Research article

Trust and respect as mediators of the other- and self-profitable trait effects on interpersonal attraction

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Abstract

Mediators of the effects of other-profitable (e.g., sincere vs. irresponsible) or self-profitable (e.g., intelligent vs. unintelligent) traits on attraction were investigated. In Experiment 1 (N = 256), valence of a single other- or self-profitable trait was varied, and trust in, respect for, and attraction toward the partner were measured. The three constructs were distinct. Moreover, the effects of the other-profitable traits on attraction were solely mediated by trust, and those of the self-profitable traits were mediated more strongly by respect than trust. In Experiment 2 (N = 144), an other-profitable trait was crossed with the self-profitable one, and diagnosticity ratings of those traits for the partner's warmth and competence and the previous three responses were taken. The five constructs were empirically distinct. Although trust mediated the effect of other-profitable trait on attraction, there was a direct effect also. Respect was the sole mediator of the self-profitable trait effect. Theoretical and methodological implications of these findings are discussed. Copyright © 2009 John Wiley & Sons, Ltd.

People organize their cognitions of persons and groups along two fundamental dimensions. One is *warmth*; another is *competence* (Fiske, Cuddy, & Glick, 2007; Judd, James-Hawkins, Yzerbyt, & Kashima, 2005; Wojciszke, 2005). Traits such as *moral*, *sincere*, and *warm* form the first dimension; traits such as *able*, *confident*, and *intelligent* form the second dimension. There are so many names for the same two dimensions in the literature (Singh, Ho, Tan, & Bell, 2007, Table 1, p. 20). Nevertheless, traits from the first dimension inform about *intent* of persons or groups and those from the second dimension inform about their *capability* to pursue that intent (Fiske et al., 2007).

Approaches to the two dimensions can be classified into structural and functional. The best example of the structural approach is the study of Rosenberg, Nelson, and Vivekananthan (1968). American participants sorted 64 traits into categories applicable to the same person. Multidimensional scaling and subsequent analyses yielded two dimensions of *socially bad–good* (e.g., cold–warm, unhappy–happy) and *intellectually bad–good* (e.g., unintelligent–intelligent, unskilful–skillful).

Subsequent studies within this approach further explored the relationship between these dimensions. Judgments of an individual person along the two dimensions from the same information were often positively correlated, a kind of *halo effect* (Singh & Teoh, 1999, 2000; Zanna & Hamilton, 1972). In judgments of many groups, in contrast, the correlation between the two dimensions was often negative (Fiske, Xu, Cuddy, & Glick, 1999; Judd et al., 2005). Moreover, the valence of social traits affected judgments of liking more strongly than those of respect (Oden & Anderson, 1971), and that of intellectual traits affected judgments of respect more strongly than those of liking (Hamilton & Fallot, 1974).

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Structural approaches were also extended to attributions of morality and ability. Morality attribution was influenced more by negative than positive moral cues; ability attribution was, in contrast, influenced more by positive than negative intellectual cues (Skowronski & Carlston, 1987). Such discrepancies arise because people use seemingly different schematic models for attributing morality and ability (Reeder & Brewer, 1979), and negative moral and positive ability cues are taken as more diagnostic than their positive moral and negative ability counterparts (Skowronski & Carlston, 1989). In sum, then, there is no doubt about the two-dimensional structure of person cognition.

European social psychologists (Dubois & Beauvois, 2005; Vonk, 1999; Wojciszke, 2005) took a functional approach (Peeters, 1983, 2005) to the valence of traits from these categories. In particular, Peeters and Czapinski (1990) classified traits into *other-profitable* (e.g., warm–cold, moral–immoral) and *self-profitable* (e.g., intelligent–unintelligent, competent–incompetent) categories. S*incere* persons benefit others around them. However, *intelligent* persons achieve their goals by themselves and/or by exploiting others. Both outcomes are more profitable to them than to others. In this view, therefore, behavioral approach or avoidance depends upon how people construe the positive and negative traits of an interaction partner in these profitability terms. Three lines of evidence support this functional approach.

First, the various operationalizations of the two dimensions yielded converging results (Peeters, 1992). In Wojciszke, Dowhyluk, and Jaworski's (1998) study, Polish participants rated a pool of seemingly other- and self-profitable traits along both dimensions. Other-profitable traits were rated higher on the other-profitability dimension (very harmful or disadvantageous to others vs. very profitable or advantageous to others) than on the self-profitability dimension (very harmful or disadvantageous to a person who has the trait vs. very profitable or advantageous to a person who has the trait). In contrast, self-profitable traits were rated higher on the self-profitability dimension than on the other-profitability dimension. In the Netherlands, the effect of other-profitable acts on global evaluation of the target was stronger than that of self-profitable acts (De Bruin & Van Lange, 1999a,b, 2000). In Abele and Wojciszke's (2007) study of Germans, communion correlated highly with other-profitability but agency correlated highly with self-profitability.

Second, profitability perception drives the behavioral approach-avoidance response. Vonk (1999) crossed *dimension* (other-profitable vs. self-profitable) with *consequence* (for others vs. for the self) and *valence* (negative vs. positive) of behaviors. Participants in the Netherlands formed impression of the target person and evaluated him along a global response of bad–good. There was interaction between dimension and valence, but not between dimension and consequence, of behaviors. More specifically, the valence of other-profitable, relative self-profitable, behaviors had a stronger effect, and the valence effect was more marked when consequence of the behaviors was for others than for the targets themselves.

Finally, traits from the two categories influence behavioral response differently. In a modified Stroop's (1935) color-naming task, Wentura, Rothermund, and Bak (2000) presented negative and positive traits from the two categories in different colors on-screen. Because meanings of traits are automatically attended to and the negative traits grab more attention than do positive ones (Pratto & John, 1991), the color-naming responses by German participants were slower for negative than positive traits. More interestingly, such pattern of response interference was confined to valence of other-profitable traits. In the go/no-go lexical decision task, responses to negative, compared to positive, other-profitable traits were faster in the *withdraw* (avoidance) condition, but those to positive, relative to negative, other-profitable traits were faster in the *press* (approach) condition. From his review of the literature, Wojciszke (2005) also noted, "Benefits and costs brought by traits to their possessors and persons who interact with them seem to practically exhaust antecedents of the trait valence" (p. 156).

Interpersonal attraction, which is measured by responses to items such as knowing, liking, discussing, and interacting with the partner (Byrne & Wong, 1962; Montoya & Horton, 2004; Singh, Simons, Seow, Shuli, Lin, & Chen, 2009), is also an approach-avoidance response. It is determined by similarity of attitudes between the participant and the partner (Byrne, 1971) as well as by the other- and self-profitable traits of the partner (Kaplan & Anderson, 1973; Montoya & Horton, 2004). One intriguing result from the studies of Southeast Asians was that valence of other-profitable traits influenced attraction but not respect[1] (Singh, Onglatco, Sriram, & Tay, 1997; Singh & Teoh, 2000). This result is seemingly inconsistent with the position that both intent and agency drive social perception (Fiske et al., 2007) and interpersonal attraction (Singh & Tor, 2008).

In the research reported in this article, we first investigated the distinction among the constructs of attraction, trust, and respect (Montoya & Horton, 2004; Montoya & Insko, 2008; Singh et al., 2009) and then the mediation of the valence effect

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[1]We are using term respect for evaluation of competence and agency-related attributes of the partner throughout this article.

of other- or self-profitable trait on attraction by trust and by respect. We predicted that (a) other-profitable traits build trust in the partner's benevolent intent (Hypothesis 1); (b) self-profitable traits command respect for the partner (Hypothesis 2); (c) the valence effect of other-profitable traits on attraction is mediated by trust (Hypothesis 3); and (d) the valence effect of self-profitable traits on attraction is mediated by respect (Hypothesis 4).

Hypotheses 1 and 2 were suggested by previous results. For instance, valence of warmth-related traits affected liking more strongly than respect (Oden & Anderson, 1971); valence of agency-relevant traits, in contrast, affected respect more strongly than liking (Hamilton & Fallot, 1974). The partner's ability also had a stronger effect on respect than attraction (Montoya & Horton, 2004). Wojciszke, Abele, and Baryla (2009) reported similar results for liking and respect from four studies of Internet users, employees in financial business, and university students in Poland. In Study 4, they measured the partner's benevolence from communion information and status from agency information. Whereas benevolence mediated the communion effect on liking as our Hypothesis 3 states, status mediated the agency effect on respect. However, they did not test mediation of the agency effect on liking by respect.

The benevolence measure of Wojciszke et al. (2009) asked participants to judge whether the target is ''a person who does much for others; ... is good for others; and ... [whose] actions are beneficial for other people.'' This operationalization matches precisely with that of trust that the partner would be helpful or at least not harmful in the forthcoming interaction (Gambetta, 1988; Holmes, 1989). In fact, such trusting belief has been found to be the key mediator of ongoing close relationships (Rempel, Holmes, & Zanna, 1985; Rempel, Ross, & Holmes, 2001; Wieselquist, Rusbult, Foster, & Agnew, 1999). Nevertheless, attention to the causal role of trust in interpersonal attraction, the initial stage of relationship formation, from trait information has not been paid to the extent it really deserves.

