Additivity Versus Attenuation: The Role of Culture in the Resolution of Information Incongruity

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Abstract

Past research on dual process models of persuasion has documented that, when faced with incongruity between attribute and source information, consumers tend to form product evaluations by attenuating the less diagnostic (source) information and relying solely on the more diagnostic (attribute) information. The current research suggests that this way of resolving incongruity may be culture specific. In Experiment 1, we draw on research in cultural psychology to demonstrate that while members of an individualist culture tend to follow the attenuation strategy described above, members of a collectivist culture tend to follow an additive strategy wherein both source and attribute information impact product evaluations. In Experiments 2 and 3, we provide further support for the proposed psychological mechanism underlying these results, and identify contexts under which these cultural differences are diminished.
Additivity Versus Attenuation:

The Role of Culture in the Resolution of Information Incongruity

Considerable research in social psychology and consumer behavior has examined the role of information incongruity on processes of persuasion. Much of this research adopts the perspective that incongruity presents a dilemma that must be resolved. To illustrate, balance theory (Heider, 1958) suggests that individuals have a preference for congruity or states of "balance." A dislike for incongruity or "imbalance" drives individuals to resolve the incongruity, often by discounting inconsistent information (cf., Festinger, 1957; Wyer, 1970). The need to resolve incongruity impacts impression formation (e.g., Anderson and Jacobson, 1965), judgment processes (e.g., Maheswaran and Chaiken, 1991), as well as the extent of information processing (e.g., MacInnis and Park, 1991; Srull and Wyer, 1989).

However, a need to resolve incongruity by discounting inconsistent information may not always exist. Recent research indicates that incongruity may be tolerated, even accepted and remain unresolved, in some cultures. In this research, we draw on the literature in cultural psychology to examine how consumers in individualist versus collectivist cultures react differently to information incongruity enroute to forming product evaluations (Hofstede, 1990). Experiment 1 shows that when faced with incongruity between source and attribute information, individualists increase elaboration to arrive at product evaluations primarily on the basis of attribute information, attenuating the conflicting source information. Collectivists, on the other hand, do not increase elaboration when exposed to incongruity; rather they incorporate both source and attribute information in their product evaluations, thus engaging in an averaging or additivity evaluation strategy.

Apart from documenting cultural differences in reactions to incongruity, we show that these differences are not contextually stable. Experiment 2 identifies conditions under which members of
both cultures attenuate the source when faced with incongruity, while Experiment 3 depicts a context in which both members of cultures engage in an additive strategy under incongruity. Together, these findings provide boundary conditions for the cultural differences found in Experiment 1.

Theoretical Background

Incongruity and the Individualism-Collectivism Dimension

Individualism-collectivism, defined as the extent to which a culture encourages independent versus interdependent selves, explains considerable variation in attitudes and behavior across cultures (Hofstede, 1990). Members of individualist cultures (e.g., United States, Australia and Canada) tend to hold an independent view of the self that portrays the self as distinct from others, and consequently emphasizes separateness, autonomy, and self-sufficiency. In contrast, members of collectivist cultures (e.g., Hong Kong, Taiwan and Japan) tend to hold an interdependent view of the self that portrays the self as inter-relating to close others and therefore emphasizes connectedness, social context and harmony (Singelis, 1994).

Recent research has examined the attitudinal and behavioral consequences of these distinct self-construals (Triandis, 1989). Much of this research directly or indirectly suggests that when faced with a conflict between two opposing perspectives, individualists tend to resolve the conflict by favoring one perspective over the other, whereas collectivists attempt to arrive at an averaging position by factoring in both opposing elements. For example, based on the heightened need for harmony in members of collectivist (versus individualist) cultures, differences in the types of negotiating strategies preferred by collectivists versus individualists exist (Leung, 1987). When asked how they would resolve a conflict scenario, undergraduate students from Hong Kong (versus the U.S.) preferred bargaining, which results in a compromise position that is mutually acceptable to both parties. In contrast, the U.S. (versus Hong Kong) participants preferred adversarial procedures,
which result in win-or-lose outcomes that favors one party’s point of view over that of the other
party.

More recent research suggests that the differential treatment of conflicting or incongruent
information also applies to self-construal (Cousins, 1989; Kitayama, Markus, Matsumoto and
Norasakkunkit, 1997). For example, Kitayama et al. (1997) examined how members of both cultures
monitor information regarding their self. They found that for people with independent selves, "self-
estee m hinges primarily on identifying and expressing positive features of self while shunning and
discounting negative features" (pg. 1253), while for people with interdependent selves, self-esteem
hinges on the intake and incorporation of both positive and negative self information. The authors
suggest that Americans have a highly elaborated concept of self-enhancement which leads to a
discounting of negative information in favor of positive information, while Japanese have a highly
elaborated concept of self improvement or hansei, (meaning "reflection") which leads to an intake of
both types of information.

Bagozzi, Wong and Yi (1997) provide further insight into how individualists versus
collectivists treat incongruity differently by examining the structural representation of emotions.
The authors find that negative and positive emotions tend to co-occur for members of collectivist
cultures (China), while only negative or positive emotions, but not both, occurs for members of
individualist cultures (U.S.). The authors suggest that because emotions experienced by the
independent self are linked to actions and are used to distinguish the self from others, they are critical
for both self-definition and social interaction. Consequently, individualists are driven by a need to
accurately classify their emotions into distinctly valenced categories, and are less likely to tolerate
conflicting emotions. In contrast, the social context, rather than self-experienced emotions, is the
basis for action for collectivists. Therefore, it is relatively less important for collectivists to
accurately classify emotions into distinct categories. As a result, collectivists may incorporate both
emotion types simultaneously without needing to resolve the incongruity between them; a pattern which is consistent with the collectivist approach of following "a general life goal of dissolving dualities" (Bagozzi et al., 1997; pg. 10).

These distinct streams of research suggest that individualists and collectivists react differently to incongruity between opposing elements in the environment (e.g., personal versus others' goals, own desires versus situational norms, positive versus negative information and emotions). Individualists tend to react to the incongruity by discounting one piece of information in favor of the other, while collectivists tend to respond to incongruity by giving weight to both pieces of information. Although this cultural difference has thus far been documented primarily in interpersonal contexts, we propose that differences in reactions to incongruity can transfer to non-interpersonal contexts via processes of socialization and induction (cf., Aaker and Maheswaran, 1997; Morris and Peng, 1994). In particular, the current research examines the different ways in which members of individualist and collectivist cultures react to information incongruity in the consumer persuasion context.

