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The Effect of Cultural Orientation on Persuasion

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The objective of this research is to assess the cross-cultural generalizability of persuasion effects predicted by dual process models. In two experiments, the impact of motivation, congruity of persuasive communication and the diagnosticity of heuristic cues on the processing strategies and product evaluations of members of a collectivist culture were compared with findings documented in past research in individualist cultures. This research supports the view that perceptual differences in cue diagnosticity account for systematic differences in persuasive effects across cultures. It is also suggested that existing theoretical frameworks, specifically the dual process models of persuasion, are robust across cultures and can help predict and explain cultural differences.

Most research in consumer psychology is based on theoretical frameworks developed using evidence from Western cultures, primarily the United States. Relatively little is known about the cross-cultural generalizability of such frameworks. More important, the effectiveness of the predictions derived from these theoretical frameworks in diverse cultural settings is not well documented (Gergen et al. 1996; Gorn, forthcoming).

Recent research in cultural and social psychology lends credence to the need for cross-cultural studies by demonstrating that differences in cultural orientation influence perceptions of the in-group versus out-group (see, e.g., Markus and Kitayama 1991), attributional styles (see, e.g., Morris and Peng 1994), patterns of emotions (see, e.g., Matsumoto 1989), and behavior (see, e.g., Triandis 1989). Despite this growing interest in cultural psychology, relatively little is known about the processes by which cultural orientation affects attitudinal and behavioral outcomes.

The objective of this research is to assess the cross-cultural generalizability of persuasion effects predicted by dual process models, the Elaboration Likelihood Model (Petty and Cacioppo 1979) and the Heuristic-Systematic Model (Chaiken 1980). Specifically, two ex-

periments were conducted to compare and contrast the well-documented findings of the dual process models of persuasion based on a Western culture, to a non-Western culture. We demonstrate that some existing theoretical frameworks are robust across cultures and can help predict and explain the different effects observed across cultures.

THEORETICAL BACKGROUND

Cultural Orientation: Individualism-Collectivism

Individualism-collectivism is perhaps the most central dimension of cultural variability identified in cross-cultural research (see, e.g., Hofstede 1990) and has received considerable attention in the cultural psychology literature. Members of individualist cultures (e.g., the United States, Australia, and Canada) tend to hold an independent view of the self that emphasizes separateness, internal attributes, and the uniqueness of individuals. In contrast, members of collectivist cultures (e.g., Hong Kong, Taiwan, and Japan) tend to hold an interdependent view of the self that emphasizes connectedness, social context, and relationships (cf. Cousins 1989; Singelis 1994; Triandis 1989).

As a result, attitudinal and behavioral differences between the two cultures exist. For example, the attitudes toward differentiation and uniqueness tend to be more favorable for members of individualist (vs. collectivist) cultures, while attitudes toward building relationships and maintaining connections tend to be more favorable for members of collectivist (vs. individualist) cultures. Further, behavior of members of individualist cultures tends

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TABLE 1
RELATIVE ATTITUDINAL AND BEHAVIORAL DIFFERENCES ASSOCIATED
WITH INDIVIDUALISM VERSUS COLLECTIVISM

	Individualism (e.g., United States, Australia, Canada)	Collectivism (e.g., Hong Kong, Taiwan, Japan)
Self-construal	Defined by internal attributes, personal traits	Defined by important others, family, friends
Role of others	Self-evaluation (e.g., standards of social comparison, sources of appraisal regarding self)	Self-definition (e.g., relationships with others define self and impact personal preferences)
Values	Emphasis on separateness, individuality	Emphasis on connectedness, relationships
Motivational drives	Focus on differentiation, relatively greater need to be unique	Focus on similarity, relatively greater need to blend in
Behavior	Reflective of personal preferences and needs	Influenced by preferences, needs of close others

to be motivated by personal preferences and inner drives, while behavior of members of collectivist cultures tends to be more influenced by preferences and needs of close others. Table 1 summarizes these differences.

Triandis (1989) proposed that the individualism-collectivism cultural variable affects the relative development and accessibility of the private and the collective selves. In individualist cultures, the development of cognitions that involve the traits, states, or behaviors of the person (i.e., private self) is encouraged. In contrast, in collectivist cultures, the development of cognitions that refer to a group (i.e., collective self) is encouraged, thereby increasing the chance that these cognitions will be sampled by the individual. Trafimow, Triandis, and Goto (1991) provide evidence that private and collective self-cognitions are encoded separately in memory. They had subjects with an individualist versus collectivist orientation (Americans vs. Chinese individuals) complete 20 sentences that began, "I am." Responses were coded in terms of private cognitions (e.g., those that refer to personal qualities, evaluations, and beliefs) versus collective cognitions (e.g., those that refer to demographic categories or groups with which the subject experiences a common fate). The authors found that cultural orientation significantly affects the type of cognition produced: Chinese (vs. North American) subjects produced more collective cognitions, while North American (vs. Chinese) subjects produced more private cognitions. This varied pattern of accessible private versus collective cognitions in turn influences the attitudes and behaviors of the subjects in the two cultures. Further, Cousins (1989) showed that members of collectivist cultures tend to form attitudes about individuals on the basis of both dispositional traits and contextual factors (e.g., others in the situation), while members of individualist cultures form attitudes about individuals solely on the basis of dispositional traits. These findings suggest that cultural orientation may influence how people process information and subsequent attitude formation and change.

Dual Process Models of Persuasion

The dual process models of persuasion, the Elaboration Likelihood Model (ELM) and the Heuristic Systematic Model (HSM), provide extensive documentation of the processing issues related to persuasion. These models suggest that two concurrent modes of information processing exist (Chaiken 1980; Petty and Cacioppo 1979).¹ Systematic processing is viewed as comprehensive and effortful information processing in which individuals scrutinize and elaborate on all available attribute-relevant information to form an evaluation. It is evidenced in settings where consumers are more likely to engage in effortful processing such as under conditions of high motivation and/or high levels of ability. Heuristic processing or the elaboration of heuristic cues dominates when motivation and/or ability for systematic processing are inadequate. Under such conditions, evaluations are likely to be based on the processing of the heuristic cues with minimal input from the attribute-relevant information.

Depending on the level of motivation and other limiting factors, either heuristic and systematic processing can proceed concurrently or one mode may dominate (Chaiken, Liberman, and Eagly 1989; Chaiken and Maheswaran 1994; Petty and Cacioppo 1986).² The concurrent occurrence of both types of processing (i.e., heuristic and systematic) is referred to as "additivity" and is evidenced by the generation of both heuristic cue-related and attribute-related thoughts. Additivity is likely to occur when the two modes of processing do not yield highly contradictory information. For example, when the

¹The hypotheses of this research are consistent with both the ELM and HSM. However, to maintain consistency throughout the research, the terminology of the HSM is used.

