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The effect of culture on perception and cognition: A conceptual framework

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ABSTRACT

Researchers are increasingly recognizing the role of culture as a source of variation in many phenomena of central importance to consumer research. This review addresses a gap in cross-cultural consumer behavior literature by providing a review and conceptual analysis of the effects of culture on pre-behavioral processes (perception and cognition). The article highlights a series of important perceptual and cognitive differences across cultures and offers a new perspective of framing these differences among cultures—that of “culturally conditioned” perceptual and cognitive orientations. The article addresses several theoretical issues and suggests directions for future research as well as managerial implications.

Keywords: Cross-cultural psychology; Cultural conditioning; Perception; Cognition; Information processing

1. Introduction

Cultural differences often lead to notorious misunderstandings. For example, some cultures perceive certain simple gestures as positive (e.g., a thumbs-up signals approval in American and European cultures), whereas others view them as negative (Islamic and Asian cultures consider the same gesture offensive) (Knapp & Hall, 2009). Recurring market failures when launching products in non-Western regions of the world illustrate the importance of understanding cross-cultural differences regulating international consumers and markets. Brands and markets are increasingly global, but understanding of consumer perceptions and consequent marketing strategies are still culturally bound (De Ruyter, Van Birgelen, & Wetzels, 1998; Zeithaml, Bitner, & Gremler, 2002) impeding effectiveness. Extensive cross-cultural consumer research suggests that cultural differences account for variation in consumer reactions to several phenomena, including perceptions of advertising and brands (Pollay, Tse, & Wang, 1990; Sung & Tinkham, 2005), consumer evaluations of and reactions to service (Zhang, Beatty, & Walsh, 2008), utilitarian versus hedonic consumption (Lim & Ang, 2008), and consumerism in general (Tse, Belk, & Zhou, 1989). Scholars are increasingly interested in studying “cultural-conditioning” effects (Hirschman, 1986), but cross-cultural consumer psychology research remains in its infancy (Shavitt, Lee, & Johnson, 2008) in several important domains. A substantial lack of knowledge has led to calls for investigations into the differences or similarities of consumers across nations and regions (Zhang et al., 2008) to understand their origins and specific dimensions.

Cross-cultural marketing literature (e.g., Engelen & Brettel, 2011) mainly describes observed differences in behaviors across cultures. This article goes beyond mere description of cross-cultural differences in consumer behavior to address the roots of these differences, that is, the existence of fundamental cross-cultural differences in pre-behavioral processes –

namely, perception and cognition. Business-related research in these domains is growing (De Mooij, 2009; Rugman & Collinson, 2009) yet relatively little research examines cross-cultural differences or similarities covering these two areas to lend significance to consumer behavior, with even less attempt to synthesize existing evidence. Perception and cognition play a central role in subjective human experience (Varela, Thompson, & Rosch, 1999) and thus studying differences in these two domains is crucial to understand cross-cultural consumer behavior. The article contributes to the literature on cross-cultural consumer psychology by showing how differences in perception can drive differences in cognition, both of which shape behavior. Evidence is drawn from many disciplines to provide a structured review of the role of culture in shaping individual perception, which in turn affects the processing of information from the surrounding environment. The study's main focus is on Western versus Eastern cultural differences, in line with most research on cross-cultural differences (Matsumoto, 1999). The article is the first to jointly review the consequences of cultural differences on perception and cognition and to explore their marketing significance. An extensive search of the multi-disciplinary psychology and marketing literature included both the terms "cross-cultural" and "cultural" and either the term "perception" or "cognition."

An understanding of the conditioning effect of culture on perception and its subsequent effect on cognition can help explain cross-cultural consumer behavior to improve marketing research and practice. First, a conceptual framework offers an overview of the different mechanisms by which culture conditions perception and cognition. Second, a review of important cross-cultural differences in perceptual and cognitive processes is undertaken followed by key resulting theoretical, methodological, and managerial issues pertinent to the review. Overall, a new perspective for understanding cross-cultural behavior highlights the role of culturally conditioned pre-behavioral processes offering a greater understanding of conditioned perspectives to improve predictive validity in behavior.

2. Cultural conditioning effects on perception and cognition

Shavitt et al. (2008, p. 1103) assert that culture includes “shared elements that provide standards for perceiving, believing, evaluating, communicating, and acting among those who share a language, a historical period, and a geographical location.” Markus and Kitayama (2010, p. 422) further contend that “the word culture is a stand-in for a similarly untidy and expansive set of material and symbolic concepts ... that give form and direction to behavior [and that] culture is located in the world, in patterns of ideas, practices, institutions, products, and artifacts.” These widely accepted definitions incorporate factors that are both *external* to people, such as societal values or similar cultural dimensions (Hofstede, 1991, 2001; Schwartz, 1992; Soares, Farhangmehr, & Shoham, 2006), social practices (Nisbett & Masuda, 2003), and artifacts (Craig & Douglas, 2006), and *internal*, such as an independent/interdependent self-construal or other traits (Markus & Kitayama, 1991), including the overlooked aspect of language (Ambady & Bharucha, 2009; Ross, Xun, & Wilson, 2002; Sen, Burmeister, & Ghosh, 2004).