**Information Incongruity and Persuasion**

Information incongruity has been defined as the orthogonality between the valence of two information sources (Osgood and Tannenbaum, 1955). In consumer persuasion contexts such as advertising, product information often contains incongruent or inconsistent elements. For example, the classic source/message dichotomy in persuasion research (e.g., Hovland, Janis and Kelley, 1953) highlights situations in which the source of a message (e.g., a product endorser) is perceived positively while the product attributes are perceived negatively, or vice-versa.¹ The question then arises, what is the relative impact of the source cue versus attribute information on product evaluations? Earlier research on dual process models of persuasion (Elaboration Likelihood Model and Heuristic-Systematic Model) indicates that, under the low involvement conditions that are
typical of much consumer information processing (Kassarjian, 1978; Krugman, 1965), product evaluations are largely based on source information, which functions as a peripheral or heuristic cue (e.g., Petty, Cacioppo and Schumann, 1983). However, more recent research suggests that when the valence of the cue and attributes are incongruent, information relating to the cue is attenuated and evaluations are based primarily on the more diagnostic attribute information, even under conditions of low involvement (Chaiken, Liberman and Eagly, 1989).

To illustrate, Maheswaran and Chaiken (1991) examined the relative impact of a heuristic cue (degree of consensus: participants were told that 81% versus 20% of consumers were satisfied with the product) and product attribute information (the product was described as superior versus inferior to competitors on several attributes) for a new brand of answering machine. Under low involvement conditions, product evaluations were primarily based on the cue when the cue and attributes were congruently valenced. However, only attribute information significantly impacted evaluations when the cue and attributes were incongruent. Process measures suggested that the observed attenuation of the cue in this experiment was caused by the increase in elaboration produced by incongruity. These findings are consistent with the premise that a need for incongruity resolution leads to greater elaboration of incoming information (Heckler and Childers, 1992; Srull and Wyer, 1989). In turn, as would be predicted by dual process models, greater elaboration ensures that only the more diagnostic (attribute) information impacts product evaluations, to the relative neglect of the less diagnostic (cue) information (Chaiken et al., 1989; Petty et al., 1983).

Culture, Incongruity, and Reactions to Product Information

While research conducted in individualist cultures such as the U.S. has shown that incongruity between cue and attribute information leads to increased elaboration, we propose that this mechanism will not hold in collectivist cultures. The extant literature in cultural psychology
indicates that collectivists are more likely to tolerate incongruity as compared to individualists (e.g., Bagozzi et al., 1997; Kitayama et al., 1997; Leung, 1987). Consequently, while individualists tend to increase elaboration in order to resolve incongruity (e.g., Srull and Wyer, 1989), such an increase should not be observed for collectivists who are less likely to feel compelled to resolve the incongruity. Thus, for individualists, incongruity between source and attribute information should increase elaboration of the overall product information (as compared to baseline congruity levels), but not for collectivists. Since increased elaboration is manifested in a greater number of total thoughts about the information (Petty and Cacioppo, 1986), we arrive at the following:

Hypothesis 1: Incongruity between source and attribute information will result in an increase in the total number of thoughts about the product information for individualists, but not for collectivists.

The processing differences between individualists and collectivists should also impact persuasion outcomes in the face of information incongruity. In particular, high elaboration raises the diagnosticity threshold for judgmental inputs (Chaiken et al., 1989; Feldman and Lynch, 1988). That is, people tend to rely only on more diagnostic information while forming judgments under high elaboration conditions, to the relative neglect of less diagnostic information (Petty and Cacioppo, 1986). Accordingly, when faced with incongruity between attribute and cue information, individualists' evaluations should follow an attenuation strategy in which evaluations are influenced by the more diagnostic attribute information, but not by the less diagnostic source cue (Maheswaran and Chaiken, 1991). In contrast, collectivists should not engage in increased elaboration when faced with incongruity because they feel less compelled to resolve the incongruity. Rather, they should be more likely to simultaneously incorporate both pieces of conflicting information. Accordingly, collectivists
should follow an additive strategy (Maheswaran and Chaiken, 1991) wherein evaluations are influenced by both attribute and source information.

Hypothesis 2: Incongruity between source and attribute information will result in individualists' product evaluations being influenced solely by attribute information, while collectivists' product evaluations will be influenced by both source and attribute information.

Experiment 1

Overview

To test the hypotheses, a 2 (Cultural Orientation: individualism versus collectivism) x 2 (Source Cue: negative versus positive) x 2 (Attribute Information: negative versus positive) between-subjects design was used. While this paper focuses on incongruity cells and no hypotheses were put forth for conditions of congruity between attribute and source, congruity cells were included to establish baseline levels for cognitive responses within each culture. As Hui and Triandis (1985) argue, a drawback of using cultural orientation as an independent variable is that some variables of interest may not be equivalent across cultures. A specific concern in the current research is the tendency for members of different cultures to express a different number of total thoughts across conditions (Alden, Stayman and Hoyer, 1994; Douglas, 1980). This issue is particularly relevant in light of Hypothesis 1, which postulates differences in elaboration for individualists versus collectivists under incongruity. Malpass and Poortinga (1986) suggest that such concerns can be addressed by a “comparison of inferences” method, which posits that, in cases of non-equivalence across cultures, hypotheses may be tested through appropriate within culture comparisons (e.g. Alden et al., 1994). The current research applies this method by including the congruity cells as a baseline for total thoughts expressed in a culture. Thus, if there is a main effect of culture on total thoughts, Hypothesis 1 may be tested by comparing incongruity conditions to congruity conditions
within each culture. Support for the hypothesis would require an increase in total number of thoughts under incongruity versus congruity for individualists, but not for collectivists.

**Method**

**Culture**

The United States was chosen as the individualist culture while Hong Kong was selected as collectivist culture for several reasons. First, existing research documenting attenuation under conditions of incongruity has typically been conducted with American participants, and the U.S. rates the highest on the individualism-collectivism dimension (Hofstede, 1990). Hong Kong, on the other hand, rates near the lowest on the dimension and has been used as an example of a collectivist culture in recent research (e.g., Aaker and Maheswaran, 1997). Second, the U.S. and Hong Kong receive similar ratings on potentially confounding variables including Power Distance, Masculinity, and Uncertainty Avoidance (Hofstede, 1990). Third, the choice of these two cultures ensured a high degree of participant similarity across the two cultures on demographic and psychographic dimensions since student participants from undergraduate programs in major universities in both the U.S. and Hong Kong were used. Fourth, potential problems arising from issues of stimuli translation were avoided since students in Hong Kong universities possess high levels of English comprehension skills.