Our decision to translate other-profitability into trust in the partner's benevolent intent was also encouraged by three recent findings. First, Cottrell, Neuberg, and Li (2007) explored the characteristics (e.g., trustworthy, intelligent, etc.) that make any one as an ideal member of interdependent groups. *Trustworthiness* was the single most important attribute for an ideal partner for casual acquaintance to close friendship. As the authors noted, ''... people tend to assign *trustworthiness* [emphasis ours] high values on Likert scales of importance, to select *trustworthiness* as the most necessary characteristic, and to allocate large portions of limited resources to increase target *trustworthiness*s'' (p. 225).

Second, Montoya and Insko (2008) manipulated attraction of the partner toward American female participants, and measured trust and attraction in Study 1. Both responses were higher when the same-sex partner was attracted to the female participants than when she was neutral toward them. Trust fully mediated the reciprocated attraction. In Study 2, the authors crossed the same-sex partner's benevolence with her attraction toward female participants. The manipulations had an additive effect on affective attraction (i.e., pleased/displeased, positive/negative with the partner) but an interactive effect on behavioral attraction (i.e., meeting, talking, interacting with the partner) and trust. Mediation by trust was again complete.

Finally, attitude similarity (Byrne, 1971) also influences trust, respect, and attraction. In a collateral study of Southeast Asians, Singh et al. (2009) demonstrated that trust is a stronger mediator of the similarity-attraction link than respect. However, any single-mediator test based on trust or respect overestimates mediation due to the omitted variable problem (Preacher & Hayes, 2008). This result explains the sole mediation of both the attitude similarity-attraction (Montoya & Horton, 2004, Experiments 1 and 2; Singh, Ho et al., 2007) and ability-attraction (Montoya & Horton, 2004, Experiment 3) links by the singly measured mediating variable (MV) of respect. In addition, it raises doubt about the conclusion of Montoya and Insko (2008) and Wojciszke et al. (2007) about trust as a mediator of the partner's benevolence effect on attraction and liking for two reasons. First, they had used the single-mediator test for the effect of other-profitable (i.e., partner's attraction or benevolence, communion) and self-profitable (i.e., partner's ability or agency) traits. Second, they had not presented convincing evidence for the distinction between their measures of the MV and the dependent variable (DV).

We investigated the mediating roles of trust and respect in interpersonal attraction fostered by a single other- and/or self-profitable trait of the partner. Our experiments are novel in two ways. First, we tested the distinction between the MV and DV measures before performing mediation analyses. Second, we sought evidence for not only the hypothesized MV but also against the rival MV. This approach eliminated the omitted variable problem (Preacher & Hayes, 2008) on the one hand and made us the first to try a translation of the other-profitability and self-profitability constructs borrowed from economics into the respective constructs of trust and respect of social psychology (Simons, Berkowitz, & Moyer, 1970) on the other.

PRETESTS OF TRAITS

Tests of our four hypotheses were contingent upon distinction between the other- and self-profitable traits in this participant population of Southeast Asians. Therefore, we first did a pretest of the traits.

Method

Participants

Forty undergraduate students (20 men, 20 women) from an introductory psychology module at the National University of Singapore in Singapore participated in exchange of module credits. Responses were anonymous.

Initial Pool of Traits

We chose 10 *positive other-profitable* (kind, polite, sociable, generous, pleasant, sincere, responsible, respectful, honest, and considerate), 10 *negative other-profitable* (unsociable, selfish, unpleasant, cruel, rude, insincere, dishonest, irresponsible, disrespectful, and inconsiderate), 10 *positive self-profitable* (bold, decisive, cautious, independent, courageous, confident, competent, knowledgeable, intelligent, industrious), and 10 *negative self-profitable* (insecure, timid, careless, dependent, cowardly, ignorant, unintelligent, lazy, indecisive, and incompetent) traits (Peeters & Czapinski, 1990; Wojciszke et al., 1998). Each trait was judged along both the other-profitable (i.e., *how profitable would this trait be to you and others if Person A were [e.g.,* **RESPONSIBLE]** *?*) and self-profitable (i.e., *how profitable would this trait be to Person A himself if (s)he were [e.g.,* **RESPONSIBLE]** *?*) dimensions.

Participants first learnt meanings of other-profitable and self-profitable traits through examples, and how to use the two rating scales. Later, they rated each trait on two 7-point Likert scales, anchored by 1 (*not profitable at all*) and 7 (*extremely profitable*) to (a) you and others and (b) the trait-possessor. Traits were presented in different randomized orders to different participants; as were the two scales of other-profitability and self-profitability.

Results

We used two criteria in selecting the traits. First, the other- versus self-profitability ratings of each trait should significantly differ. In particular, a trait should be rated higher on the dimension seemingly appropriate than inappropriate to it (Wojciszke et al., 1998). Second, the traits belonging to either the other- or self-profitable category should not significantly differ from each other.

In paired *t*-tests between the two ratings, four positive other-profitable, five negative other-profitable, nine positive self-profitable, and nine negative self-profitable traits met the first criterion. Of them, we selected four traits with seemingly equal mean ratings in the same category. The positive other-profitable traits were *generous* (5.97), *considerate* (6.13), *sincere* (6.00), and *honest* (6.23), $F(3,114) = 1.08$, $p = 0.36$; the negative other-profitable traits were *dishonest* (1.45), *cruel* (1.43), *inconsiderate* (1.65), and *irresponsible* (1.43), $F(3,114) = 1.32$, $p = 0.27$. The positive self-profitable traits were *knowledgeable* (6.56), *intelligent* (6.59), *confident* (6.28), and *competent* (6.36), $F(3,114) = 2.51$, $p = 0.06$; the negative self-profitable traits were *coward* (1.77), *incompetent* (1.80), *unintelligent* (1.80), and *indecisive*, (1.74), $F(3,114) = 0.03$, $p = 0.99$. So, they also satisfied the second criterion.

EXPERIMENT 1

In Experiment 1, we manipulated valence of either a single other-profitable trait or a single self-profitable trait, and measured the MVs of trust in and respect for the partner before the expression of interpersonal attraction. Our rationale for using a single trait as the only piece of information about the partner was that impressions of people are often conveyed by

one central trait (e.g., Harry is *bright*; Peter is *warm*), and people do rate others from such limited information (Kaplan & Anderson, 1973; Sloan & Ostrom, 1974). We tested all of our four hypotheses.

Method

Designs

There were two separate 4×2 (Set of traits $\times$ Valence of trait: positive vs. negative) between-participants factorial designs. Design 1 had a single positive (*generous, considerate, sincere*, or *honest)* and a single negative (*inconsiderate, irresponsible, dishonest, or cruel*) other-profitable trait. Design 2, by contrast, had a single positive (*knowledgeable, intelligent, confident*, and *competent*) and negative (*coward, unintelligent, indecisive*, and *incompetent*) self-profitable trait. Because the two designs contained traits from two categories, our overall design was a $2 \times 4 \times 2$ (Design: 1 of other-profitable traits vs. 2 of self-profitable traits $\times$ Set of traits $\times$ Valence of trait: positive vs. negative) between-participants factorial.

Participants

Participants were 256 students from the same population as in the pretest of traits. We first randomly assigned them to Design 1 of other-profitable traits (96 women, 32 men) or Design 2 of self-profitable traits (104 women, 24 men). We also randomly assigned the participants in each design to the eight cells formed by factors of set and valence of the trait from a category (Ns $= 16$ per cell).

Partner Opinion Questionnaire

We used the Partner Opinion Questionnaire (POQ) to measure the trust, respect, and attraction responses to the partner (Singh et al., 2009). The POQ consisted of 10 trust, 10 respect, and 10 attraction items. The first 20 items of trust and respect were randomized, and they appeared before the 10 attraction items. Each statement had a 7-point Likert scale, anchored by 1 (*strongly disagree*) to 7 (*strongly agree*). Responses to the negatively-worded items were reverse scored.

The POQ was originally designed to tap trust, respect, and attraction from attitude similarity between the participant and the partner. With personality traits as stimuli, some items in all the three measures were seemingly similar to the word descriptors.[2] To refine our measures, we solicited assistance of four graduate students in psychology. Two of them looked at our negative and positive other-profitable traits and identified the trust and attraction items that overlapped with the traits supplied about the partner. Likewise, two of them looked at our negative and positive self-profitable traits and identified the respect and attraction items that seemingly overlapped with the traits supplied about the partner. Based on their unanimous judgments, we selected five seemingly independent items for each of the three measures and treated the remaining items as fillers. We list the items forming the three scales in Table 1.

Procedure

A female experimenter met 5 to 12 participants at a time. She introduced the task as one of "forming opinion of a stranger" with whom there was a "possibility of working together later in a project as partners" (Singh, Ho et al., 2007). The partner was presented as an unknown peer of the same-sex as the participant (Byrne, 1971). The available single personality trait (e.g., SINCERE vs. DISHONEST or UNITELLIGENT vs. INTELLIGENT) was alleged to have come from another peer who knew the interaction partner and had described him or her as such in a previous study (Wojciszke, Brycz, & Borkenua, 1993).