Society- and individual-level perspectives about culture are used as a conceptual framework (see Fig. 1) to review an extensive but fragmented literature from fields as diverse as psychology, sociology, anthropology, linguistics, medicine, marketing, and business. The conceptual framework and associated literature review assists understanding of how culture conditions perception and cognition. Specifically, use of proxies of culture demonstrate how cultural elements, including norms and values conveyed by individualist and collectivist societies, dominant modes of independent and interdependent self-construal, and language, affect individual perception and cognition and eventually result in behavioral differences (Chartrand & Bargh, 1999).

Figure 1 about here

The recursive nature of most cultural processes (Kitayama, 1992) leads to the expectation that behavior reinforces the mechanisms by which culture influences individual-level psychological mechanisms. Research supports the idea that culture conditions individual perception and cognition by providing sets of values, life expectations, and needs (Markus & Kitayama, 1991), which affect people's basic sensory perceptions. Culture serves as a source of lay theories about the world and shapes how people attend, think, and react, crafting their life views and philosophies. For example, people in Western cultures perceive an advertisement showing a woman wearing a white dress (in which white is traditionally associated with purity) differently than people in Eastern cultures (in which white signifies death). Hence, perception and cognition are dependent on sensory inputs at an individual level, but they also involve various top-down processes that are automatically recruited to construct a conscious percept from the input (Kitayama, Duffy, Kawamura, & Larsen, 2003); these basic exogenous sensory inputs (e.g., colors, shapes, sounds) cannot fully account for the emerging percept, which can be modified by factors that are endogenous to the perceiver, such as cultural expectations, internalized values, emotions, and needs (Bruner, 1957). Culture affects perception and subsequently cognition at both the society and individual level.

2.1 Culture, self-perception and perception of others

Cultural differences in perception, or the process by which people become aware of their environment (Weiner, Healy, & Proctor, 2003), emerge in the ways Westerners or Easterners perceive the self versus others alongside other key areas of perception (Simonson, Carmon, Dhar, & Drolet, 2001) such as the perception of emotions, the environment and sensory perceptions.

Culture shapes the way people perceive *their self and others, as well as the relationship between the two* (Markus & Kitayama, 1991; Triandis, 1989). People in Western cultures hold a dominant independent self-construal, which “involves a conception of the self as an autonomous, independent person” (Markus & Kitayama, 1991, p. 226). Westerners focus mainly on self-related goals and needs, and their self-perception primarily comprises unique personal traits and attributes, with others de-emphasized. Conversely, people in Eastern cultures possess a dominant interdependent self-construal and perceive the individual “not as separate from the social context but as more connected and less differentiated from others” (Markus & Kitayama, 1991, p. 227). Easterners tend to focus on the inter-personal domain, the opinions or reactions of others, and how their public self appears to the rest of society. Dominant independent or interdependent self-construal are typical traits co-existing in various strengths within each person (Aaker & Lee, 2001; Brewer & Gardner, 1996; Singelis, 1994). Overall, the independent/ interdependent self-construal is relevant for cross-cultural consumer research because it captures the propensity of people to focus (or not) on social connections (Kastanakis & Balabanis, 2012).

Cultural values affect *the relationship between the individual and others or groups* (Triandis, 1989; Yamaguchi, 1994). Westerners perhaps tend to join groups to serve their own needs, whereas in collectivist societies, people serve the groups to which they belong. “The relationship, rather than the individual, may be the fundamental unit of consciousness” (Markus, Mullally, & Kitayama, 1997) for interdependent people perceiving the individual as inseparable from others. In contrast, Westerners perceive people as autonomous individuals, with distinctive features, striving for singularity (Markus, Kitayama, & Heiman, 1996). People in the West want to be authentic, which means they place the highest value on personal goals and individual freedom to express the “true self.” Westerners show a preference for uniqueness over conformity (Kim & Markus, 1999) and as a result, whenever a

group (e.g., through marriage, friendship, religion, professional or geographical affiliation) fails to serve the person's priorities, he or she may legitimately attempt to change, or even leave, the group. In contrast, Confucian values in collectivist Eastern societies (Yang, 1981) lead people to be humble, conform to others' wishes, attend to others' needs, and consider how their own actions reflect on the in-group's image, balance, and collective well-being. People who experience conflict with the in-group must adhere to prescribed role expectations, act wisely and with maturity, and preserve "face" (Ho, 1976). Overall, Eastern tradition evaluates a person's freedom in terms of costs and benefits to the group (Wong & Ahuvia, 1998), resulting in behavior that maintains peaceful and harmonious relationships.

Language plays an important role in how culture affects self- versus other perceptions. Whorf (1956) argues that the way people perceive their self and make sense of the world is highly dependent on the language spoken. Briley, Morris, and Simonson (2005) and Ross et al. (2002) similarly find that language can trigger culture-bound self-perceptions, with English-speaking bi-cultural people reporting a perception of the self as independent of others and Chinese-speaking bi-cultural people reporting a more interdependent perception of the self. Bi-cultural Chinese-born people describe themselves in terms of their own internal traits and attributes when using English but describe themselves in relation to others when using Chinese. These results suggest that East Asian and Western identities are stored in separate knowledge structures in bi-cultural people, with each structure activated by associated language and language triggers a culture-bound representation of the self. Ji, Zhang, and Nisbett (2004) cite experimental evidence suggesting that (1) different representations are associated with different languages and (2) language can serve as a cuing effect for reasoning style suggestive of flexible reasoning styles capable of modification by learning another language or culture.