**Stimulus Material**

Tennis racquets was chosen as the stimulus product category on the basis of pretests showing that undergraduate students in the U.S. and Hong Kong (n = 54) did not differ in their ratings of tennis racquets along dimensions of interest, likability and familiarity (Fs < 1 in each case). Accordingly, a second pretest was conducted to identify important and unimportant attributes for tennis racquets, as well as positively versus negatively-valenced descriptions of an endorser. Chinese and American (n = 23) undergraduate students were first instructed to rate the importance of a set of
ten attributes of tennis racquets. On a 7-point Likert scale ("1": not at all important; "7": extremely important), "Racquet weight" and "Presence of shock absorbers" received high importance ratings (Ms = 5.76, 5.17, respectively), while "Number of colors in string" and "Presence of an extra strap" received low importance ratings (Ms = 3.69, 3.75, respectively; F = 5.50, p < .001). No interaction effect was found for culture (Fs < 1).

In addition, these participants also rated a set of endorsers on 7-point liking scales (very unfavorable-favorable; dislike-like; bad-good; Cronbach's alpha = .84). In several iterations of pretesting and pilot testing, the source manipulation was found to be consistently weaker than the attribute information, to the extent that the source was overwhelmed by the attributes in terms of influencing evaluations. Therefore, we drew on prior work showing that both endorser expertise (Kamins and Gupta, 1994), and intrinsic endorser attractiveness (Petty et al., 1983) contribute to endorser likability. Both of these factors were incorporated in the manipulation of endorser likability (see endorser descriptions below). The positively-valenced endorser description chosen on the basis of this pretest received higher ratings on likability (M = 4.69) than the negatively-valenced description (M = 3.70; F = 5.07, p < .001). No cultural differences were found (F < 1).

A final pretest was conducted to assess perceptions of congruity between the attribute and endorser information. Chinese and American undergraduate students (n = 84) were exposed to one of the four possible combinations of attribute and endorser information. Participants were asked to provide ratings of congruity between the attribute and endorser information on two 7-point scales (low congruity-high congruity; low consistency-high consistency; r = .82). As expected, higher ratings for congruity were obtained for the congruent conditions (M = 4.42) versus the incongruent conditions (M = 3.41; F = 9.30, p < .001), and no cultural differences were found (Fs < 1).
Participants and Procedure

A total of 67 Caucasian participants (mean age = 20, 52% female) from an undergraduate program at a large west coast university in the U.S., and 81 Chinese participants (mean age = 21, 78% female) from an undergraduate program at a large Hong Kong University were recruited to participate.

Participants were asked to read the product description of a new tennis racquet called the "Lightning". All participants were exposed to low involvement instructions because prior research has shown that it is under low involvement that incongruity causes an increase in elaboration among individualists, leading to attenuation of the heuristic cue (Maheswaran and Chaiken, 1991). Accordingly, low involvement was manipulated by telling participants that the Lightning would soon be introduced on the east coast (for American participants living on the west coast) or in a neighboring country (for Chinese participants living in Hong Kong). Further, participants were informed that as respondents in this large-scale survey, their opinions would be averaged with those of other participants, and analyzed at the aggregate level. In addition, they were told that it was not necessary to take much time reading the product description; forming a quick impression of the advertised product would suffice (Petty and Cacioppo, 1986).

Following these initial instructions, participants were given a description of the Lightning tennis racquet. Part I of the product description focused on Endorser Information. As explained above, both attractiveness and expertise were included in the description to arrive at a stronger manipulation of source valence. Thus, participants in the positive source cue condition read,

"John Kains is a star tennis player at a top university in Europe. He is the captain of the men’s tennis team, and will be turning pro next year. In addition, John is a very popular student at his school and in his community. Not only is John a great athlete, he also has an outstanding sense of sportsmanship and fair play. In this age
of tantrum-throwing athletes, John’s impressive behavior on the tennis court has brought him many admirers worldwide, making him a much sought after endorser of sports equipment. John has been chosen to be the leading endorser of Lightning tennis racquets."

Participants in the negative source cue condition read,

"John Kains is a star soccer player at a top university in Europe. He is the captain of the men’s soccer team, and will be turning pro next year. However, John is a very unpopular student at his school and in his community. Although he is a great athlete, John seems to have little to no regard for sportsmanship and fair play. However, in this age of tantrum-throwing athletes, John’s controversial behavior on the soccer field has fetched him a great deal of media attention worldwide, making him a much sought after endorser of sports equipment. John has been chosen to be the leading endorser of Lightning tennis racquets."

Next, participants read Part II of the product description outlining that the Lightning tennis racquet had been compared with leading competitive brands (in the same price range) on several major attributes by an independent market research firm, and test results had been provided. Participants in the positive attribute information conditions were told that the Lightning rated favorably against competitive racquets on two important attributes: racquet weight and presence of shock absorbers, but inferior on two unimportant attributes: number of string colors and presence of an extra strap. In the negative attribute information conditions, participants were told the converse: the Lightning was inferior on the two important attributes, but superior on the two unimportant attributes.

Each attribute was described in a distinct paragraph of approximately 70 words. To illustrate, racquet weight was described as follows, "The new Lightning racquet is light. While most
competitive brands of tennis racquets weigh about 300-351g, the Lightning weighs about 250g. Further, the weight is optimally distributed to be heavier on the sides of the frame, which means the tennis racquet is less likely to twist. Therefore, the Lightning is more stable than competitive racquets.”

Next, participants were asked their evaluations of the new product. Subsequently, participants were given three minutes to list any of their thoughts regarding the product description, with each thought being placed in a separate box. Participants completed a series of ancillary measures, including a set of manipulation checks and Singelis’ (1994) Independent-Interdependent Scale. Finally, participants responded to an open-ended suspicion probe, and were thanked and debriefed.

**Results**

**Manipulation Checks**

The manipulation checks were analyzed on the basis of a 2 (Cultural Orientation: individualism versus collectivism) x 2 (Source Cue: negative versus positive) x 2 (Attribute Information: negative versus positive) between-subject analysis of variance (ANOVA). Unless otherwise specified, degrees of freedom are 1 and 140. Several sets of manipulation checks were included in the questionnaire. First, participants rated the extent to which the attribute information portrayed the Lightning as having many (versus few) positive features, few (versus many) negative features, and as superior (versus inferior) to competing brands. These three 7-point scales were averaged to form an attribute index (Cronbach’s alpha = .89). The ANOVA on the attribute index showed that Lightning’s attributes were perceived more favorably in conditions of positive (M = 4.89) versus negative attribute information (M = 3.65; F = 29.40, p < .01).

