

Few Ways to Love, but Many Ways to Hate: Attribute Ambiguity and the Positivity Effect in Agent Evaluation

ANDREW D. GERSHOFF
ASHESH MUKHERJEE
ANIRBAN MUKHOPADHYAY*

Recent research has identified a positivity effect in consumers' evaluations of agents, such as friends and professional critics, who provide word-of-mouth evaluations and recommendations. Specifically, agreement with an agent on previously loved alternatives is perceived as more diagnostic of the agent's suitability than agreement on previously hated alternatives. This article argues that the positivity effect arises from greater ambiguity about attribute ratings of hated versus loved alternatives. Three studies support this by showing that the effect is moderated by the number of attributes, the number of alternatives, and the revelation of an agent's attribute ratings, and is mediated by attribute ambiguity.

All happy families resemble one another, each unhappy family is unhappy in its own way.
(Leo Tolstoy, *Anna Karenina*, 1877)

Consumers often rely on the advice of others, who act as agents by providing product recommendations and evaluations. Such agents can include professionals, such as movie and wine critics, as well as laypeople, such as friends and Internet posters (Gershoff and Johar 2006; Schlosser 2005). When evaluating an agent as a potential source of advice, consumers often consider the extent to which they have agreed with the agent in the past (Gershoff, Broniar-

czyk, and West 2001; West 1996). Recent research by Gershoff, Mukherjee, and Mukhopadhyay (2003, 2006) finds that agreements on previously loved and hated alternatives are not weighted equally in the agent evaluation process. Specifically, consumers consider agreements on previously loved alternatives to be more informative than agreements on previously hated alternatives when evaluating similarity of taste with the agent and suitability of the agent as a source of future advice. This positivity effect in agent evaluation is especially interesting because prior work has generally found a negativity effect in interpersonal communications, whereby negative word of mouth is weighed more heavily than positive word of mouth in judgment and choice (Folkes and Kamins 1999; Herr, Kardes, and Kim 1991).

In the present article, we develop and test an attribute-ambiguity account for the positivity effect in agent evaluation. We propose that the positivity effect in agent evaluation arises from greater ambiguity, or uncertainty, about an agent's attribute ratings of hated alternatives compared to loved alternatives. This basic proposition is tested in two pilot studies and three main studies. In the pilot studies, hated alternatives are shown to have greater attribute ambiguity than loved alternatives, as revealed by variance and perceived uncertainty of the agent's attribute ratings. In the main studies, consistent with the attribute-ambiguity account, the positivity effect is moderated by the number of attributes, number of alternatives, and revelation of the agent's attribute ratings. Finally, mediation analysis confirms the role of attribute ambiguity as a driver of the positivity effect in agent evaluation.

*Andrew D. Gershoff (agershof@umich.edu) is associate professor at the Stephen M. Ross School of Business, University of Michigan, 7208 Davidson, 701 Tappan Ave., Ann Arbor, MI, 48109; Ashesh Mukherjee (ashesh.mukherjee@mcgill.ca) is associate professor at the Faculty of Management, McGill University, 1001 Sherbrooke St. West, Montreal, QC H3A 1G5; Anirban Mukhopadhyay (Anirban.Mukhopadhyay@ust.hk) is assistant professor and Wei Lun Fellow at the Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong. All authors contributed equally and are listed alphabetically. Correspondence may be addressed to any of the authors. The authors thank Agnes Chan for excellent research assistance and Katherine Burson, Rajiv Vaidyanathan, and Rongrong Zhou for their valuable comments. The authors also thank the reviewers, associate editor, and editor of the *Journal of Consumer Research* for their suggestions. The authors acknowledge financial assistance from the McGill Management Research Fund and the Hong Kong Research Grants Council.

