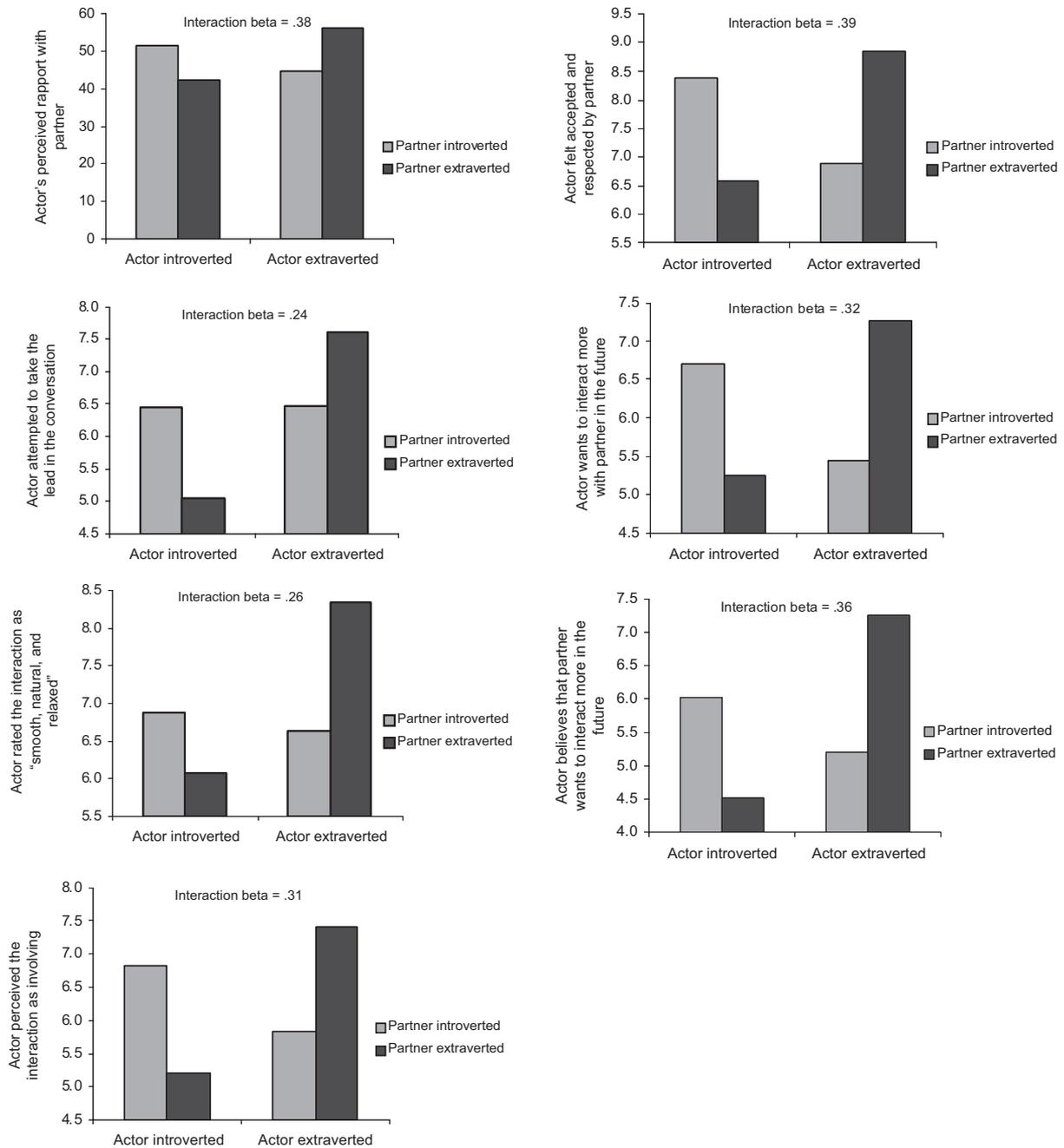


Figure 2. Significant self-report Actor \times Partner interaction effects for Extraversion.

naire (see the bottom portion of Table 3). Participants who were more neurotic not only reported feeling more self-conscious during their interaction, $F(1, 151) = 4.45, p < .05$, and reported a greater use of their partner's behavior as a guide for their own, $F(1, 150) = 4.67, p < .05$, but also believed that their partners were more self-conscious, $F(1, 150) = 4.06, p < .05$, and that their partners used the participants' behavior more as a guide for their own, $F(1, 151) = 4.22, p < .05$. The standardized betas for these effects were .20, .21, .20, and .20, respectively.