²The HSM terms the processing of the cue as "heuristic processing" and the processing of the attribute information as "systematic processing." This terminology is used regardless of whether the heuristic cue is elaborated under high motivation or low motivation.

expectations based on processing the heuristic cue are confirmed by subsequent processing of the attribute information, consumers elaborate on both pieces of information and form evaluations based on both the heuristic cue and the attribute information (vs. only the attribute information; Chaiken et al. 1989).

In contrast, when the two modes of processing yield highly contradictory information, systematic processing, which typically is considered to provide more judgment-relevant information, tends to dominate heuristic processing. Such overriding by systematic processing is termed "attenuation" (i.e., the resolution of incongruity in favor of the attribute information and the rejection of the heuristic cue) and is evidenced by the generation of primarily attribute-related thoughts and relatively few heuristic cue-related thoughts (Eagly and Chaiken 1993). For example, consumers may initially process the heuristic cue, but subsequent processing of incongruent attribute information may substantially minimize the impact of the heuristic cue on evaluations. As a result, consumers tend to discount the heuristic cue (as evidenced by relatively few heuristic cue-related thoughts) but give more weight to the attribute information (as evidenced by the number of attribute-related thoughts) when forming evaluations.

To demonstrate these additivity and attenuation effects, Maheswaran and Chaiken (1991) manipulated motivation, consensus information, and attribute information. Further, they varied the congruity of the consensus cue with subsequent attribute information in the persuasive message by orthogonally manipulating the valence of the consensus cue and the attribute information. In congruent conditions, subjects first read positive (negative) test-market results for a new product followed by a positive (negative) description of the attributes of the target product. In incongruent conditions, subjects first read positive (negative) test-market results that subsequently were contradicted by negative (positive) attribute information. Thus, the inferences based on the two types of information converged in congruent conditions, while they conflicted in incongruent conditions.

The findings on product evaluations mirrored past research showing that the consensus cue alone influences evaluations under low motivation, while attribute information alone influences evaluations under high motivation. Further, evidence for additivity in congruent conditions and attenuation in incongruent conditions was demonstrated in a set of ANOVA and regression analyses based on cognitive responses. To illustrate, in high-motivation, congruent conditions, the valence of both consensus-related thoughts and attribute-related thoughts reliably guided evaluations, suggesting that systematic and heuristic processing concurrently occurred. In high-motivation, incongruent conditions, only the valence of attribute-related thoughts reliably predicted evaluations, suggesting that systematic processing of attribute information leads to the attenuation of incongruent consensus information. In low-motivation, congruent conditions, the

valence of the consensus-related thoughts alone guided evaluations. Finally, in low-motivation, incongruent conditions, only the valence of attribute-related thoughts reliably predicted evaluations. In addition to documenting additivity and attenuation effects, this pattern of results suggests that heuristic cues such as consensus information are considered to be less important than attribute information in individualist cultures and therefore tend to be discounted when they conflict with attribute information.

In sum, the dual process models offer extensive documentation that consumers in individualist cultures may either use a detailed systematic processing strategy or a capacity-constrained heuristic processing strategy to evaluate new information. In this research, we examine the robustness of the dual process framework with two primary objectives in mind. First, we investigate whether members of collectivist cultures process new information by using heuristic and systematic processing strategies. Second, we explore the influence of cultural orientation on the outcome-based predictions of the dual process models.

EXPERIMENT 1

Hypotheses

In experiment 1, we manipulate motivation, consensus information, and attribute information to examine the processing strategies used by members of collectivist cultures and compare them to those documented in individualist cultures. Past research in an individualist culture (i.e., the United States) suggests that consensus information is used selectively by individuals in forming evaluations (Axson, Yates, and Chaiken 1987; Mackie 1987). Consensus information is defined as information involving others' opinions about or evaluations of an attitude object (where "others" include both known and unknown individuals). These studies show that consensus information is more likely to influence evaluations under low motivation. However, under high motivation, the impact of consensus information is often minimized. Also, in individualist cultures, attribute information is highly valued. Consequently, attribute elaboration often attenuates or overrides consensus information. This attenuation of heuristic processing (i.e., the processing of heuristic cues) by systematic processing (i.e., the processing of attribute information) is more likely under conditions conducive to attribute elaboration such as high motivation and incongruity.

However, in collectivist cultures, the opinions of others or group norms are emphasized. As a result, heuristic cues such as consensus information should play a greater role in persuasion in collectivist (vs. individualist) cultures. In support, Markus and Kitayama (1991) suggest that when the public display of one's own internal attributes or feelings is at odds with what others think or feel "people with independent selves will attend more to the internal feelings and act on the basis of them, because

these feelings are regarded as diagnostic of the independent self. Not to attend to one's inner feelings is often viewed as being inauthentic or even as denying the real self. In contrast, among those with more interdependent selves, one's inner feelings may be less important in determining one's consequent actions" (p. 236).

The premise above suggests that cultural orientation may lead to an asymmetric pattern of results related to the effect of heuristic cues (consensus information) on persuasion. First, the importance of consensus information in collectivist cultures may lead to its dominance even under high motivation. Second, the incongruity between the heuristic cue and attribute information may be resolved in the direction of the cue rather than that of the attribute information. As a result, in collectivist cultures, heuristic processing may attenuate systematic processing when the two modes conflict. This pattern is likely to be observed even under high motivation where past research in individualist cultures has documented relatively minimal impact of consensus information.

On the basis of the discussion above, we hypothesize that consensus information will form the basis of evaluations in collectivist cultures regardless of motivation. Also, when consensus information contradicts subsequent attribute information, we expect that collectivist consumers will rely on consensus information in forming evaluations. Hence, associating a product with positive (vs. negative) consensus is likely to lead to more favorable (vs. unfavorable) evaluations. The use of attribute information in forming evaluations also is likely to differ as a function of cultural orientation. When systematic processing of attribute information is likely, such as under conditions of high motivation, attribute information will form the basis of evaluations. However, when inferences based on consensus information contradict attribute information, attribute information will be discounted. Thus, attribute information is anticipated to influence evaluations only under high-motivation, congruent conditions (additivity). This additivity prediction is also compatible with the findings in individualist cultures, where both types of information are processed jointly when they are convergent (Maheswaran and Chaiken 1991). Further support for these predictions is provided by Slovic (1966), who suggests that multiple cues can contribute to judgments when they are congruent. In contrast, discounting occurs when cues are incongruent because judgments are difficult to make in the face of incongruous information. "To reconcile apparently contradictory information, [a judge] must doubt either the reliability of the cues or the validity of this theory or both" (Slovic 1966, p. 428). Thus, the discounting of attribute information, which may be less reliable for collectivist than individualist subjects, allows the individual to elaborate on only consensus information as a basis for evaluation.

H1a: Consensus information will influence evaluations regardless of the level of motivation or congruity for members of collectivist cultures.

More favorable evaluations will be obtained when consensus information is positive (vs. negative).

H1b: Attribute information will influence evaluations only in the high-motivation, congruent conditions for members of collectivist cultures.

