



# “The evolution-similarity matrix: an evolutionary psychology perspective on cross-cultural advertising”

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# THE EVOLUTION-SIMILARITY MATRIX: AN EVOLUTIONARY PSYCHOLOGY PERSPECTIVE ON CROSS-CULTURAL ADVERTISING

## Abstract

The standardization/adaptation debate in cross-cultural advertising is a topic on which little consensus prevails and which remains heavily discussed. Using evolutionary psychology, this paper presents a typology of advertising cues and explains their cross-cultural relevance and transportability. The paper highlights three distinct categories – human universals (evolved similarities), local adaptations (evolved differences), and local socialization (differences not due to evolution). The paper contributes to advertising theory by providing a meta-framework for the study of cross-cultural similarities and differences in the processing of advertising cues. It further assists advertising practice by delivering a framework aiding in cross-cultural advertising copy decisions. By raising the questions that the paper poses to develop the proposed typology categories, advertisers can identify which advertising cues are malleable by advertising and which are based on innate human preferences and are relatively stable. With that knowledge in hand, advertisers can decide when and to what extent to use a standardization approach versus an adaptation approach.

## Keywords

cross-cultural, international, standardization, adaptation, evolutionary psychology, evolved similarities, evolved differences, ad appeals

**JEL Classification** M37

## INTRODUCTION

*Because advertising, effective advertising, is an appeal to human fundamental needs, desires, and motivations, it is an appeal to basic human nature. People over the world have the same basic need for food, clothing, shelter, the same ambitions, egotism, and the same temptations. The setting changes, the climate, the culture, the idiom, but the basic human nature is the same everywhere. And so, the traditional advertising appeals of economy, comfort, advancement, and social approval are equally applicable in all markets*

(Leo, 1964, pp. 181-182).

Norton B. Leo, Vice-President of an international American advertising agency, envisioned in 1964 that with the passage of time and the rise in communication and travel facilities, the standardization approach to international advertising, as opposed to the adaptation approach, will gain in importance and practicality. A polemic topic among practitioners and academics back then, the standardization versus adaptation debate has persisted in cross-cultural advertising literature (Koslow & Costley, 2010). The debate revolves around the central question of whether different environments affect how consumers respond to advertising (Taylor, 2005). If perception does differ signif-



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icantly between different environments, then a local adaptation approach is probably a better choice than a global standardization approach. If not, a global standardization approach may represent a viable option, allowing for a unified corporate image and cost savings. Alas, despite the emergence of a plethora of studies on the topic, little consensus has been achieved, and the question remains heavily debated.

In his review paper spanning 40 years of research on the debate, Agrawal (1995) points out that practitioners are more likely to favor the standardization approach, whereas academics tend to favor and argue for the adoption of the adaptation approach. The scholar explains this contradiction with the inability of academics to provide practitioners with practical frameworks for decision-making. To resolve the conflict, Agrawal (1995, p. 45) calls for the development of a theory that can “determine when and to what extent standardization should be used”. By relying on evolutionary psychology, the present conceptual paper aims to provide an answer to this call. The current article introduces core concepts of evolutionary psychology – levels of explanation, and domain specificity – and develops a typology of cross-cultural advertising cues, consisting of three categories: human universals (evolved similarities), local adaptations (evolved differences), and local socialization (differences not due to evolution). Advertising cues are devices that convey product or brand information in the absence of formal informational content (Dean, 1999). The current article contributes to advertising theory by providing a meta-framework for the study of cross-cultural similarities and differences in the processing of advertising cues. It further assists advertising practice by delivering a framework aiding in cross-cultural advertising copy decisions.