Second, participants rated the product endorser, John Kains, on a set of three 7-point scales: likable-unlikable; unfavorable-favorable; bad-good, which were averaged to create source likability
index (Cronbach’s alpha = .95). As expected, a significant main effect of Source Cue on endorser likability (F = 42.77, p < .01) revealed that participants exposed to the positive source description expressed greater liking for the source (M = 4.80) than those exposed to the negative source description (M = 3.26).

Finally, to ensure that the individualism-collectivism cultural variable was tapped through the use of American versus Chinese participants, an Interdependence-Independence index was created by averaging the 31 items of the Singelis (1994) scale (Cronbach’s alpha = .91). Consistent with Hofstede (1990), American participants (M = .90) received higher independent scores than did Chinese participants (M = .01; F = 10.11, p < .01).

Hypothesis Testing

To test the effects of incongruity across cultures, a dummy variable termed “Congruity” was created by combining the attribute information and source cue variables. When Attribute Information and Source Cue had the opposite valence, the Congruity variable received a value of 0 (incongruity cells); when Attribute Information and Source Cue had the same valence, the Congruity variable received a value of 1 (congruity cells). The hypotheses were analyzed in the context of a 2 (Cultural Orientation) x 2 (Congruity) between-subjects design. Gender was included as a covariate in the analyses, but was not significant. Unless otherwise specified, degrees of freedom are 1 and 144.

Cognitive Responses. Thoughts about the Lightning were categorized by two independent raters as attribute-related (A) or source-related (S) and as expressing positive (+), negative (-) or neutral (0) evaluations. The following thoughts illustrate this coding scheme: “The Lightning’s shock absorber are important” (A+), “The Lightning doesn’t come in many colors” (A-), “Where do you buy the Lightning?” (A0), “The fact that John Kains uses the Lightning helps the products” (S+), “John Kains is not very impressive” (S-), “Who is John Kains?” (S0). Inter-rater agreement was 93%; discrepancies were resolved through discussion.
Consistent with suggestions that the total number of cognitive responses tend to vary across cultures (Alden et al., 1994; Douglas, 1986), a significant main effect for Cultural Orientation was found for total number of thoughts ($F = 8.88, p < .01$); collectivists had more total thoughts than did individualists (see Table 1). Accordingly, to test Hypothesis 1, which posits that incongruity increases elaboration for individualists but not for collectivists, we examined the interaction of Cultural Orientation and Congruity (cf., Malpass and Poortinga, 1986). The two-way interaction was significant ($F = 3.40, p < .05$). A planned contrast indicated that as predicted, total thoughts were higher for individualists ($F = 5.63, p < .01$) in conditions of incongruity ($M = 3.29$) versus congruity ($M = 2.55$). In further support of Hypothesis 1, total thoughts did not differ for collectivists in conditions of incongruity ($M = 3.53$) versus congruity ($M = 3.64; F < 1$).

Further insights into cultural processing differences are provided by separately examining the pattern of attribute thoughts and source thoughts. For individualists, attribute thoughts increased in conditions of incongruity ($M = 2.66$) versus congruity ($M = 1.60; F = 11.62, p < .001$), while source thoughts decreased in conditions of incongruity ($M = .36$) versus congruity ($M = .81; F = 6.49, p < .05$). For collectivists, however, attribute thoughts did not vary in conditions of incongruity ($M = 2.25$) versus congruity ($M = 2.50; F < 1$). Similarly, source thoughts did not differ for incongruity ($M = 1.03$) versus congruity ($M = .94, F < 1$).

This pattern of results provides support for our basic premise that incongruity increases elaboration for individualists, leading to a greater focus on the more diagnostic (attribute) information to the relative neglect of the less diagnostic (source) information. On the other hand, incongruity does not raise elaboration for collectivists; consequently, there is no tendency to focus on one piece of information to the neglect of the other, even in conditions of incongruity. Results relating to the impact of these processing differences on product evaluations are provided below.
**Evaluations.** Hypothesis 2 suggests that in conditions of incongruity, evaluations of individualists will be influenced solely by Attribute Information, while evaluations of collectivists will be influenced by both Attribute Information and Source Cue. Since the valence of the attribute information and cue cannot be independently manipulated for the incongruity cells, Hypothesis 2 cannot be tested by means of an ANOVA. Therefore, regression analyses were conducted to test this hypothesis. Following previous research (Maheswaran and Chaiken, 1991), product evaluations were regressed on the following two indices: Valenced Attribute Thought (positive minus negative attribute thoughts; VAT) and Valenced Source Thought (positive minus negative source thoughts; VST). A significant regression coefficient for VAT (unstandardized beta weight) is assumed to provide direct evidence that attribute information influenced evaluations while a significant coefficient for VST (unstandardized beta weight) indicates that the source cue impacted evaluations.

To examine the predictions of Hypothesis 2, regression analyses were carried out separately in each culture (Aiken and West, 1991). The first analysis examined the pattern of results in the incongruent cells for individualists. In support of Hypothesis 2, only the slope of the VAT index was significant for individualists ($b = .34, t = 5.41, p < .01$), while the slope for the VST index was not significant ($b = .13, t < 1$) in conditions of incongruity. Thus, for individualists, only attribute information impacted evaluations in incongruity. In contrast, both the slope of VAT ($b = .34, t = 3.69, p < .01$) and the slope of VST were significant for collectivists ($b = .36, t = 2.51, p < .01$) in conditions of incongruity. Thus, as predicted by Hypothesis 2, under conditions of incongruity, collectivists’ evaluations were impacted by both cue and attribute information (see Table 1).

**Discussion**

Experiment 1 uncovered significant differences in processing strategies and product evaluations for individualist versus collectivist cultures in conditions of incongruity. When members
of an individualist culture were faced with incongruity between a source cue and attribute information, they attenuated the source in favor of the more diagnostic attribute information. Members of a collectivist culture, however, appeared to use an additive rather than an attenuation strategy when faced with incongruity: both the source cue and attribute information impacted their product evaluations.

What is the underlying mechanism explaining these differences? Results on the process measures in Experiment 1 lend weight to the premise that collectivists are more likely to tolerate incongruity as compared to individualists (Bagozzi et al., 1997; Cousins, 1989). Faced with incongruity, individualists are motivated to resolve the incongruity to arrive at the "truth" and consequently engage in information elaboration (Srull and Wyer, 1989). Increased elaboration leads to a greater impact of the more diagnostic attribute information on evaluations, to the relative neglect of the less diagnostic source information (Maheswaran and Chaiken, 1991). In contrast, collectivists are not impelled to resolve the incongruity, and hence do not increase elaboration. Rather, collectivists are willing to let their judgments reflect the different, opposing facets of the external information. Thus, collectivists' evaluations incorporate the impact of both the source and attribute information.