Cognitive responses generated by the subjects are classified as consensus related and attribute-related and are subsequently coded for valence. When consensus is hypothesized to form the basis for evaluations, more consensus-related thoughts are anticipated. Similarly, when attribute information is expected to form the basis for evaluations, more attribute-related thoughts are anticipated. As noted earlier, collectivist subjects are likely to elaborate on consensus regardless of motivation or congruity. Such universal elaboration should result in equivalent amounts of consensus-related thoughts under all conditions. In contrast, elaboration of attribute information is more likely to be selective, occurring only in high-motivation, congruent conditions. Thus, more attribute-related thoughts are hypothesized in the high-motivation, congruent conditions. Under low motivation, when consumers in a collectivist culture are not anticipated to engage in effortful processing of attribute information, relatively limited attribute-related thoughts are expected.

H2a: The number of consensus-related thoughts will be equivalent in all conditions for members of collectivist cultures.

H2b: The number of attribute-related thoughts will be greater in congruent (vs. incongruent) conditions for members of collectivist cultures. The number of attribute-related thoughts will be equivalent regardless of congruity for members of collectivist cultures under low motivation.

Regression analyses provide additional insight on the mediation issues by examining the impact of valenced consensus-related thoughts and valenced attribute-related thoughts on evaluations (Maheswaran and Chaiken 1991; Shavitt et al. 1994). Two valenced thought indices are constructed: positive minus negative consensus-related thoughts (consensus-thought valence) and positive minus negative attribute-related thoughts (attribute-thought valence). When heuristic processing is anticipated, subjects are expected to elaborate on the consensus cue, and consensus-thought valence will form the basis for evaluations. When systematic processing is expected, subjects are likely to elaborate on attribute information, and attribute-thought valence will reliably predict evaluations.

Since collectivist subjects are expected to elaborate on consensus-related information regardless of motivation and congruity, the valence of consensus-related thoughts should predict evaluations consistently in all experimental conditions. In contrast, the processing of attribute information is anticipated only in the high-motivation, congru-

ent conditions. In these conditions, subjects' elaboration of the consensus cue and attribute information together will predict evaluations (additivity). Specifically, the valenced indices of both the attribute-related thoughts and consensus-related thoughts are expected to reliably predict evaluations in the high-motivation, congruent conditions.

H3a: Consensus-thought valence will influence evaluations in all conditions.

H3b: Attribute-thought valence will influence evaluations only under high-motivation, congruent conditions.

Method

Stimulus Material. Six important attributes were identified on the basis of a pretest in which Chinese subjects were instructed to consider the attributes of camcorders, report their thoughts, and provide importance ratings for each attribute. The six attributes selected (picture quality, sound quality, automatic features, color accuracy, remote control, and ease of operation) all elicited primarily favorable thoughts and received high importance ratings.

Procedure. Past research on cultural orientation has suggested that while American subjects are on the extreme pole of individualism, Chinese subjects are on the extreme pole of collectivism (Hofstede 1990). Therefore, 136 students from Hong Kong, males and females, were recruited from an undergraduate management program at a Chinese University to participate in a research study for extra course credit. These subjects were of Chinese ethnic origin, born and raised in Hong Kong. First, subjects were told that a large-scale electronics manufacturer was planning to introduce a new camcorder and needed consumer opinions about the new product. In high-motivation conditions, subjects were told that they were participating in an important survey and they were among a small and select group of students whose opinion was being sought by the manufacturer of the new product. Further, they were informed that their opinions were highly relevant and would be weighted heavily in the decision to introduce the new product. Subjects were also told that the product would be marketed in their area. In the low-motivation conditions, subjects were told that they were a part of a large opinion survey conducted across many universities. Further, they were informed that their individual opinions were not important and would be averaged across all the respondents. Subjects were also told that the product would be marketed in a different location.

Then subjects were given a description of a new product, the "VX-5000" camcorder, and ostensible test-market results (consensus cue) that suggested a favorable or unfavorable opinion of the product by consumers in Hong Kong. In the positive-consensus condition, 81 percent of

300 consumers in Hong Kong who had used the VX-5000 were extremely satisfied, while the percentage of extremely satisfied Chinese consumers was "just under 20 percent" in the negative-consensus condition.

There are two reasons for providing background on the reactions from "300 consumers in Hong Kong." First, the literature on individualism-collectivism suggests that consumers in collectivist (vs. individualist) cultures pay more attention to what others think or feel (Markus and Kitayama 1991) and are swayed by thoughts and feelings likely to be of others in their in-group. Therefore, by using the manipulation of "consumers in Hong Kong" (vs. a smaller in-group), the test of the hypotheses was more conservative. Second, so as to maintain consistency across studies, the wording of the consensus information manipulation in this research was the same as that in Maheswaran and Chaiken (1991).

Next, subjects were given negative or positive attribute information, ostensibly provided by a product testing agency that had evaluated the product and compared it to leading competitive brands. In the negatively valenced attribute information, the VX-5000 was described as inferior to two leading competitors on five attributes (picture quality, sound quality, automatic features, color accuracy, and remote control) and equal on ease of operation. Each attribute was described in a distinct paragraph of approximately 70 words. In the positively valenced attribute information, the VX-5000 was described as superior to both competitors on the five attributes and equal on ease of operation. By orthogonally manipulating the valence of the consensus cue and attribute information, congruity varied. In the congruent conditions, subjects received the positive (negative) consensus cue and then the positive (negative) attribute information. In the incongruent conditions, the positive (negative) consensus prefaced the negative (positive) attribute information.

Finally, subjects were asked to answer a series of questions regarding their evaluations and thoughts about the new product. Specifically, on a nine-point scale anchored by -4 and 4, subjects rated the extent to which they would consider purchasing the VX-5000, their favorability toward it, and the extent to which they regarded it as a useful and good product. Then, subjects were given about three minutes and were asked to list any thoughts that occurred to them while reading the product description. At the end the questionnaire, subjects received a set of manipulation checks, a free recall task, and an open-ended suspicion probe. Subjects were then debriefed.

Results

The hypotheses were tested on the basis of a 2 (motivation: low vs. high) \times 2 (consensus cue: negative vs. positive) \times 2 (attribute information: negative vs. positive) between-subjects ANOVA. Unless otherwise specified, the degrees of freedom used in the full-design ANOVA are 1, 128.