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THEORETICAL FRAMEWORK

Recent research has identified a positivity effect in agent evaluation, whereby agreement on previously loved alternatives is perceived as more informative than agreement on hated alternatives for judging similarity of taste and suitability of an agent as a source of advice. One possible explanation for this effect, advanced in prior research, is that the attributes underlying loved alternatives are more accessible in memory than the corresponding attributes underlying hated alternatives (Gershoff et al. 2003; Herr and Page 2004). Consequently, when an individual agrees with a prospective agent on a loved (as opposed to hated) alternative, the individual may infer that they have similar tastes on a relatively large set of underlying attributes. This, in turn, is likely to increase reliance on the agent as a source of future advice. In the present research, we extend this stream of research by developing an alternate account for the positivity effect, one based on differences in attribute ambiguity between loves and hates.

Attribute Ambiguity: Loves versus Hates

We argue that an agent's loved alternatives are likely to be lower in attribute ambiguity than their hated alternatives, where attribute ambiguity is the extent to which the individual is uncertain about the agent's underlying attribute ratings. For example, imagine you have just learned that a person loves a particular movie. This information is likely to be low in attribute ambiguity because you can be relatively certain that he or she likes most of the underlying attributes of that movie, such as its plot, actors, and genre. In contrast, learning that a person hates a movie is likely to be associated with greater attribute ambiguity because the underlying attribute ratings of hated alternatives may not be uniformly negative. For example, a person may hate a movie because of just one bad attribute, such as terrible acting, despite competent special effects and terrific music. Alternatively, it may be that normally liked attributes did not go well together, or it may be that all of the attributes were bad. To paraphrase Tolstoy, there may be few ways to love but many ways to hate. Consequently, knowing that an agent loves an alternative is likely to provide relatively unambiguous information about the uniformly positive valence of the underlying attributes. In contrast, knowing that an agent hates an alternative is likely to be higher in attribute ambiguity, since individuals are relatively less certain about why the agent hated it.

Our arguments are consistent with research on trade-offs in choice that finds that increasing interattribute conflict results in lowered alternative-level evaluations (Fischer, Luce, and Jia 2000). Since increased interattribute conflict will increase variance in attribute ratings, this research implies that loved alternatives are likely to have less variance in attribute ratings than hated alternatives. Similarly, research on the integration of multiple attributes into an overall evaluation suggests that negative attributes are generally given more weight than positive attributes (Anderson 1974;

Lynch 1979; Mukherjee and Hoyer 2001). If so, a positive evaluation of an alternative is likely to arise only when the set of underlying attributes is uniformly positive, since otherwise the greater weight given to negative attributes would tarnish the overall evaluation. In contrast, a negative overall evaluation could arise even in the presence of some neutral and positive attributes, since the greater weight of the negative attributes could drive the overall evaluation. Thus, this research also suggests that loved alternatives have less variance in attribute ratings than hated alternatives and, as a result, that individuals should be more certain about the attribute ratings underlying an agent's loved alternatives, compared to hated alternatives.

The above propositions were empirically supported in two pilot studies. In the first pilot, 28 undergraduate students from Columbia University were presented with 64 descriptions of ice-cream sundaes, constructed using all combinations of four flavors of ice cream, four solid toppings, and four liquid toppings. Participants provided their overall ratings of these sundaes using a five-star scale (1 = hate, 5 = love) and separately rated each attribute on the same scale. Results showed that average attribute variance for participants' loved alternatives ($M = .59$) was less than the corresponding variance for hated alternatives ($M = 2.75$; $t(27) = 12.00$, $p < .001$). In addition, the average number of loved attributes in loved alternatives ($M = 1.78$) was greater than the average number of hated attributes in hated alternatives ($M = .89$; $t(27) = 4.84$, $p < .001$). Finally, loved attributes were included more frequently in hated alternatives ($M = .61$) than hated attributes were included in loved alternatives ($M = .00$; $t(27) = 7.18$, $p < .01$). These results support the notion that individuals' loved alternatives have less variance in attribute ratings than their hated alternatives.