Support for the mediating role of elaboration derives from the thought protocols used in Experiment 1. These measures revealed that incongruity led to increased elaboration for individualists. Further, incongruity produced an increase in attribute-related thoughts and a decrease in source-related thoughts for individualists, supporting the premise that incongruity-induced elaboration led to a greater focus on the more diagnostic information. Collectivists, on the other hand, did not exhibit any change in total thoughts, source-related thoughts or attribute-related thoughts in conditions of incongruity versus congruity, consistent with the rationale that incongruity does not lead to greater elaboration for collectivist cultures.
More complete support for the proposed role of elaboration would be obtained by examining the flip side of the involvement coin. Keeping in mind that Experiment 1 was carried out under the low elaboration conditions induced by low involvement, the rationale delineated above suggests that the observed cultural differences should be diluted if members of both cultures were to process the information under high elaboration conditions. High involvement has been found to produce increased elaboration in both individualist (Maheswaran and Chaiken, 1991) and collectivist cultures (Aaker and Maheswaran, 1997). Accordingly, under high involvement, we expect no differences in elaboration for individualists and collectivists in the processing of incongruent information, particularly in light of earlier findings that incongruity does not increase elaboration over the levels already produced by high involvement in individualist cultures (Maheswaran and Chaiken, 1991). Further, given similar high levels of elaboration, we expect that consumers in both cultures will tend to rely on more diagnostic (attribute) information while forming judgments, to the relative neglect of less diagnostic (cue) information. More formally:

Hypothesis 3: Under conditions of high involvement, incongruity between the source and attribute information will not lead to an increase in total product thoughts for individualists relative to collectivists.

Hypothesis 4: Under conditions of high involvement, incongruity between the source and attribute information will result in evaluations of both collectivists and individualists being influenced solely by attribute information.

Experiment 2

Overview

A 2 (Cultural Orientation: individualism versus collectivism) x 2 (Source Cue: negative versus positive) x 2 (Attribute Information: negative versus positive) between-subject design was used
to test Hypotheses 3 and 4. As in Experiment 1, no hypotheses are formulated for the congruity cells. However, they were included to provide a baseline level of cognitive responses in each culture.

Method

Stimulus Materials

A pretest was conducted to assess perceptions of involvement for Experiment 2 relative to Experiment 1. Chinese and American undergraduate students (n = 88) were exposed to either congruent (source/attribute similarly valenced) or incongruent (source/attribute differently valenced) product description. A third of the participants each received the low involvement instructions (as in Experiment 1), high involvement instructions (as in Experiment 2), and accountability instructions (to be discussed in Experiment 3). Next, they were asked to rate the favorability of the product (to be consistent with the cover story), and then how involved they were in reading the product description (not at all involved, motivated, interested; very involved, motivated, interested; Cronbach’s alpha = .89). No interactive effects of culture or congruity were found (Fs < 1). As expected, significantly higher ratings were obtained for the high involvement conditions (M = 4.62) versus the low involvement conditions (M = 3.32; F = 3.81; p < .01). Higher ratings (M = 4.22) were obtained for the accountability instructions (used in Experiment 3) compared to low involvement (F = 2.77; p < .01), but not as compared to high involvement (F < 1).

Participants and Procedure

A total of 87 Caucasian participants (mean age = 20, 54% female) from an undergraduate program at a large west coast university in the U.S., and 69 Chinese participants (mean age = 20, 81% female) from an undergraduate program at a large Hong Kong University were recruited for this experiment. The same procedure used in Experiment 1 was utilized in Experiment 2 with one exception. Instead of being exposed to low involvement instructions, participants were exposed to high involvement instructions. They were told that the Lightning would soon be introduced on the
west coast (for American participants living on the west coast) or in Hong Kong (for Chinese participants living in Hong Kong). Further, participants were told that their opinions were extremely important, and would be analyzed individually by the marketers of the product. Accordingly, participants were instructed to take their time reading the product description and form a careful impression of the advertised product.

Results

Manipulation Checks

As in Experiment 1, the manipulation checks were tested based on a 2 (Cultural Orientation: individualism versus collectivism) x 2 (Source Cue: negative versus positive) x 2 (Attribute Information: negative versus positive) between-subject ANOVA. Unless otherwise specified, the degrees of freedom are 1 and 148. As intended, a check on the attribute index (Cronbach’s alpha = .80) indicated that participants who received the positive ($M = 4.62$) versus negative ($M = 3.56$) attribute information correctly perceived it as favoring the Lightning over its competitors ($F = 30.30, p < .01$). A check on the endorser likability index (Cronbach’s alpha = .93) indicated that participants perceived the positive source ($M = 4.80$) to be more likable than the negative source ($M = 3.26; F = 118.31, p < .01$). Finally, as expected, American participants ($M = .34$) received higher independent scores than did Chinese participants ($M = -.04; F = 2.68, p < .05$) on the Singelis Independent-Interdependent Scale.

Hypothesis Testing

As in Experiment 1, a Congruity dummy variable was created by combining appropriate levels of the attribute information and the source information to test the effects of incongruity across cultures. Thus, the hypotheses were analyzed in a 2 (Cultural Orientation) x 2 (Congruity) between-subjects design. Gender was included as a covariate in the analyses, but was not significant. Unless
otherwise specified, degrees of freedom are 1 and 152. Inter-rater agreement for the thought coding was 90%.

**Cognitive Responses.** Hypothesis 3 states that incongruity will not lead to a greater increase of total thoughts for individualists relative to collectivists. As in Experiment 1, the ANOVA on total number of thoughts yielded a significant main effect for Cultural Orientation: Chinese participants (M = 3.56) had more total thoughts than did American participants (M = 3.14; F = 6.82, p < .01). However, more importantly, the two-way interaction of Cultural Orientation and Congruity was not significant (F < 1), indicating that exposure to incongruity did not lead to an increase in product thoughts for individualists relative to collectivists (see Table 2). The main effect of congruity for the total number of thoughts was also non-significant (F < 1). In conjunction with the non-significant interaction effect, the absence of a significant effect for Congruity on thoughts shows that, in both cultures, incongruity (versus congruity) did not produce any additional elaboration above that produced by the high involvement instructions, supporting Hypothesis 3.