Manipulation Checks. Four sets of manipulation

checks were included in the questionnaire. First, subjects rated their motivation to read the persuasive message on two scales: not (vs. highly) interested and not (vs. highly) involved. The responses to these items were averaged to form a motivation index (coefficient alpha = .80). Second, subjects rated the extent to which the attribute information portrayed the VX-5000 as having many (vs. few) positive features, few (vs. many) negative features, and as superior (vs. inferior) to competing brands, which were averaged to form an attribute index (coefficient alpha = .84). Third, subjects rated the extent to which they thought the test marketing results were favorable or unfavorable and also recalled the percentage of consumers surveyed in the test market who indicated that they were extremely satisfied with the VX-5000. Finally, to determine the extent to which the incongruity manipulation was detected, subjects rated the extent to which the test-market results and the product description were incompatible versus compatible and dissimilar versus similar (coefficient alpha = .89).³

The ANOVA on the motivation index indicated that high-motivation subjects ($\bar{X} = 1.48$) rated the task as more involving than did low-motivation subjects ($\bar{X} = -.96$; $F = 62.62$, $p < .001$; $\omega^2 = .38$). Further, the attribute index yielded a significant main effect whereby subjects who received the positive ($\bar{X} = 1.58$) compared to the negative ($\bar{X} = -1.12$) attribute information correctly perceived it as favoring the VX-5000 over its competitors ($F = 91.64$, $p < .001$; $\omega^2 = .38$). As expected, subjects perceived the positive consensus information ($\bar{X} = 1.58$) to be more favorable than the negative consensus information ($\bar{X} = -1.35$; $F = 64.21$, $p < .001$; $\omega^2 = .37$). In addition, a high proportion of the subjects in all the conditions correctly recalled the percentage of consumers who were indicated as favoring VX-5000 (grand $\bar{X} = 84$ percent). Finally, the congruity manipulation also worked as intended; subjects correctly perceived the test-market results and the product description to be compatible in the congruent ($\bar{X} = 1.83$) compared to the incongruent ($\bar{X} = -1.67$) conditions ($F(1, 132) = 179.60$, $p < .001$; $\omega^2 = .58$), and the number of discrepant thoughts that subjects listed in the incongruent ($\bar{X} = .39$) versus congruent ($\bar{X} = .00$) conditions was significantly higher ($F(1, 132) = 20.14$, $p < .01$).⁴ No other effects were significant on any of the measures above.

Evaluations. An ANOVA on the evaluation index (coefficient alpha = .89) yielded the predicted main effect for the consensus cue ($F = 107.70$, $p < .001$). Subjects expressed significantly more favorable evaluations toward

the VX-5000 when 81 percent (vs. 20 percent) of the consumers ostensibly liked the product, which is consistent with Hypothesis 1a. Also, the interaction between consensus and motivation did not attain significance ($F < 1$). Together, these findings suggest that the consensus cue influenced evaluations regardless of motivation or congruity. Table 2 presents the relevant means for all dependent variables.

Since the congruent and incongruent conditions are averaged over positive and negative consensus and attribute information evaluations, the hypothesized main effect for attribute information and its interaction with motivation (Hypothesis 1b) could not be tested in the overall ANOVA. Therefore, an a priori contrast was run on the relevant means. Since the consensus effect is hypothesized to be equivalent in all combinations of motivation and congruity, an added attribute information effect should occur only in the high-motivation, congruent cells to support the additivity prediction. Thus, in a planned contrast, we tested whether the pooled cell means in the high-motivation, congruent (positive and negative consensus) conditions were significantly higher than the pooled means in the other conditions (high-motivation, incongruent; low-motivation, congruent; and low-motivation, incongruent). As anticipated, this contrast was significant ($t(128) = 1.84$, $p < .05$; one-tailed), providing support for Hypothesis 1b.

Cognitive Responses. Two independent raters categorized subjects thoughts as attribute related (A) or consensus related (C) and as expressing positive (+), negative (−) or neutral (0) evaluation toward the VX-5000 camcorder. In addition, thoughts involving a contradiction between the consensus and attribute information were classified as discrepant (D), and thoughts that meant nothing were classified as irrelevant (I). The following thoughts illustrate this coding scheme: “The VX-5000’s sound quality is very important” (A+), “VX-5000 doesn’t come in very many colors” (A−), “What is the price of the VX-5000?” (A0), “The test-market results showed that the VX-5000 was a good product” (C+), “Many people in the test market were not satisfied with the product” (C−), “When was the test market conducted?” (C0), “The test-market results don’t seem to support the description of the product” (D), “I have seen camcorders on display” (I). Interrater agreement was 87 percent, and discrepancies were resolved through discussion.

An ANOVA on the total number of thoughts yielded no significant effects (grand $\bar{X} = 4.20$, $p > .17$). Subsequent analyses on the different types of thoughts supported Hypotheses 2a and 2b.

An overall ANOVA (motivation \times consensus cue \times attribute information) on consensus-related thoughts yielded no significant effects (p 's $> .22$); this result is consistent with Hypothesis 2a and suggests that consensus-related thoughts were distributed equally across all the conditions regardless of motivation or congruity. For

³Subjects also were asked to recall all the information they could remember from the product description. Subjects recalled more attribute information when motivation was high than when it was low ($F = 6.06$, $p < .05$), which is consistent with past research. No other effects were significant on this measure.

⁴The degrees of freedom were based on a 2 (motivation) \times 2 (congruity) design.

TABLE 2
EXPERIMENT 1: MAJOR DEPENDENT MEASURES AS A FUNCTION OF MOTIVATION,
MESSAGE TYPE AND CONSENSUS INFORMATION

	High motivation				Low motivation			
	Positive consensus		Negative consensus		Positive consensus		Negative consensus	
	Positive attributes	Negative attributes	Positive attributes	Negative attributes	Positive attributes	Negative attributes	Positive attributes	Negative attributes
Total thoughts	4.56	4.35	4.06	4.67	4.13	3.76	4.25	3.81
Attribute-related thoughts	3.61	2.47	2.22	3.72	2.44	2.18	2.50	2.25
Consensus-related thoughts	.78	1.29	1.11	.83	1.38	1.00	1.31	1.25
Attribute recall	4.16	4.00	3.94	4.39	3.56	3.41	3.63	3.44
Attribute thought valence	1.94	1.12	-.50	-2.28	1.44	-.88	1.13	-1.00
Consensus thought valence	.67	1.18	-.61	-.83	1.13	.77	-.81	-.94
Evaluations	2.42	1.54	-1.13	-1.66	1.62	1.32	-1.32	-1.51

NOTE.—Higher means indicate greater amounts of attribute-related and consensus-related thoughts, higher recall, and more positive attitudes. Cell size ranges from $n = 16$ to $n = 19$.

convergent support, an overall ANOVA on consensus-thought valence was also conducted. The results yielded only a main effect for consensus cue, indicating that more favorable (vs. unfavorable) consensus-related thoughts were elicited across conditions when consensus was positive (vs. negative; $F = 77.75$, $p < .001$).

Attribute-related thoughts were examined next. An overall ANOVA showed that high- (vs. low-) motivation subjects generated a greater number of attribute-related thoughts ($F = 5.19$, $p < .05$). In addition to the main effect for motivation, the two-way interaction of consensus cue and attribute information ($F = 5.15$, $p < .05$) and the three-way interaction of motivation, consensus cue, and attribute information ($F = 5.06$, $p < .05$) both were significant. To specifically address the additive attribute information effect in the high-motivation, congruent conditions, we contrasted the pooled positive and negative consensus in the high-motivation, congruent conditions with the pooled positive and negative consensus in the combined congruent, low-motivation; incongruent, high-motivation; and incongruent, low-motivation conditions. This significant contrast ($F(1, 128) = 4.00$, $p < .001$) supported the additivity expectation by indicating a greater number of attribute-related thoughts only in the high-motivation, congruent conditions.