Overall, collectivist cultures trigger, through differences in self-construal, values, and language, an overlap between individual and collective identity and, as a result, evaluate people on the basis of group performance. Group affiliations in individualist cultures, in which the converse holds, do not provide a basis for evaluation and people are judged on an individual basis. These differences have significant implications for how different cultures make causal attributions and in their ability to adopt the perspective of others.

2.2 Perception of emotions

Culture influences the prevalence of two types of primary emotions through self-construal: *ego-focused* and *other-focused* emotions. Ego-focused emotions are “emotions, such as anger, frustration, and pride”, which “have the individual’s internal attributes (his or her own needs, goals, desires, or abilities) as the primary referent” (Markus and Kitayama, 1991, p. 235); Other-focused “emotions, such as sympathy, feelings of interpersonal communion, and shame, have another person ... as the primary referent” (Markus and Kitayama, 1991, p. 235) Ego-focused emotions dominate individualist cultures, whereas other-focused emotions are more prevalent in collectivist cultures. The accurate perception of the emotions of others is culturally bound (Ekman & Friesen, 1971; Izard, 1971).

The perception of others’ emotions correspondingly differs across cultures. In a series of experimental manipulations, Masuda, Ellsworth, Mesquita, Leu, Tanida, and Van de Veerdonk (2008) asked Japanese and American participants to judge a central figure’s emotion from his or her facial expression (i.e., angry or sad) when surrounded by other people expressing the same or different emotion. The findings indicate that the surrounding people’s emotions influenced Japanese perceptions but not Americans’ perceptions of the central person’s feelings. The “stimulus as perceived” differs in the East versus the West in that the former needs contextual information to evaluate a person’s emotion correctly (Matsumoto, 1992). Conversely, Westerners, who treat people as separate and autonomous,

view facial emotions as expressing an inner, authentic emotional state distinguishable from that of the group discerning little difficulty in inferring a person's emotion. Eye-tracking data further support these findings: Japanese spend more time than Americans looking at surrounding people to arrive at the "correct" conclusion about the figure's emotional state (Matsumoto, 2002). These differences in perceptions of emotion can subsequently lead to different emotionally-based decisions and judgments.

2.3 Perception of the environment and aesthetic preferences

Differences exist in the way individualist and collectivist societies attend to their *surrounding environment* respectively reflecting the narrow focus (on the self) versus the wide focus (on the group). Nisbett and Masuda (2003) find that people from different cultures have differentiated habitual patterns of attention and perception. Specifically, several experiments confirm that Asian cultures attend more closely to the context or field (holistic perspective), whereas Western cultures primarily direct their attention to focal objects (analytical or focal perspective). These perceptual orientations are "reflected" in real, external environments: objects in Eastern environments tend to be numerous, more complex, and more interpenetrating, so the distinction between object and field becomes blurred and, therefore, relationships between *objects* and *background elements* are relatively salient. Western environments with mostly salient, distinctive objects, attend more to *focal objects* than to the *field and relationships*. Nisbett and Masuda (2003) further propose that the more context-rich Eastern environments (as opposed to the more object-salient Western environments) affect their populations' perception. However, the quasi-experimental nature of the studies means that results should perhaps be taken with caution.

The present interpretation follows an alternative proposition—that is, people (re-) create environments that match their perceptual and aesthetic preferences (focal vs. contextual) of each group that in turn reinforces such preferences. Fig. 1 suggests a recursive

relationship between the outcome of perception/cognition (behavior) and the original antecedents of cultural differences. Masuda, Gonzalez, Kwan, and Nisbett (2008) show support for the view that *aesthetic preferences* replicate in each group's products (i.e., in behavior: products of artistic traditions of a culture, such as paintings, photographs, and even websites). Eastern portrait paintings or photographs, for example, tend to diminish both the size and the salience of the central figure and emphasize the field. These findings should inform research and practice in fields such as advertising, communications, and retailing aesthetics because they reveal the most familiar and more easily processed types of content for consumers.

2.4 Sensory perception

Studies on cross-cultural differences in *sensory perception* concentrate in the areas of visual, olfactory, and auditory perceptions, mostly ignoring tactual and taste perceptions. The specificity of different cultural environments affects familiarity with and perception of various other stimuli. Ayabe-Kanamura, Schicker, Laska, Hudson, Distel, Kobayakawa, and Saito (1998) analyze cross-cultural differences between Japanese and Germans in their perception of smell: each group recognized its own familiar "cultural" smells better. Similarly, Curtis and Bharucha (2009) investigate cross-cultural differences in music perceptions demonstrating that Westerners find it easier to comprehend their own, culturally familiar melodies, as opposed to Eastern, hence culturally unfamiliar, ones. Overall, people are prone to culture-specific recall and recognition of stimuli before the information enters the attitude formation, decision-making, and judgment stage of consumption processes.

