Extraversion and Agreeableness: Divergent Routes to Daily Satisfaction with Social Relationships

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Abstract

Objective: We examined the unique effects of extraversion and agreeableness (and honesty-humility) on everyday satisfaction with family, friends, romantic life, and acquaintances, and explored potential mediators of these effects; **Method:** Three diary studies (*N*'s = 206, 139, 185) were conducted on Singaporean university students. In Studies 1 and 2, participants rated their satisfaction with different relationship categories. In Study 3, participants rated their satisfaction and social interactions with ten target individuals each day for a one-week period; **Results:** Both extraversion and agreeableness predicted relationship satisfaction. However, the effect of extraversion was mediated by greater levels of trust in others, whereas the effect of agreeableness was mediated by less frequent negative exchanges (criticism, perceived anger, and perceived neglect). The effect of honesty-humility on negative exchanges was similar to agreeableness. When both were entered as predictors, only the effect of honesty-humility was significant; **Conclusions:** We discuss how the processes by which personality affect relationship satisfaction vary depending on the trait as well as the particular measure that is used (IPIP NEO-PI-R, California Q-Set, and IPIP-HEXACO).

Keywords: extraversion, agreeableness, relationships, trust, honesty-humility

Among five-factor models of personality traits, extraversion and agreeableness have the most direct implications for social interactions and interpersonal relationships. Extraverts are characterized as assertive, talkative, and motivated to engage in social contact (Wilt & Revelle, 2009). In contrast, agreeable people have been described as likeable, pleasant, and responsive to the needs of others (Graziano & Tobin, 2009). Tobin, Graziano, Vannman, and Tassinary (2000) described extraverts as concerned with social impact, and agreeable people as concerned with maintaining positive relationships with others. Both traits can be located within the Interpersonal Circumplex (Trapnell & Wiggins, 1990), which is defined by two orthogonal axes labeled dominance-agency and nurturance-communion. Whereas extraversion reflects a mixture of dominance and nurturance, agreeableness reflects nurturance primarily.

Despite theoretical formulations distinguishing extraversion and agreeableness, the two traits are often positively correlated. To the extent that they are distinct, one would expect each trait to influence affect and behavior by a unique set of processes. Although several lines of research have begun to uncover these processes (Graziano & Tobin, 2009; Wilt & Revelle, 2009), few studies have explored the mechanisms by which extraversion and agreeableness affect satisfaction with social relationships. This is an important question because satisfying relationships are a major correlate of overall well-being (Diener & Seligman, 2002).

Past research on personality and relationship satisfaction focused largely on marital and dating relationships. On average, both extraversion and agreeableness are associated with greater satisfaction in romantic relationships (Heller, Watson, & Ilies, 2004; Malouff, Thorsteinsson, Schutte, Bhullar, & Rooke, 2010). This literature is vast but still incomplete in at least two ways. First, the focus on romantic relationships raises the question of whether similar effects are observed in non-romantic relationships. In their meta-analysis, Heller et al. (2004)

could only locate five studies that examined the correlation between these traits and non-romantic "social satisfaction." Notwithstanding the importance of romantic relationships, this is a critical gap because the bulk of one's social network consists of non-romantic targets such as friends, family, and colleagues. Second, the process from personality to relationship satisfaction in daily life remains under-explored. Even if we know that extraverted and agreeable people tend to be satisfied across relationships, it is not clear *how* they arrive at greater levels of satisfaction. An examination of everyday social interactions would illuminate this process.

We explored the pathways from personality to relationship satisfaction in three diary studies. Specifically, we examined the unique effects of extraversion and agreeableness on daily satisfaction with friends, family, romantic life, and acquaintances. In Study 3, we examined whether the effects of personality on satisfaction were mediated by key relationship variables such as trust and daily social interactions. We also examined the trait of honesty-humility (Ashton & Lee, 2007), which overlaps with previous operationalizations of agreeableness, and explored links between personality and relationship variables at the facet level.

Relationship Variables as Mediators of Personality and Relationship Satisfaction

To the extent that personality traits influence relationship satisfaction, it is important to identify the specific behaviors and beliefs through which these traits operate. Doing so sheds light on how broad dispositional tendencies result in more or less satisfying relationships. Moreover, two traits—such as extraversion and agreeableness—may be associated with relationship satisfaction through different processes. Evidence of such divergent processes would further support the discriminant validity of these constructs. Because few studies have comprehensively examined personality and satisfaction across relationships, we focused on mediators that should be important in all relationships.

In the context of everyday life, relationship satisfaction should be affected by one's daily social interactions with the target person. Positive social exchanges such as receiving help, support, and companionship are associated with greater satisfaction with friends and romantic partners (Koh, Mendelson, & Rhee, 2003; Lemay, Clark, & Feeney, 2007). Moreover, giving support—not just receiving it—was associated with greater closeness between romantic partners (Gleason, Iida, Shrout, & Bolger, 2008). In contrast, negative social exchanges involve interpersonal conflict (e.g., criticizing, arguing with, or ignoring the target person). Frequent conflict is associated with lower satisfaction in romantic, friend, and family relationships (Demir & Weitekamp, 2007; La Valley & Guerrero, 2012; Rusbult, Johnson, & Morrow, 1986).

Another important relationship variable is trust, which Simpson (2007) describes as "the single most important ingredient" (p. 264) for the development of well-functioning relationships. We define trust as the belief that a person can generally be confided in and would not exploit the individual if given a chance. Trust is associated with greater satisfaction in romantic relationships (Rempel, Ross, & Holmes, 2001), perhaps because it fosters more benevolent interpretations of a partner's behavior. For example, people who trusted their romantic partners tended to make positive motivational attributions for his or her behavior (e.g., acting out of care and concern; Rempel et al., 2001). Although the preceding research focused on romantic relationships, we expected trust to be associated with satisfaction in all relationships.

Links Between Personality Traits and Relationship Variables

Extraverts may be more successful than introverts at not only initiating positive exchanges, but evoking them from others. For example, extraverts tend to elicit more positive reactions from others than introverts (Eaton & Funder, 2003); they also report a greater frequency of both giving and receiving support from others (Asendorpf & Wilpers, 1998; Lu,

1997). Why might people react more favorably toward extraverts than introverts? First, extraverts may simply have better social skills (Festa, McNamara Barry, Sherman, & Grover, 2012). Second, a major component of extraversion is the tendency to experience pleasant affect (Wilt & Revelle, 2009). People high in trait positive affect tend to be well-liked (Lyubomirsky, King, & Diener, 2005), which may help them to attract support from others.

The strong relation between extraversion and positive affectivity allows for another hypothesis: that extraverts are more trusting than introverts. Although few studies have examined the relation between extraversion and trust, the existing literature suggests that positive affect is associated with the tendency to trust others (Tov & Diener, 2008). Participants who were induced to feel positive emotions reported greater trust in an acquaintance (Dunn & Schweitzer, 2005). Moreover, people high in trait positive affect tend to think positively of others (Lyubomirsky et al., 2005), which should facilitate trust. Given that positive affectivity is a component of extraversion, the latter should also be associated with trust.

