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Effectance Motivation and Self-validation in Interpersonal Attraction from Attitude Similarity

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Abstract

Effectance motivation -- a will for certainty and a feeling of being able to know and predict -- was proposed in the 1960s as the mechanism underlying the well-known attitude similarity effects on attraction (Byrne, Nelson, & Reeves, 1966). However, this motivation was largely discarded as an explanation when alternative mechanisms, such as positive affect, were identified (e.g., Byrne & Clore, 1970). The presence of alternative mechanisms need not preclude the role for effectance motivation. Therefore, the present authors investigated a sense of self-validation by the others' views as an additional mediator of attitude similarity effects on attraction. Across four experiments, self-validation mediated attitude similarity effects when measured alone (Experiment 1) and within sequential mediation patterns involving positive affect (Experiment 2A), trust (Experiment 2B), and respect and trust (Experiment 2C). Implications for multi-process explanations of attitude similarity effects on attraction are discussed.

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Effectance Motivation and Self-validation in Interpersonal Attraction from Attitude Similarity

Two persons are usually drawn to each other when they seek and validate their respective world views (Sullivan, 1953). In everyday life and the social-psychology literature, it has also been observed that the greater the similarity between attitudes of two persons, the greater is the attraction between them (Byrne, 1961). It was logical and correct, therefore, when validation, an important motivational determinant of generalized attraction, was proposed as one possible mechanism underlying the link between attitude similarity and attraction (Byrne, Nelson, & Reeves 1966; Palmer, 1969).

However, after a decade of work in the attraction paradigm, researchers abandoned the cognitive mechanism of validation in favor of an emotional mechanism (see Byrne, 1971). That is, similar attitudes were hypothesized to determine attraction to the extent they induce positive affect in the participants (Byrne & Clore, 1970). While we do not question the notion that positive affect can contribute to attitude similarity effects in attraction (Singh, 1974), we do believe that validation has not received adequate attention as a potential mediating variable (MV) in attitude similarity effects. In the current research, therefore, we revisit the role of a motivational mechanism of self-validation in attraction developing from similar attitudes.

Validation in psychological theories and research

According to Festinger (1950) "… an opinion, a belief, an attitude is 'correct,' 'valid,' and 'proper' to the extent that it is anchored in a group of people with similar beliefs, opinions, and attitudes" (p. 272). In seeking information about themselves and their beliefs, people prefer to evaluate themselves relative to objective or physical standards. In the realm of beliefs and opinions, however, there are

not such standards. Therefore, in the realm of opinions, people often look to the opinions of similar others as a benchmark for identifying "correct" opinions (Festinger, 1954).

The notion that people rely on others to validate their sense of their own attributes as well as their beliefs and attitudes has been key to several psychological theories (e.g., Festinger, 1954; Heider, 1958; Kruglanski, 1989; Morry, 2005, 2007; Reis & Shaver, 1988; Swann, Stein-Seroussi, & Giesler, 1992; White, 1959). Specifically, seeking accuracy and/or creating illusion of it in the immediate environment seem to satisfy one's mastery motivation (Pittman, 1998). It is unsurprising, therefore, that happily married couples provide a greater degree of mutual validation in problem-focused communications than do distressed couples (Gottman, 1979), and that self–partner similarities evoke feelings of being understood and validated by the partner in close relationships (Murray, Holmes, & Griffin, 1996, 2000).

Other psychological phenomena seem consistent with the possibility of motivated pursuit of self-validation as well. One is the *false consensus effect*, a tendency in people to assume that others hold attitudes and opinions similar to their own (e.g., Ross, Greene, & House, 1977). In attraction experiments, participants assume a high level of attitudinal similarity with peers in the condition of no-attitude information (Singh & Tan, 1992; Tan & Singh, 1995). It could be that peers do tend to hold similar attitudes, so one might argue that such tendencies are simply reflecting reality. However, part of that reality may be that people are motivated to seek out others who agree with them, and it is also possible that people assume greater similarity than actually exists. This seems to be the case in *attraction-similarity effects*. That is, liking another person results in assumption and/or perception of high similarity with that person (Byrne, 1971, p. 257; Morry, 2005, 2007). In particular, the higher the level of attraction (Marks & Miller, 1982) and the quality of relationship between two persons (Morry, Kito, & Ortiz, 2011), the greater is the assumed and/or perceived similarity between them.

Such assumed or perceived similarity can be illusory in that correlations between assumed attitudes of spouses are typically higher than those between their actual attitudes (Byrne & Blaylock, 1963). Literature on illusory similarity in relationship formation and maintenance suggests that seeking self-validation in everyday life might be one of the pervasive social motives (Pittman, 1998). Thus, self-validation holds merit as a possible mechanism underlying attitude similarity effects on attraction.

Self-validation as a mediator of attitude similarity effects

Byrne et al. (1966) attributed attitude similarity effects on attraction to the satisfaction of an *effectance motive* (White, 1959) -- an urge within people to understand their immediate environment accurately and to master it. Included in this urge were "… 'the drive to be logical, consistent, and accurate,' 'the need to be able to know and predict,' 'the desire for certainty,' and 'the evaluative drive'" (Byrne et al., 1966, p. 180). Thus, awareness of attitudes similar to those of the partner in a typical attraction experiment was interpreted as providing self-validation; that of attitudes dissimilar from those of the partner, in contrast, was viewed as resulting in self-doubt (cf. Festinger, 1954).

To demonstrate the causal role of consensual validation stemming from social comparison of one's attitudes with those of the interaction partner, Byrne et al. (1966) manipulated issue verifiability along with attitude similarity. Issues selected were such that the correctness of the views expressed on them was *unverifiable* (e.g., "I strongly believe that my church represents the one true religion." "I strongly believe that no church represents the one true religion."), *verifiable at present* (e.g., "An extremely small percentage of the public schools in the United States are racially integrated." "An extremely large percentage of the public schools in the United States are racially integrated."), or *verifiable in the future* (e.g., "The amount of integration in Southern schools will sharply decrease over the next five years" "The amount of integration in Southern schools will sharply increase over the next five years"). Consistent with Festinger's (1954) social comparison

notions, use of others' opinions should be more necessary (and, therefore, more helpful in satisfying effectance motivations if others agree with one's views) when external "objective" means of verification were not available. Consistent with the prediction, attitude similarity effects on attraction were the strongest when the correctness of the views expressed was *unverifiable* than when it was *verifiable at present* or *in the future*.

Palmer (1969) also argued that effectance motive could include the *need for evaluation* (i.e., checking on accuracy of an opinion regardless of one's own current position) and the *need for vindication* (i.e., confirming one's opinion currently held). Supporting the activation of the need for vindication within the attraction paradigm, attitude similarity effects on attraction were stronger when Palmer portrayed the partner as *competent* rather than *incompetent* at forming valid opinions on important moral, political, and social issues (see Byrne, 1971, Table 13-8, p. 355).

Not all results examining effectance motivation were particularly straightforward, however. For example, Byrne and Clore (1967) had participants watch movies in which sequences and contents were pre-scaled as *neutral predictable*, *arousing predictable*, and *arousing unpredictable* – the idea being that effectance motives would be strongest after viewing movies that were increasingly arousing and unpredictable. This motivation being present when they encountered information about an agreeing or disagreeing other was supposed to increase the use of the others' views in liking or disliking the other. Consistent with the presumed manipulation of effectance motive, assessed effectance arousal (responses to items dealing with "feelings unreality, feelings like those when dreaming, uneasiness, confusion, and the desire to know the thoughts of others") increased systemically from the neutral predictable movie to the arousing unpredictable movie. Nonetheless, the induced arousal did not moderate attitude similarity effects on attraction. For example, a median split of participants in the unpredictable movie condition into low *versus* high

arousal groups yielded a significant, but *opposite*, moderation of attitude similarity effects by the aroused effectance motive. That is, attitude similarity effects were stronger with participants who reported lower rather than higher arousal. Subsequent experiments showed that attitude similarity effects could be stronger when effectance arousal is moderate rather than low or high. Although Byrne and Clore (1967) claimed "… support for a hypothetical motivational construct which mediates the relationship between attitude statements and attraction …" (p. 16), the data were not clear in associating the greatest need for self-validation with the strongest attitude similarity effects on attraction. Indeed, there were some instances in which lower levels of effectance motivation were associated with stronger attitude similarity effects than higher levels of effectance motivation. Perhaps this mixed set of findings paved the way for examinations of different potential mechanisms.

Soon after initial examinations of effectance motivation, Byrne and Clore (1970) proposed that similar and dissimilar attitudes represent rewards and punishments, respectively, and that the affect induced by various types of reinforcement is responsible for attitude similarity effects on attraction. Some more recent research measuring positive affect has produced evidence of mediation by positive affect (Singh, Yeo, Lin, & Tan, 2007; Singh, Ng, Ong, & Lin, 2008). However, the presence of one or more alternative mediators does not rule out the possible added role of self-validation (cf. Rucker, Preacher, Tormala, & Petty, 2011, on identification of additional mediators even when initial evidence suggests "full" mediation by previously identified mediators). Self-validation could serve as a basis for the production of positive affect (when the other person agrees) or could serve as a parallel mechanism underlying attitude similarity effects. Thus, we further investigated self-validation as a measure of the extent to which another person's views satisfy the effectance motive, seeking more direct support for self-validation as a mechanism underlying attitude similarity effects on attraction.

Constructing a case for self-validation as a mediator of attitude similarity effects on attraction

In previous studies investigating potential mediators of attitude similarity effects, the initial approach was to identify a single mediator. These studies individually uncovered inferred attraction of the partner toward the participant (Condon & Crano, 1988; Montoya & Horton, 2012), positive affect in the participant (Byrne & Clore, 1970; Singh, Yeo et al., 2007, Experiment 1), cognitive evaluations of respect for the partner's competence (Montoya & Horton, 2004; Singh, Ho, Tan, & Bell, 2007), and trust in the partner's benevolent intent (Montoya & Insko, 2008; Singh et al., 2015, Experiment 1) as potential mediators. These single-mediator studies could identify a given variable as a plausible contributor to attitude similarity effects but could not address whether these MVs were conceptually and empirically distinguishable from each other. These models were also incapable of examining whether a single mediator contributed to attraction above and beyond the other mediators or the relative strength of the different mediators when included alongside one another.