Finally, an ANOVA on attribute thought valence indicated a main effect for attribute information and consensus cue (F 's = 40.57 and 32.10, respectively; p 's < .001). These effects were qualified by a two-way interaction between consensus cue and motivation ($F = 23.89$, $p < .001$). Follow-up contrasts indicated that the consensus cue effect was reliable only in high-motivation conditions (simple $F = 58.81$, $p < .001$; low motivation: simple $F < 1$). These findings indicate that perceptions of the consensus cue influenced the valence of attribute-related thoughts only in high-motivation conditions.

Together, these findings provide support for Hypotheses 2a and 2b, which suggest that the consensus cue was

elaborated on and formed the basis for evaluations under all conditions, while the attribute information was elaborated on and formed the basis for evaluations only in high-motivation, congruent conditions. Further, the consensus cue influenced the valence of attribute-related thinking by causing high-motivation subjects to reject the attribute information. These findings provide support for the premise that incongruity is resolved in favor of consensus (vs. attribute) information in a collectivist culture. Further, they suggest the possibility that heuristic processing may be a dominant mode of processing in collectivist cultures.

Regression Analyses

To provide additional insight on the cognitive basis for evaluations, we conducted a series of regression analyses (see, e.g., Ratneswar and Chaiken 1991). In these analyses, product evaluations served as the dependent variable and were regressed on attribute-thought valence and consensus-thought valence. As in past research, a significant attribute-thought valence (unstandardized beta weight) is assumed to provide direct evidence that the elaboration of attribute information influenced evaluations, whereas a significant consensus-thought valence (unstandardized beta weight) indicates that elaboration of the heuristic cue formed the basis for evaluations.

Hypothesis 3a suggests that the consensus cue would be elaborated upon and form the basis for evaluations in all conditions. This implies that in the overall regression, the slope of the effect of consensus-thought valence should be significant and not interact with the ANOVA design variables. We found a significant effect for consensus-thought valence ($\beta = .95$, $t = 8.16$, $p < .001$), which is consistent with this expectation. No other higher-order interactions were significant for consensus-thought valence ($F < 1$).

To test Hypothesis 3b, we conducted both an overall

regression analysis and a follow-up set of analyses on specific cells. First, we examined the overall regression incorporating the design variables. The findings showed that the slope of attribute-thought valence was marginally significant ($\beta = .14$, $t(128) = 1.80$, $p = .07$) and had a significant interaction with motivation ($\beta = .21$, $t(128) = 2.80$, $p < .01$). However, the interaction between motivation and congruity did not attain significance ($F < 1$).

To specifically examine the predictions of Hypothesis 3b, we conducted two follow-up regression analyses. The first analysis examined the pattern of results in the high-motivation, congruent conditions. In order for the additivity hypothesis to be supported, a significant attribute-thought valence effect should be obtained. Attribute-thought valence reliably predicted evaluations ($\beta = .43$, $t(128) = 3.96$, $p < .001$), which is consistent with this prediction. Consensus-thought valence also significantly predicted evaluations in these conditions ($\beta = 1.07$, $t(128) = 4.10$, $p < .001$), which confirms the additivity effect. The second analyses examined the slope of the effect of attribute-thought valence in the pooled high-motivation, congruent; low-motivation, congruent; and low-motivation, incongruent cells. Attribute-thought valence was not significant ($F < 1$), while consensus-thought valence was significant ($\beta = .91$; $t(128) = 7.33$, $p < .001$), which is consistent with our expectation. These findings support Hypothesis 3b, which suggests that attribute information is considered diagnostic and forms the basis for evaluations for collectivists only when it is congruent with the consensus cue.

Discussion

In experiment 1, the impact of motivation, consensus cue, and attribute information on processing strategies and product evaluations of the members of a collectivist culture (Hong Kong) was examined and the findings were contrasted with those documented in past research in an individualist culture (the United States). The findings suggest that similar dual processing strategies, heuristic and systematic processing, are used by members of collectivist cultures as they are by members of individualist cultures. However, the specific data patterns in attitudinal outcomes across conditions showed some similarities and dissimilarities between the two cultures. For example, as in individualist cultures, both the consensus cue and attribute information influenced evaluations in the high-motivation, congruent conditions, demonstrating an additivity effect in this collectivist culture. Further, consensus information influenced evaluations under low-motivation, congruent conditions, which is consistent with past research.

Dissimilarities in outcomes also exist. For example, only consensus information guided evaluations for collectivist subjects in the high-motivation, incongruent conditions. In contrast, past research in individualist cultures has shown that only attribute information forms the basis for evaluations under incongruent conditions. Cognitive

responses and regression analyses in this experiment also supported this reversed effect.

In sum, the findings from experiment 1 suggest that cultural orientation has a systematic influence on persuasion. The processing strategies adopted by collectivist subjects mirror those adopted by individualist subjects when processing new information. However, the specific data patterns in attitudinal outcomes differ in the two cultures. Why? Two interesting explanations exist. First, members of the two cultures may differ in their processing proclivity. For example, members of collectivist cultures may prefer processing information via the heuristic (relative to systematic) route, whereas members of individualist cultures may not share that preference. As a result, heuristic processing strategies may simply dominate in collectivist cultures, but not in individualist cultures.

An alternate possibility is that cross-cultural differences exist with regard to the relative perception of the importance of cues or "cue diagnosticity," which refers to the extent to which consumers perceive that inferences based on the information alone would be adequate to achieve their objective (Feldman and Lynch 1988; Lynch, Marmorstein, and Weigold 1988). For example, consensus cues may have relatively high levels of perceived diagnosticity in collectivist cultures, but relatively low levels in individualist cultures. As a result, the influence of the consensus cue may dominate that of attribute information in collectivist but not individualist cultures, thereby accounting for the attitudinal outcome differences found in experiment 1 relative to past research.

Experiment 2 was conducted to determine whether cross-cultural differences in processing preference versus perceptions of cue diagnosticity account for the results found in experiment 1. In addition, we hope to provide further insight into the robustness of the dual process models across cultures.

EXPERIMENT 2

Cue Diagnosticity and Cultural Orientation

Past research has shown that perceptions of cue diagnosticity affects the use of heuristic cues. Although nondiagnostic salient heuristic cues are processed and influence evaluations only in low-motivation conditions (see, e.g., Eagly and Chaiken 1993; Petty and Cacioppo 1986), diagnostic salient heuristic cues are processed and influence evaluations in high-motivation conditions (see, e.g., Miniard et al. 1991; Miniard, Sirdeshmukh, and Innis 1992). For example, Kahle and Homer (1985) showed that a physically attractive source may provide information relevant to the effectiveness of a beauty product and hence will influence evaluations under conditions of high motivation. Similarly, Shavitt et al. (1994) showed that endorser attractiveness may receive more attention and influence evaluations under high motivation if it is relevant to the processing goal (public image development vs. sensory gratification).