A similar effect was observed when we analyzed one of the higher order factors in the postinteraction questionnaire data (i.e., the degree to which the participants tried to "get in sync" with their partners). This finding revealed that the more neurotic participants reported trying harder to get in sync with their partners, $F(1, 149) = 6.75, p < .05$, than the less neurotic participants did. The standardized beta for this effect was .25.

Partner effects. The only significant partner effect for Neuroticism revealed that when participants interacted with partners who

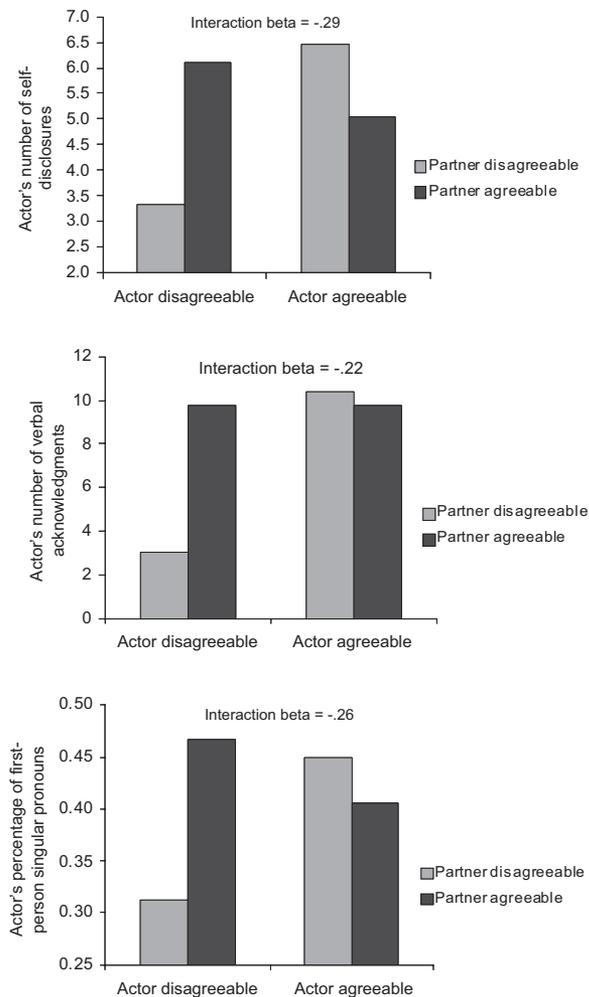


Figure 3. Significant behavioral Actor × Partner interaction effects for Agreeableness.

were more neurotic, they tended to look at these partners more often, $F(1, 106) = 4.33, p < .05$ (see top portion of Table 4). Because the previously reported actor effects revealed that neurotic individuals were self-conscious and tended to use the other person's behavior as a guide for their own, it is not too surprising that their uncertain, self-conscious behavior would be noticeable and would lead their partners to look at them more. The standardized beta for this partner effect was .20.

There were no significant Actor × Partner interaction effects or dyad-level effects for Neuroticism.

Effects of Openness to Experience

Actor effects. The only actor effect for this trait indicated that participants who scored higher on Openness to Experience tended to initiate more conversation sequences with their partners, $F(1, 142) = 5.70, p < .05$ (see the top portion of Table 3). This finding suggests that individuals who are more open to experience are more interested in interacting with a new acquaintance and will continue to initiate new conversation sequences and introduce new topics for discussion even when previous ones have stalled out.

Partner effects. The only partner effect for Openness revealed that when individuals interacted with a partner who scored high on this trait, they tended to display a more open and relaxed body posture, $F(1, 139) = 4.62, p < .05$ (see the top portion of Table 4). The standardized beta for this effect was .14. This effect suggests that individuals can recognize when their interaction partners are open and accepting and that they respond to this perception by adopting a more open and relaxed body posture. In other words, having a more open and accepting interaction partner puts one at ease.