In order to compare the potential mediators, researchers first examined *parallel-mediation models.* In such models, the mediating variables were assumed to independently transmit the effect of the independent variable (IV) of attitude similarity to the dependent variable (DV) of attraction (e.g., Singh, Chen, & Wegener, 2014; Singh et al., 2008; Singh, Yeo et al., 2007). These studies in which alternative individual mediators were measured, parallel-mediation models suggested that positive affect and respect (cognitive evaluation) are weaker mediators than inferred attraction (see Singh et al., 2014). In fact, in some cases, positive affect failed to contribute to liking of the partner (Singh, Yeo et al., 2007) when included alongside alternative mediators.

Advances in statistical methods for sequential mediation allowed researchers to examine possible ordering of MVs rather than treating them as independent mechanisms. In such models, each preceding mediator also influences the succeeding mediator to further transmit the effects of the IV

to the DV (e.g., Singh et al., 2015). Because such sequential-mediation models examine the indirect effect of an IV via one MV while controlling for effects via the alternative MV(s), they can be useful in suggesting which of the MVs studied might be relatively *distal* or *proximal* to the DV (Hayes, 2013).

When tested, the sequential-mediation models account for attitude similarity effects on attraction better than parallel-mediation models (e.g., Singh et al., 2014; cf. Singh et al., 2008, 2015; Singh, Yeo et al., 2007). Sequential models (e.g., Singh et al., 2015) and experiments (e.g., Montoya & Insko, 2008) suggest that trust could serve as a mediator proximal to attraction because it is influenced by not only attitude similarity but also by preceding mediators of positive affect, respect, and/or inferred attraction (and by direct manipulations of liking by the other; Montoya & Insko, 2008). Of particular interest in the current study, positive affect that did not qualify as a mediator of attitude similarity effects in some parallel-mediation models (Singh et al., 2015, Figure 3, p. 16) did produce reliable sequential effects via inferred attraction and/or trust when affect was treated as a distal mediator (Singh et al., 2015, Note 5, p. 20).

Because a sequential-mediation model has seemed superior to parallel mediation in previous research, specifying causal orders of the MVs in attitude similarity effects on attraction also assumed importance in the current research. As already noted, early studies posited that attraction ensues from whether attitudes of the partner validate (Byrne et al., 1966) or vindicate (Palmer, 1969) those of the participant. Validation and vindication were parts of the effectance motive (Byrne, 1971; Byrne & Clore, 1967). Nevertheless, there was no test of mediation of attitude similarity effects by the measured motivational mechanism in any of these studies. Even if the previous research had included appropriate measures of self-validation to use as mediators, few mediational analyses were conducted at that time, and the other mechanisms potentially responsible for attitude similarity

effects on attraction had not yet been discovered to test alongside the potential self-validation effects. Thus, in the current research, we examined self-validation as a new mediator of attitude similarity effects on attraction (Experiment 1) and also measured this new mediator alongside alternative mediators of positive affect (Experiment 2A), trust (Experiment 2B), or respect and trust (Experiment 2C). By placing the measured multiple MVs in different sequences (Hayes, 2013), we further investigated whether placements of self-validation and trust as the mediators distal and proximal to attraction might be empirically most defensible.

Experiment 1

As in Byrne et al. (1966), we crossed verifiability of one's views on an issue (view verifiability) with attitude similarity between the partner and the participant. More important, and unlike in Byrne et al, we measured self-validation before attraction to examine the role of validation when the "correctness" of views was relatively verifiable or not. We predicted that both the self-validation and attraction responses should be affected more strongly by attitude similarity when the views expressed would be low rather than high in verifiability. If effects of attitude similarity on self-validation are moderated by verifiability, however, then the role of self-validation in attitude similarity effects on attraction should also be stronger when verifiability is low rather than high (i.e., moderated mediation; Muller, Judd, & Yzerbyt, 2005; Wegener & Fabrigar, 2000). Thus, novelty of our first experiment lied in simultaneously obtaining experimental (Spencer, Zanna, & Fong, 2005) as well as correlational (Baron & Kenny, 1986) evidence for mediation of attitude similarity effects on attraction by self-validation.

Method

Participants and design

Participants (38 men and 146 women) were from an introductory psychology module at the National University of Singapore. Participation fulfilled course requirements. We randomly assigned them to one of the four cells of a 2 (IV of attitude similarity: dissimilar (0) *vs*. similar (1)) x 2 (Moderating variable (ModV) of view verifiability: high (0) *vs*. low (1)) between-participants factorial design (*n*s = 46 per cell). The digit in the parenthesis beside the level denotes the corresponding categorical code.

Manipulations and measures

View verifiability. We selected 12 contemporary controversial issues of *social networking websites (e.g., MySpace, Facebook), abortion, integrated resorts (casinos), environmental protection, protests and demonstrations, women in politics, demolition of old buildings, gay and lesbian rights, cohabitation, sex education, care of elderly,* and *foreigners working/settling in Singapore* but expressed them such that the views expressed differed in verifiability. In the condition of high view verifiability (Survey A), for example, the six statements about each issue represented the participant's confidence in a fact about it (e.g., *I extremely doubt that the first social networking website was launched in 1997*; … *doubt* …; … *slightly doubt* …; *I am slightly certain* …; … *certain* …; and … *completely certain* …). In the condition of low verifiability (Survey B), in contrast, the six statements about the issue represented the attitudinal position (opinion) of the participant on it (e.g., *I am very much against the use of social networking websites*; *... against*…; *... mildly against* …; *... mildly in favor of* …; *... in favor of* …; and *very much in favor of*… .).

To confirm our operationalization of view verifiability, we solicited assistance of another groups of 20 participants. Specifically, we asked them to judge whether views expressed by the six statements about each issue in the two surveys were verifiable for their correctness by any Search Engine in the Internet. Judges unanimously opined that the accuracy of views expressed in Survey A

was *easily verifiable* but the accuracy of views expressed in Survey B was *never verifiable*. Thus, as noted earlier, in high verifiability conditions, people should not feel as motivated to look to others' views, because they can easily ascertain the truth or falsity of the statements externally (i.e., objectively rather than through social comparison). In low verifiability conditions, however, it should be more necessary for people to look to the views of others in order to gauge whether their own views make sense or not.

Attitude dissimilarity versus similarity. Based on the responses in the initial survey, we prepared a participant-specific bogus partner's attitude survey. Toward that end, we followed Byrne's (1971) *constant discrepancy procedure*. We checked a response on the same side and just one statement away from the participant's own response to an issue to create attitude similarity between the participant and the bogus partner. To create attitude dissimilarity, in contrast, we checked a statement that was three-statements apart and on the other side of the attitude scale. To make the manipulations of attitude similarity realistic, moreover, we used inks of different colors across simulated surveys distributed in every session of data collection.

Measures of self-validation and attraction. For assessing self-validation, we used four single adjectives of *confirmed, assured, validated,* and *approved* mixed among six other filler items. Participants indicated whether they felt as such after knowing the views of the interaction partner. Responses were taken along 7-point scales: 1 (*strongly disagree*) and 7 (*strongly agree*).

As in recent studies (Singh et al., 2009, 2014, 2015), we measured behavioral attraction of the participant toward the partner by responses to four attraction items (i.e., I would like to meet my partner; … get to know this person better; I look forward to meeting my partner; and … to working with my partner). These four items were mixed with six filler items in a Partner's Opinion

Questionnaire (POQ). Response to each item was again sought along a 7-point scale: 1 (*strongly disagree*) and 7 (*strongly agree*).

Procedure

We collected data in two sessions. In the initial session, participants completed an attitude survey, and signed up for an interaction study scheduled in the next week. In the second session, a female experimenter met them in small groups. She instructed participants that each of them would be interacting with a partner of the same age and sex in a later project. Before the actual meeting between partners, however, an impression of the interaction partner had to be formed from his or her responses to an attitude survey. Reminding the participants that they themselves had responded to such an attitude survey earlier, the experimenter distributed the booklet that was specifically tailored for each participant. The booklet had the bogus attitude survey (A or B), the Feeling Scale to measure perceived self-validation, and the POQ in that order.

Participants examined the attitude survey, formed an opinion of the partner for 1 min, and then responded to the two scales that followed. After collecting the completed booklets, the experimenter informed the participants that there was no actual interaction session. Before ending the session, she debriefed and thanked the participants.

Results

Construct distinction

To confirm the distinction between self-validation and attraction, we first performed a two-factor confirmatory factor analysis (CFA) of the eight responses in AMOS with a correlation between the two factors. In another one-factor CFA, we specified the responses to the eight items as one factor. The two-factor measurement model yielded a much better fit to the data: $\chi^2(19) = 44.79$, $p < .001$, non-normed fit index/Tucker-Lewis index (NNFI/TLI) = .96, incremental fit index (IFI) = .98, root

mean square error of approximation (RMSEA) = .09, standardized root mean residual (SRMR) = .04, than the alternative single-factor model, $\chi^2(20) = 327.15$, $p < .001$, NNFI/TLI = .58, IFI =.70, RMSEA = .29, SRMR = .18 [$\chi^2_{\Delta}(1) = 282.36$, $p < .001$]. Thus, we treated self-validation and attraction as distinct constructs.

The Cronbach alphas (αs) of the self-validation and attraction responses were high (see Table 1). We averaged responses to the four respective items of self-validation and attraction to form separate composite measures. The correlation between the two measures was moderately positive, $r(182) = .44$, $p < .01$.

Causal effects

We performed a 2 x 2 ANOVA on each response to examine whether the level of verifiability influenced the extent to which attitude similarity affected the responses taken. The interaction effect was significant for self-validation, $F(1, 180) = 4.96$, $p = .03$, $\eta_p^2 = .03$, and attraction, $F(1, 180) = 4.85$, $p = .03$, $\eta_p^2 = .03$. To interpret the interaction effects, we performed tests of simple effects of the IV of attitude similarity at the different levels of the ModV of verifiability. In Table 1, we indicate the difference between the means (*M*s) by the corresponding superscripts (for the row *M*s) and by the subscripts (for the column *M*s).