We expected agreeable people to experience more (less) positive (negative) exchanges than disagreeable people. Like extraversion, agreeableness is also associated with prosocial behavior although the proposed mechanism is a tendency to empathize with others (Graziano, Habashi, Sheese, & Tobin, 2007) rather than positive affectivity. Agreeableness can be further distinguished from extraversion by a set of characteristics concerned with "frustration control" (Graziano & Tobin, 2009). Agreeable people make more of an effort to control the expression of negative emotion (Tobin et al., 2000), are less quarrelsome (Côté & Moskowitz, 1998), and report less conflict in daily life (Asendorpf & Wilpers, 1998) than disagreeable people. When conflicts are experienced, agreeable people are more likely to compromise and resolve the conflict (Jensen-Campbell & Graziano, 2001). Together, these findings suggest that agreeable

people are skilled at minimizing the occurrence and escalation of conflicts. The literature is less clear regarding the relation between agreeableness and trust. Although trust is a facet of NEO-PI-R Agreeableness, other personality inventories (Ashton, Lee, & Goldberg, 2007; Goldberg, 1999) have not recovered a similar subscale. Moreover, agreeableness was not associated with the propensity to trust others after controlling for other personality traits (Evans & Revelle, 2008). Therefore, we made no predictions regarding the effect of agreeableness on trust.

In summary, we hypothesized that (i) extraverts are satisfied with their relationships because they tend to trust others and experience positive exchanges; and (ii) agreeable people are satisfied with their relationships because they tend to experience frequent positive and infrequent negative exchanges.

Personality and Satisfaction Across Relational Contexts

We examined four types of relational contexts: family, friends, romantic life, and (in Study 3) acquaintances. Previous theorists have emphasized how norms and expectations vary across these relationships (Canary, Cupach, & Messman, 1995; Clark & Mills, 2012). Despite this literature, there is a paucity of theory on how the effect of personality on satisfaction differs across relational contexts. Without a strong basis for predictions, we do not formally test the moderating effects of relational context. Nevertheless, we examine and present the effects of personality on satisfaction in each context. In doing so, we hope to expand the nomological net of extraversion and agreeableness in the context of non-romantic relationships. These findings may then serve as a basis for future work on personality and social relationships.

Honesty-Humility

Ashton and Lee (2007) developed the six-factor HEXACO model of personality traits. Five of the traits in the HEXACO have counterparts in five-factor models. Their sixth factor,

honesty-humility, is of particular relevance to the current investigation as it overlaps with previous measures of agreeableness. Specifically, the facets of honesty-humility include sincerity, fairness, and modesty—which correspond closely to the straightforwardness and modesty facets of NEO-PI-R Agreeableness (Costa & McCrae, 1992) and the morality and nurturance facets of AB5C Agreeableness (Goldberg, 1999). Honesty-humility and agreeableness tend to be positively correlated (Ashton & Lee, 2005). However, research suggests that agreeableness is associated with forgiveness (versus retaliation) whereas honesty-humility is associated (negatively) with the exploitation of others (Ashton & Lee, 2007). To date, however, few studies have examined the effects of both traits on everyday interpersonal relationships. Thus, to further clarify how agreeableness and honesty-humility might be distinguished, we employed the IPIP-HEXACO (Ashton et al., 2007) in Study 3. Given the correlation between honesty-humility and agreeableness, we expected both to exhibit similar effects. We also examined the unique effects of each trait controlling for the other, but made no specific predictions regarding their relative strength.

We conducted three diary studies examining the effects of agreeableness and extraversion on everyday relationship satisfaction. In the first two studies, participants completed two different measures of personality traits. They also reported their satisfaction with family, friends, and romantic life daily for 21 days (Study 1) or weekly for two months (Study 2). The aim of these studies was to establish the relation between extraversion, agreeableness, and satisfaction in different relational contexts. In Study 3, we utilized a different measure of personality traits (Ashton et al., 2007). Participants also listed ten individuals and reported their daily social interactions and satisfaction with each person for one week. This enabled us to elucidate the process by which personality influences relationship satisfaction. Finally, we examined facet-

level effects of personality on relationship variables. Such analyses are important given that several inventories that putatively measure the same broadband trait (e.g., extraversion) can differ widely in their item content (Wilt & Revelle, 2009). As a result, effects at the broadband level may not always replicate across different measures of the same trait. To the extent that different measures emphasize some facets over others, identifying facet-level effects may help to resolve these inconsistencies.

Studies 1 and 2

Studies 1 and 2 used similar measures and are presented together. These studies differed primarily in the frequency of the satisfaction items (daily versus weekly) and the duration of the diary portion (three weeks versus two months). These data were originally collected as part of a study on well-being and memory (Tov, 2012). The previous paper focused primarily on memory processes underlying different types of well-being judgments and did not examine the effects of extraversion and agreeableness on relationship satisfaction.

Method

Participants. Students from Singapore Management University were recruited for a paid diary study. Study 1 consisted of 206 participants (121 females) with a mean age of 21.6 years. Study 2, consisted of 139 participants (91 females) with a mean age of 21.3 years.

Materials.

International Personality Item Pool (IPIP) NEO-PI-R. Participants completed the 50-item version of the IPIP NEO-PI-R (http://ipip.ori.org/ newNEODomainsKey.htm), a public-domain alternative to the original NEO-PI-R (Costa & McCrae, 1992). We modified the IPIP slightly by beginning each item with the pronoun "I". In this and the following sections, alpha reliabilities are reported in parentheses (Study 1 / Study 2). The Agreeableness scale included

ten items such as "I accept people as they are" (.79 / .76). The Extraversion scale included ten items such as "I am the life of the party" (.87 / .81). Items were rated from 1 (*very inaccurate*) to 5 (*very accurate*). Because neuroticism consistently predicts relationship satisfaction (Karney & Bradbury, 1995), we controlled for it as well (.90 / .73).

California Q-Set. We derived a second measure of personality traits from the California Q-Set (Block, 1961). Participants rated how well 101 behavioral descriptions[1] characterized them from 1 (*extremely uncharacteristic*) to 7 (*extremely characteristic*). McCrae, Costa, and Busch (1986) factor analyzed responses from a self-report version of the Q-Set and presented a five-factor solution, which we used to create scores on agreeableness (.77 / .76), extraversion (.83 / .81), and neuroticism (.89 / .87).

Relationship Satisfaction. At each diary survey, participants rated how satisfied they were with their family, friends, and romantic life during the past day (Study 1) or past week (Study 2), from 1 (*extremely dissatisfied*) to 7 (*extremely satisfied*). We estimated the reliability of the mean of each item when aggregated to the participant-level (Raudenbush & Bryk, 2002). Items means were reliable: family (.95 / .84), friends (.94 / .87), and romantic life (.97 / .92).