Actor × Partner interactions. The APIM analyses revealed only one significant Actor × Partner interaction effect for Openness to Experience. This interaction was found for the postinteraction measure of how much the participants thought that their partners tried to accommodate their own behavior in order to fit in with the participants themselves, $F(1, 71) = 4.93, p < .05$. The plot of this interaction (see Figure 5) revealed that although actors who were low on openness attributed an equal amount of behavioral accommodation to partners who were both high and low on this trait, actors who were more open to experience attributed more behavioral accommodation as their partners' level of openness increased. This finding suggests that actors who are themselves high in openness might be in a better position to recognize it in others when it is expressed in the form of behavioral accommodation. The standardized beta for this interaction effect was $-.21$.

Discussion

To the best of our knowledge, this study is the first to examine the links between scores on the Big Five personality dimensions and a wide range of objectively coded interaction behaviors. It is also the first study of this type to test for partner effects and Actor × Partner interaction effects in addition to actor effects. There were a large number of effects of all three types in the present investigation, and we summarize and discuss these effects in the sections below.

Before doing that, however, we should note that our first, and least controversial, prediction was clearly confirmed. As predicted, we found that the largest number of significant effects in our study were attributable to the Big Five dimensions of Extraversion and Agreeableness. They accounted for 33% and 51% of the 75 significant findings that we have reported, with the remaining dimensions—Conscientiousness, Neuroticism, and Openness to Experience—accounting for only 4%, 8%, and 4%, respectively.

Actor Effects

We obtained a large number of actor effects in this study, and they were consistent with many of the specific predictions that we based on the earlier findings of Funder and Sneed (1993). With regard to Extraversion, we found that more extraverted actors were more likely to report taking the lead in the conversation; to rate the interaction as smooth, natural, and relaxed; and to say they felt comfortable interacting with their partners. Their high level of comfort was also reflected in their low self-consciousness ratings and in their perceptions that they were likable and that their partner would want to interact more with them in the future.

With regard to Agreeableness, we found that more agreeable actors reported having more enjoyable interactions, which they