Attitude similarity created a larger difference in self-validation when views expressed were low, $F(1, 90) = 47.43$, $p < .001$, $\eta_p^2 = .35$, rather than high, $F(1, 90) = 22.34$, $p < .001$, $\eta_p^2 = .20$, in verifiability. Likewise, attitude similarity created a larger difference in attraction means when views expressed were low, $F(1, 90) = 45.53$, $p < .001$, $\eta_p^2 = .33$, rather than high, $F(1, 90) = 21.04$, $p < .001$, $\eta_p^2 = .19$, in verifiability.

The similarity effect was significant for self-validation, $F(1, 180) = 69.10$, $p = .001$, $\eta_p^2 = .28$, and attraction, $F(1, 180) = 65.86$, $p = .001$, $\eta_p^2 = .27$. There was no overall main effect of verifiability

on self-validation, $F(1, 180) = 0.90$, $p = .34$, $\eta_p^2 = .01$, but there was a main effect of verifiability on attraction, $F(1, 180) = 10.03$, $p = .005$, $\eta_p^2 = .05$. Collectively, these results suggest that similar attitudes help to create attraction at least in part because the similarity helps people to validate their views (by comparing their own views with those held by other people). Similar patterns in the two interaction effects form an experimental evidence for the hypothesized mediation of attitude similarity effects on attraction by self-validation of the effectance motivation.

Moderated mediation analysis

If verifiability affected attraction by determining the extent to which a person uses others' views as a means to validate the correctness of his/her own views, then a persons' perception of the validity of his/her viewers should play a stronger role when the belief is not otherwise verifiable. To test this possibility, we performed a moderated mediation analysis by PROCESS Model 8 (Hayes, 2013) in SPSS. For this analysis, we specified attraction as the DV, attitude similarity as the IV, verifiability as the ModV, and 5000 bootstrap re-samples for estimating the 95% bias-corrected confidence intervals (CI) of the conditional indirect effects (IEs) of the IV at the two levels of the ModV. We treated the IE as significant if its 95% CI excluded zero.

As expected, the conditional IE of attitude similarity effects on attraction was stronger when verifiability was low, IE = 0.29, 95% CI: [0.07, 0.55], rather than high, IE = 0.17, 95% CI: [0.05, 0.36]. Likewise, the conditional direct effects (c's) of attitude similarity on attraction was stronger when verifiability was low, $c' = 1.05$, $t = 5.09$, $p < .001$, rather than high, $c' = 0.60$, $t = 3.17$, $p = .002$. However, the moderated effect on attraction was rendered statistically nonsignificant, $c'_{IV \times ModV} = 0.45$, $t = 1.73$, $p = .08$, by self-validation.

Discussion

There are three key results of Experiment 1. First, self-validation is empirically distinguishable from attraction. Second, the manipulated verifiability of the belief moderates the similarity effect on both self-validation and attraction. Specifically, the sense of validation given by the others' views plays a significantly stronger role in attraction when beliefs are not otherwise verifiable than when they are verifiable. Finally, self-validation fully accounted for the moderation of attitude similarity effects in attraction but not the conditional IEs of attitude similarity effects at the two levels of verifiability. The first experimental-correlational finding supports the mediating role of self-validation in attraction and the second finding suggests that there may be mediator of the similarity effect in addition to self-validation.

As noted earlier, consensual validation of attitudes via social comparison with those of the partner was originally proposed as the sole mediator of attitude similarity effects on attraction (Byrne & Clore, 1967; Byrne et al. 1966; Palmer, 1969). However, Byrne and Clore (1970) abandoned such self-validation for another mediator -- positive affect -- without examining how the two constructs might be related. Given the convergent evidence for mediation of attitude similarity effects on attraction by self-validation in Experiment 1, we examined the relation between self-validation and positive affect in Experiment 2A. We saw merit in precedence of self-validation to positive affect because there were already suggestions that perceiving similarities with others validates one's own beliefs (Reis & Shaver, 1988) which, in turn, boosts one's positive mood (Morry, 2007). Because of the recent evidence for sequential mediation of attitude similarity effects on attraction by cognitive variables of respect for (Montoya & Horton, 2004; Singh, Ho et al., 2007) and trust in (Singh et al., 2015) the partner, we further investigated the relation of self-validation with trust in Experiments 2B and with both trust and respect in Experiment 2C.

Experiments 2A, 2B, and 2C

In Singh et al. (2015), positive affect did not mediate the SAL in a parallel-mediation analysis that included respect, inferred attraction, and trust as the competing MVs. In sequential-mediation analysis, however, the very same positive affect successfully transmitted attitude similarity effects to attraction through the succeeding MVs of inferred attraction and/or trust. Also, respect and inferred attraction had reliable sequential mediation effects on attraction via the succeeding MV of trust.

Given the preceding sequential possibilities and the complexities involved in testing such models with multiple mediators, we performed three separate experiments. Specifically, self-validation was measured before (i) positive affect in Experiment 2A, (ii) trust in Experiment 2B, and (iii) both respect and trust in Experiment 2C. If the suggested sequential–mediation model has merit, the effects of the preceding mediator via the succeeding one(s) should be more likely at one causal order of the MVs than at the alternative causal orders. Of greatest interest was the possibility that self-validation might precede most of the multiple mediators identified so far.

Method

Participants and designs

Participants in Experiment 2A (42 men and 118 women), 2B (51men and 109 women), and 2C (44 men and 112 women) were from the same population as in previous experiments. We crossed order of mediator measurement with attitude similarity, and measured self-validation along with positive affect in the participants (Experiment 2A) or trust in the partner (Experiment 2B). In Experiment 2C, we used three levels of attitude similarity and measured self-validation along with both respect and trust responses. Thus, the designs were 2 (order of mediator measurement: self-validation first *vs*. self-validation last) x (attitude similarity: dissimilar *vs*. similar) between-participants factorial (*n*s = 40 per cell) in Experiments 2A and 2B, and 2 (order of mediator measurement: self-validation first

vs. self-validation last) x 3 (proportion of similar attitudes: 0, 0.5, or 1) between-participants factorial (*n*s = 26 per cell) in Experiments 2C.

Materials, procedure, and measures

We used nine of the 12 issues from Survey B of Experiment 1 plus three new ones (i.e., *retirement age, increasing the number of seats for foreign students in local universities,* and *compulsory campus housing* to manipulate attitude similarity between the participant and the partner. The manipulations of similar and dissimilar attitudes, the measurement of self-validation and attraction responses, and the procedure of data collection paralleled those of Experiment 1.

Following Singh et al. (2014, 2015), we measured positive affect in the participants in Experiment 2A by taking their responses to *active, attentive, inspired,* and *determined* items that overlapped with the *interest* and *activation* dimensions of positive affect (Egloff, Schmukle, Burns, Kohlmann, & Hock, 2003). These items were mixed among four negative affect items.[1]

To assess trust in the partner in Experiment 2B, we added four relevant (*My partner would look out for my interests; ….. act benevolently toward me; … make me feel secure;* and *I would find this partner to be dependable.*) and six filler items to the POQ of Experiment 1. To measure respect for the partner in Experiment 2C, we included additional four items on respect for the competence of the partner (i.e., *My future interaction partner will probably be successful in life*; *…would achieve all of his or her goals*; *… is probably good at everything that s/he does*; and *… would make a good leade*r.) among 6 fillers to the POQ used in Experiment 2B. The randomized trust and respect items always preceded the attraction ones in the POQ. Essentially, then, the items measuring positive affect, respect, trust, and attraction were the same as those in Singh et al. (2015).

Results

Construct distinction

To reaffirm the distinction between self-validation and attraction found in Experiments 1, we first pooled the data from Experiment 2A-2C (N = 476) and performed a two-factor CFA of the eight responses. In another one-factor CFA, we specified the eight responses to be one factor. The two-factor measurement model provided a much better fit to the data: $\chi^2(19) = 42.95$, $p < .001$, NNFI/TLI = .98, IFI = .99, RMSEA = .05, SRMR = .04, than did the single-factor model, $\chi^2(20) = 592.94$, $p < .001$, NNFI/TLI = .61, IFI = .72, RMSEA = .25, SRMR = .14[$\chi^2_{\Delta}(1) = 549.99$, $p < .001$], lending strong confirmation of construct distinction. The αs of the self-validation and attraction measures were .86 and .88, respectively, and the positive correlation between them was again moderate, $r(474) = .49$, $p < .01$.

We also confirmed the distinction between the mediators measured across the three experiments. For this purpose, we compared the fit indices from the two-factor CFA of the eight responses in Experiment 2A and 2B and from the three-factor CFA of the 12 responses in Experiment 2C with those from an alternative single-factor CFA. In all three instances, the fit indices were more satisfactory from CFAs for the hypothesized structural model than for the alternative one. Importantly, the drop in χ^2 from the hypothesized model to the alternative model was substantial, $\chi^2_{\Delta s}(1) = 37.44$ and 92.16 for Experiment 2A and 2B, respectively, and $\chi^2_{\Delta s}(3) = 117.43$ for Experiment 2C, ps < .001. Similar satisfactory fits were also obtained when all responses of Experiments 2A and 2B were subjected to separate three-factors CFAs and those of Experiment 2C to a four-factor CFA. Table 2 lists high αs of all measures and moderate correlations among them.

Similarity effects

Experiments 2A-2B. In separate 2 x 2 ANOVAs, we did not find any evidence for the moderation of the attitude similarity effect on any response by the order of moderator measurement. Thus, we tested the significance of the difference between the two attitude similarity conditions using independent-

group *t* tests and estimated the effect size (ES) using *r* as an index. We report the attitude similarity effects on the attraction DV and the two mediators in Experiments 2A and 2B in the top and bottom parts of Table 3, respectively. In each experiment and on both mediators as well as the attraction DV, responses were significantly higher when the partner's attitudes were similar to rather than dissimilar from those of the partner.