## 1. THEORETICAL BASIS

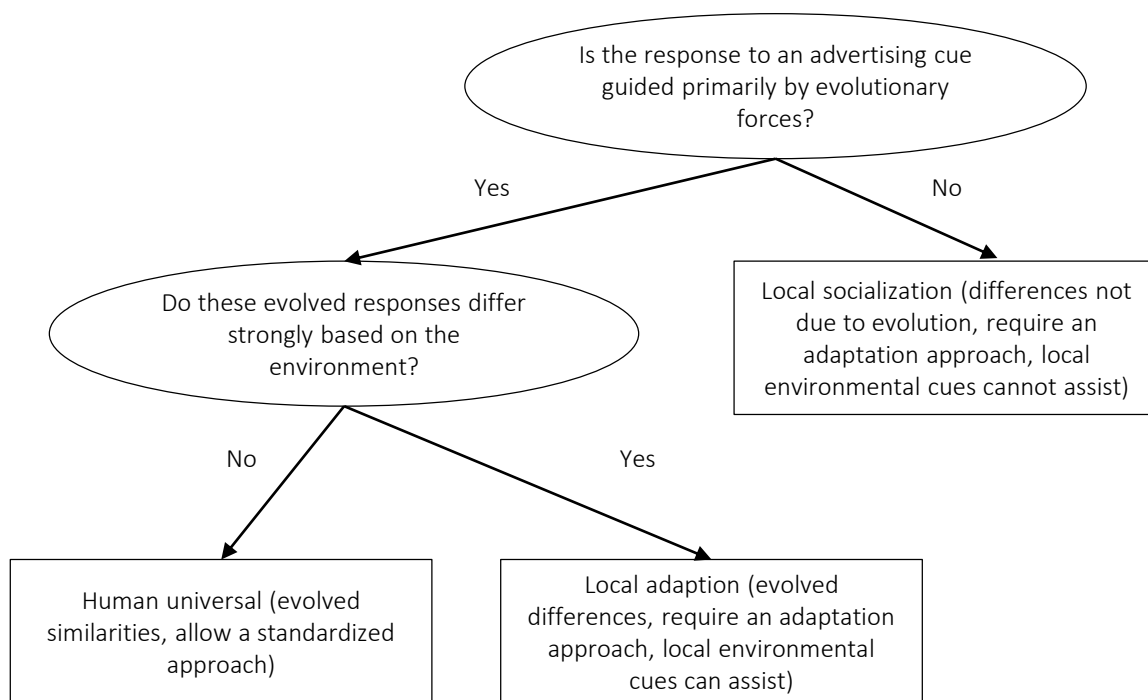
Evolutionary psychology is a relatively new discipline that looks into adaptive pressures from our ancestral past that may help explain modern human behavior (Saad, 2017). In the environment of evolutionary adaptedness during the Stone Age, humans faced recurring adaptive problems. In this period, our ancestors lived in small groups, hunted animals, and gathered plants. The forces of evolution shaped the human mind during this long period spanning about 3.4 million years. The modern era, characterized by the emergence of agriculture around 10,000 years ago and the industrial revolution around 200 years ago, has spanned substantially fewer years. According to evolutionary psychology, this short timeframe has not allowed the human mind to adapt to these new circumstances. In a sense, our modern skulls carry a Stone Age mind (Cary, 2000). Evolutionary psychology helps us understand not only *how* (a proximate explanation) a behavior or phenomenon works, but more importantly *why* (an ultimate explanation) individuals do what they do (see Ivanov, Eisend, & Bayon, 2019 for a detailed discussion of proximate and ultimate levels of explanation).

Evolutionary psychologists assert that behavior always has both a proximate and an ultimate cause. Therefore, to fully explain a behavior, academ-

ics need to consider both causes (Tinbergen, 1963). According to Griskevicius and Kenrick (2013), as referenced in Ivanov, Eisend, and Bayon (2019), while a myriad of motives can explain behavior at the proximate level, there is a much narrower set of motives at the ultimate level. Griskevicius and Kenrick (2013) classify them into seven key fundamental motives – (1) evading physical harm, (2) avoiding disease, (3) making friends, (4) attaining status, (5) acquiring a mate, (6) keeping a mate, and (7) caring for family. Human behavior is viewed as guided not by general-purpose content-free mechanisms (e.g., learning), but by domain-specific mechanisms linked to these fundamental motives (e.g., humans possess a psychological mechanism specialized for avoiding infectious diseases) (Wang, Michalak, & Ackerman, 2018).

## 2. RESULTS

After having introduced the core features of the evolutionary perspective, this paper presents an evolutionary typology of advertising cues and explains their cross-cultural transportability. The paper highlights three distinct categories – human universals (evolved similarities), local adaptations (evolved differences), and local socialization (differences not due to evolution) (see Figure 1).



**Figure 1.** Developing an evolutionary typology of cross-cultural advertising cues

The answers to two questions allow the classification of advertising cues into one of these three categories, with implications for cross-cultural transportability.

The first question is whether the response to an advertising cue is guided primarily by evolutionary forces. This is commonly the case for cues that play a significant role in a key fundamental motive. A negative answer to that question will put an advertising cue in the local socialization category, where socialization forces (other than evolution) and chance events would explain the effect of a cue. Cues in that category would require an adaptation approach. A positive answer to the first question will lead to the second question of whether these evolved responses differ strongly based on the environment. If so, the advertising cue will be classified as a local adaptation (an evolved difference). If the evolved response does not differ based on the environment, or differs only slightly, then the advertising cue will be classified as a human universal (an evolved similarity). Cues in the local adaptation category would require an adaptation approach, whereas cues in the human universal category can be cross-culturally transferred using a standardization approach. Both the local adaptation and the human universal categories provide evolution-

ary explanations of the effects of cues contained in these categories in predictable manners.