Segall, Campbell, and Herskovits (1963) report differences in visual perceptions, such as visual illusions. Specifically, Europeans are likely to perceive significant length difference between arrows of the same length but with differing extremity style (the Müller-Lyer illusion), as opposed to more collectivist societies, such as Africa and Philippines. Shiraev

and Levy (2007) report that people in collectivist societies are prone to another type of visual illusion—the vertical/horizontal illusion—and tend to judge a vertical line as taller than a same-length perpendicular horizontal line. These results are explained by ecological differences, suggesting that different types of physical environments, such as tall urban settings (predominant in many individualist cultures) or flat rural environments (predominant in many collectivist cultures), affect people’s visual perceptions (Shiraev and Levy, 2007).

2.5 Culture, cognition and the self versus others

East Asians and Westerners differ in cognition—that is, the processing of stimuli, such as attention, memory, language, problem solving, and decision making that transforms perceptions through mental work (Zajonc, 1984). Key areas include self- versus other-related cognitions, self-esteem, and information processing (Markus & Kitayama, 1991; Medin, Ross, & Markman, 2005).

People’s ability to adopt the perspective of others varies cross-culturally, and this difference is directly linked to the way they perceive the self versus the group as well as their dominant mode of self-construal. Specifically, cultural patterns of interdependence focus attention on the other - causing East Asians to be better *perspective takers* than Westerners) – with members of both cultures able to distinguish between their own perspective and that of another person (Wu & Keysar, 2007). However, Westerners make more egocentric errors when reasoning about others and interpreting their reactions (Wu & Keysar, 2007). These findings shed light on previous studies showing that Americans evaluate the similarity of others to themselves as higher than the similarity of themselves to others (Holyoak & Gordon, 1983) because, for them, their self functions as a habitual reference point in similarity comparisons with others. Cohen and Gunz (2002) find that Americans asked to

remember and describe an occasion when they were the center of attention report the event from a first-person perspective whereas Chinese participants use the third person.

Research focusing on the way people make situational or dispositional *judgments* about causes of events suggests the existence of cross-cultural differences. People from Western cultures display higher levels of fundamental attribution error (FAE), a cognitive bias describing people's tendency to make dispositional *attributions* and discard situational ones when explaining other people's behavior (Ross, 1977). The FAE is more prevalent in Western cultures where norms and values emphasize the importance of competition and promote self-sufficiency, autonomy, and self-promotion (Hofstede, 2001). Conversely, Eastern cultures typically display lower levels of FAE, given that collectivist norms value relatedness and interdependence and promote group over individual goals. This tendency correlates naturally with people's ability to adopt the perspective of others: people should be less prone to dispositional attributions if they can take a broader perspective. Another frequent attributional bias is self-serving bias when people perceive positive outcomes as the result of internal dispositions (e.g., working hard and receiving a good grade) and negative outcomes as the result of situational factors (e.g., a bad grade due to a difficult exam). Though initially considered a universal bias, research suggests the existence of cultural differences: for example, Asian students report more situational attributions for exam success than Western students (Fry and Ghosh, 1980).

Evidence reveals differences in *causal reasoning* (Lee, Hallahan, & Herzog, 1996) and, accordingly, in making predictions (Choi & Nisbett, 1998). Asians understand behavior as the result of complex interactions between dispositional and other situational or contextual factors; Westerners view behavior as a direct manifestation of an actor's disposition. The former employ a holistic mode of thinking—focusing attention on the field on which an object is located and ascribing causality from relationships between the object and the field.

The latter prefer analytical thinking—focusing on the object, categorizing its attributes, and ascribing causality directly (Norenzayan & Nisbett, 2000). This difference does not indicate the absence of dispositional thinking in Eastern cultures. Extensive ethnographic and psychographic data indicate that “dispositionism” constitutes a mode of widespread thinking across cultures (Choi, Nisbett, & Norenzayan, 1999) and the East–West split in attribution is perhaps is rather the result of strong “situationism” among Asians rather than ignoring endogenous factors. Morris and Peng (1994) describe Chinese-language newspapers making more situational attributions, when describing similar crimes, whilst English-language newspapers make more dispositional attributions, highlighting the effect of language in causal reasoning.

2.6 Self-esteem

A positive self-view is a universal motivation (Sedikides, Gaertner, & Toguchi, 2003), though studies report cross-cultural differences in self-esteem (e.g., Heine, Lehman, Markus, & Kitayama, 1999). North American populations, influenced by cultural norms of independence, display strong needs to view self in a positive light and typically score above the theoretical mid-point on self-esteem scales (Baumeister, Tice, & Hutton, 1989). Westerners tend to report inflated positive self-views (Taylor & Brown, 1988) or to engage in various self-protective mechanisms whenever facing threats to self-esteem (Steele, 1988). Americans engage in self-enhancement on attributes that emphasize positive aspects of their lives (Kitayama, Markus, Matsumoto, & Norasakkunkit, 1997).