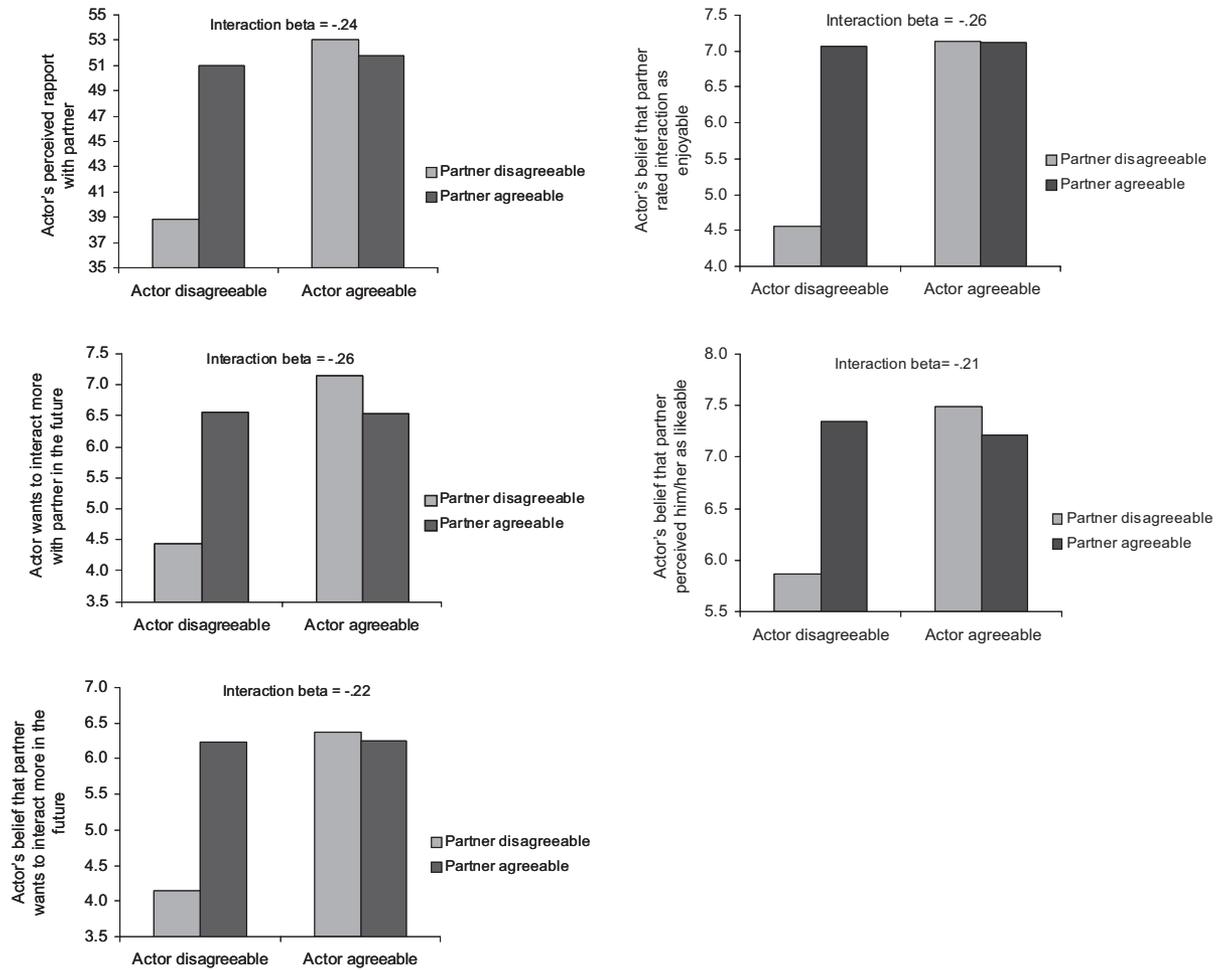


Figure 4. Significant self-report Actor × Partner interaction effects for Agreeableness.

perceived as smooth, natural, and relaxed. Agreeable actors talked and smiled more often. They also acknowledged their partners more often through the use of verbal acknowledgments and head nods. In addition, they liked their interaction partners more and wanted to interact more with them in the future.

With regard to Neuroticism, we found evidence that the more neurotic actors were uncomfortable during their interactions and projected similar feelings onto their partners. Neurotic actors reported feeling self-conscious and tried harder to get “in sync” with their partners by following their lead. And, interestingly, they believed that their partners felt and acted the same way.

With regard to Openness to Experience, we found that actors who scored high on this trait tended to initiate a greater number of conversation sequences during their interaction. Although we did not measure their interest in discussing intellectual and philosophical topics (Funder & Sneed, 1993) in the present study, our objective measure indicates that they probably did initiate a greater number of new conversation topics during their interaction.

However, a few of our actor effects were not predicted from the Funder and Sneed (1993) findings. First, as actors became more *extraverted*, the number of first-person singular pronouns they used decreased. Although this finding did not follow from Funder and Sneed’s (1993) predictions regarding Extraversion, it does support Carl Jung’s (1921) view that extraverts tend to turn their attention outward, away from themselves. Second, as the actors became more *agreeable*, they talked more and reported a greater

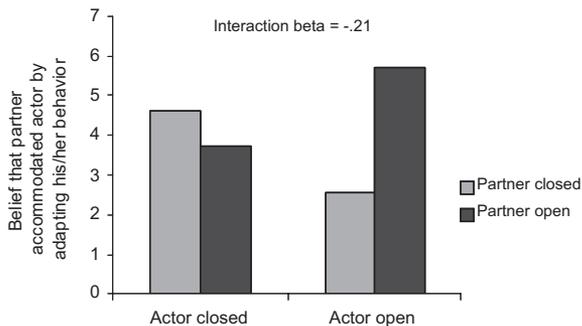


Figure 5. Significant self-report Actor × Partner interaction effect for Openness to Experience.