The three categories that the paper highlights are contained in the “evolution-similarity matrix” (see Figure 2). The matrix reveals two factors that marketers should consider when deciding whether to use a standardization or an adaptation approach – whether the response is evolved or not evolved, and whether the response is similar or different across environments. Several important facets need to be noted here. First, the divide between evolved and not evolved maps onto the divide between nature and nurture – are responses innate or learned (see Confer et al., 2010, p. 116 for a discussion of nature versus nurture dichotomy)? On that account, evolutionary psychology rejects the tabula rasa premise (i.e., that the human mind starts off as an empty slate), but asserts that most human traits and responses involve an interaction between genes (i.e., nature) and environments (i.e., nurture) (Saad, 2017). Hence, the divide between evolved and not evolved responses is not clear cut. Marketers that deal with this question are, thus, advised to consult the evolutionary psychology literature that might shed light on whether a behavior is closely guided by evolutionary forces or not. Second, it is noticeable that there are only three categories contained in

		SIMILARITY	
		Similar	Different
EVOLUTION	Evolved	Human universal (standardization)	Local adaption (adaption)
	Not evolved		Local socialization (adaption)

**Figure 2.** The evolution-similarity matrix of cross-cultural advertising cues

the evolution-similarity matrix. The absent quadrant is about responses that are not primarily guided by evolutionary forces and are similar across different environments. The paper hypothesizes that it is highly unlikely for the same behavioral response to be observed across various environments unless it maps onto an evolved behavioral trait. While cultural evolution exists (i.e., the development of one or more cultures from simpler to more complex forms), humankind across the globe has reached the stage of advanced civilization (Morgan, 1877). Behaviors that are similar across civilized environments and are acquired through learning, imitation, and other forms of social transmission represent common knowledge, known to marketers, and are hence not relevant to this paper (Richerson & Boyd, 2005).

Next, the paper provides explanations of the three category types, with examples from advertising and marketing.

### 2.1. Human universals (evolved similarities)

The human universal category contains advertising cues that are guided by a key fundamental motive, the responses to which do not differ (or dif-

fer only slightly) based on the environment. This category contains evolved similarities – responses which have evolved to be the same across different human populations. From an evolutionary perspective, in order for a behavioral preference to be observed across cultures and across time, it must have an evolutionary origin that most commonly provides a strong adaptive advantage.

An illustrative example is our preference for energy-rich foods. Humans have a universal preference for foods with high energy contents – sugars, fats, etc., – and tend to find sweet tastes pleasurable. Even newborn human babies demonstrate preferences for higher sugar concentrations (Desor, Maller, & Turner, 1973), while young children consistently prefer those fruits and vegetables which are the most energy-dense (Gibson & Wardle, 2003). This is because, in our evolutionary past, those individuals who had evolved to prefer energy-rich food sources would have been more likely to successfully avoid starvation, allowing them to reproduce and pass on those preferences to their offspring. Humans today, therefore, have a universal preference for foods with high energy content. Marketing which uses cues (e.g., imagery) of energy-dense foods is therefore likely to elicit similar responses across different human populations worldwide.

Another example, relevant to advertising, is men's evolved preference for the hourglass figure in women. From an evolutionary perspective, this aesthetic cue is related to the key fundamental motive of reproduction, for an hourglass figure in women has been demonstrated to be a reliable cue of fertility and health (Singh, 2002). Research from a diverse set of disciplines has demonstrated that this preference is relatively stable across different environments – it is established in widely different racial populations and cultures (Singh, Dixon, Jessop, Morgan, & Dixon, 2010), and has been found in analyses of 286 Egyptian, African, Greco-Roman, and Indian sculptures and statuettes going back several millennia (Singh, 2002) and 155 prehistoric Jomon figurines (Hudson & Aoyama, 2007). As a human universal, this advertising cue can be cross-culturally transferred successfully using a standardization approach. Indeed, evidence from advertising research supports this claim – the hourglass figure was established in content analysis of female escorts' online ads from 48 different countries (Saad, 2008), advertised hourglass figures are linked with higher-paid fees for online escorts (Griffith, Capiola, Balotti, Hart, & Turner, 2016), and hourglass-shaped anthropomorphized packages of consumer goods elicit aesthetic appeal in consumers (De Bondt, Van Kerckhove, & Geuens, 2018).