Experiment 2C. Results were similar in Experiment 2C. The attitude similarity effect was significant for self-validation, $F(2, 150) = 22.80$, $p < .001$, $\eta_p^2 = .23$, respect, $F(2, 150) = 15.88$, $p < .001$, $\eta_p^2 = .18$, trust, $F(2, 150) = 26.02$, $p < .001$, $\eta_p^2 = .26$, and attraction, $F(2, 150) = 5.39$, $p = .005$, $\eta_p^2 = .06$. In each case, means increased as a positive linear function of proportion of similar attitudes (see Table 4). The interaction between order of mediator measurement and attitude similarity was significant for self-validation, $F(2, 150) = 8.50$, $p = .001$, $\eta_p^2 = .10$, but not for attraction, $F(2, 150) = 2.05$, $p = .13$, $\eta_p^2 = .03$.[2]

Mediation Analyses

Single mediator analyses. We first conducted mediation analyses for each potential mediator as the sole mediator for Experiments 2A-2C by PROCESS Model 4 (Hayes, 2013) in SPSS. In Experiments 2A and 2B, the categorical levels of attitude similarity were used (with dissimilar attitudes coded as 0 and similar attitudes coded as 1). In Experiment 2C, the levels of attitude similarity (0, .5, and 1) were treated as a continuous predictor.

Each potential mediator produced significant indirect effects when treated as a single mediator. That is, in Experiment 2A, there were significant indirect effects when self-validation was treated as the mediator, *IE* = 0.19, 95% CI: [0.08, 0.36], and when positive affect was treated as the mediator, *IE* = 0.30, 95% CI: [0.15, 0.50]. In Experiment 2B, there were significant indirect effects when self-validation was treated as the mediator, *IE* = 0.55. 95% CI: [0.33, 0.83], and when trust was

treated as the mediator, *IE* = 0.92, 95% CI: [0.64, 1.26]. In Experiment 2C, the indirect effects of attitude similarity on attraction were significant via self-validation, *IE* = 0.43, 95% CI: [0.25, 0.68], respect, *IE* = 0.43, 95% CI: [0.20, 0.72], and trust, *IE* = 0.72, 95% CI: [0.43, 1.07]. Thus, self-validation acted as an additional mediator of attitude similarity effects on attraction in each case.

Parallel-mediation models. We conducted separate parallel-mediation analyses for the data of each experiment by the same PROCESS Model 4. The difference was that we entered the two (or three) measured mediators simultaneously. We display results from Experiments 2A, 2B, and 2C in the top, center, and bottom diagrams of Figure 1, respectively. Given that the mediators and the IV were entered simultaneously to predict the DV, the respective path coefficients of *b* (i.e., the MV effect on the DV) and *c'* (i.e., the direct effect of the IV on the DV) in each diagram represent the partial influences.

Four results are evident. First, the *b* coefficients for self-validation (i.e., influences of self-validation on attraction above and beyond the other potential mediator or mediators in the model) are highly variable across experiments: It is nonsignificant in Experiment 2A, $t = 1.59$, $p = .11$, highly significant in Experiment 2B, $t = 5.49$, $p < .001$, and marginal in Experiment 3C, $t = 1.94$, $p = .054$. Consequently, the indirect effects of attitude similarity via self-validation was not significantly greater than zero in Experiment 2A, *IE* = 0.07, 95% CI: [-0.02, 0.19], but it was marginal in Experiment 2C, *IE* = 0.17 [95% CI: 0.00, 0.39], and significantly greater than zero in Experiment 3B, *IE* = 0.42 [95% CI: 0.22, 0.68]. Second, positive affect in Experiment 2A, *IE* = 0.28 [95% CI: 0.15, 0.45], and trust in both Experiment 2B, IE = 0.57 95% CI: [0.27, 0.91], and Experiment 2C, *IE* = 0.51 95% CI: [0.24, 0.89], reliably mediated attitude similarity effects on attraction. Third, respect did not significantly mediate in Experiment 2C when analyzed alongside trust and self-validation, *IE* = 0.16, 95% CI: [-0.01, 0.40]. Finally, the sizes of the indirect effects in each experiment, regardless

of whether they were significant or nonsignificant, did not differ from each other. Collectively, these results suggest that self-validation may appear relatively early in any mediational chain. That is, an early mediator (distal to the DV) might often have less independent influence on the DV when mediators later in the sequence are also included in the model (cf. Singh et al., 2014, 2015; Singh, Yeo et al., 2007 for potential ordering of measured variables other than self-validation).

Two-mediator sequential-mediation analyses. We performed two sequential-mediation analyses for Experiments 2A and 2B using PROCESS Model 6 (Hayes, 2013). In the first analysis, we specified self-validation and the previously established mediator as the respective MV_1 and MV_2. Thus, we estimated sequential dependency (d_{21}) of MV_2 (positive affect or trust) on MV_1 of self-validation and partitioned the IE via MV_2 into two sources, one coming from preceding MV_1 (IE via $MV_1 \rightarrow MV_2 = a_1d_{21}b_2$) and another stemming from the IV as in the parallel-mediation models tested previously (i.e., IE via $MV_2 = a_2b_2$). In the second analysis, we placed self-validation after the competing mediator. We present results from Experiments 2A and 2B in the left and right sides and from Sequential-mediation Models 1 and 2 in the top and bottom parts of Figure 2, respectively.

We conducted three sets of similar sequential two-mediator analyses for the data of Experiment 2C, taking two mediators at a time. That is, we pitted self-validation against trust in the first pair of analyses, self-validation against respect in the second pair of analyses, and respect against trust in the final pair of analyses. We present results from these 2-mediator analyses (Self-validation *vs*. Trust; Self-validation *vs*. Respect; and Respect *vs.* Trust) in the left, center, and right sides and the two possible orders of the mediators in the top and bottom parts of Figure 3, respectively. Table 5 lists the indirect effects and their corresponding 95% CI. The three indirect effects sharing the same superscript in an analysis did not differ significantly from each other.

The path coefficients displayed in Figures 2 and 3 and the indirect effects reported in Table 5 clearly suggest a sequential ordering of self-validation and positive affect. In Experiment 2A, for example, the sequence of self-validation followed by positive affect significantly influenced attraction, but the sequence from positive affect to self-validation did not. The results were a bit more mixed when examining potential ordering of self-validation and trust. In Experiment 2B, the sequence of trust followed by self-validation affected attraction more strongly than the sequence of self-validation followed by trust (though that sequence was also significantly different from zero). In Experiment 2C, however, the sequence of self-validation followed by trust affected attraction more strongly than the sequence of trust followed by self-validation (though, again that sequence was also significantly different from zero). Thus, the two-mediator analyses allowed for either ordering of self-validation and trust. The two-mediator analyses were also equivocal regarding the ordering of self-validation and respect, with both sequences producing roughly equivalent indirect effects. Regarding respect and trust, however, similar to previous studies, the sequence of respect followed by trust produced a stronger indirect effect on attraction than the sequence of trust followed by respect (cf. Singh et al., 2015).

Three-mediator sequential-mediation analyses. We further checked on potential sequences of the mediators by evaluating the four 3-MV sequential-mediation models exhibited in Figure 4 (informed by both the previous 2-mediator models and previous research, e.g., Singh et al., 2007, 2015). The first model placed self-validation, respect, and trust at the first, second, and third positions, respectively. Placing self-validation or respect as the last mediator, most proximal to attraction, weakened the sequential indirect effect (see Table 6). That is, the model placing self-validation first in the sequence and trust last produced the strongest sequential indirect effect. Together, these data suggest that self-validation can contribute substantially to attitude similarity effects on attraction, and

that the impact of self-validation seems greatest when treated as an early mediator in potential sequences of mediators. That is, when self-validation was placed later in the sequence (i.e., after positive affect in Experiment 2A or in the second or third position in Experiment 2C), it produced weak influences on any later mediators or on the DV of attraction. When placed earlier in the sequence, however, self-validation was strongly influenced by attitude similarity and produced strong influences on succeeding mediators (that were then more successful in transmitting the effects of attitude similarity and self-validation to the DV of attraction).

Discussion

We obtained four key findings from Experiments 2A-2C. First, self-validation is a reliable (and replicable) mediator of attitude similarity effects on attraction, as Byrne et al. (1966) and Palmer (1969) had originally envisaged. From this point of view, Byrne and Clore (1970) were perhaps premature in abandoning the effectance motive aroused by attitudes for positive affect induced by reinforcing stimuli. When seeking only a single explanation, one can imagine that perceptions of belief validity might not seem as plausible or strong as some of the other potential mediators (as seen in some of the parallel-mediator analyses). However, when considering a more complicated explanation that includes a larger number of potential mechanisms, self-validation seems to play a role in carrying effects of attitude similarity through positive affect, respect, and trust to attraction.

The current research also buttresses recent work suggesting that trust is a key mediator of attitude similarity effects on attraction (Singh et al., 2015). Whenever trust was included in the mediation model, there was no remaining direct effect of attitude similarity on attraction (whereas such direct effects remained significant when trust was not included in the model as a mediator). The overall network of potential mediators that might carry effects of manipulated attitude similarity to

attraction seems broadly consistent with the order of Attitude similarity → Self-validation → Positive affect → Respect → Trust → Attraction.

General Discussion

Role of self-validation

Findings of the current research indicate that attitude similarity effects on attraction can indeed be explained better by including self-validation among previously known mediators (Singh et al., 2015) than by excluding it (cf. Byrne & Clore, 1970). By recognizing a role for self-validation, we can easily account for moderation of attitude similarity effects by issue verifiability (Byrne et al., 1966) and the partner's competence for vindicating the participant's opinions (Palmer, 1969). This view is further strengthened by our demonstrated difference in similarity effects based on beliefs about facts *versus* opinions (where facts were viewed as more easily verified separate from others' opinions than were opinions; Experiment 1). By comparing similarity effects based on beliefs about facts *versus* opinions, we conceptually replicated moderation of similarity effects by view verifiability. More important, we additionally showed its moderated mediation. Such simultaneous experimental and correlational approaches to mediation (Spencer et al., 2005) helps to show that consensual validation and vindication of the effectance motive plays a role in similarity-attraction effects.