If perceptions of cue diagnosticity differ across cultures, then certain cues, such as consensus information, may be perceived as more diagnostic by members of the collectivist (vs. individualist) cultures. In support, Triandis (1989) has demonstrated that cultural orientation influences the relative importance assigned to the opinion of self versus others. In individualist cultures, the self tends to be contained within or inside the individual. As a result, behavior is primarily a consequence of one's internal attributes (Geertz 1975). The opinions of others in a social context are important only to the extent that they serve as sources of reflected appraisal (Tedeschi 1981), standards of comparison (Tesser and Campbell 1986), or sources of direct feedback that can be used to verify the self (Swann 1987). In contrast, in collectivist cultures, the self is not tied to internal attributes but to social relations. Others in a social context are fundamental to the definition of the self and are therefore "assigned much more importance, carry more weight and are relatively focal in one's own behavior" (Markus and Kitayama 1991, p. 230). As a result, behavior tends to be directed by the likes, preferences, and needs of important others rather than the likes, preferences, and needs of one's own self. This conceptualization suggests that factors related to others (vs. self) may be more important and therefore diagnostic in collectivist versus individualist cultures.

In addition, past research on cue diagnosticity and information incongruity suggests that cues of moderate diagnosticity are used in decision making when they are congruent with more diagnostic information but are discounted when they are incongruent with more diagnostic information (Anderson and Jacobson 1965; Lynch and Ofir 1989; Wyer 1970). This finding is conceptually consistent with the results of experiment 1. If consensus information is highly diagnostic while attribute information is only moderately diagnostic for members of collectivist (but not individualist) cultures, incongruity between consensus and attribute information may be resolved by discounting the attribute information (rather than the consensus information) by members of collectivist cultures. This pattern of results was found in experiment 1 regarding both evaluations and cognitive responses.

In sum, the discussion above suggests that different perceptions of cue diagnosticity may lead to different patterns of attitudinal outcomes. Experiment 2 was conducted to determine whether this cue diagnosticity explanation or the differential preference for processing strategies explanation accounts for asymmetric outcomes in collectivist (vs. individualist) cultures. Therefore, one significant change was made in the design of experiment 2. While experiment 1 relied on a heuristic cue that should vary in diagnosticity across cultures, experiment 2 relies on a cue that theoretically should not vary in diagnosticity as a function of cultural orientation because it has no relation to perceptions of self (and other): "number of attributes" (Petty and Cacioppo 1984).

If members of collectivist versus individualist cultures

differ in their fundamental preferences for certain processing strategies, experiment 2 should replicate the findings of experiment 1. In other words, regardless of the change in cue diagnosticity, the pattern of results in experiment 2 should mirror those found in experiment 1. However, if cross-cultural differences in perceptions of cue diagnosticity exist, then the findings in experiment 2 will differ from those in experiment 1. Instead, the pattern of results should mirror those found in past research on individualist cultures (Petty and Cacioppo 1984).

Hypotheses

Under low motivation, the heuristic cue, number of attributes, reliably predicts evaluations in individualist cultures. For example, Petty and Cacioppo (1984) gave subjects attribute information that contained either three strong attributes, three weak attributes, or six combined attributes (three strong plus three weak attributes). More favorable evaluations resulted when low-motivation subjects were given the combined (vs. strong or weak) attribute information. If the asymmetric data patterns found in experiment 1 were due to differences in cue diagnosticity, a similar pattern of effects for members of collectivist cultures should occur. Specifically, because the cue, number of attributes, should not vary in diagnosticity across cultures, it will affect evaluations only in conditions of low motivation.

Under high motivation, dual process studies typically show that attribute information alone influences evaluations in individualist cultures. For example, Petty and Cacioppo (1984) found that more favorable evaluations resulted when subjects were given strong (vs. weak) attributes, but only in conditions of high motivation. Theoretically, we expect the same effect in collectivist cultures. Thus, associating the product with strong (vs. weak) attributes will produce more favorable evaluations in high-motivation conditions.⁵ Therefore, the following predictions are advanced for product evaluations.

H4a: Under low motivation, only number of attributes will influence evaluations for members of collectivist cultures.

H4b: Under high motivation, only attribute strength will influence evaluations for members of collectivist cultures.

In terms of cognitive responses, if attribute strength formed the basis for evaluations under high motivation, the valence of thoughts will be more consistent with attribute strength in conditions of high (vs. low) motivation (Petty and Cacioppo 1984). Subjects will generate more positive thoughts when given strong attributes and fewer positive thoughts when given weak attributes when moti-

⁵It should be noted that this prediction is consistent with both the cue diagnosticity and processing difference explanations.

vation is high but not when it is low. Similarly, subjects will generate more negative thoughts when given weak attributes and fewer negative thoughts when given strong attributes when motivation is high but not when it is low.

- H5:** The valence of thoughts will be more consistent with attribute strength in conditions of high (vs. low) motivation for members of collectivist cultures.

Method

Stimulus Materials. To be consistent with experiment 1, the stimulus materials used in this experiment were adapted from an individual decision-making context (academic policy changes; Petty and Cacioppo 1984) to a marketing context (new product evaluations). Strong and weak attributes were selected on the basis of a pretest in which Chinese subjects were instructed to think about the attributes, report their thoughts, and provide importance ratings for each attribute, as in experiment 1. The strong attributes elicited primarily favorable thoughts and received high importance ratings, while the weak attributes elicited primarily unfavorable thoughts and received low importance ratings. The three strong attributes involved favorable comparisons of the VX-5000 relative to two competing brands on important attributes (picture quality, color accuracy, and battery time), while the three weak attributes involved favorable comparisons on unimportant attributes (length of extension cord, cloth lens wipe, and number of colors of camcorder bag). As in experiment 1, each attribute was described in a distinct paragraph of approximately 70 words.⁶

Procedure. A total of 119 students from Hong Kong, both males and females, were recruited from an undergraduate management program at a Chinese university to participate in a research study for HK\$80. All of the subjects were of Chinese ethnic origin, born and raised in Hong Kong.

As in experiment 1, subjects were told that a large-scale electronics manufacturer was planning to introduce a new camcorder and needed to obtain consumer opinions about the new product. Next, subjects received the motivation manipulation, which was identical to that used in experiment 1. Then, subjects were given a description of a new product, the VX-5000 camcorder. For all subjects,

the attribute information began, "The new Camcorder, VX-5000, was compared with other leading competitive brands on several major features by an independent market research firm. The results revealed that the VX-5000 is clearly superior to existing competition in terms of performance. All of the products are in the same price range and have the same length of one-year warranty period. More specific test results are given below." Following this statement, subjects read (1) three strong attributes, (2) three weak attributes, or (3) six combined attributes (three strong plus three weak). In this way, the attribute information variable incorporates both attribute strength (hypothesized to be processed systematically) and number of attributes (hypothesized to be processed heuristically).