Table 5
Significant Actor × Partner Interaction Effects for Extraversion and Agreeableness

Big Five trait	Measure	<i>B</i>	<i>F</i>	<i>df</i>	β
EXTRA	Behavioral				
	Number of self-disclosures	0.02	4.75*	66	.27
	Number of speaking turns	0.10	5.01*	72	.29
	Duration of speaking turns	0.35	4.12*	72	.21
	Percentage of 2nd-person pronouns	0.001	6.15*	66	.24
	Self-report				
	Perceived rapport with partner	0.12	13.03***	72	.38
	Attempted to take the lead in the conversation	0.01	5.87*	72	.24
	Rating of the interaction as "smooth, natural, and relaxed"	0.01	7.95**	72	.26
	Perceived the interaction as involving	0.02	7.46**	72	.31
	Felt accepted and respected by partner	0.02	12.44***	72	.39
	Desire to interact more with partner in the future	0.02	11.07**	72	.32
	Rating of interaction as enjoyable	0.02	10.08**	72	.36
	Belief that partner wants to interact more in the future	0.02	13.43***	71	.36
	Felt comfortable interacting with partner	0.01	6.69*	72	.22
	Perceived partner as likable	0.02	10.40**	72	.34
	Belief that partner perceived actor as likable	0.02	12.42***	72	.36
AGREE	Behavioral				
	Number of self-disclosures	-0.04	5.87*	66	-.29
	Number of verbal acknowledgments	-0.07	4.38*	66	-.22
	Number of 1st-person singular pronouns	-0.002	7.43**	66	-.26
	Self-report				
	Perceived rapport with partner	-0.13	5.60*	72	-.24
	Desire to interact more with partner in the future	-0.03	8.04**	72	-.26
	Belief that partner wants to interact more in the future	-0.02	5.50*	72	-.22
	Rating of interaction as enjoyable	-0.02	5.62*	72	-.26
	Belief that partner perceived actor as likable	-0.02	4.75*	72	-.21

Note. All of the boldfaced unitalicized standardized beta coefficients in this table are significant beyond $p < .025$, whereas the boldfaced italicized standard beta coefficients are significant only beyond $p < .05$ and not beyond $p < .025$.

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

need to communicate with their partners. Although agreeable actors were found to express interpersonal warmth and positive affect, as we had expected, their higher level of talking and their greater need to communicate were not specifically predicted. Third, although Openness to Experience was associated with initiating more conversation sequences, as we had predicted, it was not associated with more personal self-disclosures.

Partner Effects

In contrast to the actor effects described above, we had virtually no empirical precedents to use in making predictions about partner effects. The one interesting exception was the study of agreeableness and interpersonal conflict by Graziano et al. (1996). Its findings suggest that having an agreeable interaction partner results in less reported conflict as well as more mutual liking during the interaction.

There were several significant partner effects in our data, virtually all of which can be regarded as novel effects. With regard to Extraversion, we found that the more extraverted their interaction partners were, the more verbal acknowledgments the actors used when interacting with them. Because extraverted actors reported taking a more active role by attempting to take the lead in their

conversations, it seems reasonable for their partners to take a more passive role, by simply providing more verbal acknowledgments to keep the conversation going.

With regard to Agreeableness, we found that the more agreeable their interaction partners were, the more behaviorally involved the actors were, as expressed in their greater talking, gazing, smiling/laughing, and their display of more verbal and nonverbal (head nods) acknowledgments. In addition to reporting greater feelings of comfort, rapport, and liking for their agreeable partners, the actors who had agreeable partners also believed that their partners would want to interact more with them in the future. In general, the partner effects for Agreeableness paralleled the actor effects (see Tables 3 and 4), suggesting that "agreeable" behaviors are readily reciprocated in initial interactions.

With regard to Conscientiousness, we found that the more conscientious their interaction partners were, the more the actors perceived them to be self-conscious. Apparently, the desire of conscientious partners to act appropriately in an initial interaction results in behavior that is perceived as self-conscious by the actors with whom they are paired.

With regard to Neuroticism, we found that the more neurotic their partners were, the more times the actors looked at them.