In impression formation (Fiske, Cuddy, & Glick, 2007) and interpersonal attraction (Montoya & Horton, 2013, 2014), choice of an interaction partner has typically been explained through the partner's willingness and capacity to cooperate with the other person. Whereas willingness can be assessed, in part, by either inferred attraction or trust in the benevolent intent of the other, capacity is typically assessed by respect for the partner's competence. However, growing evidence for mediation of attraction by positive affect (e.g., Singh et al., 2014, 2015) and the current evidence of a role for self-validation suggest that a full understanding of attraction would benefit from consideration of

more than these two relatively-cognitive beliefs about the partner. Adding positive affect to the two cognitive processes of respect and trust is necessary but might still be insufficient. At present, we propose that a general model of interpersonal attraction should also incorporate some form of effectance motivation (Pittman, 1998) as well as positive emotion (Byrne & Clore, 1970) in the participants with their cognitive evaluations of respect for and trust in the partners as well.

Because inferred attraction seemingly fell between respect and trust in generating attraction (Singh et al., 2015) and both inferred attraction and trust have been taken as proxies of the partner's willingness to cooperate (Montoya & Horton, 2014), we did not pit self-validation against inferred attraction. It could be that perceptions of the other validating one's views would also be related to a sense that the other person is likely to be friendly or "attracted to" the perceiver. However, validation of one's views and general liking seem to be conceptually separable. In addition, the current evidence suggests that self-validation may play a different role in the mediational sequence than has been previously identified for inferred attraction. We welcome future research that relates self-validation and inferred attraction. Perhaps future research will manipulate each of the variables and examine the extent to which such manipulations influence mediators that have been identified in previous and the current research.

Causal orders of mediators

Previous work suggested that the similarity-attraction link could be represented better when positive affect, respect, and inferred attraction are treated as sequential (Singh et al., 2014) rather than parallel (Singh, Yeo et al., 2007, Singh et al., 2008) processes. Moreover, when trust that is so central to acquaintance (Cottrell, Neuberg, & Li, 2007) is considered as an additional MV, positive affect and trust stand out as the mediators distal and proximal to attraction, respectively (with respect and inferred attraction more likely to fall between positive affect and trust; Singh et al., 2015).

Our current findings further clarify potential mediators and causal orders of the mediators in a number of notable ways. First, self-validation measured alone mediates attitude similarity effects much like the other previously identified mediators (see Montoya & Horton, 2014; Singh et al.,, 2014, 2015). Second, self-validation may determine attraction, in part, by boosting positive affect (cf. Morry, 2007; Reis & Shaver, 1988) as well as respect for the partner and creating trust in him or her (cf. Singh et al., 2015). Third, the same self-validation that produces the sequential effect on positive affect yields its own and sequential effects when analytically pitted against either respect or trust. Finally, self-validation and respect that preceded trust either experimentally or analytically had only the sequential effects on attraction through trust. However, the very same self-validation that sequentially influenced trust via respect never had the reverse effect of respect (i.e., respect had no sequential effect on self-validation). Collectively, the most defensible causal chain for attitude similarity effects on attraction appears to be Attitude-Similarity → Self-validation → Positive affect → Respect → Trust.

Limitations and future directions

Attitude similarity effects on attraction have previously been moderated by only four individual difference variables: *need for affiliation* (Byrne, 1971, Table 8-14, p. 225), *social anxiety* (Smith, 1972), *need for approval* (Posavac, 1971), and *empathy* (Grover & Brockner, 1989). In each of these cases, attitude similarity effects were was stronger when participants scored higher rather than lower on the measure of the individual difference. Perhaps those high, relative to low, scorers on at least some of these measures sought and experienced greater consensual validation of their attitudes by those of the partner and were hence more attracted to the similar partner but less attracted to the dissimilar one. To us, a moderated-mediation analysis of attitude similarity effects on attraction,

using these measures of individual difference and our measure of self-validation, could be another important topic for future research.

Our work also paves the way for testing the sequence of mediators through additional experiments. Given the current and previous evidence for sequential dependency of positive affect or inferred attraction on self-validation, experimental manipulations of these mediating variables should produce interactions in both trust and attraction (Spencer et al., 2005). That is, the measured mediators that appear to be sequentially linked should generate interaction effects on the succeeding measured mediators and the DV of attraction, and the interaction between the manipulated mediators should account for the moderation in attraction. We would like to see future work employing such combinations of experimental and correlational tests of mediation.

Concluding comments

In summarizing his decade-long research on attitudes-and-attraction, Byrne (1971) stated, "… the attraction paradigm represents a continuing research program … and, if it has anything to offer, should continue to grow and to change" (p. 415). After 44 years of work (Byrne, 1961), we continue to assert that attitude similarity effects on attraction are more complex than previously realized (Byrne, 1971, 1997; Montoya & Horton, 2013, 2014; Montoya, Horton, & Kirchner, 2008; Singh & Tan, 1992; Singh, Yeo et al., 2007). Our current contributions lie in first reiterating the importance of self-validation in relationship formation from similar attitudes and then demonstrating that self-validation and trust could well be the mediators distal and proximal to attraction, respectively.

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Notes

1. We also measured negative affect in Experiment 2A. There was no effect of attitude similarity on negative affect.
2. For self-validation (and, to a lesser extent, attraction), the pattern was that effects were stronger when self-validation was measured before the other two potential mediators, $F(2, 75) = 19.81$, $p < .001$, $\eta_p^2 = .35$, rather than after the other two potential mediators, $F(2, 75) = 9.13$, $p = .001$, $\eta_p^2 = .20$. Effects of attitude similarity were significant in both measurement orders, however.

References

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173-1182.

Byrne, D. (1961). Interpersonal attraction and attitude similarity. *Journal of Abnormal and Social Psychology, 62*, 713-715.

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

Byrne, D. (1997). An overview (and underview) of research and theory within the attraction paradigm. *Journal of Social and Personal Relationships, 14,* 417-431.

Byrne, D., & Blaylock, B. (1963). Similarity and assumed similarity of attitudes between husbands and wives. *Journal of Abnormal and Social Psychology, 67*, 636-640.

Byrne, D., & Clore, G. L. (1967). Effectance arousal and attraction. *Journal of Personality and Social Psychology, 6 (4,* Whole No. 638), 1-18.

Byrne, D., & Clore, G. L. (1970). A reinforcement model of evaluative responses. *Personality: An International Journal, 1,* 103-128.

Byrne, D., Nelson, D., & Reeves, K. (1966). Effects of consensual validation and invalidation on attraction as a function of verifiability. *Journal of Experimental Social Psychology, 2,* 98-107.

Condon, J. W., & Crano, W. D. (1988). Inferred evaluation and the relation between attitude similarity and interpersonal attraction. *Journal of Personality and Social Psychology, 54,* 789-797.

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.

Egloff, B., Schmukle, S. C., Burns, L. R., Kohlmann, C. W., & Hock, M. (2003). Facets of dynamic positive affect: Differentiating joy, interest, and activation in the positive and negative affect schedule (PANAS). *Journal of Personality and Social Psychology, 85,* 528-540.

Festinger, L. (1950). Informal social communication. *Psychological Review, 57,* 271-282.

Festinger, L. (1954). A theory of social comparison processes. *Human Relations, 7,* 117-140.

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.

Gottman, J. M. (1979). *Marital interaction: Experimental investigations*. New York: Academic Press.

Grover, S. L., & Brockner, J. (1989). Empathy and the relationship between attitudinal similarity and attraction. *Journal of Research in Personality, 23*, 469-479.

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis*. New York: Guilford Press.

Heider, F. (1958). *The psychology of interpersonal relations*. New York: Wiley.

Kruglanski, A.W. (1989). The psychology of being "right": The problem of accuracy in social perception and cognition. *Psychological Bulletin, 106*, 395-409.

Marks, G., & Miller, N. (1982). Target attractiveness as a mediator of assumed similarity. *Personality and Social Psychology Bulletin, 8*, 728-735.

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., & Horton, R.S. (2012). The reciprocity of liking effect. In M. Paludi (Ed.), *The psychology of love* (pp. 39-57). Santa Barbara, CA: Praeger.

Montoya, R. M., & Horton, R. S. (2013). A meta-analytic investigation of the processes underlying the similarity-attraction effect. *Journal of Social and Personal Relationships, 30,* 64-94.

Montoya, R. M., & Horton, R. S. (2014). A two-dimensional model for the study of interpersonal attraction. *Personality and Social Psychology Review, 18*, 59-86.

Montoya, R. M., Horton, R. S., & Kirchner, J. (2008). Is actual similarity necessary for attraction? A meta-analysis of actual and perceived similarity. *Journal of Social and Personal Relationships*, *25*, 889-922.

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

Morry, M. M. (2005). Relationship satisfaction as a predictor of similarity ratings: A test of the attraction-similarity hypothesis. *Journal of Social and Personal Relationships*, *22*, 561–584.

Morry, M. M. (2007). The attraction-similarity hypothesis among cross-sex friends: Relationship satisfaction, perceived similarities, and self-serving perceptions. *Journal of Social and Personal Relationships*, *24*, 117-138.

Morry, M. M., Kito, M. I. E., & Ortiz, L. (2011). The attraction-similarity model and dating couples: Projection, perceived similarity, and psychological benefits. *Personal Relationships, 18,* 125-143.

Muller, D., Judd, C. M., & Yzerbyt, V. Y. (2005). When moderation is mediated and mediation is moderated. *Journal of Personality and Social Psychology, 89,* 852-863.

Murray, S. L., Holmes, J. G., & Griffin, D. W. (1996). The self-fulfilling nature of positive illusions in romantic relationships: Love is not blind, but prescient. *Journal of Personality and Social Psychology, 71,* 1155-1180.

Murray, S. L., Holmes, J. G., & Griffin, D. W. (2000). Self-esteem and the quest for felt security: How perceived regard regulates attachment processes. *Journal of Personality and Social Psychology, 78,* 478-498.

Palmer, J. A. (1969). *Vindication, evaluation, and the effect of the stranger's competence on the attitude similarity-attraction function*. Unpublished doctoral dissertation, Austin, TX: University of Texas.

Pittman, T. S. (1998). Motivation. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (3rd ed., Vol. I, pp. 549-590). Boston, MA: McGraw-Hill.

Posavac, E. J. (1971). Need for approval as a moderator of interpersonal attraction based on attitude similarity. *Journal of Social Psychology, 85,* 141-142.

Reis, H. T., & Shaver, P. (1988). Intimacy as an interpersonal process. In S. W. Duck (Ed.), *Handbook of personal relationships* (Vol. 24, pp. 367–389). Chichester: John Wiley.