These motivations are less salient in collectivist societies (Vohs & Heatherton, 2001) because people tend to favor group-esteem over self-esteem, hold a dominant interdependent self-construal, make fewer self-serving attributions to protect their self-esteem (Schmitt & Allik, 2005), and have low compensatory self-protective attitudes (Brockner & Chen, 1996). Kitayama and Uchida (2003) confirm that East Asians show less motivation to self-enhance

than Westerners, and Japanese are more likely to engage in self-criticism, which helps them avoid future ill-perceived behavior (Kitayama et al., 1997). These findings extend to other collectivist societies: scores on self-esteem and self-view measures are usually lower in Native American collectivist cultures than in North American populations (Fryberg & Markus, 2003). These results taken together reflect the dominant cultural norms and values in collectivist societies (e.g., humility, group precedence) and suggest high levels of individual self-esteem are potential threats to group harmony.

2.7 Information processing

A direct correlate of visual perception, attention to visual information, varies across cultures. Studies reveal that Americans attend to predominantly central focal objects (Ji, Peng, & Nisbett, 2000; Nisbett & Masuda, 2003), that is to say, visual information is processed in a field-independent way, paying less attention to background information. Chinese participants make more saccade movements to the background of an image when looking at a photograph than American participants whereas Westerners attend to central objects sooner and longer than Easterners (Chua, Boland, and Nisbett, 2005). Conversely, Asians process visual information in a context-dependent way and this “field dependency” means that Asians have more difficulty in separating a focal object from its original context (Witkin, Lewis, Hertzman, Machover, Messiner, & Karp, 1954). Such a tendency manifests in the phenomenon of “change blindness” occurring when people fail to detect large between-view differences in natural or artificial scenes (Levin, Momen, Drivdahl, & Simons, 2000). Asians detect changes in the field more easily while failing to attend to focal object changes, whereas Westerners detect changes to salient objects more easily while being “change blind” to changes in the field (Nisbett & Masuda, 2003).

These differences in attention and processing of visual information align with visual/environmental perceptual preferences and suggest the existence of two distinct but culturally

dependent cognitive styles of information processing: analytical and holistic. An analytical cognitive style occurs predominantly in individualist cultures requiring more attention to objects; a holistic cognitive style occurs predominantly in collectivist cultures requiring more attention to contextual information (Witkin & Goodenough, 1981).

Analytical versus holistic *information-processing styles* affect not only what is being looked at but also what types of connections are drawn between different stimuli (objects or people) and how these stimuli are *categorized* (Norenzayan, Smith, Kim, & Nisbett, 2002). Because people from Western cultures focus more on individual objects when processing information, classifications based on rule-based categorical memberships are preferred; conversely, Eastern Asians classify events or objects according to relationships and family resemblance (Ji et al., 2004). Chiu (1972) asked children to classify triplets of objects (cow, chicken, grass) by grouping them in pairs and leaving one alone: American children, using a rule-based categorical classification, grouped together the cow with the chicken because both are animals (leaving the grass unpaired); Chinese children, using instead a relational type of classification, grouped the cow and grass together because cows eat grass (leaving the chicken unpaired). Similarly, Masuda and Nisbett (2001) report that Chinese students grouped together a squirrel and grass (i.e., suggesting a relational grouping: squirrels run on grass), leaving a seagull unpaired; American students grouped the squirrel with the seagull (i.e., suggesting a categorical grouping: both are animals), leaving the grass unpaired. Easterners memorize patterns of association between figures better than Westerners (Ji et al., 2000).

Other differences, consistent with the cultural patterns reviewed here, exist in the content of personal *memories*. Conway, Wang, Hanyu, and Haque (2005) find that people from collectivist cultures report more interdependent memories (i.e., memories involving others), whereas people from individualist cultures report more independent memories (i.e.,

memories involving themselves). These variances are a direct consequence of differences in self-perceptions (Markus & Kitayama, 1991). Culture affects the functioning and quality of memory over time. Levy and Langer (1994) argue that commonly observed differences in memory capacities in Western versus Eastern elderly (suggesting better memory performance for Eastern than Western elderly) come from stereotypes associated with older people in each culture. Specifically, drawing on previous studies, they report that collectivist cultures value and attach positive attributes and traits to older people, whereas individualist cultures associate negative stereotypes, attributes, and traits to them. Levy and Langer (1994) speculate that such stereotypes can lead to self-fulfilling prophecies, showing that cultural effects interact at both the society and individual level.

Culturally dependent dominant modes of thinking affect *decision making* and the *processing of persuasive information* (e.g., marketing communications). Aaker and Sengupta (2000) suggest that holistic thinking explains why Hong Kong consumers value and process contradictory pieces of information, whereas Westerners favor one over the other. Easterners are also more comfortable with contradictory statements (e.g., “too humble is half proud”) and try to find the truth on both sides; conversely, Americans strive to reduce cognitive dissonance by rejecting one in favor of the other (Peng & Nisbett, 1999). Similarly, it is reported that Chinese prefer compromising solutions to inter- or intra-personal conflicts, whereas Americans prefer solutions that favor the side they believe is correct (Nisbett, Peng, Choi, & Norenzayan, 2001). Such distinctions manifest themselves in the context of predicting future changes: Westerners prefer linear predictions for change (e.g., a drop in the stock market this year also means a drop next year), whereas Easterners ignore such patterns and make predictions non-linearly because they perceive events to have a broader net of consequences (Maddux & Yuki, 2006).