Analyses of attribute-related thoughts and source-related thoughts provided further insights into the impact of incongruity across the two cultures. For individualists, attribute thoughts did not increase under conditions of incongruity (M = 2.02) versus congruity (M = 2.07; F < 1). Partial evidence for an attenuation strategy, however, was provided by the pattern of source thoughts, which were lower in conditions of incongruity (M = .66) versus congruity (M = .83), although this trend did not reach significance (F = 1.38, p = .11). For collectivists, the number of attribute thoughts was marginally higher under incongruity (M = 2.70) versus congruity (M = 2.31; F = 2.50, p < .07), while the number of source thoughts was significantly lower under incongruity (M = .59) versus congruity (M = .89; F = 4.02, p < .05), consistent with the predicted attenuation strategy.

While the lack of variation in attribute thoughts in conditions of incongruity versus congruity can be attributed to the uniformly high involvement nature of the processing, the pattern
of source thoughts indicates some degree of attenuation in both cultures. More direct evidence for attenuation under incongruity is provided by the findings relating to the impact of source versus attributes on product evaluations.

**Evaluations.** Hypothesis 4 states that when incongruity between source and attribute information exists, high involvement will cause members of both cultures to base their evaluations solely on attribute information. Following Experiment 1, Hypothesis 4 was tested by using valenced thought indices as proxies for the influence of Attribute Information and Source Cue in the intraculture regression analyses. The first analysis examined the pattern of results in the incongruity conditions for individualists. In support of Hypothesis 4, under incongruity, only the slope of VAT was significant ($b = .36, t = 5.41, p < .01$), not the slope of VST ($b = .20, t < 1$). A second regression analysis tested the equivalent prediction for collectivists. As predicted, in conditions of incongruity, only the slope of VAT was significant ($b = .43, t = 4.99, p < .01$), not the slope of VST ($b = -.22, t < 1$). Thus, when faced with incongruity between attribute information and source cue information, members of both cultures relied solely on attribute information to form evaluations under high involvement (see Table 2).³

**Discussion**

Experiment 2 revealed that individualists and collectivists react similarly to incongruity between source and attribute information under high involvement conditions, both in terms of information processing and product evaluations. These results lend increased support to the role of elaboration in explaining the cultural differences found in Experiment 1. One reason suggested for the individualists' use of an attenuation strategy (versus the additive strategy adopted by collectivists) was that individualists engage in more elaboration when faced with incongruity, while collectivists do not. This reasoning implies that collectivists should also follow an attenuation strategy under conditions of high elaboration, such as those induced by high involvement processing. In showing
that collectivists did attenuate the source cue in favor of attribute information under high elaboration conditions, Experiment 2 provides further support for the mechanism underlying the results found in Experiment 1.

It should be noted that although collectivists engaged in attenuation in Experiment 2 versus additivity in Experiment 1, their total number of thoughts did not differ in the two experiments (Experiment 1: 3.59, Experiment 2: 3.56, \( F < 1 \)). While surprising, this result is consistent with Alden et al.'s (1994) study which found that in a collectivist culture (Thailand), increasing involvement did not result in more total thoughts, although a more sensitive measure (processing time) provided strong evidence of greater elaboration under high involvement. In the current research, evidence of different elaboration levels across different involvement conditions is provided by another measure, namely, source thoughts. Consistent with the premise that higher levels of involvement and elaboration are generally accompanied by fewer thoughts about the source (Petty and Cacioppo, 1986), collectivists had fewer source thoughts on average in Experiment 2 (\( M = .73 \)) as compared to Experiment 1 (\( M = .98, F = 4.25, p < .05 \)).

The pretest for involvement instructions also provided support, with the Experiment 2 instructions leading to higher involvement for collectivists (mean = 4.50) versus those used in Experiment 1 (mean = 3.11, \( F = 3.60, p < .01 \); see also Aaker and Maheswaran, 1997 for a similar manipulation of elaboration in the same collectivist culture). The evidence thus suggests that the different evaluation strategies used by collectivists in the two experiments were accompanied by different levels of elaboration.

Experiment 2 results provide a boundary condition to the cultural differences demonstrated in Experiment 1, and lead to the inference that the two evaluation strategies documented in Experiment 1 (additivity and attenuation) are not hard-wired to particular cultures. Thus, while collectivists employed an additive strategy in Experiment 1, increasing involvement in Experiment 2
led them to employ the attenuation strategy typically used by individualists. The conclusion that both cultures may at times use the same evaluation strategy leads to an interesting question: Are there conditions under which members of both cultures will engage in an additive strategy when faced with incongruity?

Research on the effects of accountability (Tetlock, 1983; Tetlock and Boettger, 1989) suggests an answer. When individuals are told they will have to justify their views and process information particularly carefully, recall is heightened (Tetlock, 1983) and the probability of judgment biases decreases (Tetlock, 1985). Thus, accountability can produce consequences similar to those resulting from high involvement (Alba, Marmostein and Chattopadhyay, 1992).

There is, however, an important difference between the effects of accountability and involvement that is particularly relevant to the current research. Accountability can magnify the dilution effect – a phenomenon wherein the impact of diagnostic information on evaluations is diluted by the influence of relatively non-diagnostic information. To illustrate, Tetlock and Boettger (1989) asked accountable and non-accountable participants to predict the GPA of a student named Robert. Based on a description of Robert, non-accountable participants relied solely on diagnostic information (e.g., “Robert studies 31 hours per week”) to arrive at their judgments, while accountable participants incorporated both nondiagnostic (e.g., “Robert is widely regarded by his friends as being honest”) and diagnostic information. The authors suggest that accountability not only motivates people to analyze information more carefully (as does involvement), it leads them to use a wider range of information in forming their views, without making them more discriminating about the diagnosticity of the added information (as distinct from the effects of involvement). The latter effect – i.e., the use of a wider range of information – stems from a desire to appear to have formed a considered and well thought-out opinion (“evaluation apprehension”: Simonson and Nowlis, 1997).
Thus, accountable people, even while carefully analyzing the presented information, are likely to incorporate both diagnostic and non-diagnostic elements in their judgments. Based on this premise, we propose that accountability should lead to individualists as well as collectivists employing an additive strategy when faced with incongruity, even under the high involvement conditions that have been shown to lead to attenuation across cultures (Experiment 2). Specifically, when faced with a mismatch between (diagnostic) attribute and (relatively non-diagnostic) source information, participants who are told that they will later have to justify their judgments should incorporate both attribute and source information into their product evaluations. Formally:

Hypothesis 5: Under conditions of high accountability, incongruity between source and attribute information will result in evaluations of both individualists and collectivists being influenced by both source and attribute information.

Experiment 3

Overview

A 2 (Cultural Orientation: individualism versus collectivism) x 2 (Source Cue: negative versus positive) x 2 (Attribute Information: negative versus positive) between-subjects design was used. All participants were exposed to an accountability manipulation as outlined in Tetlock and Boettger (1989).