Ross, L., Greene, D., & House, P. (1977). The 'false consensus effect': An egocentric bias in social perception and attribution processes. *Journal of Experimental Social Psychology, 13,* 279-301.

Rucker, D. D., Preacher, K. J., Tormala, Z. L., & Petty, R. E. (2011). Mediation analysis in social psychology: Current practices and new recommendations. *Social and Personality Psychology Compass*, *5*, 359-371.

Singh, R. (1974). Reinforcement and attraction: Specifying the effects of affective states. *Journal of Research in Personality*, *8*, 294-305.

Singh, R., Chen, F., & Wegener, D. T. (2014). The similarity-attraction link: Sequential versus parallel multiple-mediator models involving inferred attraction, respect, and positive affect. *Basic and Applied Social Psychology*, *36*, 281-298.

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., 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., Simons, J. J. P., Young, D. P. C. Y., Sim, B. S. X., Chai, X. T., Singh, S., & Chiou, S. Y. (2009). Trust and respect as mediators of the other- and self-profitable trait effects on interpersonal attraction. *European Journal of Social Psychology*, *39*, 1021-1038.

Singh, R., & Tan, L. S. C. (1992). Attitudes and attraction: A test of the similarity–attraction and dissimilarity–repulsion hypotheses. *British Journal of Social Psychology*, *31*, 227–238.

Singh, R., Wegener, D. T., Sankaran, K., Singh, S., Lin, P. K-F., Seow, M. X., Teng, J. S. Q., & Shuli, S. (2015). On the importance of trust in interpersonal attraction from attitude similarity. *Journal of Social and Personal Relationships*, in press. DOI: 10.1177/0265407515576993

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.

Smith, R. E. (1972). Social anxiety as a moderator variable in the attitude similarity-attraction relationship. *Journal of Experimental Research in Personality, 6*, 22-28.

Spencer, S. J., Zanna, M. P., & Fong, G. T. (2005). Establishing a causal chain: Why experiments are often more effective than meditational analyses in examining psychological processes. *Journal of Personality and Social Psychology, 89*, 845-851.

Sullivan, H. S. (1953). *The interpersonal theory of psychiatry*. New York: Norton.

Swann,W. B., Stein-Seroussi, A., & Giesler, R. B. (1992). Why people self-verify. *Journal of Personality and Social Psychology, 62*, 392-401.

Tan, D. T. Y., & Singh, R. (1995). Attitudes and attraction: A developmental study of the similarity–attraction and dissimilarity–repulsion hypotheses. *Personality and Social Psychology Bulletin, 21*, 975-986.

Wegener, D. T., & Fabrigar, L. R. (2000). Analysis and design for nonexperimental data: Addressing causal and noncausal hypotheses. In H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (pp. 412-450). New York: Cambridge University Press.

White, R.W. (1959). Motivation reconsidered: The concept of competence. *Psychological Review, 66*, 297-333.

Table 1. Means and standard deviations (*SD*s) of self-validation and attraction responses to high versus low verifiable and dissimilar versus similar attitudes in Experiment 1.

View verifiability	Self-validation (α = .87)			Attraction (α = .92)		
	Partner's attitudes			Partner's attitudes		
	Dissimilar	Similar	Overall	Dissimilar	Similar	Overall
High (0)	3.74^{a}_{y}	4.49^{a}_{x}	4.12^{a}	4.03^{a}_{y}	4.80^{a}_{x}	4.41^{a}
	(0.72)	(0.80)	(0.85)	(0.92)	(0.67)	(0.89)
Low (1)	3.35^{b}_{y}	4.65^{a}_{x}	4.00^{a}	3.34^{b}_{y}	4.67^{a}_{x}	4.01^{b}
	(0.94)	(0.87)	(1.11)	(1.18)	(0.65)	(1.16)
Overall	3.55_{y}	4.57_{x}		3.69_{y}	4.74_{x}	
	(0.85)	(0.83)		(1.11)	(0.66)	

Note. The value in parenthesis below each mean is the corresponding *SD*. The different superscripts indicate the difference between the two means of a column (i.e., the verifiability effect), and the subscripts indicate the difference between the two means of a row (i.e., the similarity effect). $N = 184$.

Table 2. Reliabilities of and correlations between constructs of Experiments 2A through 2C.

Constructs	Self-validation	Positive affect	Respect	Trust	Attraction
	Experiment 2A (N = 160)				
Self-validation	.82	.51**			.45**
Positive affect		.70			.62**
Attraction					.86
	Experiment 2B (N = 160)				
Self-validation	.89			.59**	.50**
Trust				.80	.53**
Attraction					.89
	Experiment 2C (N = 156)				
Self-validation	.86		.48**	.58**	.43**
Respect			.76	.63**	.46**
Trust				.77	.56**
Attraction					.91

Note. The corresponding αs are listed along the diagonal. ** $p < .01$

Table 3. Means and *SD*s of responses to attitudinally dissimilar and similar partners along with tests of significance and effect size in Experiments 2A and 2B.

	Partner's attitudes		Tests	Effect size
Responses	Dissimilar	Similar	*t*	r
	Experiment 2A			
Self-validation	3.49	4.08	4.32*	.32
	(0.82)	(0.92)		
Positive affect	3.45	4.04	4.18*	.31
	(0.81)	(0.98)		
Attraction	3.66	4.73	8.40*	.55
	(0.83)	(0.78)		
	Experiment 2B			
Self-validation	3.49	4.57	6.17*	.44
	(1.16)	(1.06)		
Trust	3.20	4.69	11.86*	.66
	(0.81)	(0.78)		
Attraction	3.56	4.26	4.06*	.23
	(1.10)	(1.06)		

Note. The value in the parenthesis below each mean is the corresponding *SD*. The *df* for the independent-group *t* test was 158 in both experiments. *ps < .001. *N*s = 160.

Table 4. Means and *SD*s of four responses as a function of proportion of similar attitudes in Experiment 2C.

	Proportion of similar attitudes			Trend components	
Responses	0	0.5	1	Linear	Quadratic
Self-validation	3.54	3.84	4.55	0.71	0.17
	(0.83)	(0.86)	(0.82)	[0.50, 0.93]	[-0.05, 0.37]
Respect	3.88	4.26	4.61	0.52	-0.01
	(0.76)	(0.63)	(0.59)	[0.34, 0.70]	[-0.19, 0.17]
Trust	3.45	4.06	4.53	0.77	-0.06
	(0.87)	(0.73)	(0.89)	[0.56, 0.98]	[-0.27, 0.15]
Attraction	3.81	4.20	4.42	0.44	-0.07
	(1.23)	(0.72)	(0.89)	[0.17, 0.70]	[-0.34, 0.20]

Note. The value in the parenthesis below each mean is the corresponding *SD*. The values in the parenthesis below each trend component are the corresponding 95% CI. *N* = 156; *n*s = 52 per cell.

Table 5. IE of attitude similarity via each mediator and its sequential effect along with 95% CI at two sequences in Experiments 2A through 2C.

		Experiments 2A—2B		Experiment 2C	
Models	Mediators	IE	95% CI	IE	95% CI
Sequential mediation by SV and PA					
	SV	0.06[a]	[-0.02, 0.19]		
1	SV → PA	**0.13[a]**	[0.06, 0.25]		
	PA	**0.15[a]**	[0.03, 0.30]		
	PA	**0.27[a]**	[0.13, 0.47]		
2	PA → SV	0.03[b]	[-0.01, 0.09]		
	SV	0.04[b]	[-0.01, 0.14]		
Sequential mediation by SV and T					
	SV	**0.42[a]**	[0.22, 0.69]	**0.19[a]**	[0.01, 0.41]
1	SV → T	**0.13[b]**	[0.06, 0.24]	**0.24[a]**	[0.12, 0.42]
	T	**0.44[a]**	[0.27, 0.74]	**0.37[a]**	[0.17, 0.67]
	T	**0.57[a]**	[0.27, 0.89]	**0.61[a]**	[0.34, 0.97]
2	T → SV	**0.36[a]**	[0.17, 0.64]	**0.10[b]**	[0.01, 0.24]
	SV	0.07[b]	[-0.09, 0.24]	**0.09[b]**	[0.01, 0.24]
Sequential mediation by SV and R					
	SV			**0.31[a]**	[0.13, 0.53]
1	SV → R			**0.12[a]**	[0.06, 0.25]
	R			**0.21[a]**	[0.06, 0.45]
	R			**0.33[a]**	[0.12, 0.62]
2	R → SV			**0.10[b]**	[0.04, 0.18]
	SV			**0.21[b]**	[0.09, 0.11]
Sequential mediation by R and T					
	R			0.18[a]	[0.00, 0.43]
1	R → T			**0.25[a]**	[0.13, 0.43]
	T			**0.34[a]**	[0.16, 0.60]
	T			**0.59[a]**	[0.33, 0.93]
2	T → R			0.13[b]	[0.00, 0.32]
	R			0.06[b]	[-0.00, 0.18]

Note. SV = Self-validation; PA = Positive affect; R = Respect; T = Trust; IE = Indirect effect; 95% CI = 95% confidence interval. The IEs in bold are significantly greater than zero, and those with different superscripts differ significantly at $p = .05$.

Table 6. IE via each mediator and its sequential dependency along with 95% CI from four sequences of three mediators in Experiment 2C.