Because the neurotic actors reported feeling more self-conscious, it is not too surprising that their tentative and uncertain behavior would be noticeable and cause their partners to look at them more often. It is also possible, however, that due to their hesitant and anxious nature, neurotic individuals may have behaved in a way that actually caused their partners to look at them more often. Therefore, the partner's paying closer attention to them might be a cause of the neurotic actors' greater reported self-consciousness. Most likely, reciprocal causality is occurring in this case.

Finally, with regard to Openness to Experience, we found that the more open their partners were, the more the actors tended to display an open and relaxed body posture. This finding suggests that having a partner who was more open to experience allowed actors to feel more open and comfortable themselves.

Actor × Partner Interaction Effects

Although we were unable to predict in advance whether we would even find significant Actor × Partner interaction effects, let alone what form(s) they might take, our analyses revealed many of these effects, and they are probably the most novel and interesting findings in our study. Once again, the majority of these effects were associated with Extraversion and Agreeableness, though the interactions took a different characteristic form in each case.

With regard to Extraversion, we found that dyads whose members had similar personalities (2 extraverts or 2 introverts) had objectively and subjectively better initial interactions than dyads whose members had dissimilar personalities (an introvert paired with an extravert). The fact that two introverts had relatively good interactions, whereas the dissimilar introvert–extraverted pairs did not, suggests that the interaction “styles” of introverts and extraverts may be sufficiently different that people with different styles cannot integrate them as effectively as people with similar styles can.

With regard to Agreeableness, we found that the least pleasant and involving interactions took place between dyad members who were both disagreeable. In these dyads, the participants disclosed very little about themselves (consistent with their low use of first-person singular pronouns) and provided each other with few verbal acknowledgments. In addition, they did not enjoy their interaction and had little desire to have any future interactions with each other. Having similar personalities was clearly a disadvantage in this case, perhaps because neither partner would or could compensate for the other partner's “disagreeableness.”

However, the presence of at least one agreeable member in the dyad resulted in interactions that were both involving and pleasant. Interestingly, this was just as true, if not more so, in dyads in which an agreeable and a disagreeable person were paired as it was in dyads composed of two agreeable people. It appears that agreeable people are able to get along well with just about any stranger they meet, regardless of their partner's level of agreeableness. How they manage to do this is suggested by the actor effect data in Table 3, which show that agreeable people talk, smile, and laugh more, and provide their new interaction partners with more verbal and nonverbal acknowledgments.

With regard to Openness to Experience, we found that actors who were more open to experience attributed more behavioral accommodation to their partners as their partner's level of openness increased. Actors who were low on openness, however, attributed an equal amount of behavioral accommodation to their

partners, regardless of their partner's level of openness. In other words, when interacting with a partner who was high on openness, those who were equally open were better able to recognize that their partners were attempting to accommodate their own behavior.

Theoretical Implications of the Present Findings

The present findings have a number of implications for theoretical conceptions of the Big Five dimensions. First, the present findings are consistent with Jung's (1921) assumption that extraverts are externally focused rather than self-focused. Our data revealed that, compared with introverts, extraverts made more eye contact with their partners, used fewer first-person singular pronouns, and reported being less self-conscious.

Second, although the raters in Funder and Sneed's (1993) study perceived extraverts to be more talkative than introverts, it was the amount of mutual gazing rather than the amount of talking that distinguished extraverts from introverts in the present study. To reconcile this apparent discrepancy, we suggest that extraverts may give the *impression* of being more talkative because they have a more direct (high mutual gaze), more *unself-conscious*, and more confident style of talking than introverts do. In our opinion, theoretical conceptions of extraversion should deemphasize the amount of talking and give greater emphasis to these newly documented aspects of the extraverted interaction style: its *directness*, its *lack of self-consciousness*, and its *confident assumption of being liked and accepted* by the interaction partner.

Third, although Extraversion was not uniquely associated with the frequency and duration of talking, Agreeableness was. Agreeableness was also unexpectedly associated with a greater self-reported need to communicate, and with more frequent acknowledgments of the partner's contribution to the conversation. Viewed in the context of the greater gazing, smiling, and laughing displayed by agreeable actors, these findings suggest that agreeableness should be viewed as an actively pleasant, rather than merely a passively pleasant, orientation toward social interaction.