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[2]The authors thank an anonymous reviewer for pointing out this problem with our original measures.

Participants received an experimental booklet that had one trait of the partner and the POQ. After reading the trait, they thought of the partner for 1 minute, and then responded to the POQ. Participants circled one of the seven responses to each statement. After collecting the completed booklets, the experimenter told the participants that there was no actual interaction session scheduled. She ended each session with a full debriefing.

Results

Factor Analysis, Reliability, and Correlation Coefficients

We did a principal-axis factoring of the responses to trust, respect, and attraction items (Pett, Lackey, & Sullivan, 2003) of the POQ. This analysis yielded the least number of factors which could account for the common variance in the responses measured. We chose the direct oblimin rotation because it allows for the factors to be correlated. We list the loadings of responses to the 15 items on the three factors in Table 1. As can be seen, the first, second, and third factors in the responses were *trust*, *respect*, and *attraction*, respectively. The inter-factor correlations between attraction and trust, attraction and respect, and trust and respect were -0.51, -0.45, and 0.15, respectively. So, evidence for the construct distinction is convincing.

The Cronbach alphas (αs) of the trust, respect, and attraction responses were 0.82, 0.83, and 0.89, respectively. We averaged the responses to the five items of each scale. Scores ranged from 1 (*lowest*) to 7 (*highest*).

Attraction correlated positively with trust, $r(254) = 0.60$, $p < 0.01$, and respect, $r(254) = 0.50$, $p < 0.01$. Trust also correlated positively with respect, $r(254) = 0.37$, $p < 0.01$. When the correlation between X and Y is equal to the reliability of X or Y, then X and Y are essentially the same construct (Nunnally & Bernstein, 1994). So, we also set up the 95% confidence intervals (CIs)[3] around the highest correlation of 0.60. The 95% CIs ranged from 0.52 to 0.68, and clearly excluded the three αs. That led us to further regard the three constructs as psychometrically distinct (Singh, Ng, Ong, & Lin, 2008; Singh, Yeo, Lin, & Tan, 2007).

Analysis of Variance (ANOVA)

For statistical tests of difference, we set the level of significance to 0.05. Moreover, we report the effect sizes by the partial η^2.

We separately analyzed the respect, trust, and attraction responses by the overall $2 \times 4 \times 2$ (Design $\times$ Set $\times$ Valence of trait) between-participants ANOVAs. The valence effect was statistically significant for respect, $F(1, 240) = 52.53$, $p < 0.001$, $\eta^2 = 0.10$, trust, $F(1, 240) = 86.88$, $p < 0.001$, $\eta^2 = 0.13$, and attraction, $F(1, 240) = 37.30$, $p < 0.001$, $\eta^2 = 0.13$. The Design $\times$ Valence effect was significant for respect, $F(1, 240) = 26.75$, $p < 0.001$, $\eta^2 = 0.10$, and trust, $F(1, 240) = 39.20$, $p < 0.001$, $\eta^2 = 0.14$, but nonsignificant for attraction, $F(1, 240) = 0.00$, $p = 0.99$, $\eta^2 = 0.00$. No other effect was significant.

Hypotheses 1 and 2 We did tests of simple effects of valence of a trait at the level of each design. We report the means and standard deviations of respect, trust, and attraction for the negative and positive trait from the two designs in Table 2. Evidently, respect was influenced by valence of a single self-profitable trait of Design 2, $F(1, 120) = 67.07$, $p < 0.001$, $\eta^2 = 0.36$, but not by that of a single other-profitable trait of Design 1, $F(1, 120) = 2.53$, $p = 0.11$, $\eta^2 = 0.02$. In contrast, trust was influenced more by valence of a single other-profitable trait of Design 1, $F(1, 120) = 98.53$, $p < 0.001$, $\eta^2 = 0.45$, than by that of a single self-profitable trait of Design 2, $F(1, 120) = 6.09$, $p = 0.02$, $\eta^2 = 0.05$. Attraction was equally affected by valence of other-profitable, $F(1, 120) = 18.01$, $p < 0.001$, $\eta^2 = 0.13$, and self-profitable, $F(1, 120) = 19.33$, $p < 0.001$, $\eta^2 = 0.14$, traits of Designs 1 and 2, respectively.

The simple effect of a single other-profitable trait on trust supports Hypothesis 1. No effect of such a trait on respect also confirms the past findings (Singh et al., 1997; Singh & Teoh, 2000). The simple effect of a single self-profitable trait on respect supports Hypothesis 2. However, the simple effect of a single self-profitable trait on trust makes the support for Hypothesis 2 mixed.

[3]For estimating the 95% CIs around the correlation, we used the online program of website (http://glass.edu.asu.edu/stats/analysis/rce.html).

Table 1.   Principal-axis factor patterns in responses to the trust, respect, and attraction items of Experiments 1 and 2: oblimin rotation

Items	Experiment 1 ($N = 256$)			Experiment 2 ($N = 144$)		
	Factor 1	Factor 2	Factor 3	Factor 1	Factor 2	Factor 3
Factor 1: trust						
T1: In any upcoming task, this interaction partner would act benevolently toward me.	**0.48**	0.02	−0.13	**0.64**	0.16	−0.11
T2: If given the opportunity, this interaction partner would probably exploit me.*	**0.73**	−0.11	−0.07	**0.85**	−0.13	−0.01
T3: My future interaction partner would take advantage of me.*	**0.79**	−0.07	0.05	**0.79**	−0.06	−0.05
T4: This interaction partner would make me feel secure.	**0.52**	0.38	−0.09	**0.55**	0.24	−0.19
T5: I would expect this interaction partner to play fair with me.	**0.64**	0.10	−0.16	**0.88**	0.00	0.02
Factor 2: respect						
R1: My future interaction partner will probably be successful in life.	0.34	**0.65**	−0.05	−0.03	**0.80**	−0.09
R2: My future interaction partner is probably good at everything that s/he does.	−0.02	**0.75**	0.07	0.18	**0.69**	0.15
R3: My future interaction partner is probably a gifted individual.	−0.17	**0.52**	−0.24	0.04	**0.70**	0.05
R4: My future interaction partner will probably achieve all of his or her goals.	−0.19	**0.82**	−0.01	−0.09	**0.66**	−0.06
R5: I think that my future interaction partner would make a good leader.	0.36	**0.67**	−0.05	−0.14	**0.58**	−0.15
Factor 3: attraction						
A1: I would like to meet my future interaction partner.	0.05	−0.08	**−0.91**	0.15	0.01	**−0.71**
A2: I will probably like my future interaction partner.	0.33	0.10	**−0.58**	0.15	−0.01	**−0.81**
A3: I look forward to meeting my future interaction partner.	0.13	0.00	**−0.80**	0.10	−0.05	**−0.88**
A4: I would enjoy discussing controversial topics with my future interaction partner.	−0.08	0.10	**−0.62**	−0.09	−0.01	**−0.63**
A5: I would like to get to know this person better.	0.00	−0.06	**−0.80**	−0.01	0.11	**−0.79**

*Reverse-scored.

Mediation Analyses: Tests of Hypotheses 3 and 4

We conducted separate mediation analyses for the data of Designs 1 and 2 by SPSS macro (Preacher & Hayes, 2008). This macro simultaneously estimated: (a) the IV effect on the MVs; (b) the MV effects on the DV; (c) the total effect of the IV on the DV; and (c') the direct effect of the IV when the MVs also predicted the DV. It also provided the bias corrected 95% CIs around the indirect effect (i.e., $[(a) \times (b)] = [(c) − (c')]$) from a nonparametric bootstrap resampling procedure. An

Table 2.   Means and standard deviations of responses to a single negative or positive trait from two categories in Experiment 1

	Designs for categories of traits			
	Design 1: other-profitable		Design 2: self-profitable	
Responses	Negative	Positive	Negative	Positive
Respect	3.83[a] (0.66)	4.03[a] (0.77)	3.44[b] (0.85)	4.66[a] (0.82)
Trust	3.42[b] (0.98)	4.98[a] (0.83)	4.19[b] (0.78)	4.49[a] (0.60)
Attraction	4.02[b] (0.98)	4.74[a] (0.93)	4.08[b] (1.08)	4.81[a] (0.71)

Note: The values in the parentheses are the corresponding SDs. Within each trait category, the means for the negative and positive levels that have different superscripts differed significantly.
$p \leq 0.05$.

indirect effect of the IV through a MV was adjudged as significant only if its bias corrected 95% CIs from numerous bootstrap resamples excluded zero (Williams & MacKinnon, 2008). Likewise, the difference between two indirect effects was considered as statistically significant only if its 95% CIs from bootstrap resamples excluded zero. We used 5000 bootstrap resamples in our analyses.

We also did two separate single-MV analyses for the data of Designs 1 and 2 to explore the seriousness of the omitted variable problem (Preacher & Hayes, 2008) in any single-MV analysis. All these calculations yielded unstandardized coefficients. Hence, we report unstandardized coefficients in Table 3.