Procedure. In both studies, participants completed the IPIP and California Q-Set in a one-hour survey session. The following week, they logged into a website and completed the diary surveys. In Study 1, participants completed a survey at the end of each day for 21 days. In Study 2, participants completed surveys twice a week for eight weeks. They reported their experiences over the past few days (on Wednesdays) or the entire past week (on Sundays). We present the results for the Sunday (past week) surveys only; results were similar when the

[1] In the original Q-Set (Block, 1961), two different versions of Item 93 (Behaves in a [*masculine* / *feminine*] style and manner) were administered depending on whether the subject was male or female. We used both versions, bringing the total number of items to 101 (from the more typical 100). Items largely followed Block (1961) with modifications to shorten the item text. A list of these modifications can be obtained from the first author.

Wednesday data were analyzed.[2] On average, participants completed 19.27 out of 21 daily surveys in Study 1, and 7.94 out of 8 Sunday surveys in Study 2.

Results and Discussion

To facilitate comparisons across Studies 1-3, responses to all variables were rescaled to POMP scores (Cohen, Cohen, Aiken, & West, 1999), which range from 0 to 100.[3] Means and correlations for all measures are presented in Table 1. In both studies, IPIP extraversion, agreeableness, and neuroticism correlated strongly with their corresponding Q-Set scale (*r*'s = .60 to .78). With few exceptions, extraversion and agreeableness were both associated with greater satisfaction with family, friends, and romantic life.

We evaluated the unique effects of each trait in several multilevel models (MLMs) using restricted maximum likelihood estimation (REML). Daily (Study 1) and weekly (Study 2) satisfaction were treated as nested within participants. Random intercepts were specified, reflecting significant between-participant variation in satisfaction measures. In addition, a first-order autoregressive (AR1) covariance structure was specified for the within-person random errors. Extraversion, agreeableness, and neuroticism were entered as predictors (centered on the sample mean). In Table 2 (and throughout this paper), we present raw coefficients for MLM results. Nevertheless, because measures were standardized by POMP metric, effects are roughly comparable across measures and studies.

The results of Studies 1 and 2 suggest that agreeableness and extraversion may have

[2] Effects that were significant or nonsignificant in the Sunday (past week) data were also significant or nonsignificant in the Wednesday (past few days) data. Moreover, trait effects were highly similar in magnitude between the two sets (*r* = .98). Because Study 1 results are based on daily satisfaction, we present the results of weekly satisfaction in Study 2 to illustrate the robustness of personality effects across the time frame of judgment.

[3] A raw score X can be converted to a POMP (Percentage of Maximum Possible) score by the following formula: (X – Min) / (Max – Min) * 100, where Min and Max are the minimum and maximum possible scores for a given variable. Thus, regardless of the original rating scale: 0 = the lowest possible score, 100 = the highest possible score, and 50 = a score at the midpoint of the scale. Unlike z-scores, the meaning of a POMP score is less dependent on the mean and variance of a sample.

distinct effects on relationship satisfaction. Agreeableness uniquely predicted satisfaction with family and extraversion uniquely predicted satisfaction with romantic life. Both traits tended to predict satisfaction with friends. Having confirmed that extraverts and agreeable people tend to be satisfied with their relationships, we conducted another study to illuminate the *process* by which these traits operate in everyday life. We also sought to address some limitations of Studies 1 and 2. First, the IPIP and Q-set tended to emphasize certain aspects of each trait more than others. For example, both measures of extraversion tended to focus on how assertive and talkative one is; few items assessed the positive affectivity (or *enthusiasm*; DeYoung, Quilty, & Peterson, 2007) component. Similarly, both measures of agreeableness tended to focus on how tenderhearted and empathic one is; few items assessed modesty and moral behavior—what DeYoung et al. (2007) refer to as the *politeness* aspect. Thus it is unclear whether the results would replicate or generalize to other aspects of these traits. Second, relationship satisfaction was assessed in categorical terms, which can be difficult to interpret. The term *romantic life* in particular is vague and does not clearly refer to a relationship with a specific person.

Study 3

In Study 3, we assessed relationship satisfaction in two ways. In addition to the categorical items used in Studies 1 and 2, participants rated their satisfaction with specific target persons. They also rated their trust in and daily social interactions with each target, which we expected to mediate the effects of personality on satisfaction. We assessed extraversion and agreeableness more comprehensively with the IPIP-HEXACO (Ashton et al., 2007), which consists of 24 facet-level scales composing six broad traits. The Extraversion facets tap positive affectivity (*liveliness, sociability*) as well as social dominance (*social boldness, expressiveness*). The Agreeableness facets (*gentleness, patience, forgiveness, flexibility*) reflect

tenderheartedness; whereas the Honesty-Humility facets (*sincerity, fairness, modesty, greed avoidance*) capture the politeness aspect of agreeableness (DeYoung et al., 2007). The IPIP-HEXACO enabled us to examine facet-level effects of personality on relationship variables.

Method

Participants. Initially, 202 students at Singapore Management University enrolled in a one-week diary study and were paid a maximum of SGD$33. Six participants skipped entire portions of the survey, preventing us from computing their personality scores. Four participants failed to complete any diary surveys, and seven were excluded for missing more than half of the diary surveys. The final sample consisted of 185 participants (119 females) with an average age of 21.6 years. The sample was predominantly Chinese (65%), with 32% indicating another Asian ethnicity (e.g., Indian, Vietnamese). There were no personality differences between excluded participants and those retained for analysis.

Materials.

IPIP-HEXACO. Ashton et al. (2007) developed a 240-item public-domain inventory to assess the six traits of the HEXACO personality model (http://ipip.ori.org/newHEXACO_PI_key.htm). Each trait scale comprised four 10-item facet scales. Participants rated how accurately each statement described them from 1 (*very inaccurate*) to 5 (*very accurate*). Alpha reliabilities are reported in parentheses. The overall Extraversion score (.92) consisted of Expressiveness (.77), Liveliness (.83), Sociability (.83), and Social Boldness (.79). The overall Agreeableness score (.94) consisted of Flexibility (.71), Forgiveness (.82), Gentleness (.82), and Patience (.92). The overall Honesty-Humility score (.91) consisted of Fairness (.83), Greed Avoidance (.78), Modesty (.82), and Sincerity (.79). To control for neuroticism/emotional stability, we computed the overall Emotionality (.90) score,

which consisted of Fear (.84), Anxiety (.84), Dependence (.80), and Sentimentality (.81).

Social Network Survey. Participants completed an online survey which required them to list people they were likely to interact with during the week and provide additional information about their relationship with each target person.

Target Listing. Participants listed ten targets. The first nine consisted of three family members/relatives, three friends in whom they were not romantically interested, and three acquaintances. The majority of acquaintances were either classmates (62.9%) or casual friends (20.5%) whom participants met through student clubs or other contacts. The tenth target was either a romantic partner (n = 89) or someone the participants were romantically interested in (n = 31). If there was no such person, they listed a fourth friend (n = 65).

Length of Relationship. For non-family targets, participants indicated how long they knew each person in years and months: friends (M = 3.47), romantic partners (M = 2.16), romantic interests (M = 1.80), and acquaintances (M = 1.19).