Finally, as in experiment 1, subjects were asked to answer a series of questions regarding their evaluations and thoughts about the new product. At the end, subjects received a set of manipulation checks and an open-ended suspicion probe and were debriefed.

Results

The hypotheses were tested on the basis of a 2 (motivation: high vs. low) \times 3 (attribution information: three strong attributes, three weak attributes, or six combined attributes) between-subjects ANOVA. The order of the attribute (strong vs. weak) presented first in the combined attribute condition was counterbalanced. Since no significant order effect was found ($F < 1$), the data were collapsed. Unless otherwise specified, the degrees of freedom are 1, 113.

Manipulation Checks. As in experiment 1, a motivation index (coefficient alpha = .94) and an attribute index (coefficient alpha = .83) were created. The ANOVA on the motivation index indicated that high-motivation subjects rated the task as more involving than did low-motivation subjects ($\bar{X} = 1.55$ vs. $\bar{X} = .38$; $F = 9.46$, $p < .001$; $\omega^2 = .07$). In addition, an ANOVA on the attribute index yielded a significant main effect for attribute information ($F = 11.46$, $p < .001$; $\omega^2 = .15$), whereby subjects who received the strong attributes ($\bar{X} = 1.91$), compared to those who received the weak attributes ($\bar{X} = .26$), correctly perceived the VX-5000 to be favored over its competitors. Further, the persuasive message involving the combined attributes also was seen as significantly more favorable ($\bar{X} = 1.73$) than the persuasive message involving the weak attributes ($F = 10.88$, $p < .001$; $\omega^2 = .14$).

Evaluations. Overall, the results involving evaluations mirrored those found in Petty and Cacioppo (1984) and supported the hypotheses above. An ANOVA on the evaluation index (coefficient alpha = .89) yielded a significant main effect for attribute information ($F = 5.22$, $p < .01$), indicating that subjects expressed significantly more favorable evaluations toward the VX-5000 when the attributes were strong ($\bar{X} = 1.65$) or combined ($\bar{X} = 2.43$) than when the attributes were weak ($\bar{X} = .60$).

⁶The variable, "attribute information," differs in the two experiments. In experiment 1, attribute information involved attribute valence to be consistent with Maheswaran and Chaiken (1991). Therefore, six relatively important attributes were identified on the basis of a pretest relying on Chinese subjects. In experiment 2, attribute information incorporated both number of attributes and attribute strength (or importance) to be consistent with Petty and Cacioppo (1984). Therefore, three important and three unimportant attributes were identified on the basis of another pretest relying on Chinese subjects. At the operationalization level, this led to two attributes being common to both experiments 1 and 2 (high picture quality and color accuracy).

TABLE 3
EXPERIMENT 2: MAJOR DEPENDENT MEASURES AS A FUNCTION OF MOTIVATION AND MESSAGE TYPE

	High motivation			Low motivation		
	Strong message	Weak message	Combined message	Strong message	Weak message	Combined message
Total thoughts (attribute-related)	5.07	3.93	5.50	4.46	4.00	4.28
Attribute-related thoughts (positive)	3.33	.93	1.83	1.80	1.67	2.00
Attribute-related thoughts (negative)	.60	2.47	1.90	.87	1.40	.89
Attribute recall	2.60	2.93	4.23	1.93	2.13	3.17
Attribute thought valence	2.73	-1.53	-.07	.93	.27	1.10
Evaluations	2.18	.53	1.50	1.11	.66	2.69

NOTE.—Higher means indicate greater amounts of attribute-related and consensus-related thoughts, higher recall, and more positive attitudes. Cell size ranges from $n = 14-16$ (strong, weak message) to $n = 29-30$ (combined message).

More important, a significant interaction between motivation and attribute information ($F = 3.13, p < .05$) was found. In support of Hypothesis 4a, a simple effects test of this interaction revealed that the combined attributes (six attributes) led to more favorable evaluations ($\bar{X} = 2.69$) than either the strong attributes (three attributes; $\bar{X} = 1.11$) or the weak attributes (three attributes; $\bar{X} = .62$) for low-motivation subjects ($F = 13.37, p < .01$), but not high-motivation subjects ($F < 1$). In support of Hypothesis 4b, attribute strength had a stronger effect under high-motivation conditions than under low-motivation conditions. A simple effects test revealed that the strong attributes produced significantly higher evaluations ($\bar{X} = 2.18$) than did the weak attributes ($\bar{X} = .53$) for high-motivation subjects ($F = 4.34, p < .04$), but not for low-motivation subjects ($F < 1$).

In sum, the pattern of results is consistent with Hypothesis 4a, suggesting that under low motivation only the number of attributes influenced evaluations for members of collectivist cultures. Further consistent with Hypothesis 4b, under high motivation, only attribute strength influenced evaluations for members of collectivist cultures. See Table 3 for cell means.

Cognitive Responses. Two independent raters categorized subjects' thoughts as positive (i.e., a statement expressing a favorable reaction to the new product or attributes in the persuasive message; e.g., "The VX-5000's picture quality is very great"), negative (i.e., a statement expressing an unfavorable reaction to the new product or its attributes; e.g., "The length of the VX-5000's extension cord is not important to me"), neutral (i.e., a statement indicating a neutral reaction; e.g., "What is the price of the VX-5000?"), and irrelevant ("Where do you buy camcorders?").⁷ Interrater agreement was high (92 percent), and discrepancies were resolved through discussion.

⁷Since the consensus cue was not manipulated in experiment 2, the thoughts were generally all attribute related.

As in Petty and Cacioppo (1984), an ANOVA on positive (attribute-related) thoughts led to a main effect for attribute information ($F = 3.08, p < .05$) whereby more positive thoughts were generated when the attributes were strong ($\bar{X} = 2.56$) than when they were weak ($\bar{X} = 1.30$; $F = 6.15, p < .01$). A directionally significant two-way interaction between motivation and attribute information appeared on the number of positive thoughts ($F = 2.77, p < .07$), but not on negative thoughts ($F = 1.37, p < .25$). However, consistent with Hypothesis 5, a simple effects test of this interaction revealed that subjects' thoughts significantly differentiated the strong from the weak attributes in the high-motivation condition (positive thoughts: $F = 11.04, p < .01$; negative thoughts: $F = 7.65, p < .01$), but not in low-motivation conditions (F 's < 1). See Table 3 for the cell means for the attribute-related thoughts.

In sum, support was found for Hypotheses 4a, 4b, and 5, which suggest that only number of attributes influenced evaluations of low-motivation collectivist subjects while only attribute strength was elaborated upon and influenced evaluations of high-motivation collectivist subjects.

Discussion

The objective of experiment 2 was to determine whether the results found in experiment 1 were driven by fundamental cross-cultural differences in the preferences of processing strategies or by differences in perceptions of cue diagnosticity. If the former, the results of experiment 2 should have mirrored those found in experiment 1. If the latter, the results of experiment 2 should have mirrored those found in past research (Petty and Cacioppo 1984).