Cultures respond differently to content and form (alternative modes and styles) of communications. The nature of the product advertised, and more specifically whether the product is to be shared with others (e.g., a car) or not (e.g., beauty products), affects consumers' propensity to value culture-congruent information (i.e., social harmony and conformity in collectivist cultures, uniqueness and self-promotion in individualist cultures) (Han and Shavitt, 1994). Similarly, diagnosticity of cues traditionally used in persuasion models (e.g., elaboration likelihood model [Petty & Cacioppo, 1986], heuristic systematic model [Chaiken, 1980]) differs cross-culturally: unlike Westerners, Easterners evaluate peers' opinions using a central route rather than a peripheral route (Aaker & Maheswaran, 1997). When the product is not related to cultural norms (reflecting a personal rather than social use), similar persuasion appeals are effective cross-culturally (Zhang & Gelb, 1996). Collectivist cultures evaluate communications using an indirect or implicit style, whereas individualist cultures prefer more direct and explicit styles (Hall, 1976). Cho, Kwon, Gentry, Jun, and Kropp (1999) report that people in collectivist cultures value the mood, tone, or aesthetics of advertisements over content. Overall, these findings integrate well with research on the relationship of the self with others, underlying within-culture consistencies and between-culture differences.

3. Discussion

This review suggests that culture conditions perception and subsequently cognition with important consequences for understanding behavioral differences across cultures.

The review uncovers major differences in perception especially with regard to self-versus other perceptions. Such differences affect people's perceptions of emotions, the environment, and aesthetic preferences. Culture may be viewed as the gateway through which external stimuli are received. Culturally conditioned perception affects cognition. A culturally

conditioned cognitive orientation triggers a field-independent way to process information (i.e., focusing on individuated focal objects) in the West versus a field-dependent, contextual information-processing mode in the East. Independent-oriented people tend to retrieve self-related memories, whereas interdependent-oriented people retrieve other-related or relational memories. Culturally conditioned cognition affects decision making. Westerners exhibit a preference for congruent information (dissonant with contradictions) and focus on message content; Easterners “see the big picture,” feel comfortable with contradictions, and attend to elements other than the core focal objects.

A key finding overall is that interdependent/ collectivist people perceive and process more of the world than independent/ individualist people. Observed differences in holistic versus analytic perspectives, de-individuation, and dominant focus on groups versus individuals (conditioning effects of culture) have strong consequences on behavior. Traditional cross-cultural research focuses mainly on differences in behaviors, whereas this review suggests that research should focus instead on the roots of these behaviors. Table 1 provides a summary to support research efforts in this direction.

Table 1 about here

This review shows that many Western frameworks and theories, how consumers perceive and process information, do not adequately translate to the East. For example, most of what is known about Western in-store behavior (e.g., comparing product features, memorizing prices) will not apply in the East because customers perceive and process information differently.

3.1 Directions for further research

Further research on cross-cultural perception and cognition should attempt to deepen current understanding of how culturally conditioned perception and cognition shape different behaviors. Researchers should go beyond collectivism/ individualism (Hofstede, 1991, 2001) that represents the current dominant society-level explanatory cross-cultural framework. That framework is an insightful and convenient approach to studying cross-cultural differences, but the focus is broad cross-cultural differences rather than individual-level differences. Examining the effect of culture at the individual level (e.g., investigating how self-construal shapes pre-behavioral processes) would provide a more precise identification of the locus of cultural differences and better understanding of how culture interacts with innate human processes. This review offers a conceptual framework of a fragmented and vast cross-disciplinary literature, considers cultural effects at both the individual and society level including research on the influence of language, to understand how culture shapes pre-behavioral processes. Future research might incorporate other advances in the field, such as vertical/horizontal distinctions of individualism/collectivism (Triandis & Gelfand, 1998), and more recent constructs of “boundary shifting” (Aaker, 2006), “high and low power,” and “equality” (Oyserman, 2006). Doing so would help clarify how, for example, an individual need (e.g., power) interacts with culturally conditioned perception and cognition of similarities and need for inclusion for Easterners.

Second, researchers should investigate how processes of cultural change complicate cultural conditioning of perception and cognition. Triandis (2001) argues that cultures are gradually changing as a result of acculturation and Eastern exposure to Western media. The roles of cultural inter-penetration and contamination, cultural pluralism, and cultural hybridization (Craig & Douglas, 2006) in altering two orientations remain unknown. Collectivists’ perceptions or cognition may gradually shift from an “other-orientation” to a “self-orientation.” Further research could investigate how Easterners integrate values of

individualism into their daily lives and consumption. Such integration would be especially relevant to the luxury industry that has traditionally sold a Western lifestyle to Eastern consumers. Understanding value shifts, possibly merging to a form of “Eastern individualism,” could help adapt traditional marketing tools or inform the emergence of new Eastern luxury brands, such as Shanghai Tang. Research could conduct within-culture studies to understand the processes of value change in collectivist cultures and compare, for example, modern Westernized urban settings (e.g., Shanghai) with more traditional settings (e.g., Chongqing).