Interpersonal Trust. Participants rated the extent to which they trusted each target using four items from the Specific Interpersonal Trust Scale (Johnson-George & Swap, 1982). Examples include "I could expect X to tell me the truth" and "X would never intentionally misrepresent my point of view to others." Items were rated from 1 (*strongly disagree*) to 7 (*strongly agree*). Because target ratings were nested within participants, we computed composite reliabilities (ω) at both levels (Geldhof, Preacher, & Zyphur, 2013). Trust ratings were reliable measures of how much particular targets were trusted (target-level ω = .87) and how much participants trusted others on average (participant-level ω = .91).

Daily Diary Survey. At the end of each day, participants completed several items regarding their satisfaction and social interactions during the day.

Categorical Relationship Satisfaction. Satisfaction with family, friends, and romantic life were rated using the same items from Study 1. Each item provided a reliable estimate of mean-level relationship satisfaction: family (.84), friends (.81), and romantic life (.88).

Target-Specific Relationship Satisfaction. Participants rated how satisfied they were in their relationship with each target (1 = *extremely dissatisfied*, 7 = *extremely satisfied*). The reliability of the mean by relational context was as follows: family (.75), friends (.75), acquaintances (.60), romantic partner (.57), and romantic interests (.60).

Daily Social Interactions. Six items were taken from the scale of Positive and Negative Social Exchanges (Newsom, Rook, Nishishiba, Sorkin, & Mahan, 2005). Participants rated the extent to which each target provided them with good company and companionship, did favors and other things for them, acted angry or upset with them, and made them feel neglected or ignored (0 = *not at all*, 3 = *a great deal*). Participants also rated the extent to which they did favors for the target, and questioned or criticized the target. We averaged the items into two composite scores reflecting positive exchanges and negative exchanges. As measures of daily social interaction, reliability was acceptable for positive exchanges (ω = .70) but suboptimal for negative exchanges (ω = .59). However, both scores were reliable when aggregated to the participant-level (ω's = .88 and .93 for positive and negative exchanges, respectively). Because our tests for mediation utilized the participant-level scores (described later), we proceeded to conduct analyses on the composite exchange variables.

Time Spent Interacting. Participants rated how much time they spent interacting with each target during the day from 0 (*I did not see or interact with this person today*) to 6 (*over 8 hours*). Interactions were defined as doing various activities together as well as conversations by phone, email, or Internet.

Procedure. Participants completed the IPIP-HEXACO during a one-hour survey session. They were then given a URL to complete the Social Network Survey. About one to three days later, participants began the Daily Diary Surveys. They logged into a website each night (9:00 p.m. to 3:00 a.m.) to complete the survey. On average, participants completed 6.42 out of 7 diary surveys during a one-week period.

Results

We converted all ratings to POMP scores as we did in Studies 1 and 2. Table 3 presents the correlation among personality and other variables averaged across the week. Agreeableness and extraversion were both associated with greater satisfaction with friends and family. However, only extraversion was associated with satisfaction with romantic life.

Effects of personality on categorical and target-specific satisfaction. To replicate the results of Studies 1 and 2, we estimated three MLMs predicting categorical satisfaction from agreeableness, extraversion, and emotionality using the same model specifications reported earlier (Table 2). Consistent with the previous studies: (i) agreeableness uniquely predicted satisfaction with family and friends; and (ii) extraversion uniquely predicted satisfaction with romantic life and friends. In addition, extraversion predicted satisfaction with family.

Next we conducted a similar set of MLMs predicting target-specific satisfaction. In general, each model contained three levels: daily target-specific satisfaction (Level 1) nested within targets (Level 2) nested within participants (Level 3). For romantic partners and romantic interests, daily satisfaction with the romantic target (Level 1) was nested within participants (Level 2). Several results were consistent with the analysis of categorical satisfaction. For example, agreeableness uniquely predicted satisfaction with specific family members (b = .11, SE = .06) and friends (b = .13, SE = .05), p's < .05. Extraversion also uniquely predicted

satisfaction with specific family members (b = .14, SE = .06) and friends (b = .12, SE = .06), p's < .05. However, extraversion did not predict satisfaction with a specific romantic partner (b = .14, SE = .12) or romantic interest (b = .17, SE = .26), p's > .24. Thus, extraverts' greater satisfaction with romantic life did not necessarily translate into greater satisfaction with an actual romantic partner or interest. We consider some potential reasons for this discrepancy in the Discussion. The unique effects of agreeableness (b = .09, SE = .05) and extraversion (b = .09, SE = .05) on satisfaction with acquaintances were both marginally significant, p's < .10. Finally, we did not observe any unique effects of emotionality on target-specific satisfaction (p's > .28).

Mediating effects of relationship variables on target-specific relationship satisfaction. As depicted in Figure 1, we tested whether relationship variables mediated the effects of personality on relationship satisfaction. We followed recommended procedures for testing mediation in MLMs (Pituch, Murphy, & Tate, 2009; Zhang, Zyphur, & Preacher, 2009). First, we tested the effect of personality on relationship variables (path a). Next, we tested the effect of relationship variables on satisfaction (path b). When both paths were significant, we tested the indirect effect (ab) by computing 95% confidence intervals using the distribution of the product method (MacKinnon, Fritz, Williams, & Lockwood, 2007; Pituch et al., 2009).

Path a and b effects were generally estimated within a three-level MLM. At Level-1 (L1; day-level), daily target-specific satisfaction was predicted from either positive or negative exchanges. As social interactions could be a function of the amount of time spent with the target, the latter was included as predictor in all models. At Level-2 (L2; target-level), the average time spent with the target during the week was entered as a predictor. In addition, trust in the target was tested as a L2 mediator. Level-3 (L3; participant-level) predictors included agreeableness, extraversion, emotionality, and the participant's average time spent with all

targets. The models for estimating paths *a* and *b* are presented in the Appendix. Note that emotionality is included as a proxy for neuroticism (which we controlled for in Studies 1 and 2).

According to Zhang et al. (2009), when testing lower-level mediation of higher-level constructs, the path-*b* effect should be estimated at the appropriate level. Although Zhang et al. focused on two-level models, their reasoning applies to the present study, whereby the effect of a L3 predictor (personality trait) is transmitted through a L1 mediator (positive and negative exchanges) to a L1 outcome (relationship satisfaction). In this 3-1-1 model, Zhang et al.'s reasoning is that the path-*b* effect should *not* be taken as the effect of the mediator at L1. Instead, the L1 mediator should be aggregated to the level of the predictor (in this case, L3). The effect of this aggregated mediator on the outcome should then be taken as the path-*b* effect. The rationale is that the L3 personality traits can only account for mean-level variation in social interactions *between* participants (also at L3) and not within participants (at L1 and L2). Following Zhang et al.'s recommendation, we estimated the path-*b* effect from the *mean* of each mediator (aggregated to L3). We also included the L1 and L2 scores for the mediator to adjust for lower-level effects. For trust, only scores at L2 and L3 could be computed.

All models were estimated using REML and an AR1 covariance structure for the L1 random errors. Random effects for the intercept were estimated at L3 and L2 reflecting significant variation in satisfaction and relationship variables between participants and targets, respectively. We also estimated the random effects for all L1 and L2 predictors, removing those that were nonsignificant to reduce model complexity. Removal of nonsignificant random effects did not alter the significance of any of the fixed effects we report below. L3 predictors were centered on the sample mean. All lower level predictors were centered "within-cluster" (Enders & Tofighi, 2007). Thus, L1 predictors were centered on the target-level mean, and L2 predictors

were centered on the participant-level mean.