By using a heuristic cue that was not expected to vary in diagnosticity across cultures, the results of experiment 2 replicated those found in Petty and Cacioppo (1984), indicating that the dual process models of persuasion are robust across cultures but that cross-cultural variation in cue diagnosticity exists. Specifically, when the impact of

motivation, attribute strength, and number of attributes on evaluations was examined, patterns of outcomes were found in this collectivist culture that were parallel to those in individualist cultures. More favorable evaluations resulted when the number of attributes increased, but only in conditions of low motivation. Further, more favorable evaluations resulted when the attributes were stronger, but only in conditions of high motivation.

In addition, the pattern of cognitive responses indicates that subjects in this collectivist culture engaged in similar patterns of elaboration, which provides further evidence that similar processing strategies are used in both cultures. The valence of thoughts was more consistent with attribute strength in high motivation (indicating systematic processing) than in low motivation (indicating heuristic processing).

In sum, the results of experiment 2 provide further support that the processing strategies employed by collectivist subjects mirror those adopted by individualist subjects when processing new information. In addition, they provide an explanation for the asymmetric data patterns found in attitudinal outcomes across cultures by documenting cross-cultural differences in cue diagnosticity.

GENERAL DISCUSSION

This research aims to contribute to recent research in cultural psychology by documenting the cross-cultural robustness of the dual process models of persuasion. Although past research in cultural psychology has documented attitudinal and behavioral differences across cultures, the conclusion is often that it is inappropriate to apply previously developed theoretical frameworks to study different cultural effects and that the phenomenon must be studied within a specific culture. Our findings also document significant cross-cultural differences in outcomes. However, the results of two experiments suggest that these differences can be explained by the cross-cultural variations in the perceived diagnosticity of heuristic cues, rather than the nontransferability of theoretical frameworks.

In experiment 1, motivation, consensus cue, and attribute information were manipulated, and their effects on processing and evaluations were examined. The results indicated that attribute information is attenuated by the consensus cue in high- and low-motivation, incongruent conditions as well as low-motivation, congruent conditions, and additivity occurs in the high-motivation, congruent conditions, a pattern of findings that could be interpreted in two ways. First, subjects in the two cultures may differ in their preference for certain processing strategies. For example, heuristic processing may be preferred and therefore more frequent, while systematic processing may simply be more limited (e.g., only in conditions of high motivation and congruity) in collectivist cultures. Second, systematic and heuristic processing may both occur as in individualist cultures, but the information that is perceived as most diagnostic may vary across cultures.

Experiment 2 was conducted to determine which explanation was driving the asymmetric pattern of outcomes found in experiment 1 relative to past research in individualist cultures. Number of attributes, a cue that theoretically should not vary in diagnosticity across cultures, was featured in experiment 2. The findings replicated past research indicating that the number-of-attributes cue influenced evaluations only in low-motivation conditions. Further, attribute strength was elaborated upon and influenced evaluations only in high-motivation conditions. This pattern of results suggests that the dual process model predictions are replicated across cultures for cues with equivalent diagnosticity.

In sum, the two experiments document that the dual process models of persuasion are effective in predicting and explaining persuasion effects across cultures. While the underlying processes remain the same, culture-specific variations in cue diagnosticity should be incorporated in studying cross-cultural consumer behavior.

These results also provide insight into recent findings in cultural psychology. For example, Morris and Peng (1994) showed that fundamental attribution error, which refers to the tendency to underestimate the impact of situational factors and overestimate the role of dispositional factors when making attributions, is cross-culturally limited. The authors suggest that these differences are driven by implicit theories about social behavior that differ across cultures. In highly individualist cultures, such as the United States, persons are primarily identified as individual units, they can leave groups at will, and they are socialized to behave according to personal preferences. In highly collectivist cultures, such as China, persons are primarily identified as group members, they cannot freely leave groups, and they are socialized to behave according to group norms, role constraints, and situational scripts (Morris and Peng 1994, p. 952). As a result, information concerning social behavior should vary in diagnosticity across cultures. More relational concepts (e.g., situations) may be perceived as more diagnostic in collectivist (vs. individualist) cultures, while more isolatory concepts (e.g., dispositional traits) may be perceived as more diagnostic in individualist (vs. collectivist) cultures, a finding that is consistent with the results found by Morris and Peng (1994; see also Miller 1984).

Similarly, this research provides insight into the findings in Han and Shavitt (1994), who demonstrated that advertising appeals vary in their effectiveness across cultures. Advertisements employing appeals that emphasize individualistic benefits are more persuasive in the United States than in Korea, while advertisements emphasizing family or in-group benefits are less persuasive in the United States than they are in Korea. The results of the current research suggest that asymmetric levels of diagnosticity or relevance of the information contained in the two types of appeals may account for these cross-cultural differences in persuasion. Similarly, this cross-cultural cue diagnosticity explanation may shed light on other research that has documented cultural differences in the

persuasive effectiveness of advertising content (e.g., information content [Ramaprasad and Hasegawa 1992] and emotional content [Aaker and Williams 1997]). Future research is needed to explore the premise that cultural differences in information diagnosticity may drive persuasive effects by examining cognitive responses when processing advertisements, as well as the broader issue of cultural variability in the effectiveness of persuasion appeals.

Future research also is needed to determine the extent to which other heuristic cues vary in diagnosticity across cultures. For example, Triandis (1989) suggests that the thoughts, desires, and opinions of in-group members or significant, respected individuals should be differentially used by members of distinct cultural orientations. This observation has two implications. First, the results of experiment 1 may be more pronounced if the consensus cue had been based on in-group members or highly respected individuals (vs. consumers). Second, heuristic cues such as communicator trustworthiness or source credibility may be more diagnostic in collectivist compared to individualist cultures, while heuristic cues such as communicator likability, which are theoretically unrelated to individualism-collectivism, should be invariant in diagnosticity across cultures.

These findings also extend our understanding of the dual process models of persuasion. While past research has emphasized the use of attribute information to form and change evaluations, particularly under conditions of high motivation, relatively little research has focused on how heuristic cues can form the basis for persuasion under high motivation. Some research has suggested that heuristic cues are likely to be diagnostic under high product relevance (see, e.g., Miniard et al. 1991), processing goal (Shavitt et al. 1994), and congruity (Maheswaran and Chaiken 1991). This research suggests that cultural orientation may be another variable that may affect the extent to which heuristic cues influence evaluations under conditions of high motivation.

Finally, this research provides a basis for further examination of several related theoretical paradigms across cultures. For example, our research focused on the cultural-level variable individualism-collectivism. Additional research may examine the robustness of our findings across other domains of cultural orientation such as uncertainty avoidance (Hofstede 1990), within individualism-collectivism dimensions such as horizontal-vertical (Singelis et al. 1997), or at an individual level relying on the independence-interdependence variable (Singelis 1994). Another interesting possibility is to examine the extent to which additional theoretical frameworks are cross-culturally robust. Such research would help broaden our understanding of consumer behavior by incorporating the diversity prevalent in cross-cultural contexts.

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