Third, cultural conditions of perception and cognition carry important methodological consequences for conducting marketing research in cross-cultural settings. Researchers could investigate how cross-cultural differences in self-perception affect respondent bias. Lalwani, Shavitt, and Johnson (2006) show that social desirability biases (e.g., importance of others’ opinions) affect Easterners more than Westerners because of their dominant interdependent self-construal. Similarly, an acquiescent response style (Stricker, 1963) is more common in collectivist cultures (Smith, 2004) that value conformity over disagreement. Finally, people from individualist cultures tend to display more extreme response styles (Smith & Fischer, 2008) because of their dominant values of self-promotion and individuality. However, no agreement exists on how to do so (Shavitt et al., 2008) despite emerging attempts to compare measures cross-culturally. To counterweight these problems, researchers could turn to more objective (and involuntary) behavioral measures, such as eye-movement, contractions of facial muscles during facial expressions or galvanic skin response. For example, eye-tracking devices, commonly used in vision research, are popular tools for experimental cultural psychologists. Examination of cross-cultural neuroscience, which explores the existence of differences in neural correlates (see Ames & Fiske, 2010), would enable researchers to collect more objective data to support or refute current findings.

Evidence supports many of these findings. For example, Gutchess, Welsh, Boduroğlu, and Park (2006) show that when looking at pictures, Americans use more regions of the brain typically involved in the processing of objects than the Chinese. Promising research avenues for marketers include work on the taste of branded versus un-branded products (McClure, Li, Tomlin, Cypert, Montague, & Montague, 2004). The field of cross-cultural neuroscience is relatively new, however, and though early results appear promising, care should be taken not to overstate existing findings.

3.2 Managerial implications

From product development, to retailing, to communication campaigns, this review offers ways for practitioners to adapt and improve the efficiency of cross-cultural marketing strategies. Managerial implications of cross-cultural differences in perception and cognition include the design of products, services, or retailing servicescapes; more efficient use of marketing stimuli (e.g., brands, colors, sounds); cultural adaptations of communication content (i.e., significance of peer vs. self-focus) or peripheral elements (e.g., tone of voice); and the behavior of customer-facing personnel (e.g., salespeople or customer relationship management personnel). For example, firms could adapt retail environments to suit differences in holistic versus analytical modes of perception. Westerners would respond better to standard retail environments in which all products from a category are grouped together; conversely, Easterners would respond better to non-standard retail environments, in which products are grouped around themes or “universes” (e.g., breakfast section, with milk, cereals, and teas grouped together).

In the service industry, Eastern customers differ from Western customers in the way they explain the outcome of service deliveries. Easterners are generally more likely to perceive situational factors when analyzing the cause of events and less likely to analyze the

outcome of a service failure in a negative way; yet they might also expect service providers to take responsibilities for any problem occurring during service delivery. In the advertising industry, for which perception/cognition is a core consideration, cross-cultural advertising campaigns could be improved by understanding how customers from different cultures perceive persuasion messages and process visual information. Consumers from collectivist cultures pay more attention to contextual information when looking at print advertisements. Differences in holistic versus analytic cognitive styles mean that advertisements designed for Eastern markets should present a balanced composition between background and core foci of an advertisement. Overall, this review shows that exporting existing marketing practices without taking into account perceptual and cognitive differences is a risky strategy that may result in market failures.

4. Limitations and conclusion

This research has limitations. First, the review is limited in scope in terms of the number of articles included. For example, the review does not include certain areas of the literature on cognition such as differences in numerical processing (e.g., Tang, Zhang, Chen, Feng, Ji, Shen, Reiman, & Liu, 2006). However, the areas covered include the major domains of perception and cognition. Second, this research does not address in-depth the notion that the relationship among culture, perception, and cognition is likely to be recursive. Researchers should account for this complexity when approaching cross-cultural topics.

This review offers consistent evidence for cultural variation in two pre-behavioral mechanisms: perception and cognition. An explanation of cross-cultural differences in consumer behavior requires better understanding of the role of these cultural differences. This article offers a series of theoretical and managerial insights as the result of a fresh perspective. Overall, integrating the conditioning effects of culture on perception and

cognition with new cross-cultural research enables scholars and managers to broaden understanding of cross-cultural consumer research with the possibility of improved cross-cultural marketing strategies. Future research may reveal a degree of cultural shaping of perception and cognition greater than previously expected from cross-cultural consumer behavior or psychological literature. This article provides a basis for re-conceptualizing consumers' perceptual and cognitive orientations across the world significantly shaped by collectively generated and shared practices, values, norms, and beliefs behind culture, as well as self-views and language. After all, if perception is reality, as surmised in the corporate world, examining perception - and subsequently cognition - becomes even more crucial for successful marketing.