The model in Figure 1 was estimated separately for family, friends, acquaintances, and romantic partners. To further simplify the models, paths *a* and *b* were tested for each mediator individually, without controlling for the effects of other mediators. We also tested for gender effects, but observed few interactions.[4] Controlling for gender did not alter any of the effects we reported below; thus we collapsed across gender.

Extraversion, agreeableness, and emotionality were entered simultaneously in all models. However, we discuss the results separately for extraversion and agreeableness to highlight how each trait affects satisfaction. We report multilevel coefficients following the notation in the Appendix, with superscripts to distinguish path-*a*, ($\gamma^{(a)}$) from path-*b* ($\gamma^{(b)}$) effects.

Table 4 presents the unique effects of traits on relationship variables (path-*a*), the effect of relationship variables on satisfaction (path-*b*), and 95% confidence intervals (CI) for the indirect effects of traits on satisfaction (when these effects were significant). We do not present the unique effects of emotionality, which were generally nonsignificant.

Unique effects of extraversion. Extraversion did not predict positive or negative exchanges. However, extraverts trusted family, friends, and acquaintances more than introverts. Moreover, trust (aggregated to L3) predicted greater satisfaction with each of these targets. The indirect effect of extraversion on satisfaction (through trust) was significant in all relational contexts except romantic partners. Thus extraverts tended to trust others more than introverts, and this contributed to greater satisfaction with family, friends, and acquaintances.

Unique effects of agreeableness. Agreeableness did not predict positive exchanges with targets and was only associated with greater trust among family members. However, agreeable

[4] Agreeableness was associated with more frequent positive exchanges with friends for female participants but not male participants. Also, the effect of negative exchanges on satisfaction with acquaintances was stronger for female participants than male participants, but the simple slopes were significant for both groups.

people consistently reported less negative exchanges across relational contexts than disagreeable people. Moreover, negative exchanges (aggregated to L3) were associated with less satisfaction with targets. The indirect effect of agreeableness on satisfaction through negative exchanges was significant in all contexts. Thus, agreeable people tended to experience less conflict with others, and this contributed to greater satisfaction across relationships.

Unique effects of honesty-humility versus agreeableness. Honesty-humility and agreeableness were moderately correlated with each other (r = .56; Table 3). When we replaced agreeableness with honesty-humility as a predictor of relationship variables, the effects were largely similar. Thus we tested whether the two traits offered unique prediction over each other. These models resembled the path-*a* model in the Appendix, with the addition of honesty-humility (H_k) as a fifth predictor ($\gamma_{005}^{(a)}$) in Equation 3. The results suggested greater incremental validity of honesty-humility over agreeableness in predicting negative exchanges. For example, honesty-humility was associated with less negative exchanges with friends ($\gamma_{005}^{(a)}$ = -.17, SE = .06, p < .01), and marginally with family ($\gamma_{005}^{(a)}$ = -.11, SE = .06, p = .06) and acquaintances ($\gamma_{005}^{(a)}$ = -.12, SE = .06, p = .06). Only in the context of romantic partners was no effect observed ($\gamma_{005}^{(a)}$ = -.05, SE = .10, p = .66). In contrast, agreeableness did not predict negative exchanges above and beyond honesty-humility ($\gamma_{001}^{(a)}$'s = -.03 to .06, p's > .50).

Honesty-humility also predicted greater trust in friends ($\gamma_{005}^{(a)}$ = .20, SE = .08) and romantic partners ($\gamma_{005}^{(a)}$ = .33, SE = .09), p's < .01, above and beyond agreeableness and extraversion. Agreeableness did not predict trust above and beyond honesty-humility ($\gamma_{001}^{(a)}$'s = -14 to .06, p's > .12). We also tested the indirect effects of honesty-humility on relationship satisfaction. Honesty-humility contributed to greater satisfaction with friends through less

negative exchanges and greater trust, 95% CI's [.030; .176] and [.017; .122], respectively. Honesty-humility also contributed to greater satisfaction with romantic partners through greater trust, 95% CI [.044; .295].

Facet-level effects on relationship variables. We computed the correlations between the facets of each trait and relationship variables (Table 5). As we observed with the broadband scores, facet-level traits were generally unrelated to positive exchanges. However, three facets consistently correlated with either trust or negative exchanges across all contexts. First, the liveliness facet was consistently associated with trust across contexts. Liveliness reflects the tendency to experience positive affect and energy. Second, two facets of honesty-humility—fairness and sincerity—were consistently associated with infrequent negative exchanges. They were also associated with greater trust across most contexts. The facets of agreeableness were also associated with these relationship variables but less consistently. These facet-level patterns parallel the stronger effects observed for honesty-humility versus agreeableness.

Discussion

With a different measure of traits, we replicated the effects of agreeableness on family and friend satisfaction, and extraversion on romantic life satisfaction. However, extraversion did not predict satisfaction with a specific romantic partner or interest. This discrepancy could be due to differences in sample size. Our analysis of romantic partners (n=89) and interests (n=31) were limited to those participants who listed these targets. This reduced our power to detect effects relative to our analysis of romantic life (n=185). For instance, the effect of extraversion on satisfaction with romantic partner (b = .14; p = .24) was larger than the effect of extraversion on satisfaction with friends (b = .12; p = .04), but the standard error was twice the size (.12 vs .06). Given a larger sample of participants with romantic partners, the effect of extraversion

might be estimated more precisely, thus producing a significant result.

Mediation analyses uncovered some of the pathways by which extraversion and agreeableness influence daily relationship satisfaction. Extraverts were more satisfied with friends, family, and acquaintances than introverts because they trusted these targets more. Agreeable people were more satisfied across relationships because they experienced less negative exchanges than disagreeable people. This is consistent with the hypothesis that agreeable people are more adept at deescalating conflicts. However, agreeableness no longer predicted negative exchanges when we controlled for honesty-humility. In particular, the fairness and sincerity facets of honesty-humility were consistently related to negative exchanges. We consider the implications of this finding in the following section.

General Discussion

Across three studies, we observed a tendency for extraverts and agreeable people to be more satisfied with their relationships, but results were more consistent in some contexts than others. Extraverts were more satisfied with friends and romantic life than introverts. Agreeable people were more satisfied with family and friends than disagreeable people. These effects held when both traits were entered as predictors, suggesting that each may contribute to relationship satisfaction in different ways. In Study 3, we identified two distinct pathways by which extraversion and agreeableness may affect relationship satisfaction. Extraverts tended to trust others more than introverts; and agreeable people engaged less frequently in negative exchanges than disagreeable people. These mediators, in turn, were associated with greater satisfaction.

The general pattern of results in Studies 1 and 2 were replicated in Study 3—with one exception. Only in Study 3 did extraversion predict satisfaction with family. In addition, two other findings require elaboration. First, we predicted (but did not find) an association between

positive exchanges with extraversion and agreeableness. Second, in some contexts, extraversion and agreeableness exerted indirect effects on satisfaction even though the overall effect was not significant. We offer some possible explanations for these issues below.