In the second pilot study, 120 McGill University undergraduate students saw a set of 20 sundaes, randomly chosen from the set used above. Participants were told that another person ("Person X") had rated 10 of the sundaes as five-star and the other 10 as one-star. For each sundae, participants were asked how confidently they could predict Person X's ratings of the underlying attributes, using a single-item scale (1 = not at all, 9 = very). Mean confidence was found to be significantly higher for loved than for hated sundaes (M 's = 6.32 vs. 4.93; $t(119) = 12.37$, $p < .001$), supporting the notion that agents' loves are perceived to have less attribute ambiguity than agents' hates.

Attribute Ambiguity and Agent Agreement

What does the differential attribute ambiguity of agents' loves versus hates imply when individuals and agents agree on their evaluation of a specific alternative? Since loves are likely to have uniformly positive attribute ratings, agreement on loves implies that the individual and the agent probably agree on most of the underlying attributes, that is, they both rate most of the underlying attributes positively. In contrast, since the attribute ratings underlying hates are more widely distributed, agreement on a hate does not indicate which

attributes the individual and the agent agree on. Hence, agreement with an agent on a love (as compared to a hate) should lead to greater inferred similarity of attribute-level tastes, which, in turn, should lead to greater perceived suitability of the agent as a source of future advice. This is because, if one perceives that an agent has similar tastes in attributes, then one may also infer that they will agree on other possible combinations of these attributes. Such combinations may conceivably represent future alternatives that the agent will have knowledge about and can provide advice about. Therefore, compared to agreement on hated alternatives, agreement on loved alternatives should lead to greater perceived suitability of the agent as a source of future advice, that is, a positivity effect in agent evaluation.

In the studies that follow, we test the above attribute-ambiguity mechanism for the positivity effect in agent evaluation. Study 1 shows that the positivity effect is attenuated when attribute ambiguity is manipulated by the number of attributes in the target alternative. Study 2 shows that the positivity effect is attenuated when attribute ambiguity is manipulated by the number of target alternatives. Finally, study 3 manipulates attribute ambiguity through revelation of the agent's attribute ratings and shows that the resultant attenuation of the positivity effect is mediated by perceived attribute ambiguity.

STUDY 1: THE MODERATING EFFECT OF THE NUMBER OF ATTRIBUTES

If the positivity effect is driven by greater attribute ambiguity for agents' hated alternatives compared to their loved alternatives, then the effect should be stronger (weaker) when the number of attributes is high (low). We have shown that compared to loved alternatives, hated alternatives have a wider range of possible attribute ratings. Hence, when the number of attributes is high, there are more possible combinations of attribute ratings for hates than loves, leading to greater attribute ambiguity for hates compared to loves. This increased gap in attribute ambiguity between loves and hates is likely to magnify the positivity effect in agent evaluation. In contrast, when the number of attributes is low, attribute ambiguity for the agent's hates should be low because there are now fewer combinations of attributes that could underlie the agent's hates. The consequent reduction of the attribute ambiguity gap between loves and hates should lead to an attenuation of the positivity effect when the number of attributes is low.

Method

Design and Procedure. Eighty undergraduate students from McGill University were randomly assigned to a 2 (number of attributes: high vs. low) \times 2 (agreement valence: love vs. hate) between-subjects design. Participants were asked to create an ice-cream sundae using ingredients from a list of 22 commercially available flavors and toppings. In the low number of attributes condition, participants created

their sundae by selecting one flavor and one topping from the list. In the high number of attributes condition, they selected three flavors and three toppings from the list. Depending on agreement valence condition, participants were asked to create a sundae they would either love (five stars) or hate (one star). After constructing their sundaes, participants were asked to imagine that another person ("Person X") had rated the sundae they had just created and had given it exactly the same rating. Participants then responded to the dependent variables and were debriefed and thanked.

Dependent Variables. The dependent variables were inferred similarity of taste with Person X and suitability of Person X as a source of future advice. Inferred similarity of taste was measured by 1 = not at all, 7 = very: "In general, how likely is it that you and Person X have the same tastes in sundaes; evaluate sundaes in the same way; assess sundaes using the same criteria?" ($\alpha = .83$). Suitability was measured by 1 = not at all, 7 = very: "How likely is it that you would accept Person X's advice about sundaes in the future; Person X's future advice about sundaes would be useful to you; Person X's future opinions about sundaes will be informative to you?" ($\alpha = .87$).