One final example directly linked to the fundamental motives that drive our behavior is our evolved parental instinct. This innate predisposition motivates humans to behave in ways that ensure that individuals in need receive proper care and attention (Sherman, Haidt, & Coan, 2009). For example, our evolved kin care system reacts to infants' faces by inducing cuteness perception, increasing our motivation for caretaking (Glocker et al., 2009). Evidence from the UK suggests that, when active, this kin care system increases prosocial behavior and decreases antisocial behavior. A field experiment demonstrated that simply painting shop shutters with the faces of babies and toddlers led to a significant reduction in both crime and antisocial behavior, compared to when the shop shutters were of plain steel (Sutherland, 2019, pp. 60-61). Caring for offspring has been even demonstrated to extend to infants of other species (Lorenz, 1997). From an evolutionary psychology perspective, Vyncke, Apaolaza Ibañez,

and Hartmann (2009) conducted an experiment indicating that consumers preferred an advertisement for a café featuring an adult and a newborn elephant over an advertisement that only featured an adult elephant. The experimental study was conducted in Spain, but one can suspect that the pattern of results would remain relatively stable across different environments.

## 2.2. Local adaptations (evolved differences)

The local adaptation category contains advertising cues that are guided by a key fundamental motive, the responses to which differ strongly based on the environment. This category contains evolved differences – responses that have evolved to be different across different human populations. These behavioral preferences have evolved in response to stark differences between different environments. Evolution has thus selected for preferences that provide an advantage in a specific environment, but that may be maladaptive in a different environment.

To illustrate the mechanism through which local adaptations are formed, the paper provides an example from the field of Darwinian gastronomy. From an evolutionary perspective, the consumption of spices can be linked to survival, for spices have been demonstrated to have an antimicrobial function. Evolutionarily informed research on spice consumption has documented a strong interaction with environments (Billing & Sherman, 1998). In particular, in hotter climates that facilitate the rapid development of foodborne pathogens, humans have evolved to adapt their gustatory preferences to accommodate a diet containing spicier food with strong antimicrobial effects. In colder climates, the consumption of spicier food is, by comparison, lower. This example serves to explain how evolutionary forces can shape cross-cultural differences in predictable manners. Thus, local adaptations require an adaptation approach, where cues in the environments can assist with and determine the directionality and the strength of the effects. In the provided example, the temperature in an environment can predict spice consumption.

Another example of a locally adapted trait is that of loss aversion. Loss aversion is a well-known

phenomenon whereby the pain of losing is psychologically more powerful than the pleasure of gaining (Kahneman & Tversky, 1979), meaning most people tend to be risk-averse in situations where losses and gains are possible (Wang, Rieger, & Hens, 2017). There is strong evidence for loss aversion being an evolved trait. As well as humans, other species including Capuchin monkeys have been found to display loss aversion (Chen, Lakshminarayanan, & Santos, 2006), suggesting that this bias is an innate, rather than learned, predisposition. However, the extent to which this evolved trait is expressed differs significantly between cultures. Foellmi, Jaeggi, and Rosenblatt-Wisch (2019) have found evidence of loss aversion for a broad set of OECD countries but found that average levels of loss aversion across these countries is negatively correlated with GDP – an indicator of resource availability. Consumers in relatively resource-scarce environments, as indicated by a lower GDP, exhibit more loss aversion, while consumers in relatively resource-plentiful environments, as indicated by a higher GDP, experience less loss aversion. Therefore, GDP can be used as a reliable predictor of how strongly someone in a certain environment will exhibit loss aversion, which marketers should take into account.

One final example, which is of relevance to marketers, is our desire for ‘personal space’. Personal space is the distance individuals maintain in interpersonal interactions, an abstract area that surrounds them, which they consider (even subconsciously) as psychologically ‘theirs’. Most people around the world will feel some form of negative emotion, such as discomfort, anger, or anxiety, when their personal space is encroached (Hall, 1969). The closer the relationship between two people, the smaller their personal space requirements will tend to be (Sundstrom & Altman, 1976). Although humans have evolved a predisposition for this buffer zone of personal space around them, the average size of these buffer zones differs in a predictable way depending on the environment, specifically, the average temperature of the environment. In warmer countries, people prefer to maintain and tolerate closer distances toward strangers, whereas, in colder countries, people prefer to maintain a greater distance toward strangers (Ijzerman & Semin, 2010; Sorokowska et al., 2017). Even within the United States, people in warm latitudes tend to demon-

strate closer contact behavior with more touch than their counterparts in colder climates (Andersen, 1988). When designing effective communications, it therefore makes sense to take into account the local norms for personal space when considering how close together characters should stand and other similar features of advertisements.