Differences in Item Content and Construct Representation Across Measures

Studies 1 and 2 employed measures of personality traits modeled after the NEO-PI-R (Costa & McCrae, 1992). Though each NEO-PI-R trait comprises six facets, the scales we used from the IPIP and California Q-Set were broad bandwidth measures targeting the overall trait construct with a limited number of items. As a result, certain aspects of extraversion and agreeableness were underrepresented. To rectify this, Study 3 employed a facet-level measure of traits modeled after the HEXACO (Ashton et al., 2007). This alternative representation of traits must be taken into consideration when interpreting the results.

For example, although positive affectivity is a component of extraversion in many inventories (Ashton et al., 2007; Costa & McCrae, 1992; DeYoung et al., 2007), it was not captured by the measures we used in Studies 1 and 2. In Study 3, positive affectivity is reflected in the liveliness facet of IPIP-HEXACO Extraversion. That family satisfaction was predicted by extraversion in Study 3 but not Studies 1 and 2 can be attributed specifically to the liveliness facet. To confirm this, we regressed family satisfaction on all extraversion facets; only liveliness predicted significantly. This supports past work showing that positive affectivity is a strong correlate of relationship satisfaction (Watson, Hubbard, & Wiese, 2000). Liveliness was also the facet of extraversion most consistently related to trust. This finding accords with research linking positive affect and trust (Dunn & Schweitzer, 2005; Tov & Diener, 2008). It remains unclear however why extraverts did not report more frequent positive exchanges across relational contexts. Extraversion is associated with active engagement in social endeavors (Ashton & Lee,

2007; Wilt & Revelle, 2009). In contrast, two of the items in our positive exchange composite score—receiving companionship and help—are somewhat passive in connotation. These items may be more dependent on the target person than the participant's personality.

The representation of agreeableness in the IPIP-HEXACO also requires discussion. Existing models of agreeableness consist of two aspects that DeYoung et al. (2007) labeled compassion and politeness. We had considered IPIP-HEXACO Agreeableness to reflect tenderheartedness (compassion), and we expected this measure to be associated with positive exchanges. However this was not supported. A closer look at the facets of IPIP-HEXACO Agreeableness suggests more of an emphasis on frustration control, such as the tendency to criticize others (gentleness), accept criticism (flexibility), feel angry (patience), and hold grudges (forgiveness). Missing are items that reflect sympathetic or altruistic behaviors (e.g., Costa & McCrae, 1992), which might be more indicative of compassion. This might explain why agreeableness more consistently predicted negative than positive exchanges in Study 3. The passive nature of our positive exchange measure could be a factor here as well.

Whereas extraversion was strongly associated with trust, agreeableness was largely unrelated to trust. This may be somewhat surprising given that the latter is a facet of agreeableness in some models (Costa & McCrae, 1992). DeYoung et al. (2007) found that trust (measured by the NEO-PI-R) loaded equally (.42) on both the politeness and compassion aspect of agreeableness. However, as noted earlier, compassion is not well-represented by IPIP-HEXACO and the politeness aspect is better represented by honesty-humility not agreeableness. Honesty-humility predicted trust among friends and romantic partners. From a five-factor perspective, this suggests that trust may be more strongly linked to the moral facets of agreeableness than to the frustration-control facets.

A major implication of the preceding discussion is that researchers should carefully attend to the content of their chosen measures and consider how this might affect the conclusions. To the extent that an extraversion (agreeableness) scale omits items that reflect positive affectivity (morality), personality effects on trust may be more circumscribed. Such discrepancies are more likely to be noticed if replications are attempted with alternative measures as we have done. At the risk of complicating the findings, such an approach may refine our understanding of trait constructs and permit more specific hypotheses to be developed.

Total Effects versus Indirect Effects of Personality Traits

Extraversion and agreeableness directly predicted satisfaction in a subset of contexts. Yet the indirect effects of these traits were similar across contexts. For example, both traits were only marginally predictive of satisfaction with acquaintances. Nevertheless, the indirect effect of agreeableness (through negative exchanges) and extraversion (through trust) were significant (Table 4). This seeming paradox is consistent with Kenny and Judd's (2014) observation that the power to test the indirect effect of a predictor can be higher than the power to test the overall effect of that predictor on the outcome. This can occur when the predictor and outcome variables are more strongly associated with the mediator (paths *a* and *b*) than they are to each other—what Kenny and Judd refer to as the total effect (path *c*). For example, the effects of extraversion on trust (path $a = .25$) and trust on satisfaction with acquaintances (path $b = .17$) were both larger than the effect of extraversion on satisfaction (path $c = .09$).[5] Whereas extraversion encompasses a wide range of behaviors, trust may be more fundamental to the health of a relationship (Simpson, 2007). People also interact less with acquaintances than family and friends, further limiting power by reducing the sample size at L1.

Similarly, neither agreeableness nor extraversion predicted satisfaction with an actual

[5] This is technically a conditional total effect (controlling for other traits).

romantic partner. However, agreeableness indirectly contributed to greater satisfaction with romantic partners through infrequent negative exchanges (Table 4). As we noted earlier, the power to test personality effects on satisfaction with romantic partners may be reduced because only a subset of participants (n=89) reported a partner. A larger sample of participants with partners might yield results more consistent with past work (Heller et al., 2004; Malouff et al., 2010). More generally, the power to detect personality effects on relationship outcomes may differ according to the relational context, which affects how often people interact with certain targets. Future research on personality and social relationships should take this into consideration especially if the moderating effect of context is of primary interest.

Nevertheless, we consistently observed an effect of agreeableness on satisfaction with family and extraversion on satisfaction with romantic life. These consistencies suggest that the effects of these traits are more readily observed or detected in certain contexts. For example, family relationships often require strong commitments and obligations that can conflict with other goals (Canary et al., 1995). These relationships frequently provide a test of patience that agreeable people are likely to pass and disagreeable people are likely to fail. Likewise, given sufficient power, the effects of extraversion may be readily detected in the romantic domain because a certain level of trust and social comfort is necessary for initiating contact and requesting dates. In contrast, the effect of extraversion on satisfaction with family may be less consistently detected because such relationships are obligatory and less dependent on initiative.

Agreeableness and Honesty-Humility

Independent of agreeableness, honesty-humility was associated with infrequent negative exchanges. The facets of honesty-humility that were most predictive of negative exchanges were fairness and sincerity. In contrast, the effects of agreeableness were no longer significant after

controlling for honesty-humility. These findings are unexpected in light of the links between agreeableness and frustration control (Graziano & Tobin, 2009). Although frustration control (agreeableness) and moral behavior (honesty-humility) are correlated, it appears that the latter has stronger effects on the avoidance of negative exchanges. Disagreeable people may anger their family and friends because they are not simply unpleasant but tend to be dishonest and unfair as well. Indeed, moral transgressions often trigger intense affective reactions (Wojciszke, 2005). People attend more to the negative (versus positive) moral behavior of others to avoid associating with harmful individuals. Overall, the findings may suggest that the basis for agreeable people's preference for compromise and deescalating conflict is a principled stance on fairness and sincerity rather than an innate aversion to confrontation.