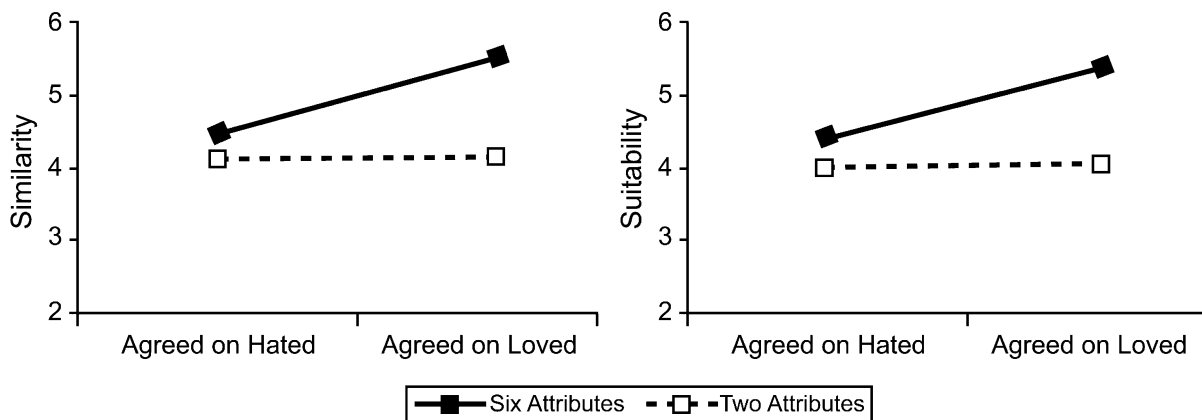
Results

A 2 (agreement valence) \times 2 (number of attributes) ANOVA with similarity as the dependent variable showed main effects for agreement valence ($F(1, 76) = 5.24, p < .05$), number of attributes ($F(1, 76) = 12.40, p < .001$), and their interaction ($F(1, 76) = 4.34, p < .05$). Planned contrasts showed that, as hypothesized, agreement on loves led to significantly higher inferences of similarity than agreement on hates in the high number of attributes condition ($M_{\text{loved}} = 5.53$ vs. $M_{\text{hated}} = 4.46; F(1, 76) = 9.56, p < .01$), but not in the low number of attributes condition ($M_{\text{loved}} = 4.16$ vs. $M_{\text{hated}} = 4.11; F(1, 76) < 1, \text{NS}$; see fig. 1). Similarly, when suitability of the agent was used as the dependent variable, there were main effects of agreement valence ($F(1, 76) = 3.85, p < .05$) and number of attributes ($F(1, 76) = 11.37, p < .001$), and a marginally significant interaction ($F(1, 76) = 2.91, p < .09$). Planned contrasts again showed that agreement on loves led to greater perceived suitability than agreement on hates in the high number of attributes ($M_{\text{loved}} = 5.40$ vs. $M_{\text{hated}} = 4.45; F(1, 76) = 6.73, p < .01$), but not in the low number of attributes condition ($M_{\text{loved}} = 4.08$ vs. $M_{\text{hated}} = 4.01; F(1, 76) < 1, \text{NS}$).

The results of study 1 were consistent with the proposed attribute-ambiguity mechanism. As predicted, agreement on loved (compared to hated) alternatives led to greater inferred similarity and suitability of the agent when the number of attributes was high, but this difference was attenuated when the number of attributes was low. In study 2, we further investigated the attribute-ambiguity mechanism by manipulating the number of alternatives on which individuals and agents agreed.