Hypothesis 3 Consider the mediation of the valence effect of a single other-profitable trait on attraction via respect and trust in the top part of Table 3. Evidently, the mediation was via trust, but not via respect. The difference of 0.89 between the indirect effects via trust and respect was significant, 95% CIs: 0.60, 1.28. The original valence effect on attraction, $t = 4.25$, $p < 0.001$, was rendered nonsignificant, $t = -1.66$, $p = 0.10$, when the two MV also predicted attraction. So, mediation was complete, supporting Hypothesis 3.

Results from the single-MV analyses of the same data indicate that the indirect effect of a single other-profitable trait via trust increased slightly but the mediation was partial, $t = -2.32$, $p = 0.02$. Although the indirect effect via respect increased from 0.05 to 0.13, it was still no different from zero. In this case, therefore, the omitted variable problem (Preacher & Hayes, 2008) is not as serious as it was with attitude similarity (Singh et al., 2009). Nevertheless, the complete mediation in the multiple-MV test and a partial mediation by trust alone point out that the effectiveness of trust and respect as MVs may be conditional to each other.[4]

Hypothesis 4 We list the mediation results for the effect of a single self-profitable trait on attraction via respect and trust in the bottom part of Table 3. The mediation was via both respect and trust. The difference of 0.28 between the two indirect effects was significant, 95% CIs: 0.05, 0.61. The original valence effect on attraction, $t = 4.48$, $p < 0.001$, was also rendered nonsignificant, $t = 1.02$, $p = 0.31$, when the two MVs also predicted attraction. So, the mediation was complete.

In single-MV tests, both respect and trust reliably mediated the valence effect. However, the mediation was complete via the stronger respect, $t = 1.06$, $p = 0.29$, but not via the weaker trust, $t = 3.69$, $p < 0.001$. This result supports Singh et al. (2009) who showed that a stronger MV by itself can sometimes fully mediate the link.

Table 3.   Unstandardized beta coefficients and indirect effects of the valence of a single other- or self-profitable trait via the mediating variables (MVs) on attraction in Experiment 1

(a): IV→MV	(b): MV→DV	(c): total effect	(c'): direct effect	MVs	(a) × (b): indirect effect	95% CIs
		Design 1: valence of a single other-profitable trait → MVs → attraction ($N = 128$)				
			Multiple-MV test			
0.20	0.26**	0.72**	−0.28	Respect	0.05[b]	−0.00, 0.18
1.56**	0.61**			Trust	**0.94[a]**	0.66, 1.31
			Single-MV tests			
0.20	0.65**	0.72**	0.59**	Respect	0.13	−0.02, 0.32
1.56**	0.71**	0.72**	−0.39*	Trust	**1.10**	0.84, 1.44
		Design 2: valence of a single self-profitable trait → MVs → attraction ($N = 128$)				
			Multiple-MV test			
1.22**	0.34**	0.72**	0.18	Respect	**0.41[a]**	0.18, 0.70
0.31**	0.44**			Trust	**0.13[b]**	0.03, 0.32
			Single-MV tests			
1.22**	0.43**	0.72**	0.19	Respect	**0.52**	0.25, 0.84
0.31**	0.54**	0.72**	0.56**	Trust	**0.17**	0.04, 0.36

Note: The (a), (b), (c), and (c') are unstandardized beta coefficients. The indirect effect in bold are significantly greater than zero; the adjacent indirect effects with different superscripts differ significantly. 95% CIs: bias corrected confidence intervals.
*$p \leq 0.05$; **$p \leq 0.01$.

[4]In an unpublished study ($N = 64$), the valence effect of a single other-profitable trait on attraction was fully mediated by trust. Whereas the indirect effect of 0.39 via trust was significant, 95% CIs: 0.03, 0.78, the direct effect was nonsignificant, $B = 0.47$, $t = 1.85$, $p = .07$.

Discussion

We obtained five results. First, the constructs of trust, respect, and attraction are indeed distinguishable. Second, valence of a single other-profitable trait influences trust and attraction. Third, valence of a single self-profitable trait affects all three responses. Fourth, valence of a single other-profitable trait affects trust more than respect, but that of a single self-profitable trait affects respect more than trust. Finally, the valence effects of other- and self-profitable traits are mainly mediated by trust and respect. These results not only support the hypotheses but also show that our attempt to translate the other-profitability and self-profitability constructs of the behavioral adaptive theory (Peeters, 2005; Peeters & Czapinski, 1990) into trust in and respect for the partner of the attraction paradigm (Singh et al., 2009) has been successful.

Because of the respect and trust measures, we have convincingly shown that participants responded to the traits from the two categories, not to the mere semantic demands of a positive versus negative descriptor of the partner. Evidence for the mediation of the effect of a single other-profitable trait on attraction by trust, but not by respect, and of the effect of a single self-profitable trait on attraction more by respect than trust further enhances our confidence in the interpretations made. The supremacy of intent over agency in attraction toward the partner holds for other-profitable traits. With self-profitable traits, respect for partners is more important than their trustworthiness. So, the processes underlying social perception (Cuddy, Fiske, & Glick, 2008; Fiske et al., 2007) are not as readily generalizable to interpersonal attraction as we originally envisaged.

Results discrepant from our hypotheses might have arisen from the use of traits from just one category as the information and/or the consideration of diagnosticity of the trait given for the responses sought. The first possibility deserves consideration, for every person is construed in terms of both other-profitability and self-profitability (Abele & Wojciszke, 2007; Fiske et al., 2007). Likewise, the second possibility merits attention because judgment of morality is influenced more by negative than positive moral cues, but that of ability is influenced more by positive than negative intellectual cues (Skowronski & Carlston, 1987). This happens because negative moral and positive ability cues are viewed as more diagnostic of their respective dimensions than their positive moral and negative ability counterparts (Skowronski & Carlston, 1989).

In our research, we have been dealing with the valence effect, not weighting of negative versus positive information in attraction. Nevertheless, we included the measures of diagnosticity of the traits used for the partner's warmth and competence along with those of trust, respect, and attraction of Experiment 1. Moreover, we crossed valence of a single other-profitable trait with that of a single self-profitable trait in Experiment 2.

EXPERIMENT 2

We retested the previous four hypotheses and the three new hypotheses, using an improved method. We expected the negative, relative to the positive, other-profitable trait to be more diagnostic of the partner's warmth (Hypothesis 5), and the positive, relative to the negative, self-profitable trait to be more diagnostic of the partner's competence (Hypothesis 6). We had competing hypotheses about the joint effect of other- and self-profitable traits. On the one hand, an opposite weighting of the negative and positive traits from the two categories (Singh & Tor, 2008; Wojciszke et al., 1993) led us to expect an additive effect on the responses (Hypothesis 7a). On the other hand, a greater weighting of the negative than positive traits from both the categories in negative–positive judgment (Martijn, Spears, van der Plight, & Jakobs, 1992) and attraction (Singh & Teoh, 2000) led us to expect that the effect of one trait would be smaller at the greater weighted negative than at the lesser weighted positive level of the other trait (Hypothesis 7b).

Method

Stimuli and Design

Three sets of other- (*considerate-cruel* excluded) and self-profitable (*competent-incompetent* excluded) traits from Experiment 1 served as stimuli. The design was a $3 \times 2 \times 2 \times 2$ (Set of traits $\times$ Order of trait presentation: other-self vs.

*s*elf-other profitable × Valence of a single other-profitable trait × Valence of a single self-profitable trait) between-participants factorial.

Participants

One hundred seven female and 37 male students from the same population as in Experiment 1 participated. There were six participants per cell.

Response Measures

For consistency in the measures, we used the same POQ and the 7-point scales as in Experiment 1. For measuring diagnosticity of a trait for the partner' warmth and competence, we used a set of five negative and five traits from each of the two categories. Contingent upon the valence of a trait from the other- or self-profitable category, we scored the responses to five items that were applicable to the case. When a partner was described as *knowledgeable* and *irresponsible*, for example, we scored responses to the five positive competence-relevant traits and those of the five negative warmth-relevant traits. The remaining five traits were fillers as with the other three responses to the same partner. We list the items used to assess diagnosticity of a trait for competence and warmth of the partner in Table 4.

Procedure

The procedures were the same as in Experiment 1. Two changes were (a) a 2-trait description of the partner and (b) a 50-item POQ. The first 40 items of the POQ were presented randomly; the attraction items appeared at the end.

Results

Factor Analyses, Reliability, and Correlation Coefficients

We first did a principal-axis factoring of the responses to trust, respect, and attraction items to confirm the results of Experiment 1. As the factor patterns reported in the right side of Table 1 indicate, the first, second, and third factors were again *trust*, *respect*, and *attraction*, respectively. The inter-factor correlations between attraction and trust, attraction and respect, and trust and respect were -0.39, -0.36, and 0.15, respectively. This outcome reaffirms the construct distinction.