Method

A total of 58 Caucasian participants (mean age = 20, 50% female) from an undergraduate program at large west coast university in the U.S., and 88 Chinese participants (mean age = 19, 68% female from an undergraduate program at a large Hong Kong University were recruited for this experiment. The method paralleled that outlined in Experiment 2, but participants were also told that the marketers of the product would like to conduct an interview with them after the experiment to explore the types of information that people use to form impressions of products. Participants
were asked to sign their name at the bottom of the page to indicate their willingness to be interviewed. In addition, they listed two possible appointment times during which they could meet with the researchers for an interview to discuss their responses.

**Results**

**Manipulation Checks**

Manipulation checks were analyzed with a 2 (Cultural Orientation: individualism versus collectivism) x 2 (Source Cue: negative versus positive) x 2 (Attribute Information: negative versus positive) between-subjects ANOVA. The associated degrees of freedom are 1 and 144. As expected, an ANOVA on the attribute index (Cronbach's alpha = .80) indicated that participants who received the positive ($M = 4.61$) versus negative ($M = 3.30$) attribute information correctly perceived the Lightning as possessing superior attributes to its competitors ($F = 49.14, p < .01$). Also as expected, participants rated the positive source ($M = 4.50$) more highly on the endorser likability index (Cronbach's alpha = .94) than the negative source ($M = 3.18; F = 46.02, p < .01$). Further, American participants ($M = .46$) received higher independent scores than did Chinese participants ($M = -.01; F = 3.81, p < .05$) on the Singelis Independent-Interdependent Scale. Finally, inter-rater agreement for the thought coding was 95%.

**Hypothesis Testing**

Hypothesis 5 suggests that, given the accountability instructions used in this experiment, participants' evaluations under conditions of incongruity will be influenced by both source and attribute information for members of both cultures. As in Experiments 1 and 2, a dummy variable (Congruity) was formed by combining the different levels of attribute and source. The hypothesis was tested by means of a regression analysis relying on valenced attribute and source thoughts as predictors. In support of Hypothesis 5, regression analyses conducted for the incongruity cells for individualist subjects revealed that both the slope of the VAT index ($b = .60, t = 3.02, p < .01$) and
the slope of the VST index ($b = .44, t = 2.59, p < .01$) were significant. Similarly, collectivist subjects also engaged in an additive strategy under conditions of accountability, as shown by a significant coefficient for VAT ($b = .60, t = 3.02, p < .01$) and VST ($b = .43, t = 2.59, p < .02$). Thus, both individualist and collectivist participants used attribute and source information to form product evaluations when faced with incongruity under accountability conditions.6

Discussion

Experiment 3 showed that when confronted with an incongruity between attribute and source information, accountable members of both individualist and collectivist cultures employed an additive strategy of evaluation. Thus, accountability represents another context in which the cultural differences documented in Experiment 1 can be diluted. These findings, combined with those obtained in Experiment 2, support the premise that evaluation strategies such as additivity and attenuation are not culture specific. Rather, members of both cultures can adopt either strategy depending on the processing context.

On a different note, these results provide further support for the findings indicating the impact of accountability on the quality of elaboration, as distinct from the degree of elaboration. Researchers have suggested that accountability serves to increase elaboration (Alba et al., 1992), which should lead to a focus on the more diagnostic (attribute) information, to the relative neglect of the less diagnostic (cue) information. Tetlock and Boettger (1989), however, suggest that accountability alters the quality of elaboration as well; it fosters processing of non-diagnostic as well as diagnostic information. Consistent with this notion, they found a significant impact of accountability on the dilution effect, whereby all types of information, regardless of diagnosticity, are used to form evaluations. Not only does the current research extend these findings to the product evaluation context, but it shows that the dilution effect can be observed even when the less diagnostic (cue) information has an opposite valence to that of the more diagnostic (attribute)
information. In this light, our results serve to extend and strengthen Tetlock and Boettger’s (1989) findings regarding the impact of accountability on information processing.

General Discussion

The results reported in the current research make several contributions. Drawing on literature in cultural psychology, we postulate and find that under the low involvement conditions that often prevail in consumer information processing contexts, collectivists differ significantly from individualists in their reactions to incongruities in product information. When faced with incongruity between source and attribute information, individualists tend to base evaluations solely on attribute information – i.e., they follow an attenuation strategy. Collectivists, on the other hand, incorporate both source and attribute information – i.e., they follow an additive strategy. This basic finding adds to the growing body of work identifying contexts in which information processing differs across cultures, and provides further support for the notion, already mooted in several distinct research streams (Bagozzi et al., 1997; Cousins, 1989; Kitayama et al., 1997; Leung, 1987), that collectivists are more likely than individualists to simultaneously represent divergences in opinions, information or emotions.

We also provide support for an elaboration-based mechanism underlying the differences in evaluation strategies adopted by collectivists and individualists. Experiment 1 shows that the attenuation strategy adopted by individualists is accompanied by greater elaboration as compared to the additive strategy used by collectivists. Experiment 2 provides further support for the mediating role of elaboration by demonstrating that under conditions of high elaboration, collectivists also follow an attenuation strategy. Knowledge of this underlying process sheds insight into the cultural differences in reactions to and representations of incongruity. The finding that high involvement leads both cultures to engage in attenuation also suggests that the specific evaluation strategies that are used to deal with incongruity (e.g., attenuation and additivity) are not hard-wired to particular
cultures. Building on this premise, Experiment 3 shows that members of both cultures employ an additive strategy when faced with incongruity in certain contexts (i.e., when they feel accountable for their evaluations). Thus, not only do we document cultural differences in reactions to incongruity, we also identify boundary conditions for these differences.

From a theoretical perspective, this research has implications for the impact of culture on the relationship between incongruity and processing-evoked affect. Research conducted with American participants has found that the processing of moderate levels of incongruity between category expectations and a specific exemplar evokes favorable affect, as compared to the processing of low and high levels of incongruity (Meyers-Levy and Tybout, 1989). Thus, the relationship between incongruity and processing-evoked affect follows an inverted U-shape for individualists. The results of the current research suggest that collectivists may be more tolerant of incongruity than individualists. Accordingly, even a high level of incongruity may evoke a positive affect for collectivists, causing the relationship between incongruity and affect to follow a more linear pattern.