Models	Mediators	IE	95% CI
Sequential-mediation Model 1 for SV, R, and T			
	SV	0.17^{ab}	[-0.01, 0.31]
	SV → R	0.06^{b}	[-0.00, 0.16]
	SV → T	**0.14^{ab}**	[0.06, 0.28]
1	SV → R → T	**0.06^{b}**	[0.03, 0.14]
	R	0.10^{ab}	[-0.00, 0.29]
	R → T	**0.11^{ab}**	[0.04, 0.24]
	T	**0.20^{a}**	[0.06, 0.41]
Sequential-mediation Model 2 for SV, T, and R			
	SV	0.17^{abc}	[-0.01, 0.39]
	SV → T	**0.20^{ab}**	[0.09, 0.38]
	SV → R	0.02^{c}	[-0.00, 0.09]
2	SV → T → R	0.04^{c}	[0.00, 0.11]
	T	**0.31^{a}**	[0.13, 0.59]
	T → R	0.06^{bc}	[-0.01, 0.17]
	R	0.04^{c}	[-0.01, 0.17]
Sequential-mediation Model 3 for R, T, and SV			
	R	0.16^{abc}	[-0.02, 0.40]
	R → T	**0.21^{ab}**	[0.09, 0.40]
	R → SV	0.02^{d}	[-0.00, 0.08]
3	R → T → SV	0.03^{d}	[0.00, 0.09]
	T	**0.30^{a}**	[0.12, 0.57]
	T → SV	0.05^{cd}	[0.00, 0.14]
	SV	0.07^{bcd}	[0.00, 0.21]
Sequential-mediation Model 4 for T, SV, and R			
	T	**0.51^{a}**	[0.24, 0.88]
	T → SV	0.09^{b}	[-0.00, 0.22]
	T → R	0.12^{b}	[-0.01, 0.28]
4	T → SV → R	0.01^{b}	[-0.00, 0.05]
	SV	0.08^{b}	[0.00, 0.23]
	SV → R	0.01^{b}	[-0.00, 0.05]
	R	0.04^{b}	[-0.01, 0.16]

Note. SV = self-validation; R = respect; T = trust; IE = indirect effect; 95% CI = 95% confidence interval. The IEs in bold are significantly greater than zero and those with different superscripts differ significantly at $p = .05$.

Figure Captions

Figure 1. Results from tests of parallel-mediation models in Experiments 2A (self-validation and positive affect as mediators in the top diagram), 2B (self-validation and trust as mediators in the center diagram) and 2C (self-validation, respect, and trust as mediators in the bottom diagram). !p = .06; *$p \leq .05$; **$p \leq .01$.

Figure 2. Results from tests of Sequential-mediation Models 1 (top diagrams) and 2 (bottom diagrams) in Experiments 2A and 2B. The coefficient d_{21} of Model 1 represents the hypothesized sequential dependency of MV_2 on MV_1; the coefficient d_{12} in Model 2, in contrast, represents the reverse sequential dependency of MV_1 on MV_2. **$p \leq .01$.

Figure 3. Results from tests of Sequential-mediation Models 1 and 2, using two of the three mediators of Experiment 2C. The coefficients are interpretable in the same ways as in Figure 2. *$p \leq .05$; **$p \leq .01$.

Figure 4. Results from tests of Sequential-mediation Models 1, 2, 3, and 4 analyses in Experiment 2C. The sequential dependency coefficients are interpretable in the same ways as in Figure 2. ! p = .06, *$p \leq .05$; **$p \leq .01$

Figure 1

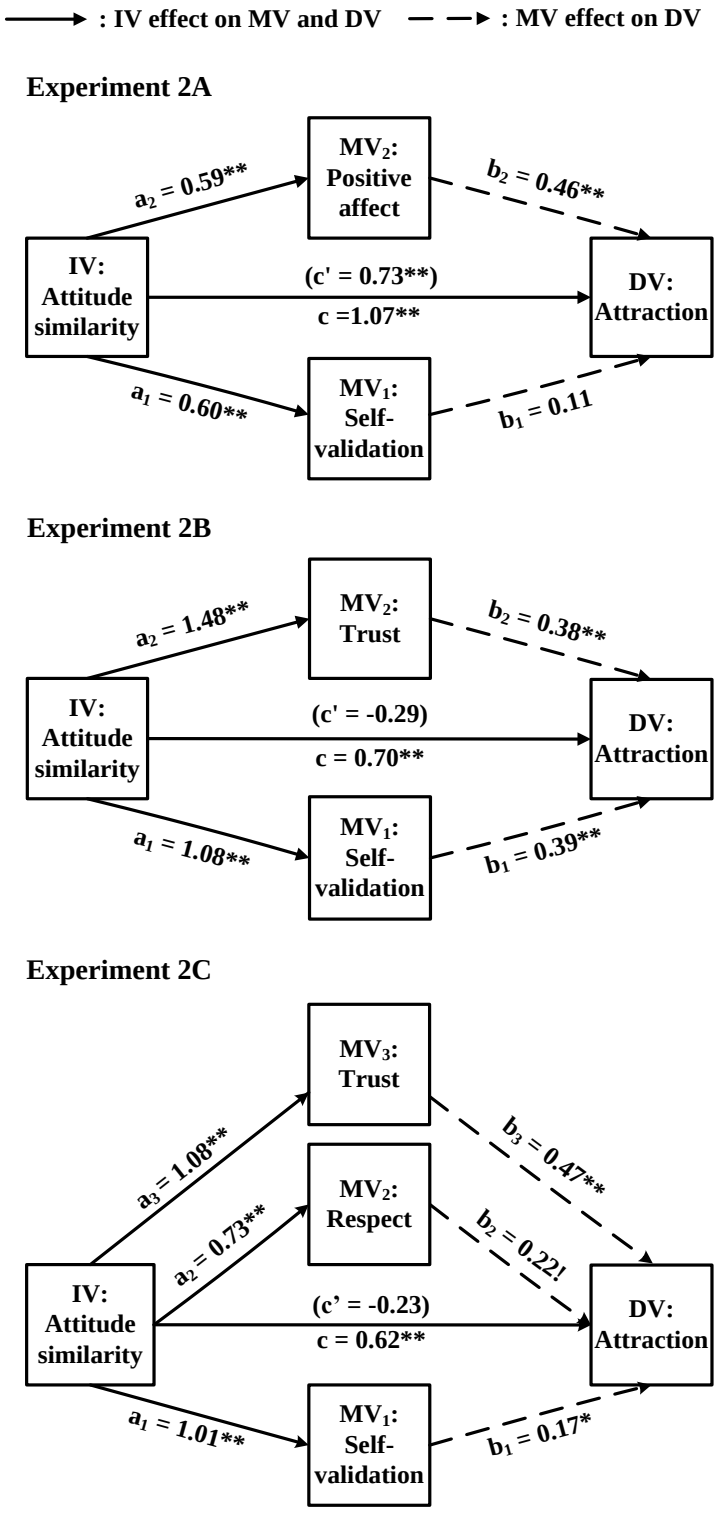

: IV effect on MV and DV
: MV effect on DV
Experiment 2A
MV2: Positive affect
a2 = 0.59**
b2 = 0.46**
IV: Attitude similarity
(c' = 0.73**)
c =1.07**
DV: Attraction
a1 = 0.60**
MV1: Self-validation
b1 = 0.11
Experiment 2B
MV2: Trust
a2 = 1.48**
b2 = 0.38**
IV: Attitude similarity
(c' = -0.29)
c = 0.70**
DV: Attraction
a1 = 1.08**
MV1: Self-validation
b1 = 0.39**
Experiment 2C
MV3: Trust
a3 = 1.08**
b3 = 0.47**
MV2: Respect
a2 = 0.73**
b2 = 0.22!
IV: Attitude similarity
(c' = -0.23)
c = 0.62**
DV: Attraction
a1 = 1.01**
MV1: Self-validation
b1 = 0.17*

Figure 2

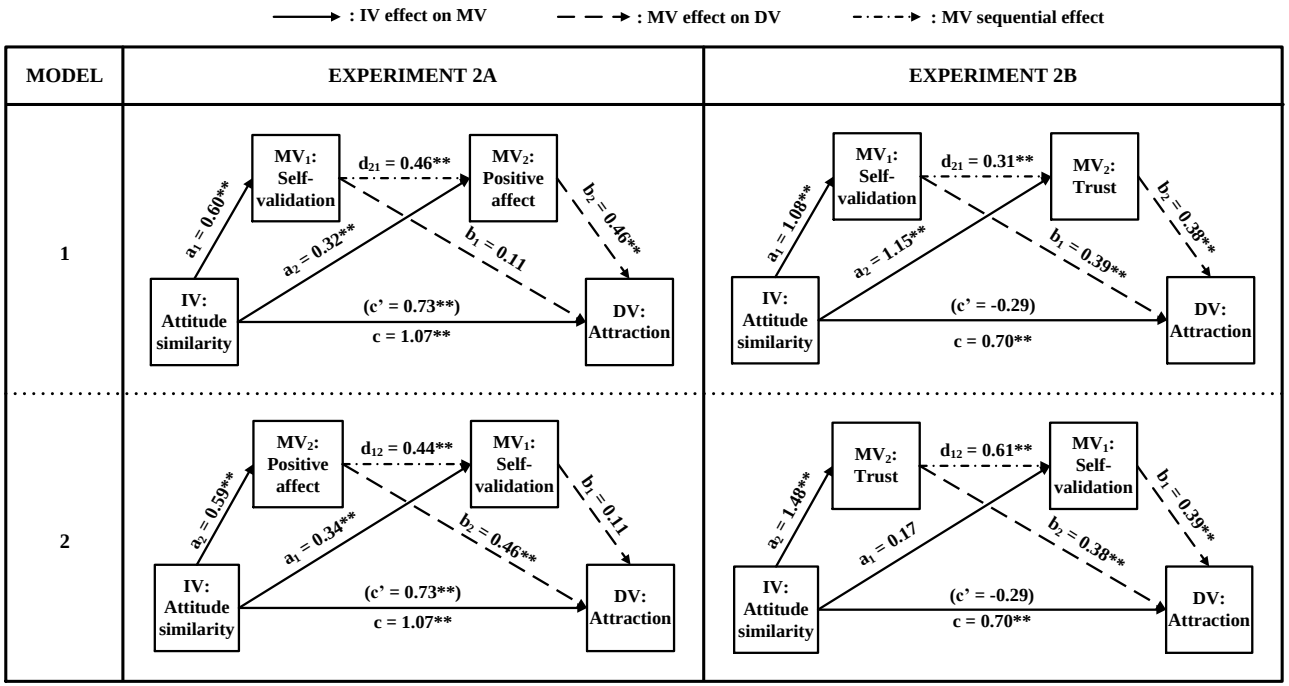

: IV effect on MV
: MV effect on DV
: MV sequential effect
MODEL
EXPERIMENT 2A
EXPERIMENT 2B
1
MV1: Self-validation
MV2: Positive affect
d21 = 0.46**
a1 = 0.60**
a2 = 0.32**
b1 = 0.11
b2 = 0.46**
IV: Attitude similarity
(c' = 0.73**)
c = 1.07**
DV: Attraction
MV1: Self-validation
MV2: Trust
d21 = 0.31**
a1 = 1.08**
a2 = 1.15**
b1 = 0.39**
b2 = 0.38**
IV: Attitude similarity
(c' = -0.29)
c = 0.70**
DV: Attraction
2
MV2: Positive affect
MV1: Self-validation
d12 = 0.44**
a2 = 0.59**
a1 = 0.34**
b2 = 0.46**
b1 = 0.11
IV: Attitude similarity
(c' = 0.73**)
c = 1.07**
DV: Attraction
MV2: Trust
MV1: Self-validation
d12 = 0.61**
a2 = 1.48**
a1 = 0.17
b2 = 0.38**
b1 = 0.39**
IV: Attitude similarity
(c' = -0.29)
c = 0.70**
DV: Attraction