We also did another analysis for the responses to the 25 items, including the 10 diagnosticity items. We list the results in Table 4. Evidently, the five factors of attraction, competence-diagnosticity, warmth-diagnosticity, trust, and respect were clearly distinguishable from each other. The inter-factor correlations between attraction and trust, attraction and respect, attraction and competence-diagnosticity, attraction and warmth-diagnosticity, trust and respect, trust and competence-diagnosticity, trust and warmth-diagnosticity, respect and competence-diagnosticity, respect and warmth-diagnosticity, and competence-diagnosticity and warmth-diagnosticity were -0.38, 0.33, 0.11, -0.08, -0.14, 0.03, 0.02, 0.31, -0.01, and 0.17, respectively.

The αs of the responses loading on the attraction, competence-diagnosticity, warmth-diagnosticity, trust, and respect factors were 0.89, 0.88, 0.83, 0.88, and 0.82, respectively. We averaged the responses to the five items of each scale. Scores ranged from 1 (*lowest*) to 7 (*highest*).

Attraction correlated positively with respect, $r(142) = 0.34$, $p < 0.01$, and trust, $r(142) = 0.48$, $p < 0.01$, but not with competence-diagnosticity, $r(142) = 0.11$, $p > 0.05$, or warmth-diagnosticity, $r(142) = -0.07$, $p > 0.05$. While competence-diagnosticity correlated positively with respect, $r(142) = 0.34$, $p < 0.01$, warmth-diagnosticity did not correlate with trust, $r(142) = -0.04$, $p > 0.05$. Competence-diagnosticity correlated positively with warmth-diagnosticity, $r(142) = 0.23$, $p < 0.01$, so did respect with trust, $r(142) = 0.19$, $p < 0.05$. Apparently, then, diagnosticity of a trait was of no causal consequence for attraction. Consistent with the results from factor analyses, the 95% CIs (0.35, 0.60) of the highest correlation of 0.48 excluded the five αs.

Table 4.   Principal-axis factor patterns in responses to the attraction, diagnosticity for competence, diagnosticity for warmth, trust, and respect items of Experiment 2 ($N = 144$): oblimin rotation

Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Factor 1: attraction					
A1: I would like to meet my future interaction partner.	**0.71**	−0.01	−0.05	−0.15	0.02
A2: I will probably like my future interaction partner.	**0.81**	0.04	0.01	−0.15	−0.02
A3: I look forward to meeting my future interaction partner.	**0.88**	0.04	0.07	−0.12	−0.06
A4: I would enjoy discussing controversial topics with my future interaction partner.	**0.61**	0.03	−0.06	0.08	−0.01
A5: I would like to get to know this person better.	**0.79**	−0.07	0.05	0.00	0.14
Factor 2: diagnosticity for competence					
C1: How diagnostic are these traits of your partner's [inability] ability.	0.05	**0.82**	−0.17	0.10	0.08
C2: How accurate are these traits as predictors of your partner's [incompetence] competence.	0.08	**0.72**	−0.06	0.08	0.01
C3: How much do these traits reflect on your partner's [incapability] capability.	−0.07	**0.80**	0.11	−0.03	0.06
C4: How much do these traits serve as cues to your partner's [incapability] capability.	−0.06	**0.74**	0.25	0.00	−0.11
C5: How valid are these traits as predictors of your partner's [incapability] capability.	0.04	**0.70**	0.10	−0.05	0.09
Factor 3: diagnosticity for warmth					
W1: How confident are you that your partner's is [unsociable] sociable.	−0.06	−0.09	**0.68**	−0.02	0.03
W2: How much do these traits tell about your partner's [immorality] morality.	0.04	0.05	**0.72**	0.12	−0.02
W3: How strongly do these traits tell about your partner's [immorality] morality.	0.02	0.21	**0.56**	−0.01	0.00
W4: How valid are these trait as predictors of your partner's [unsociability] sociability.	0.02	0.14	**0.70**	−0.04	0.00
W5: How much do these traits reflect on your partner's [hostility] friendliness.	−0.04	−0.10	**0.79**	−0.02	0.02
Factor 4: trust					
T1: In any upcoming task, this interaction partner would act benevolently toward me.	0.11	0.17	0.02	**−0.67**	0.07
T2: If given the opportunity, this interaction partner would probably exploit me.[*]	0.02	−0.08	−0.09	**−0.83**	−0.11
T3: My future interaction partner would take advantage of me.[*]	0.07	−0.15	−0.01	**−0.77**	−0.02
T4: This interaction partner would make me feel secure.	0.21	0.08	0.06	**−0.57**	0.18
T5: I would expect this interaction partner to play fair with me.	0.00	−0.06	0.02	**−0.87**	0.00
Factor 5: respect					
R1: My future interaction partner will probably be successful in life.	0.11	−0.07	0.14	0.02	**0.82**
R2 My future interaction partner is probably good at everything that (s)he does.	−0.15	0.18	−0.11	−0.22	**0.62**
R3: My future interaction partner is probably a gifted individual.	−0.05	0.15	−0.06	−0.08	**0.63**
R4: My future interaction partner will probably achieve all of his or her goals.	0.08	−0.16	0.13	0.09	**0.74**
R5: I think that my future interaction partner would make a good leader.	0.15	0.13	−0.16	0.12	**0.55**

Note: Trust and respect that were Factors 1 and 2 in Table 1, respectively, are now Factors 4 and 5 because the principal-axis analysis also included responses to the competence- and warmth-diagnostic items.
[*]Reverse-scored.

Preliminary Analyses

In separate four-way ANOVAs, there were four scattered cases of trait valence interacting with trait set or order of presentation across the five responses.[5] As there were so few interactions and they followed no apparent pattern, we ignored the set and order variables and analyzed the data by 2×2 (Valence of a single other-profitable trait $\times$ Valence of a single self-profitable trait) ANOVAs, with 36 participants per cell.

We report the means and standard deviations of the five responses to a single negative or positive trait from the two categories in Table 5. Whereas valence of the other-profitable trait influenced trust, $F(1, 140) = 102.38$, $p < 0.001$, $\eta^2 = 0.42$, and attraction, $F(1, 140) = 32.94$, $p < 0.001$, $\eta^2 = 0.19$, that of the self-profitable trait influenced respect, $F(1, 140) = 49.14$, $p < 0.001$, $\eta^2 = 0.26$, and attraction, $F(1, 140) = 9.59$, $p < 0.002$, $\eta^2 = 0.06$. The other-profitable trait did not affect respect, $F(1, 140) = 0.04$, $p = 0.84$, $\eta^2 = 0.00$, nor did self-profitable trait affect trust, $F(1, 140) = 0.16$, $p = 0.69$, $\eta^2 = 0.00$. As in Experiment 1, the other-profitable trait was more effective than self-profitable trait in building trust but the self-profitable trait was more effective than the other-profitable trait in generating respect. Unlike in Experiment 1, however, the effect size of the other-profitable trait was nearly three times as large that of the self-profitable trait. Overall, then, support for Hypotheses 1 and 2 was clear.

Consistent with the new Hypotheses 5 and 6, negative other-profitable and positive self-profitable traits were more diagnostic of the partner's respective warmth, $F(1, 140) = 8.78$, $p < 0.004$, $\eta^2 = 0.06$, and competence, $F(1, 140) = 16.72$, $p < 0.001$, $\eta^2 = 0.11$, than were positive other-profitable and negative self-profitable traits. None of the five responses had the two-way interaction effect, $Fs(1, 140) \leq 2.09$, $ps \geq 0.09$, $\eta^2 \leq 0.0$. So, we accepted Hypothesis 7b about additive effect but rejected Hypothesis 7a about interactive effect.

Mediation Analysis

Hypotheses 3 and 4 Due to the additive effects of the two traits presented, we did mediation analyses of the valence effect of one trait while holding the valence effect of the other trait constant in the same macro as in Experiment 1. Further, we used all four MVs together as well as separately to test Hypotheses 3 and 4. We report the results in Table 6.

The valence of a single other-profitable trait had both the direct effect of 0.59, $t = 2.44$, $p = 0.02$, and indirect effect of 0.45 via trust. As no other variable had any causal effect, trust emerges as the mediator of the valence effect of other-profitable trait on attraction. The valence effect of self-profitable trait on attraction was fully mediated by respect. The

Table 5.   Means and standard deviations of responses to a negative or positive trait from two categories in Experiment 2

| | Categories of traits | | | |
| | Other-profitable | | Self-profitable | |
Responses	Negative	Positive	Negative	Positive
Diagnosticity for competence	4.03[a] (1.04)	4.09[a] (1.05)	3.72[b] (1.02)	4.40[a] (0.96)
Diagnosticity for warmth	4.28[a] (1.04)	3.76[b] (1.05)	4.04[a] (1.14)	4.01[a] (1.02)
Respect	4.18[a] (1.06)	4.21[a] (0.90)	3.70[b] (0.89)	4.68[a] (0.80)
Trust	3.24[b] (1.15)	4.85[a] (0.70)	4.01[a] (1.26)	4.08[a] (1.24)
Attraction	3.60[b] (1.17)	4.65[a] (1.08)	3.84[b] (1.26)	4.41[a] (1.17)

Note: The values in the parentheses are the corresponding SDs. Within each trait category, the means for the negative and positive levels that have different superscripts differed significantly.
$p \leq 0.05$.