Fourth, the large number of partner effects and Actor × Partner interaction effects that we found for the traits of Extraversion and Agreeableness are clearly relevant to future theorizing about these traits. Although McCrae and Costa's (1997) five-factor theory takes an important first step in this direction by emphasizing the social and nonsocial contexts in which people behave, more theoretical work is needed (such as that in the circumplex tradition, for example)¹⁶ to

¹⁶ Circumplex theories may take us only so far. For example, although circumplex theories (e.g., Kiesler, 1983; Leary, 1957; Wiggins, 1979) would clearly predict the parallel actor and partner effects that we found for agreeableness, it is arguable whether they would predict our findings that the initial interactions of two introverts are generally better than those of extravert–introvert pairs. More specifically, if a presumed aloofness of an introvert is reciprocated by an introverted partner, then dyads composed of two introverts should have worse interactions than those composed of an introvert paired with an extravert. (For studies that have used the circumplex model to predict various outcome measures in dyadic interactions, see Ansell, Kurtz, & Markey, 2008; Locke & Sadler, 2007; Markey, Funder, & Ozer, 2003; and Oakman, Gifford, & Chlebowski, 2003).

help researchers predict which personality “types” are—and are not—likely to get along with each other. We believe that this theoretical work should not be premature, or rely too heavily on sheer invention, but should instead be informed by a developing body of empirical findings such as those reported here.

Strengths of the Present Investigation

The strengths of the present investigation are defined by the various ways in which we sought to extend the findings of Funder and Sneed’s (1993) study: in our inclusion of both same-sex and mixed-sex dyads; in our collection of a wide range of objectively coded interaction behaviors; and in our use of the APIM to test the unique effects of each of the Big Five traits in the form of actor effects, partner effects, and Actor \times Partner interaction effects. Another important strength, one shared in common with the Funder and Sneed (1993) study, is the wealth of informative findings yielded in the present study.

Limitations of the Present Investigation

As with most investigations in personality and social psychology, the findings of the present study are limited in their generality. Like the previous studies in this area, our study relied on a college student sample and thereby imposed limitations on the generality of the findings with respect to the participants’ restricted range of age, socioeconomic status, and standards for admission to college. It remains for future research to determine whether the present findings will generalize to individuals of varying ages and life circumstances.

Directions for Future Research

In our opinion, future research should build on the present findings in at least three ways. First, as we have just noted above, it should seek to determine the *generality of the effects* we have identified, not only with respect to individuals in different social categories and life circumstances but also with respect to different types of relationships.

Second, future research should seek to determine the *situational boundary conditions* for these effects. For example, on the one hand, if the stakes are high enough (e.g., if individual survival depends on mutual cooperation and goodwill), can two disagreeable people find a way to interact effectively and intensively without “rubbing each other the wrong way”? On the other hand, if two agreeable people find themselves in a high-stakes, zero-sum competition, will they start treating each other in a less-than-agreeable way?

Third, future research should build on the present findings and create a body of findings that can be used to develop inductively based, empirically guided theories for predicting how well—or how poorly—people of certain personality “types” will get along together. From this perspective, the ultimate value of the present study is not just that it provides evidence of the behavioral validity of John et al.’s (1991) BFI (though it clearly does that), but that it facilitates researchers’ understanding of how personality affects our everyday interactions with other people.

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(Appendix follows)

Appendix

Percentage of Significant Effects Out of the Total Number of Effects Tested for Each of the Big Five Predictor Variables

Effect type	Extraversion	Agreeableness	Conscientiousness	Neuroticism	Openness
Actor	18%	44%	0%	13%	3%
Partner	3%	31%	3%	3%	3%
Actor \times Partner	38%	21%	0%	0%	3%
Dyad-level	67%	33%	67%	0%	0%

Note. A denominator of 39 (i.e., the total number of individual-level criterion measures) was used to calculate the percentages of significant actor, partner, and Actor \times Partner interaction effects for each of the Big Five predictors, whereas a denominator of 3 (the total number of dyad-level criterion measures) was used to calculate the percentages of significant dyad-level effects for each of the Big Five predictors.

Received September 1, 2008
Revision received January 27, 2009
Accepted February 23, 2009 ■