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Table 1

Culturally-conditioned perceptual & cognitive orientation(s): Individualistic/Independent vs. Collectivist/Interdependent

	Individualistic/independent orientation	Collectivist/interdependent orientation	
Perception	<i>Self-perception</i>	Autonomous, detached, differentiated	Inseparable, connected, non-differentiated
	<i>Perception of others/groups</i>	Group exists to serve individual needs	Individuals exist to serve group needs
	<i>Perception of emotions</i>	Individual-orientation, de-contextualized, non-relational	Group-orientation, contextual, relational
	<i>Perception of the environment and aesthetic preferences</i>	Analytical, focal	Holistic, contextual
	<i>Sensory perception</i>	Differences across sensory channels	Differences across sensory channels
	<i>Perspective-taking</i>	Low perspective-taking ability, egocentric errors, insider perspective	High perspective-taking ability, less egocentric errors, outsider perspective
	<i>Attributions & causal judgments</i>	Tendency for dispositional attributions	Tendency for situational, contextual attributions
	<i>Self-esteem</i>	High need for self-enhancement	Low need for self-enhancement
	<i>Information processing</i>	Field-independent, focal, analytical	Field-dependent, contextual, holistic
	<i>Categorization</i>	Rule-based, categorical	Relational
Cognition	<i>Memory</i>	Self-related memories	Other-related, relational memories
	<i>Processing of persuasion messages and decision-making</i>	Central-orientation (content of message), uncomfortable with contradictory information	Peripheral-orientation (how is the message delivered), comfortable with contradictory information

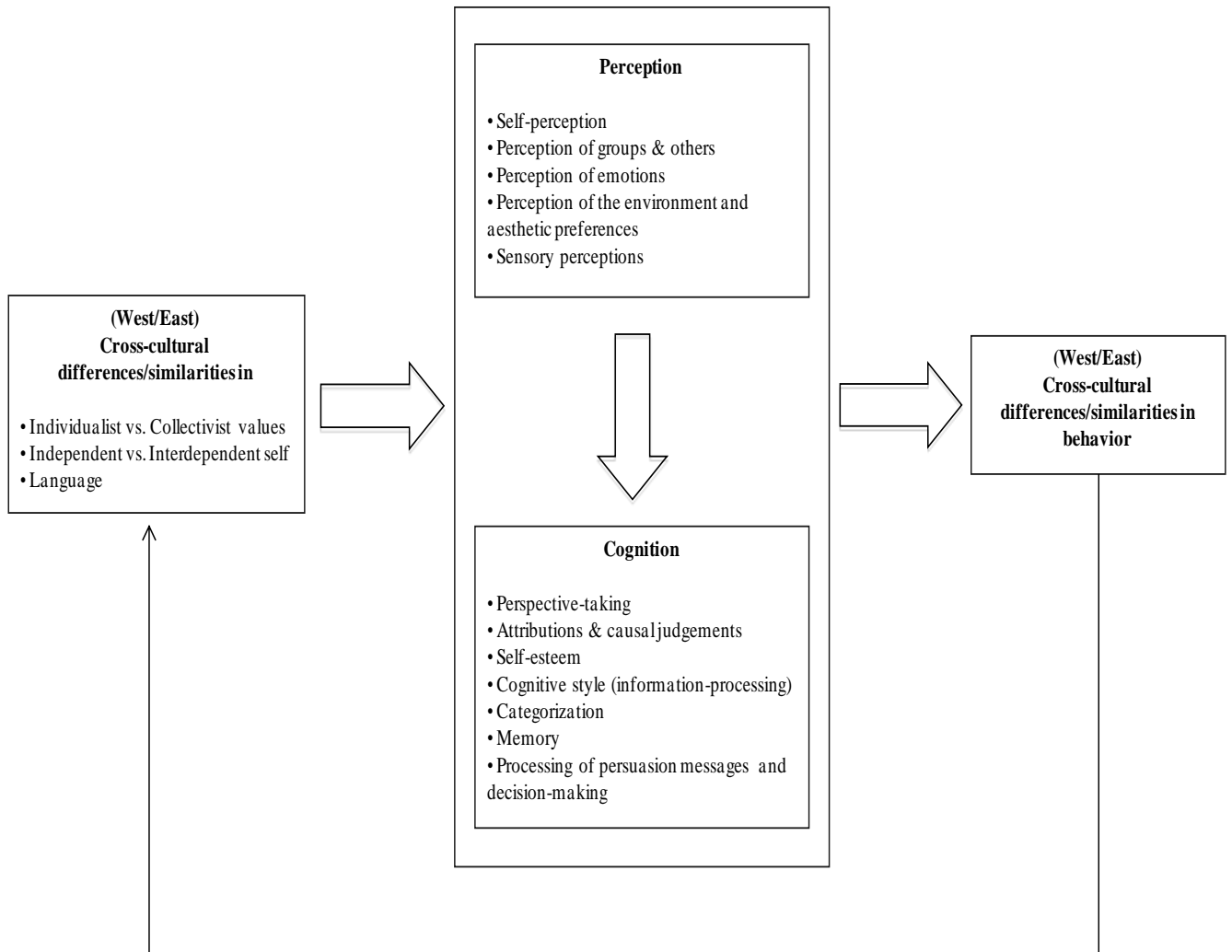


Figure 1. A framework of the role of culture on consumers' perception and cognition (and eventual behavior).