[5]There were the Set $\times$ Self-profitable, $F(1, 120) = 3.78$, $p = 0.03$, $\eta^2 = 0.06$, and Set $\times$ Other-profitable, $F(1, 120) = 7.20$, $p = 0.001$, $\eta^2 = 0.11$, effects on trust. Participants found an unintelligent partner ($M = 4.43$, SD $= 1.10$) to be more trustworthy than an intelligent one ($M = 4.06$, SD $= 1.17$). The valence effect of a single other-profitable trait on trust was most marked when partners were sincere ($M = 4.78$, SD $= 0.65$) and dishonest ($M = 2.41$, SD $= 0.65$) than when they were described by the other two sets of traits. The Set $\times$ Other-profitable trait effect on competence-diagnosticity, $F(1, 120) = 3.24$, $p = 0.04$, $\eta^2 = 0.05$, emerged because dishonesty ($M = 4.28$, SD $= 0.98$) was more diagnostic of competence than sincerity ($M = 3.75$, SD $= 1.00$). In attraction, there was the Set $\times$ Order of trait presentation $\times$ Other-profitable trait effect, $F(1, 120) = 3.84$, $p = 0.02$, $\eta^2 = 0.06$. There was no difference between irresponsible ($M = 4.20$, SD $= 1.08$) and honest ($M = 4.32$, SD $= 0.54$) partners at the self-profitable-other-profitable order of trait presentation.

Table 6. Unstandardized beta coefficients and indirect effects of the valence of a pair of single other- and self-profitable trait via the MVs on attraction in Experiment 2

(a): IV→ MV	(b): MV→DV	(c): total effect	(c'): direct effect	MVs	(a) x (b): indirect effect	95% CIs
		Valence of a single other-profitable trait → MVs → attraction (N = 144)				
			Multiple-MV test			
0.05	0.01	1.05**	0.59*	CDiagn.	0.00[b]	−0.04, 0.04
−0.52**	0.01			WDiagn.	−0.01[b]	−0.02, 0.12
0.03	0.29**			Respect	0.01[b]	−0.07, 0.11
1.61**	0.29**			Trust	**0.45**[a]	0.08, 0.77
			Single-MV tests			
0.05	0.03	1.05**	1.05**	CDiagn.	0.00	−0.02, 0.06
−0.52**	0.05	1.05**	1.05**	WDiagn.	−0.02	−0.05, 0.08
0.03	0.37**	1.05**	1.04**	Respect	0.01	−0.09, 0.12
1.61**	0.35**	1.05**	0.49*	Trust	**0.56**	0.21, 0.92
		Valence of a single self-profitable trait → MVs → attraction (N = 144)				
			Multiple-MV test			
0.68**	0.01	0.57**	0.26	CDiagn.	0.00[b]	−0.14, 0.13
−0.03	0.01			WDiagn.	−0.00[b]	−0.04, 0.04
0.98**	0.29**			Respect	**0.28**[a]	0.05, 0.57
0.06	0.28**			Trust	0.02[b]	−0.06, 0.13
			Single-MV tests			
0.68**	0.03	0.57**	0.54**	CDiagn.	0.02	−0.10, 0.17
−0.03	0.05	0.57**	0.57**	WDiagn.	−0.00	−0.06, 0.03
0.98**	0.37**	0.57**	0.20	Respect	**0.37**	0.13, 0.67
0.06	0.35**	0.57**	0.54**	Trust	0.02	−0.08, 0.17

Note: The (a), (b), (c), and (c') are unstandardized beta coefficients. The indirect effect in bold are significantly greater than zero; those with different superscripts differ significantly from each other. 95% CIs: Bias corrected confidence intervals. CDiagn. = Diagnosticity for the partner's competence; WDiagn. = Diagnosticity for the partner's warmth.
*$p \leq 0.05$; **$p \leq 0.01$.

indirect effect was significantly greater than zero, but the direct effect was nonsignificant, $t = 1.29$, $p = 0.20$. These results support Hypotheses 3 and 4.

Single-MV tests The indirect effect of a single other-profitable trait via trust on attraction increased from 0.45 in the multiple-MV test to 0.56 in the single-MV test. Likewise, the indirect effect of a single self-profitable trait via respect on attraction increased from 0.28 in the multiple-MV test to 0.37 in a single-MV test. None of the remaining MVs, however, showed any increase. So, the omitted variable problem (Preacher & Hayes, 2008) of a single-MV test is again not as serious as it was with attitude similarity (Singh et al., 2009). Because the mediation of the effect of a single other-profitable trait on attraction by trust was partial in the multiple-MV and single MV tests, the discrepancy between the results of the corresponding tests of Experiment 1 cannot be treated as indicative of a conditional relationship between trust and respect.

Discussion

Results of Experiment 2 confirmed the previous four hypotheses and removed ambiguities from results of Experiment 1. Consistent with Hypotheses 1 and 2, valence of a single other-profitable trait affected trust and attraction but not respect, and that of a single self-profitable trait affected respect and attraction but not trust. The effect of a single other-profitable trait on attraction was also stronger than that of a single self-profitable trait, replicating the result of Singh and Tor (2008) who manipulated likability and competence of the partner by his or her relative standings in the two distributions of peers. Supporting Hypotheses 3 and 4, the valence effect of a single other-profitable trait on attraction was mediated by trust but that of a single self-profitable trait was mediated by respect. As other- and self-profitable traits co-exist (Abele & Wojciszke, 2007; Fiske et al., 2007), we attribute clear results of Experiment 2 to the use of traits from both categories in the partner's description.

We also succeeded in showing a greater diagnosticity of a negative than positive other-profitable trait for warmth (Hypothesis 5) and a greater diagnosticity of a positive than negative self-profitable trait for competence (Hypothesis 6). Because of such opposite diagnosticity of the negative and positive traits from the two categories, we obtained support for Hypothesis 7b about additive effect of traits. More important, diagnosticity of a trait for warmth or competence had no causal consequence for attraction. Clearly, the causal links were between other-profitability and trust and between self-profitability and respect as we predicted.[6]

GENERAL DISCUSSION

Our research contributes to the attraction literature in four important ways. First, attraction, trust, and respect are truly distinguishable constructs even when the other- and self-profitable traits serve as stimuli. Results from factor analyses of the responses to the MV and DV measures together converged in confirming the hypothesized construct distinction. This outcome agrees with the findings of Singh et al. (2009), and extends them from attitude similarity and the partner's benevolence to personality traits as stimuli.

Second, other-profitable traits, compared to self-profitable traits, influence trust and attraction more but respect less. This demonstration argues for the cross-cultural generalizability of the functional classification of traits (Peeters & Czapinski, 1990; Wojciszke, 2005), particularly because the stimuli and the response measures of this research were not only different but also much improved ones than those in the past studies (Singh et al., 1997; Singh & Teoh, 2000). We also now understand why other-profitable traits failed to influence respect in these studies.

Third, other-profitable traits influence attraction directly as well as indirectly via trust. The indirect effect though trust validates our attempt to translate the other-profitability into trust. Nevertheless, the direct effect implies that other-profitable traits have either other mediators or direct effects of their own. Given the evidence for primacy of warmth, morality, or communion in past research on person cognition (Cuddy et al., 2008; Fiske et al., 2007; Wojciszke, 2005), we are inclined toward accepting the supremacy of other-profitability traits and their indirect effect via trust in interpersonal attraction.

Finally, self-profitable traits determine attraction only indirectly. In Design 2 of Experiment 1, the indirect effect of self-profitable traits was stronger via respect than trust. Respect was the sole mediator of the effect of the self-profitable trait when the partner was described by both the other- and self-profitable traits in Experiment 2. What these results imply is that self-profitable traits can lead to inferences about other-profitable traits, a kind of *halo effect* (Zanna & Hamilton, 1972). That is why a single self-profitable trait presented alone had the same effect on attraction as the single other-profitable trait in Experiment 1. In accordance with such inferences, trust also mediated the valence effect of that single self-profitable trait. This interpretation agrees with the evidence that the same pair of self-profitable traits that evinced a greater weighting of positive than negative information in judgment of intellect evinced a greater weighting of negative than positive information in attraction (Singh & Teoh, 2000).

Implications

Behavioral Adaptive Theory Peeters and Czapinski (1990) made functional interpretations of the social and intellectual traits (Rosenberg et al., 1968), but they never specified the psychological mechanisms underlying the valence effects of those traits on approach-avoidance responses. Wojciszke et al. (2007) linked other-profitable traits with trust but self-profitable traits with respect. Nevertheless, they did not investigate the mediating potential of both trust and respect as the MVs of the valence effects on attraction. So, our findings have three implications for the behavioral adaptive theory.