### 2.3. Local socialization (differences not due to evolution)

The local socialization category contains advertising cues that cannot be easily classified into a particular key fundamental motive. This category contains differences not due to evolution.

An example relevant to advertising is the use of humor (Eisend, 2009, 2018). From an evolutionary perspective, humor as a phenomenon cannot be exclusively associated with one of the fundamental motives, despite its ubiquity (Weinberger, Gulas, & Weinberger, 2015). Humor has been argued to be linked to survival by boosting health and well-being (Martin, Puhlik-Doris, Larsen, Gray, & Weir, 2003), to mating by signaling good genes (Greengross & Miller, 2011; Ivanov, Eisend, & Bayon, 2019), and to reciprocation (i.e., the formation and maintenance of alliances) as a false alarm signal (Ramachandran, 1998). The inability of scholars to theoretically link humor to an exclusive fundamental motive and to derive types of humor with a universal human appeal has led to the proliferation of literature documenting how consumers from distinct environments differently appreciate distinct types of humor (Hatzithomas, Boutsouki, & Zotos, 2009; Hatzithomas, Zotos, & Boutsouki, 2011; Hoffmann, Schwarz, Dalicho, & Hutter, 2014). There is broad evidence that humor appreciation varies across cultures (Alden, Hoyer, & Lee, 1993; Toncar, 2001; Unger, 1995). This suggests that humor in advertising requires an adaptation approach. Yet, in contrast to the case of local adaptations, there are no cues in the environment that can be used to reliably predict the directionality and the strength of the effects. Academics have concluded that humor is a rather bad global traveler (Crawford & Gregory, 2015; Gregory, Crawford, Lu, & Ngo, 2019).

A final example of a local difference that is not guided primarily by evolutionary forces is the use (and the meaning) of symbols. A symbol is something that represents or stands for something else, espe-

cially a material object representing something abstract (Geertz, 1973). Symbols can have different meanings. The meaning of a symbol can be relatively stable and unified across individuals in a particular environment, while the same symbol can have a different shared interpretation in a different environment. For example, in contrast to facial gestures that humans have evolved to react similarly to, hand gestures and other physical gestures represent symbols that can communicate very different messages in different environments (Ekman, 1973; Ekman & Davidson, 1994). The same applies to graphical symbols that, depending on the environment, can even convey opposing associations (e.g., good vs. evil, femininity vs. masculinity). The indeterminacy of symbols has been noted by scholars interested in power and influence. According to Johnson (1997) and Tingley (2006), an actor imbues a specific meaning to a symbol to influence an observer through the created mental connection between a symbol and its imparted interpretation. Hence, meaning is created outside the head of the observer. In advertising, this suggests an adaptation approach where a marketer

might need to replace a symbol with another to convey the same message in different environments. Yet, as is the case with cues in the local socialization category, no clues in the environment (e.g., temperature, resource availability) could assist a marketer in this decision.

### 3. DISCUSSION

The present conceptual paper contributes to advertising theory by providing a meta-framework for the study of cross-cultural similarities and differences in the processing of advertising cues. Adopting an evolutionary lens can guide future research pursuits by elucidating whether they are more likely to uncover cross-cultural similarities or cross-cultural differences. In the case of cross-cultural differences, evolutionary psychology can identify environmental factors that reliably predict the directionality and the strength of the effects. Cataloging the results of these research efforts in the provided typology will contribute to the consilience of knowledge.

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## CONCLUSION

This paper contributes to both advertising theory and to advertising practice. The paper is considered of high relevance for advertising practice, for it provides a framework assisting in cross-cultural advertising copy decisions. By raising the questions that the paper poses to develop the proposed typology categories, advertisers can identify which advertising cues are malleable by advertising and which are based on innate human preferences and are relatively stable. With that knowledge in hand, advertisers can decide when and to what extent to use a standardization approach versus an adaptation approach.

## AUTHOR CONTRIBUTIONS

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Methodology: Lachezar Ivanov, Jordan Buck.

Writing (original draft preparation): Lachezar Ivanov, Jordan Buck, Rory Sutherland.

Writing (reviews and editing): Lachezar Ivanov, Jordan Buck, Rory Sutherland.

Visualization: Lachezar Ivanov, Jordan Buck.

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