Several limitations of the present research are worth noting. Although we have suggested that extraverts and agreeable people are more satisfied *because* they are more trusting and avoid negative exchanges, respectively, further replication is needed before the causal role of these variables can be firmly established. The indirect effects we observed should be replicated with other measures of agreeableness and extraversion. The assessment of satisfaction and relationship variables could also be improved. Our use of a single item to measure relationship satisfaction might not capture other important aspects of this construct such as intimacy, connectedness, and understanding. Similarly, positive and negative exchanges could be decomposed into more specific *types* of interactions (e.g., arguing with versus ignoring a person), with the cognitive and affective experiences associated with these interactions more comprehensively measured. Another limitation is that we only collected participants' perceptions of their social interactions. In the future, it would be insightful to collect informant ratings. Participants may overlook instances in which they have upset or been helpful to others.

Any social interaction involves more than one perspective; a more complete account of personality and social relationships would include the views of all parties.

We have explored the process by which personality influences relationship satisfaction in everyday life. Although both extraverts and agreeable people tend to have satisfying relationships, they arrive at this destination by different routes. Extraverts are inclined to trust others which may facilitate their social interactions; agreeable people are skilled at avoiding conflict. We provided some initial evidence for the importance of honesty-humility in daily social life. In examining the unique effects of agreeableness and honesty-humility, our results do not answer the question of whether personality trait structure is best represented by five or six factors. However, we hope that future researchers continue to refine the conceptualization of these traits. We have taken just one step in clarifying how they are distinct.

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Table 1

Correlations, Means and Standard Deviations for Personality and Satisfaction in Studies 1 and 2

Variables	1	2	3	4	5	6	7	8	9
1. IPIP – Agreeableness	--	.22*	-.21*	.60*	.33*	-.30*	.28*	.34*	.16
2. IPIP – Extraversion	.39*	--	-.41*	.17*	.73*	-.44*	.08	.26*	.31*
3. IPIP – Neuroticism	-.21*	-.18*	--	-.37*	-.46*	.76*	-.14	-.39*	-.23*
4. Q-Set – Agreeableness	.66*	.29*	-.42*	--	.31*	-.47*	.29*	.37*	.26*
5. Q-Set – Extraversion	.49*	.70*	-.29*	.52*	--	-.59*	.20*	.37*	.39*
6. Q-Set – Neuroticism	-.30*	-.31*	.78*	-.57*	-.57*	--	-.25*	-.41*	-.23*
7. Family Satisfaction	.32*	.22*	-.23*	.29*	.29*	-.30*	--	.57*	.19*
8. Friends Satisfaction	.35*	.33*	-.38*	.34*	.43*	-.48*	.72*	--	.35*
9. Romantic Life Satisfaction	.15*	.19*	-.21*	.22*	.30*	-.28*	.40*	.45*	--
				Study 1					
M	69.00	50.73	50.55	58.34	61.03	42.78	62.77	63.16	49.85
SD	14.04	17.89	20.72	11.25	11.33	11.43	15.08	13.68	21.24
				Study 2					
M	69.77	51.33	49.06	59.37	60.95	42.80	67.98	66.45	53.70
SD	13.19	19.40	19.50	10.57	10.35	10.76	13.86	13.74	21.37

Note. Sample sizes are 206 for Study 1 and 139 for Study 2. Correlation for Study 1 variables appear below the diagonal; Study 2 variables appear above the diagonal. Responses were rescaled to range from 0 to 100 prior to computing the means.

*$p < .05$.

Table 2

Multilevel Models Predicting Relationship Satisfaction from Personality Traits (Studies 1-3)

	Family		Friends		Romantic Life	
Predictor	*b*	*SE*	*b*	*SE*	*b*	*SE*
			Study 1			
Model 1: IPIP						
Agreeableness	.26*	.08	.21*	.06	.09	.11
Extraversion	.08	.06	.15*	.05	.16†	.09
Neuroticism	-.11*	.05	-.20*	.04	-.18*	.07
Model 2: Q-Set						
Agreeableness	.18	.11	.04	.09	.07	.16
Extraversion	.19†	.11	.27*	.09	.36*	.16
Neuroticism	-.19†	.11	-.40*	.09	-.28†	.16
			Study 2			
Model 1: IPIP						
Agreeableness	.28*	.09	.27*	.08	.15	.13
Extraversion	-.01	.07	.06	.06	.28*	.10
Neuroticism	-.06	.06	-.21*	.06	-.12	.10
Model 2: Q-Set						
Agreeableness	.28*	.12	.29*	.11	.36*	.18
Extraversion	.10	.13	.24†	.12	.78*	.20
Neuroticism	-.15	.14	-.25*	.13	.13	.21
			Study 3			
IPIP-HEXACO						
Agreeableness	.21*	.07	.18*	.07	.18†	.10
Extraversion	.18*	.08	.27*	.08	.27*	.12
Emotionality	.12	.08	.06	.08	.16	.13

Note. IPIP = International Personality Item Pool; Q-Set = Q-Set Measure of Five-Factor Model (McCrae et al., 1986); IPIP-HEXACO = IPIP version of Ashton and Lee's (2007) HEXACO model. Daily relationship satisfaction was measured in Studies 1 and 3; weekly relationship satisfaction was measured in Study 2.

*$p < .05$. †$p < .10$.

Table 3

Correlation Among Personality, Satisfaction, and Relationship Variables (Study 3)

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Agreeableness	--										
2. Honesty-Humility	.56	--									
3. Extraversion	.22	.01	--								
4. Emotionality	-.34	-.09	-.15	--							
5. CS Family Sat	.22	.22	.20	.01	--						
6. CS Friend Sat	.23	.28	.28	-.05	.62	--					
7. CS Romantic Sat	.13	.13	.18	.03	.26	.23	--				
8. Time Spent	.06	.10	.08	.04	.19	.11	.15	--			
9. Positive Exchanges	.09	.03	.09	.02	.40	.37	.21	.29	--		
10. Negative Exchanges	-.17	-.25	-.04	-.05	-.24	-.31	-.01	.39	.23	--	
11. Trust	.25	.23	.36	-.09	.45	.45	.14	.18	.28	-.18	--
M	53.74	54.10	60.37	57.54	66.88	67.32	55.54	22.06	33.81	8.25	72.89
SD	15.51	13.29	12.92	12.67	14.08	13.94	20.73	7.93	12.96	8.33	9.83

Note. $N = 185$. CS = categorical relationship satisfaction; Correlations greater than or equal to |.15| are significant at $p < .05$.