FIGURE 1

STUDY 1: THE MODERATING EFFECT OF THE NUMBER OF ATTRIBUTES



STUDY 2: THE MODERATING EFFECT OF THE NUMBER OF ALTERNATIVES

If the positivity effect is driven by the greater attribute ambiguity of hates versus loves, then the effect should be moderated by the number of alternatives on which the individual and the agent agree. Increasing the number of alternatives increases the amount of information available on which to draw inferences about underlying attribute ratings. For hated alternatives the additional information is likely to reduce the (initially high) attribute ambiguity. In contrast, since loves have low attribute ambiguity, the additional information provided by increasing the number of alternatives is not likely significantly to reduce attribute ambiguity. Hence, the net effect of increasing the number of alternatives should be a narrowing of the gap in attribute ambiguity between loves and hates, which is likely to attenuate the positivity effect.

Method

Design and Procedure. One hundred and twenty-two undergraduate students from the University of Michigan were randomly assigned to a 2 (agreement valence: love vs. hate) \times 2 (number of alternatives: low vs. high) between-subjects design. Participants first provided their overall ratings, on the five-star scale used earlier, for a set of 27 ice-cream sundaes created by combining a flavor of ice cream with a liquid topping and two solid toppings. Depending on condition, participants then selected either one hated, three hated, one loved, or three loved sundaes from the set and were told, "Later we will find another participant taking part in this study who rated this [these] sundae[s] the same as you did." Participants subsequently responded to the dependent variables and were debriefed and thanked.

Dependent Variables. As in study 1, the dependent variables were inferred similarity of taste and suitability of

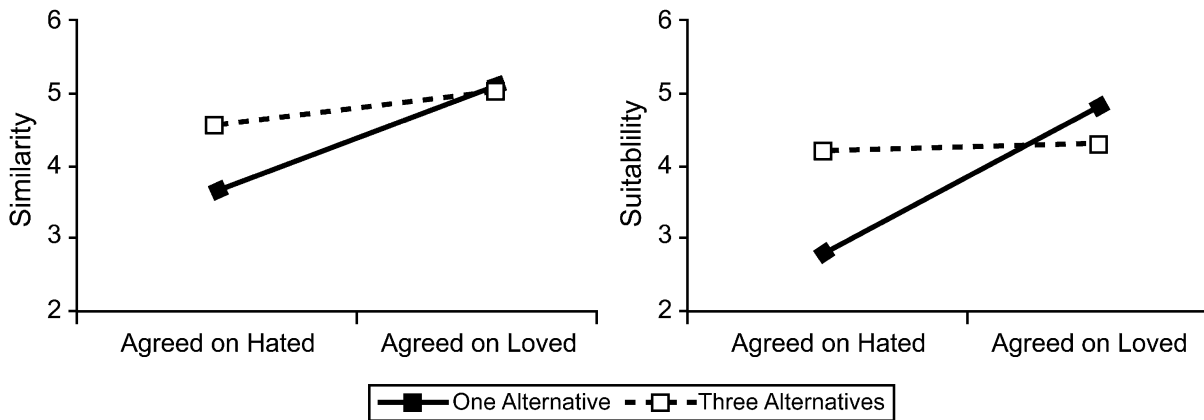
the other participant to act as an agent. Similarity was measured by 1 = not at all, 7 = very: "How likely is it that you and the other participant have the same tastes in ice-cream sundaes?" "How similar do you think your tastes for ice-cream sundaes will be to this other participant's tastes?" and "In general, how likely is it that you and the other participant would give the same ratings to other sundaes?" ($\alpha = .79$). Suitability was measured by 1 = not at all, 7 = very: "How likely is it that you would allow the other participant to choose an ice-cream sundae for you in the future?" and "How likely is it that you would be confident in accepting the other participant's advice about ice-cream sundaes in the future?" ($\alpha = .72$).