Finally, the notion that collectivists (as opposed to individualists) are more likely to base their product evaluations on incongruent pieces of information also carries implications in terms of attitude strength. Research on attitude structure indicates that attitudes based on conflicting elements generally tend to be weaker than attitudes based on more consistent pieces of information (Eagly and Chaiken, 1995), suggesting that product evaluations may be weaker for collectivists versus individualists under conditions of incongruity. In turn, such a difference would result in product evaluations formed by collectivists (versus individualists) being less stable over time, more susceptible to an attack, and less likely to be linked with purchase behavior (Petty and Cacioppo, 1986). Indeed, researchers have suggested that emotions and attitudes may be more weakly linked to ultimate behavior for individualists versus collectivists.
(Bagozzi et al., 1997). The current research suggests that one reason for this difference may lie in the differential structure of attitudes in collectivist versus individualist cultures.

Limitations and Future Research

The current research suffers from several limitations such as the use of only one product category, student samples, and a single individualist and collectivist culture. Future research is needed to increase the generalizability of these findings to different products, populations and cultures. Other limitations of the work offer more substantive areas for further exploration. For example, empirical evidence is needed to determine why individualists are driven to elaborate in the face of incongruity, while collectivists are not. The current work has drawn on several streams of research suggesting that collectivists are more likely than individualists to simultaneously incorporate opposing elements of information. However, we focused on the consequences of this difference, as manifested in distinct evaluation strategies for members of the two cultures, rather than determining why this tendency arises. Future research is needed to examine the antecedents of this cultural difference. Kitayama et al (1997) provide one rationale that holds intuitive appeal. They suggest that members of individualist cultures are acculturated to follow a style of decision making that necessitates choosing between options. That is, as compared to collectivists, individualists approach most situations with a mindset that impels them to choose one alternative over another. When faced with information incongruity, such a mindset may be more conducive to an attenuation strategy where one piece of information is rejected in favor of another. This rationale suggests that collectivists may also follow an attenuation strategy if they adopt a "choice" mindset, as opposed to the current evaluation contexts.

Another limitation of this research is that evaluations were made immediately after information exposure. However, time delays between information exposure and product evaluation are often the norm, particularly in advertising contexts (Sengupta, Goodstein and Boninger, 1997).
Thus, the question arises, how would such a time delay impact the current findings? Bagozzi et al. (1997) suggest that while collectivists are typically able to simultaneously incorporate negative and positive emotions, retrieval errors may cause even collectivists to recall only positive or negative emotions after a delay. Accordingly, it would be interesting to examine whether a time lag between advertising exposure and purchase moves collectivists from an additive to an attenuation strategy.

Finally, another avenue for future research lies in extending the current results to different types of information incongruity. Research by Alden et al. (1994) suggests that the cultural differences in reactions to incongruity that were depicted in the current research may not extend to all incongruity types. These researchers found that when attribute information differed from category expectations (e.g., a sports car with four doors), consumers in both the U.S. and Thailand engaged in elaboration and based their evaluations primarily on attribute information. While the Alden et al. study differs in some respects from the current research (e.g., different manipulation of involvement/elaboration), their results suggest that some types of incongruity (e.g., incongruity between category expectations and a specific exemplar) might lead collectivists to engage in an attenuation strategy. Since a category expectation is typically stored in memory after some experience with the category, consumers might be more sensitive to deviations from such expectations as compared to the case where both pieces of incongruent information (source and attribute information) are being encountered for the first time. Future research that manipulates information incongruity in different ways and to different degrees is needed to clearly outline the limiting conditions under which cultural differences in incongruity resolution exist.
References


Endnotes

1 Another type of incongruity studied in the consumer literature deals with the deviation of a product’s attributes from prior schema-based expectations (e.g., Myers-Levy and Tybout 1989). The current research, however, focuses more on the conflict between opposing types of information.

2 It should be noted that prior research has documented that incongruity typically does not increase elaboration beyond the levels already produced by high involvement processing, even in individualist cultures (Maheswaran and Chaiken 1991; Maheswaran, Mackie and Chaiken 1992). Therefore, while Experiment 1 tests hypotheses that are based on differences in incongruity-induced elaboration across cultures (and, as a result, relies on low involvement), Experiment 2 will provide boundary conditions by examining processing under high involvement conditions.

3 In all the experiments reported here, the pattern of results remained the same when each incongruity cell was analyzed separately (positive source/negative attribute and negative source/positive attribute).

4 While no specific hypotheses were formulated for the congruity cells, the regression results for these cells are reported here for the sake of completeness. For individualists, both the slope of VAT \(b = .32, t = 2.47, p < .01\) and the slope of VST \(b = 1.04, t = 6.06, p < .01\) were significant. For collectivists too, the slope of VAT \(b = .33, t = 3.98, p < .01\) and the slope of VST \(b = .27, t = 1.63, p < .05\) were significant. The impact of source thoughts is consistent with dual process models that predict a positive influence of the source cue under low involvement conditions (Chaiken et al., 1989). The impact of attributes under low involvement, while not unique to the present research (cf. Petty et al., 1983), may be due to the fact that the attribute manipulation was considerably stronger than the source manipulation (as indicated by our pretests).

5 In conditions of congruity, both the slope of VAT \(b = .32, t = 3.17, p < .01\) and VST \(b = .50, t = 2.87, p < .01\) were significant for individualists. For collectivists too, the slope of VST \(b = .51, t = 2.61, p < .01\) was significant, while the slope of VAT was marginally significant \(b = .15, t = 1.35, p < .09\). These results are consistent with previous findings indicating that under high involvement conditions, people tend to engage in an additive processing when the source and attributes are congruently valenced (Maheswaran et al., 1992). It should be noted that the coefficient for attribute thoughts was relatively low for collectivists. Given our focus on incongruity resolution, we did not pursue this issue further in this paper; however, future research examining this outcome may be warranted.

6 Both collectivists (VAT = 0.34, VST = 0.34, p’s < .05) and individualists (VAT = 0.40, VST = 0.80, p’s < .01) followed an additive strategy under conditions of congruity between source and attribute, as would be expected under such high elaboration conditions (Alba et al., 1992). Finally, analyses revealed no differences in total thoughts, source thoughts, or attribute thoughts in conditions of incongruity versus congruity in either culture (Fs < 1 in each case), a result probably attributable to the uniformly high levels of elaboration in congruity as well as incongruity conditions.
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Notes: VAT = Valenced Attribute Thoughts; VST = Valenced Source Thoughts; standard deviations in parentheses.
TABLE 2
INCONGRUITY RESOLUTION UNDER HIGH INVOLVEMENT (EXPERIMENT 2)

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Notes: VAT = Valenced Attribute Thoughts; VST = Valenced Source Thoughts; standard deviations in parentheses.
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