Table 4

Effects of Extraversion and Agreeableness on Relationship Variables (Path a) and Relationship Variables on Relationship Satisfaction (Path b)

	Trait → Mediator				Mediator → Satisfaction		Indirect Effects (95% CI)[a]	
	X		A					
Mediator	$\gamma^{(a)}$	*SE*	$\gamma^{(a)}$	*SE*	$\gamma^{(b)}$	*SE*	X	A
Positive Exchanges with								
Family	.09	.09	.11	.08	.34*	.04		
Friend	.04	.08	.08	.07	.42*	.05		
Romantic Partner	-.04	.13	.12	.11	.50*	.07		
Acquaintance	.00	.08	.07	.07	.47*	.06		
Negative Exchanges with								
Family	-.03	.05	-.10*	.05	-.42*	.09		.004; .086
Friend	-.07	.05	-.12*	.04	-.59*	.09		.020; .132
Romantic Partner	.02	.10	-.24*	.08	-.57*	.10		.044; .248
Acquaintance	-.03	.05	-.09*	.05	-.60*	.10		.001; .115
Trust in								
Family	.19*	.09	.16*	.08	.26*	.05	.001; .104	.001; .091
Friend	.29*	.07	.04	.06	.34*	.06	.048; .156	
Romantic Partner	.14	.09	.09	.07	.42*	.14		
Acquaintance	.25*	.08	.06	.07	.17*	.04	.013; .082	

Note. X = Extraversion; A = Agreeableness. $\gamma^{(a)}$ = path-*a* effect of personality trait on mediator variables; $\gamma^{(b)}$ = path-b effect of mediator (aggregated to the participant-level) on relationship satisfaction.
[a] 95% confidence intervals (CI) for the indirect effect (*ab*) of traits on relationship satisfaction; only CI's that do not include 0 are presented.
*$p < .05$.

Table 5

Facet-Level Correlations with Relationship Variables by Relational Context

	Positive Exchanges				Negative Exchanges				Trust			
Facets	Fam	Frn	Rom	Acq	Fam	Frn	Rom	Acq	Fam	Frn	Rom	Acq
Extraversion												
Expressiveness	.03	-.02	-.07	-.06	.00	-.05	.05	-.06	.08	**.22**	.14	.12
Liveliness	**.20**	.11	.09	.08	-.06	**-.16**	-.02	-.03	**.28**	**.32**	**.27**	**.20**
Sociability	.11	.01	.08	.08	-.02	**-.16**	-.05	-.10	.12	**.27**	.09	**.22**
Social Boldness	.07	.03	.02	.02	.02	-.06	.10	.02	.14	**.32**	**.21**	**.24**
Agreeableness												
Flexibility	.05	-.00	.09	.05	-.06	-.13	**-.24**	-.03	.10	.11	.21	.08
Forgiveness	.04	**.16**	.09	-.09	-.14	**-.18**	-.15	-.07	**.20**	**.25**	.06	.13
Gentleness	.07	.04	.12	.03	**-.17**	**-.20**	-.14	-.13	**.26**	.13	.21	.11
Patience	.06	.11	.12	.06	-.10	**-.15**	-.19	-.02	.14	.13	.16	.14
Honesty-Humility												
Fairness	.04	.13	.03	.05	**-.23**	**-.26**	**-.27**	**-.24**	**.20**	**.22**	**.27**	.06
Greed Avoidance	-.05	-.01	-.01	.02	-.07	-.10	-.17	-.04	.08	.09	**.38**	.05
Modesty	.02	.01	.08	.08	-.07	-.11	-.03	-.13	.14	.09	**.21**	.04
Sincerity	-.02	.09	-.00	.03	**-.19**	**-.26**	**-.30**	**-.18**	**.17**	**.28**	**.35**	.02
Emotionality												
Anxiety	.06	-.07	-.05	.04	-.02	.04	-.01	-.09	-.06	**-.18**	-.16	-.06
Fear	-.05	-.04	-.00	.00	-.06	.05	-.13	-.02	-.10	**-.20**	-.08	**-.17**
Dependence	.10	.00	.00	.02	.04	.09	-.05	-.04	-.12	-.08	-.15	-.04
Sentimentality	.07	.06	-.03	.06	-.12	-.08	-.03	**-.18**	**.16**	.12	.07	.12

Note. N = 183-185 except for romantic partners (N = 89). Fam = family; Frn = friend; Rom = romantic partner; Acq = acquaintance.
$p < .05$ for **bold** correlations; $p < .10$ for underlined correlations.

Figure 1. Mediation model testing the indirect effects of personality on relationship satisfaction through social interaction variables.

Appendix

To test the indirect effects of Agreeableness (A_k) and Extraversion (X_k) on daily relationship satisfaction, we estimated two separate models that controlled for Emotionality (E_k).

Path-*a* Model

Path-*a* tests the effect of personality on the Level-1 mediator (e.g., negative exchanges). $L1M_{ijk}$ represents negative exchanges on day *i* with target *j* for participant *k*. The path-*a* personality effects are superscripted (^{a}) below in Equation 3, where A_k and X_k represent participant *k*'s level of agreeableness and extraversion, respectively.

Level-1: $$L1M_{ijk} = \pi_{0jk} + \pi_{1jk}*L1TIMESP_{ijk} + e_{ijk} \quad (1)$$

Level-2: $$\pi_{0jk} = \beta_{00k} + \beta_{01k}*L2TIMESP_{jk} + r_{0jk} \quad (2)$$

Level-3: $$\beta_{00k} = \gamma_{000} + \gamma_{001}*L3TIMESP_k + \gamma_{002}^{(a)}*A_k + \gamma_{003}^{(a)}*X_k + \gamma_{004}*E_k + u_{00k} \quad (3)$$

$$\beta_{01k} = \gamma_{010} + u_{01k} \quad (4)$$

Path-*b* Model

Path-b concerns the effect of the mediator (aggregated to Level-3) on satisfaction (Y_{ijk}). This effect is superscripted (^{b}) and appears below in Equation 9 ($\gamma_{002}^{(b)}$). We also accounted for the effects of the mediator at Levels 1 and 2, although these do not enter into the estimate of the path-b effect. Once estimates of paths *a* and *b* were obtained, the significance of the indirect effect was tested using the distribution of the product method (MacKinnon et al., 2007).

Level-1: $$Y_{ijk} = \pi_{0jk} + \pi_{1jk}*L1TIMESP_{ijk} + \pi_{2jk}*L1M_{ijk} + e_{ijk} \quad (5)$$

Level-2: $$\pi_{0jk} = \beta_{00k} + \beta_{01k}*L2TIMESP_{jk} + \beta_{02k}*L2M_{jk} \quad (6)$$

$$\pi_{1jk} = \beta_{10k} + r_{1jk} \quad (7)$$

$$\pi_{2jk} = \beta_{20k} + r_{2jk} \quad (8)$$

Level-3: $\beta_{00k} = \gamma_{000} + \gamma_{001}*L3TIMESP_k + \gamma_{002}^{(b)}*L3M_k + \gamma_{003}*A_k + \gamma_{004}*X_k + \gamma_{005}*E_k + u_{00k}$ (9)

$\beta_{01k} = \gamma_{010} + u_{01k}$ (10)

$\beta_{02k} = \gamma_{020} + u_{02k}$ (11)

$\beta_{10k} = \gamma_{100} + u_{10k}$ (12)

$\beta_{20k} = \gamma_{200} + u_{20k}$ (13)