Results

A 2 (agreement valence) \times 2 (number of alternatives) ANOVA with similarity as dependent variable showed main effects of valence ($F(1, 122) = 29.14, p < .001$), number of alternatives ($F(1, 122) = 6.50, p < .05$), and their interaction ($F(1, 122) = 7.63, p < .01$; see fig. 2). As hypothesized, when the number of alternatives was low, love agreements led to greater perceived similarity of taste than hate agreements ($M_{\text{loved}} = 5.05$ vs. $M_{\text{hated}} = 3.62$; $F(1, 122) = 30.78, p < .001$). However, this effect was attenuated when the number of alternatives was high ($M_{\text{loved}} = 5.01$ vs. $M_{\text{hated}} = 4.54$; $F(1, 122) = 3.59, p < .06$). Similar results were obtained when suitability was used as the dependent variable. In this case, there was a main effect of agreement valence ($F(1, 122) = 13.08, p < .001$), no main effect for number of alternatives ($F(1, 122) = 2.40, \text{NS}$), and a significant interaction ($F(1, 122) = 16.07, p < .001$). Planned comparisons again showed a positivity effect when the number of alternatives was low ($M_{\text{loved}} = 4.88$ vs. $M_{\text{hated}} = 2.84$; $F(1, 122) = 26.87, p < .001$), which was attenuated when the number of alternatives was high ($M_{\text{loved}} = 4.32$ vs. $M_{\text{hated}} = 4.22$; $F(1, 122) < 1, \text{NS}$).

FIGURE 2

STUDY 2: THE MODERATING EFFECT OF THE NUMBER OF ALTERNATIVES



STUDY 3: THE MODERATING EFFECT OF ATTRIBUTE-RATING REVELATION

Agents often reveal their reasons (i.e., their attribute ratings) underlying their overall evaluations. For example, a movie review often contains a critic’s overall evaluation (e.g., five stars), as well as the reasons for the rating in terms of attributes such as acting, direction, or special effects. We argue that revealing the agent’s underlying attribute ratings should significantly reduce the (initially high) attribute ambiguity of hated alternatives. In contrast, revealing the agent’s attribute ratings should have little effect on the attribute ambiguity of loved alternatives, since loved alternatives have low attribute ambiguity even before revelation of attribute ratings. Thus, the net effect of revelation should be a narrowing of the gap in attribute ambiguity between loves and hates, which, in turn, is likely to attenuate the positivity effect. In the present study, we test this proposed moderating effect of attribute rating revelation and also examine the mediating effect of attribute ambiguity on the positivity effect in agent evaluation.

Method

Design and Procedure. One hundred and forty-three undergraduate students (recruited at the University of Michigan and at Hong Kong University of Science and Technology) were randomly assigned to a 2 (agreement valence: love vs. hate) × 2 (attribute revelation: revealed vs. not revealed) between-subjects design. Participants were presented with a set of 27 ice-cream sundaes constructed as in the previous study, each sundae consisting of a flavor of ice cream with a liquid and two solid toppings. Participants first provided their overall ratings of the sundaes and then rated each of the individual ingredients on the five-star scale used earlier. Then, after a filler task, participants received a feedback form from the research assistant that described one of the participant’s loved (five stars) or hated (one star) sun-

daes. Further, depending on agreement valence condition, it was stated on the form that another person who had taken part in the study earlier had given the same overall evaluation (i.e., five stars or one star) of the sundae described on the form. Finally, in the attribute ratings revealed condition, the form provided the fictional other person’s ratings for the ingredients of the target sundaes—these were identical to the participant’s own ratings. In contrast, participants in the attribute ratings not revealed condition were not told about the other person’s ingredient ratings.

Dependent Variables. The dependent variables, as before, were similarity and suitability. Similarity was measured by 1 = not at all, 7 = very: “How likely is it that you and the other participant have the same tastes in ice-cream sundaes?” “How similar do you think are your tastes for ice-cream sundaes to this other participant’s tastes?” and “In general, how likely is it that you and the other participant would give the same rating to other sundaes?” ($\alpha = .75$). Suitability was measured by 1 = not at all, 7 = very: “How likely is it that you would allow the other participant to choose an ice-cream sundae for you?” “How likely is it that you would be confident in accepting the other participant’s advice about ice-cream sundaes in the future?” and “How well do you feel the other participant would understand the reasons why you rated the ice-cream sundaes the way you did?” ($\alpha = .68$). Ambiguity about the agent’s attribute ratings was measured using the item, “How well do feel you understand the reasons why the other participant rated the ice-cream sundae as he or she did?” (reverse coded).