Figure 3

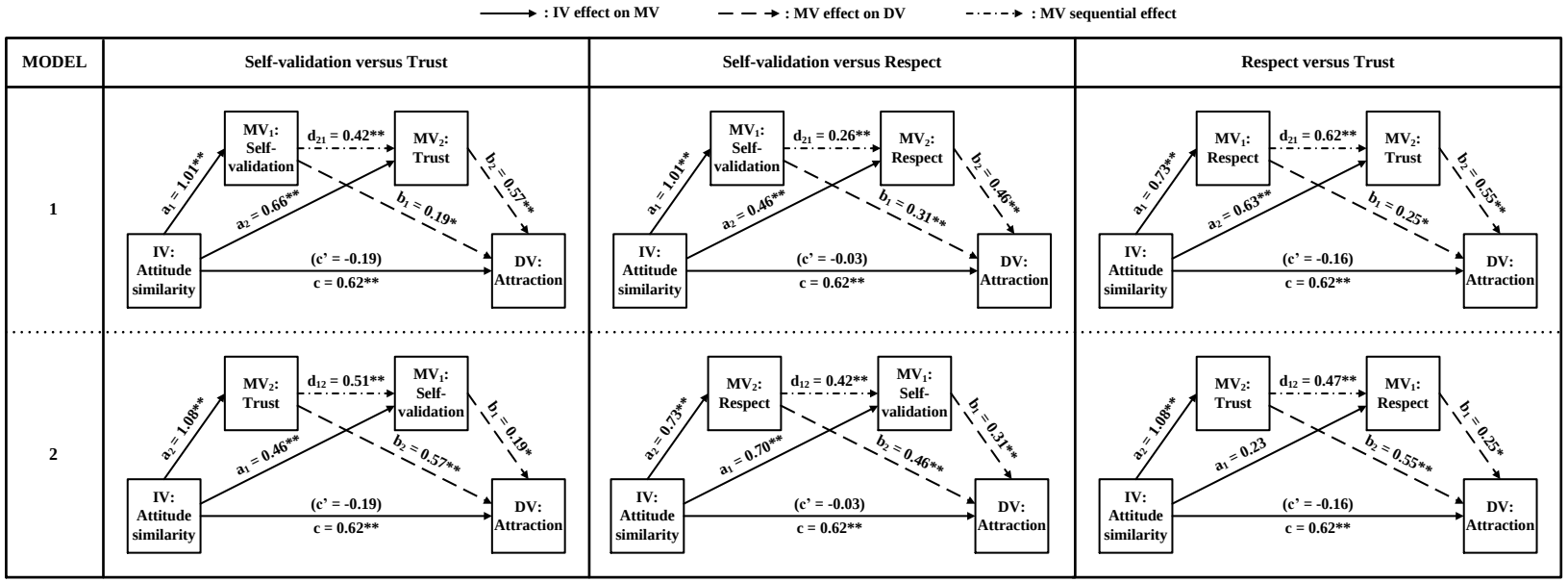
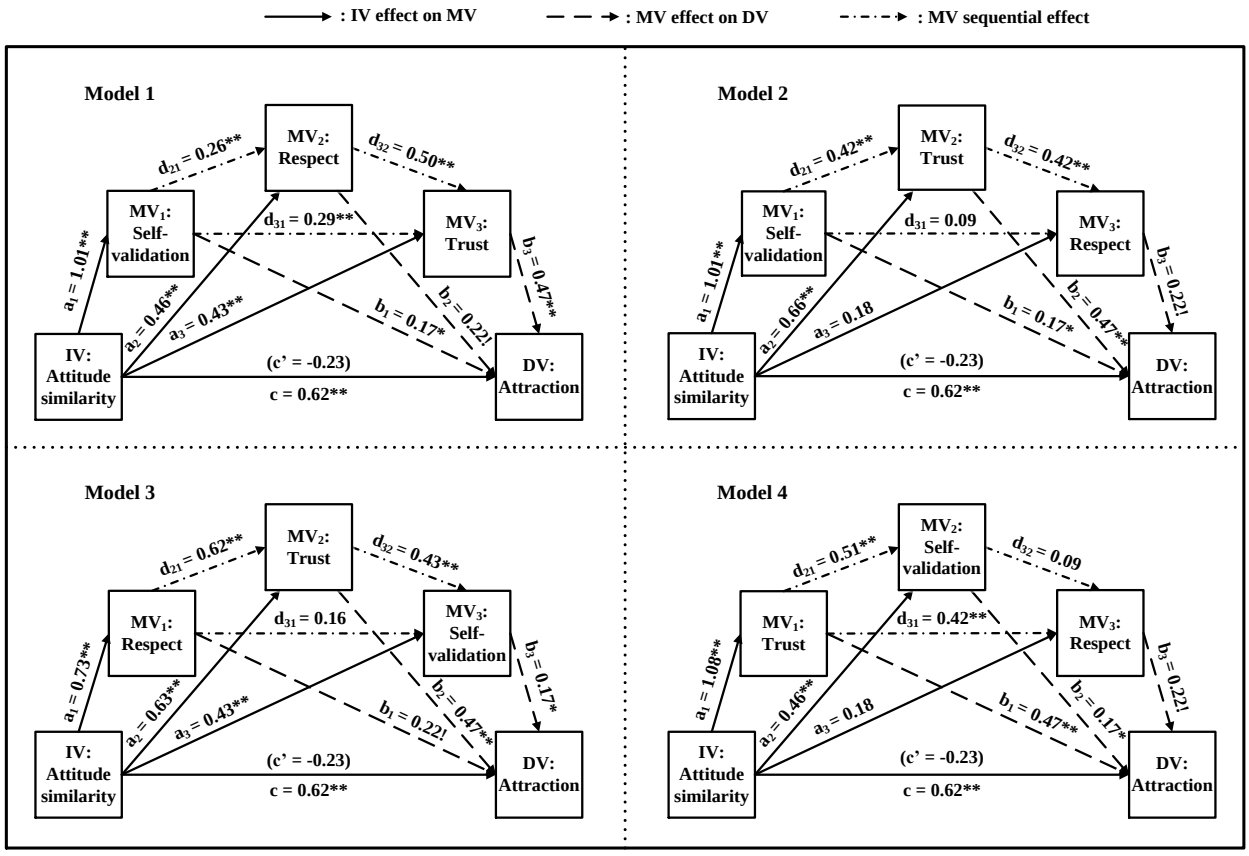

: IV effect on MV
: MV effect on DV
: MV sequential effect
MODEL
Self-validation versus Trust
Self-validation versus Respect
Respect versus Trust
1
2
IV: Attitude similarity
DV: Attraction
MV1: Self-validation
MV2: Trust
MV2: Respect
MV1: Respect
a1 = 1.01**
a2 = 0.66**
d21 = 0.42**
b1 = 0.19*
b2 = 0.57**
(c' = -0.19)
c = 0.62**
a1 = 1.01**
a2 = 0.46**
d21 = 0.26**
b1 = 0.31**
b2 = 0.46**
(c' = -0.03)
c = 0.62**
a1 = 0.73**
a2 = 0.63**
d21 = 0.62**
b1 = 0.25*
b2 = 0.55**
(c' = -0.16)
c = 0.62**
a2 = 1.08**
a1 = 0.46**
d12 = 0.51**
b2 = 0.57**
b1 = 0.19*
(c' = -0.19)
c = 0.62**
a2 = 0.73**
a1 = 0.70**
d12 = 0.42**
b2 = 0.46**
b1 = 0.31**
(c' = -0.03)
c = 0.62**
a2 = 1.08**
a1 = 0.23
d12 = 0.47**
b2 = 0.55**
b1 = 0.25*
(c' = -0.16)
c = 0.62**

Figure 4


: IV effect on MV
: MV effect on DV
: MV sequential effect
Model 1
MV2: Respect
MV1: Self-validation
MV3: Trust
IV: Attitude similarity
DV: Attraction
d21 = 0.26**
d32 = 0.50**
d31 = 0.29**
a1 = 1.01**
a2 = 0.46**
a3 = 0.43**
b1 = 0.17*
b2 = 0.22!
b3 = 0.47**
(c' = -0.23)
c = 0.62**
Model 2
MV2: Trust
MV1: Self-validation
MV3: Respect
IV: Attitude similarity
DV: Attraction
d21 = 0.42**
d32 = 0.42**
d31 = 0.09
a1 = 1.01**
a2 = 0.66**
a3 = 0.18
b1 = 0.17*
b2 = 0.47**
b3 = 0.22!
(c' = -0.23)
c = 0.62**
Model 3
MV2: Trust
MV1: Respect
MV3: Self-validation
IV: Attitude similarity
DV: Attraction
d21 = 0.62**
d32 = 0.43**
d31 = 0.16
a1 = 0.73**
a2 = 0.63**
a3 = 0.43**
b1 = 0.22!
b2 = 0.47**
b3 = 0.17*
(c' = -0.23)
c = 0.62**
Model 4
MV2: Self-validation
MV1: Trust
MV3: Respect
IV: Attitude similarity
DV: Attraction
d21 = 0.51**
d32 = 0.09
d31 = 0.42**
a1 = 1.08**
a2 = 0.46**
a3 = 0.18
b1 = 0.47**
b2 = 0.17*
b3 = 0.22!
(c' = -0.23)
c = 0.62**