First, the self-profitable traits determine attraction indirectly through respect. However, the other-profitable traits affect attraction both directly and indirectly through trust. While the mediators of the valence effects of other- and self-profitable

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[6]Our results do not challenge the cue-diagnosticity model (Skowronski & Carlston, 1989) which deals with attributions of morality and ability from the respective other- and self-profitable information. Consistent with the model's prescriptions, we also obtained support for our Hypotheses 5 and 6. More important, warmth-diagnosticity reliably mediated the valence effect of other-profitable trait on trust (indirect effect $= -0.09$, 95% CIs: -0.23, -0.01), and competence-diagnosticity reliably mediated the valence effect of self-profitable trait on respect (indirect effect $= 0.13$, 95% CIs: 0.02, 0.30).

traits are no doubt trust and respect, respectively, the direct effect of the former reaffirms supremacy of warmth over competence in evaluation of worth of partners (Cuddy et al., 2008; Fiske et al., 2007).

Second, other-profitable traits are always construed as such, but self-profitable traits take on different evaluative meanings in different contexts. Recall that a single self-profitable trait evoked trust in the partner which partly mediated the valence effect on attraction in Experiment 1. When the very same single self-profitable trait was crossed with a single other-profitable trait in Experiment 2, there was no such effect on trust. Clearly, self-profitable traits are construed as such only when they are paired with other-profitable traits. This inferential asymmetry from other- and self-profitable traits offers an interesting avenue for further investigation and refinement in behavioral adaptive theory.

Finally, the mediation of the valence effect of other-profitable traits on attraction by trust brings behavioral adaptive theory closer to evolutionary psychology. Cosmides and Tooby (1992), for example, argued for a cheater detection mechanism that adaptively prepares people against trust violation. In fact, patients with damaged orbitofrontal cortex and amygdale—the loci of the cheater detection mechanism—were too trusting to effectively regulate their interpersonal relations (Stone, Cosmides, Tooby, Kroll, & Knight, 2002). Therefore, we agree with Cottrell et al. (2007) who noted that "...trustworthiness can be considered of paramount value" in affiliation choices, and that the "...trustworthiness seeking may, in fact, nicely complement additional psychological mechanisms for detecting others' cheating behavior" (p. 227).

Attraction Paradigm One of the more reliable findings in social psychology is that the greater is the similarity between attitudes of two persons, the greater is the attraction between them (Byrne, 1971). Even within this American paradigm, there is controversy on whether there is a single MV of respect for the partner (Montoya & Horton, 2004; Singh, Ho et al., 2007; Singh, Lin, Tan, & Ho, 2008) or there are multiple MVs of affect, respect, and inferred attraction (Singh, Ng, et al., 2008; Singh, Yeo et al., 2007) for the similarity-attraction link.

Our findings of a stronger association of trust with other-profitable traits and of respect with self-profitable traits have an important implication for the construal of attitude similarity in attraction development. When attitude similarity is construed as other-profitable, the similarity-attraction link is mediated solely by trust (Singh et al., 2009). By contrast, a self-profitable construal of attitude similarity makes respect as the sole mediator of the same link (Montoya & Horton, 2004; Singh, Ho et al., 2007; Singh, Lin et al., 2008). As these studies had measured either trust or respect before attraction, we believe that the other- versus self-profitable construal of attitude similarity was activated by the MV measured between the IV and the DV.

The foregoing interpretation has merit because both trust and respect mediated the similarity-attraction link when they were measured together (Singh et al., 2009). That trust, compared to respect, was a stronger mediator of the effect of other-profitable traits on attraction indicates that attitude similarity is construed more in other-profitable terms than in self-profitable terms. Given the evidence for the dual construal of attitude similarity and self-profitable traits, we foresee an overlap between these two IVs. Future investigators should, therefore, study such dual-construal of attitude similarity by crossing it with traits and acts coming from the two functional categories (De Bruin & Van Lange, 1999a,b, 2000; Peeters, 2005; Vonk, 1999; Wojciszke, 2005).

Methodological Implications Our findings have two important methodological implications as well. One is for the tests of mediators of any IV-DV link. Montoya and Horton (2004) found respect to be the sole MV of the effect of partner's attitudes and ability on interpersonal attraction. By showing the complete mediation of the valence effect of a single self-profitable trait on attraction by respect alone in our Experiments 1 and 2, we replicated their finding and extended it to the present participant population of Southeast Asians. Nevertheless, this outcome also illustrated a limitation of a single-MV test (Preacher & Hayes, 2008). Even when trust had a significant indirect effect in the two-MV test of Experiment 1, for instance, respect alone erroneously accounted for the total effect. Trust measured alone also fully mediated the valence effect of a single other-profitable trait on attraction (see also Footnote 5). Trust by itself had fully mediated the total effect of similar attitudes on attraction in Singh et al. (2009), even when respect had a reliable indirect effect in the two-MV test. Thus, we argue that any test of a single-MV hypothesis should simultaneously produce evidence for its indirect effect and against the indirect effect of one or more rival MVs as illustrated in this research.

Another implication is for the need to draw a clear distinction between the IV and the MV in social perception. Warmth–trustworthiness is either considered as the first universal dimension in person perception (Fiske et al., 2007, p. 77) or trustworthiness is routinely included within the DV of warmth dimension (Cuddy et al., 2008, p. 63). Our findings indicate that other-profitable traits are precursors, not substitutes of trust. It is incorrect, therefore, to combine the intermediary mechanism of trust with either the IV of warmth or the DV of attraction. Even in the attraction paradigm, the measures of social attraction (Singh & Ho, 2000) and affective attraction (Herbst, Gaertner, & Insko, 2003) tap the warmth dimension,

and those of intellectual and cognitive attraction tap the competence dimension. For the sake of clarity and meaningful integration of processes from different research paradigms, we recommend that attraction be regarded as the behavioral approach-avoidance response, other-profitability and self-profitability as the IVs, and trust and respect as the MVs of the trait-attraction link.

Concluding Comments

Our attempt to represent the other- and self-profitability dimensions of behavioral adaptive theory (Peeters & Czapinski, 1990; Wojciszke, 2005) by the respective mechanisms of trust and respect of interpersonal attraction (Byrne, 1971; Singh et al., 2009) is an example of paradigm linkage in social psychology. By trying such linkage, we generated a new insight on social perception. The seemingly supremacy of intent over agency (Cuddy et al., 2008; Fiske et al., 2007) holds only when information about both the other- and self-profitable traits (Peeters & Czapinski, 1990) are simultaneously available. Even under such circumstance, other-profitable traits have direct effects on attraction. Further, the picture changes when information about either other- or self-profitable trait is available. With other-profitable traits as the sole information, both trust in the benevolent intent of the partner and his other-profitability are attended to. In case of self-profitable traits as the sole information, respect takes precedence over trust in partner selection. We hope, therefore, that future researchers will identify more social stimuli that lead to supremacy of respect over trust or mind over heart.

REFERENCES

Abele, A. E., & Wojciszke, B. (2007). Agency and communion from the perspective of self vs. others. *Journal of Personality and Social Psychology*, *93*, 751–763.

Byrne, D. (1971). *The attraction paradigm*. New York: Academic Press.

Byrne, D., & Wong, T. J. (1962). Racial prejudice, interpersonal attraction, and assumed dissimilarity of attitudes. *Journal of Abnormal and Social Psychology*, *65*, 246–253.

Cosmides, L., & Tooby, J. (1992). Cognitive adaptations for social exchange. In J. H. Barkow, L. Cosmides, & J. Tooby (Eds.), *The adapted mind: Evolutionary psychology and the generation of culture* (pp. 163–228). New York: Oxford University Press.

Cottrell, C. A., Neuberg, S. L., & Li, N. P. (2007). What do people desire in others? A sociofunctional perspective on the importance of different valued characteristics. *Journal of Personality and Social Psychology*, *92*, 208–231.

Cuddy, A. J. C., Fiske, S. T., & Glick, P. (2008). Warmth and competence as universal dimensions of social perception: The stereotype content model and the BIAS map. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 40 pp. 61–149). New York: Academic Press.

De Bruin, E. N. M., & Van Lange, P. A. M. (1999a). Impression formation and cooperative behavior. *European Journal of Social Psychology*, *29*, 305–328.

De Bruin, E. N. M., & Van Lange, P. A. M. (1999b). The double meaning of a single act: Influence of the perceiver and the perceived on cooperative behavior. *European Journal of Personality*, *13*, 165–182.

De Bruin, E. N. M., & Van Lange, P. A. M. (2000). What people look for in others: Influences of the perceiver and the perceived on information selection. *Personality and Social Psychology Bulletin*, *26*, 206–219.

Dubois, N., & Beauvois, J. L. (2005). Normativeness and individualism. *European Journal of Social Psychology*, 35, 123–146.

Fiske, S. T., Cuddy, A. J. C., & Glick, P. (2007). Universal dimensions of social cognition: Warmth and competence. *Trends in Cognitive Sciences*, 11, 77–83.

Fiske, S. T., Xu, J., Cuddy, A. C., & Glick, P. (1999). (Dis)respecting versus (dis)liking: Status and interdependence predict ambivalent stereotype of competence and warmth. *Journal of Social Issues*, 55, 473–489.

Gambetta, D. (1988). Can we trust? In D. Gambetta (Ed.), *Trust: Making and breaking of cooperative relations* (pp. 213–238). New York: Blackwell.