Results

A 2 (agreement valence) × 2 (attribute revelation) ANOVA with similarity of taste as dependent variable showed main effects for agreement valence ($F(1, 139) = 24.53, p < .001$) and attribute revelation ($F(1, 139) = 3.64, p <$

.06) as well as an interaction ($F(1, 139) = 6.13, p < .05$; see fig. 3). Planned comparisons indicated, as hypothesized, that perceived similarity of taste was greater for love agreements than for hate agreements when attribute ratings were not revealed ($M_{\text{loved}} = 5.12$ vs. $M_{\text{hated}} = 3.88$; $F(1, 139) = 28.78, p < .001$). In contrast, when ratings were revealed, the difference between love agreements and hate agreements was attenuated ($M_{\text{loved}} = 5.03$ vs. $M_{\text{hated}} = 4.61$; $F(1, 139) = 3.18, p < .08$). Similar results were obtained when suitability of the agent was the dependent variable. There was a main effect of agreement valence ($F(1, 139) = 10.14, p < .01$), no effect of attribute revelation ($F(1, 139) < 1, \text{NS}$), and a significant interaction ($F(1, 139) = 4.39, p < .05$). Planned comparisons again showed greater perceived suitability for love agreements versus hate agreements in the absence of attribute rating revelation ($M_{\text{loved}} = 4.29$ vs. $M_{\text{hated}} = 3.32$; $F(1, 139) = 14.25, p < .001$), which was attenuated when the ratings were revealed ($M_{\text{loved}} = 4.03$ vs. $M_{\text{hated}} = 3.83$; $F(1, 139) < 1, \text{NS}$).

Our primary argument was that the positivity effect in agent evaluation is mediated by attribute ambiguity. We tested this proposition by conducting a four-step mediation analysis (Baron and Kenny 1986) for each of the two dependent variables. When similarity was regressed on agreement valence, attribute revelation, and their interaction, the interaction term was significant ($\beta = -.19, t(139) = -2.48, p < .05$). Next, when ambiguity was regressed on the same predictors, the interaction term was again significant ($\beta = .22, t(139) = 2.64, p < .01$). Third, ambiguity had a significant effect on similarity ($\beta = -.45, t(141) = -6.03, p < .001$). Finally, when similarity was simultaneously regressed on the two independent variables, their interaction, and ambiguity, ambiguity remained significant ($\beta = -.38, t(138) = -5.35, p < .001$) while the interaction dropped below significance ($\beta = -.10, t(138) = -1.48, p < .15, \text{NS}$). A subsequent Sobel test supported the mediation effect ($z = 2.37, p < .05$; Sobel 1982). Similarly, when suitability was regressed on agreement valence, attribute revelation, and their inter-

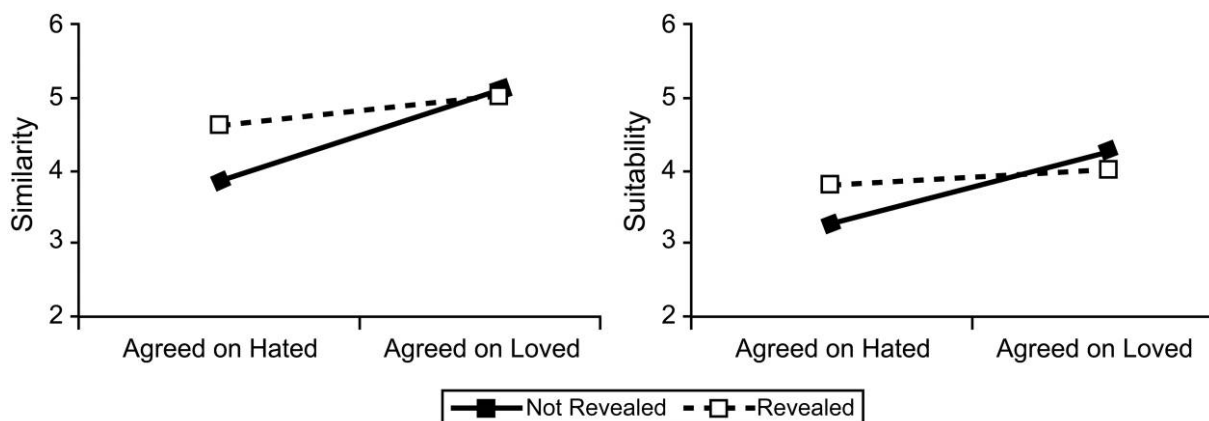
action, the interaction term was significant ($\beta = -.17, t(139) = -2.09, p < .05$). When ambiguity was regressed on the same predictors, the interaction term was again significant ($\beta = .22, t(139) = 2.64, p < .01$). Third, ambiguity had a significant effect on suitability ($\beta = -.71, t(141) = -11.70, p < .001$). Finally, when suitability was simultaneously regressed on the two independent variables, their interaction, and ambiguity, ambiguity remained significant ($\beta = -.67, t(138) = -11.11, p < .001$) while the interaction dropped from significance ($\beta = -.02, t(138) = -.38, p < .71, \text{NS}$). A Sobel test supported this mediation as well ($z = 2.57, p < .01$).

GENERAL DISCUSSION

Recent research has identified a positivity effect in the agent evaluation process, whereby agreements on loved alternatives have a greater impact on perceived similarity and suitability of the agent than agreements on hated alternatives. Our findings make several important contributions to this stream of research. First, we develop and test an attribute-ambiguity account for the positivity effect in agent evaluation. We argue that hated alternatives are associated with a wider range of possible attribute ratings compared to loved alternatives, and this leads to greater attribute ambiguity for agents' hates compared to agents' loves. In two pilot studies, we show that agents' hates have higher attribute ambiguity than agents' loves as revealed by variance and perceived uncertainty of attribute ratings. Then, in three studies, as predicted by the attribute-ambiguity account, we show that the positivity effect is attenuated when the number of attributes in the alternative is decreased, when the number of alternatives is increased, and when the agent's attribute ratings are revealed. These three new moderators add to recent work that has begun to identify boundary conditions of the positivity effect in agent evaluation, such as the valence of future agent advice (Gershoff et al. 2003) and agreement versus disagreement with a prospective agent (Gershoff et

FIGURE 3

STUDY 3: THE MODERATING EFFECT OF ATTRIBUTE REVELATION



al. 2006). Moreover, in the final study, we demonstrate that perceived attribute ambiguity mediates the positivity effect in agent evaluation.

Our attribute-ambiguity account extends previous research that has investigated an attribute-accessibility account for the positivity effect (Gershoff et al. 2003, 2006; Herr and Page 2004). These two accounts may be considered complementary, since they focus on different dimensions on which loved and hated alternatives can differ. Thus, by demonstrating the role of attribute ambiguity for the first time, our findings contribute to a fuller understanding of the mechanisms underlying the positivity effect in agent evaluation. Our results also extend the literature on word of mouth, which has generally found that negative word of mouth about products is weighed more heavily than corresponding positive word of mouth (Herr et al. 1991). In contrast, we show that a positivity effect can emerge when the object of evaluation is the agent instead of the product. More broadly, our studies fit into a larger framework of research that explores asymmetries between positive and negative stimuli and the conditions under which each is likely to be dominant (Ahluwalia 2002; Skowronski and Carlston 1987). And, in the broadest sense, our research suggests that Tolstoy's insight into family happiness extends to the product domain, such that loved products have uniformly positive reasons for being loved, while hated products tend to have relatively unique reasons for being hated.

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