Hamilton, D., & Fallot, R. (1974). Information salience as a weighting factor in impression formation. *Journal of Personality and Social Psychology*, 30, 444–448.

Herbst, K. C., Gaertner, L., & Insko, C. A. (2003). My head says yes but heart says no: Cognitive and affective attraction as a function of similarity to the ideal self. *Journal of Personality and Social Psychology*, 84, 1206–1219.

Holmes, J. G. (1989). Trust and the appraisal process in close relationships. In W. H. Jones, & D. Perlman (Eds.), *Advances in personal relationships* (Vol. 2, pp. 57–104). London: Jessica Kingsley.

Judd, C. M., James-Hawkins, L., Yzerbyt, V., & Kashima, Y. (2005). Fundamental dimensions of social judgment: Understanding the relations between judgments of competence and warmth. *Journal of Personality and Social Psychology*, 89, 899–913.

Kaplan, M. F., & Anderson, N. H. (1973). Information integration theory and reinforcement theory as approaches to interpersonal attraction. *Journal of Personality and Social Psychology*, 28, 301–312.

Martijn, C., Spears, R., van der Plight, J., & Jakobs, E. (1992). Negativity and positivity effects in person perception and inference: Ability versus morality. *European Journal of Social Psychology*, 22, 84–90.

Montoya, R. M., & Horton, R. S. (2004). On the importance of cognitive evaluation as a determinant of interpersonal attraction. *Journal of Personality and Social Psychology*, 86, 696–712.

Montoya, R. M., & Insko, C. A. (2008). Toward a more complex understanding of the reciprocity of liking effect. *European Journal of Social Psychology*, 38, 477–498.

Nunnally, J., & Bernstein, I. (1994). *Psychometric theory* (3rd ed.). New York: McGraw Hill.

Oden, G. C., & Anderson, N. H. (1971). Differential weighting in integration theory. *Journal of Experimental Psychology*, 89, 152–161.

Peeters, G. (1983). Relational and informational pattern in social cognition. In W. Doise, & S. Moscovici (Eds.), *Current issues in European social psychology* (pp. 201–237). Cambridge, UK: Cambridge University Press.

Peeters, G. (1992). Evaluative meanings of adjectives *in vitro* and in context: Some theoretical implications and practical consequences of positive-negative asymmetry and behavioral-adaptive concepts of evaluation. *Psychologica Belgica*, 32, 211–231.

Peeters, G. (2005). Good and bad for self and other: Evaluative meaning processes in social cognition. In B. Wojciszke (Chair), Agency and communion in social cognition. *Symposium held at the 14th General Meeting of the European Association of Experimental Social Psychology*, Wuerzberg, Germany.

Peeters, G., & Czapinski, J. (1990). Positive-negative asymmetry in evaluations: The distinction between affective and informational negative effects. In W. Stroebe, & M. Hewstone (Eds.), *European review of social psychology* (Vol. 1, pp. 33–60). London: Wiley.

Pett, M. A., Lackey, N. R., & Sullivan, J. J. (2003). *Making sense of factor analysis: The use of factor analysis for instrument development in health care research*. Thousand Oaks, CA: Sage Publications.

Pratto, F., & John, O. P. (1991). Automatic vigilance: The attention-grabbing power of negative social information. *Journal of Personality and Social Psychology*, 61, 380–391.

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in simple and multiple mediator models. *Behaviour Research Methods*, 40, 879–891.

Reeder, G. D., & Brewer, M. B. (1979). A schematic model of dispositional attribution in interpersonal perception. *Psychological Review*, 86, 61–79.

Rempel, J. K., Holmes, J. G., & Zanna, M. P. (1985). Trust in close relationships. *Journal of Personality and Social Psychology*, 49, 95–112.

Rempel, J. K., Ross, M., & Holmes, J. G. (2001). Trust and communicated attributions in close relationships. *Journal of Personality and Social Psychology*, 81, 57–64.

Rosenberg, S., Nelson, C., & Vivekananthan, P. (1968). A multidimensional approach to the structure of personality impressions. *Journal of Personality and Social Psychology*, 9, 283–294.

Simons, H. W., Berkowitz, N. N., & Moyer, R. J. (1970). Similarity, credibility, and attitude change: A review and a theory. *Psychological Bulletin*, 73, 1–16.

Singh, R., Ho, L. J., Tan, H. L., & Bell, P. A. (2007). Attitudes, personal evaluations, cognitive evaluation, and interpersonal attraction: On the direct, indirect, and reverse-causal effects. *British Journal of Social Psychology*, 46, 19–42.

Singh, R., & Ho, S. Y. (2000). Attitudes and attraction: A new test of the attraction, repulsion, and similarity-dissimilarity asymmetry. *British Journal of Social Psychology*, 39, 197–211.

Singh, R., Lin, P. K. F., Tan, H. L., & Ho, L. J. (2008). Evaluations, attitudes, and interpersonal attraction: Testing the hypothesis of weighting interference across responses. *Basic and Applied Social Psychology*, 30, 241–252.

Singh, R., Ng, R., Ong, E. L., & Lin, P. K. F. (2008). Different mediators of the age, sex, and attitude similarity effects in interpersonal attraction. *Basic and Applied Social Psychology*, 30, 1–17.

Singh, R., Onglatco, M. L. U., Sriram, N., & Tay, A. B. G. (1997). The warm-cold variable in impression formation: Evidence for the positive-negative asymmetry. *British Journal of Social Psychology*, 36, 457–477.

Singh, R., Simons, J. J. P., Seow, M. X., Shuli, S., Lin, P. K. F., & Chen, F. (2009). Attitude similarity-attraction relationship revisited: On the importance of trust. *British Journal of Social Psychology*, *48*, in press.

Singh, R., & Teoh, J. B. P. (1999). Attitudes and attraction: A test of two hypotheses about the similarity-dissimilarity asymmetry. *British Journal of Social Psychology*, *38*, 427–443.

Singh, R., & Teoh, J. B. P. (2000). Impression formation from intellectual and social traits: Evidence for behavioral adaptation and cognitive processing. *British Journal of Social Psychology*, *39*, 537–554.

Singh, R., & Tor, X. L. (2008). The relative effects of competence and likability on interpersonal attraction. *Journal of Social Psychology*, *148*, 253–255.

Singh, R., Yeo, S. E., Lin, P. K. F., & Tan, L. (2007). Multiple mediators of the attitude similarity-attraction relationship: Dominance of inferred attraction and subtlety of affect. *Basic and Applied Social Psychology*, *29*, 61–74.

Sloan, L. R., & Ostrom, T. M. (1974). Amount of information and interpersonal judgment. *Journal of Personality and Social Psychology*, *29*, 23–29.

Skowronski, J. J., & Carlston, D. E. (1987). Social judgment and social memory: The role of cue diagnosticity in negativity, positivity, and extremity biases. *Journal of Personality and Social Psychology*, *52*, 689–699.

Skowronski, J. J., & Carlston, D. E. (1989). Negativity and extremity biases in impression formation: A review of explanations. *Psychological Bulletin*, *105*, 131–142.

Stroop, J. R. (1935). Studies of interference in serial verbal reactions. *Journal of Experimental Psychology*, *18*, 643–662.

Stone, V. E., Cosmides, L., Tooby, J., Kroll, N., & Knight, R. T. (2002). Selective impairment of reasoning about social exchange in a patient with bilateral limbic system damage. *Proceedings of the National Academy of Sciences of the United States of America*, 99, 11531–11536.

Vonk, R. (1999). Effects of other-profitability and self-profitability on evaluative judgments of behaviors. *European Journal of Social Psychology*, *29*, 833–842.

Wentura, D., Rothermund, K., & Bak, P. (2000). Automatic vigilance: The attraction-grabbing power of approach and avoidance-related social information. *Journal of Personality and Social Psychology*, *78*, 1024–1037.

Wieselquist, J., Rusbult, C. E., Foster, C. A., & Agnew, C. R. (1999). Commitment, pro-relationship behavior, and trust in close relationships. *Journal of Personality and Social Psychology*, *77*, 942–966.

Williams, J., & MacKinnon, D. P. (2008). Resampling and distribution of the product methods for testing indirect effects in complex models. *Structural Equation Modeling*, *15*, 23–51.

Wojciszke, B. (2005). Morality and competence in person- and self-perception. *European Review of Social Psychology*, *16*, 155–188.

Wojciszke, B., Abele, A. E., & Baryla, W. (2009). Two dimensions of interpersonal attitudes: Liking depends on communion, respect depends on agency. *European Journal of Social Psychology*, in press.

Wojciszke, B., Brycz, H., & Borkenua, P. (1993). Effects of information content and evaluative extremity on positivity and negativity biases. *Journal of Personality and Social Psychology*, *64*, 327–335.

Wojciszke, B., Dowhyluk, M., & Jaworski, M. (1998). Moral and competence-related traits: How do they differ? *Polish Psychological Bulletin*, *29*, 283–294.

Zanna, M. P., & Hamilton, D. L. (1972). Attribute dimensions and patterns of trait inferences. *Psychonomic Science*, *27*, 353–354.