Culture and Nonverbal Behavior

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The influence of culture on nonverbal behaviors is undeniably large. And yet, we cannot ignore the universal bases for many nonverbal behaviors that cut across cultural differences. In this chapter I explore the nature of both the universal and culture specific aspects of nonverbal behaviors, focusing on facial expressions of emotion, because the vast bulk of research in this area has been conducted on them, and because of their importance in the communication process. I begin the chapter with a definition and discussion of culture, so as to ground readers in what culture is and where it comes from. I then briefly discuss the role of culture in the overall communication process, highlights its effects on verbal and nonverbal behaviors. Then I devote the majority of the chapter to a discussion of the influence of culture on facial expressions of emotion, first by describing research documenting their universal basis in expression and recognition, and then by describing research demonstrating how cultures differ in their expressions and judgments. The goal of this chapter is for readers to gain an appreciation of the dual influence of universal, biologically innate processes as well as culturally specific processes in the production and judgments of nonverbal behaviors.

Defining Culture

In considering how cultures influence nonverbal behavior, it is useful to consider what culture is in the first place, and where it comes from. In this section I define culture, provide a theoretical explanation of where it originates, and describe some of its characteristics.

Human Nature

In order to understand and define culture it is inevitable to start with some assumptions about human nature. The view of human nature that provides the best platform to account for not only pancultural universals, which are an important aspect of emotional expression (see below), but also culture-specifics is that of evolutionary psychology. This perspective suggests that people have evolved a set of motives and strivings that are ultimately related to reproductive success (Buss, 2001). Reproductive success and other biological functions such as eating and sleeping are biological imperatives if people are to survive.

In the evolutionary psychology perspective survival is related to the degree to which people can adapt to their environments and to the contexts in which they live. Over the history of time people must have had to solve a host of distinct social problems in order to adapt and thus achieve reproductive success. These include negotiating complex status hierarchies, forming successful work and social groups, attracting mates, fighting off potential rivals of food and sexual partners, giving birth and raising children, and battling nature (Buss, 1988, 1989, 1991, 2000, 2001). In fact we need to do these things in our everyday lives today as well. Thus universal biological imperatives are associated with a universal set of psychological problems that people need to solve in order to survive. All individuals and groups of individuals have a universal problem of how to

adapt to their environments in order to deal with their universal biological needs and the imperative of reproductive success; thus all individuals and groups of individuals must create ways to deal with these universal problems. These ways can be very specific to each group because the context in which each group lives – the physical environment, social factors, and types and sizes of their families and communities – are different. The ways that each group develops then become their culture.

Culture

In my view culture is the product of the interaction between universal biological needs and functions, universal social problems created to address those needs, and the context in which people live (Figure 1). Culture is created as people adapt to their environments in order to survive, and it results from the process of individuals' attempts to adapt to their contexts in addressing the universal social problems and biological needs.

Table 1 Malinowski's Conceptualization of Basic Needs and Cultural Responses	
Basic Needs	**Cultural Response**
Metabolism	Commissariat
Reproduction	Kinship
Bodily comforts	Shelter
Safety	Protection
Movement	Activities
Growth	Training
Health	Hygiene

Social scientists have been interested in culture and how it influences people for well over 100 years, and there have been many attempts at defining exactly what those biological and social needs are and the aspects of culture that address them. For example, Malinowski (1960; 1961) suggested that all individuals had universal basic needs related to metabolism, reproduction, bodily comforts, safety, movement, growth, and health. According to Malinowski all cultures must create ways to deal with each of these social motives, producing a cultural "response" that corresponds ultimately to the universal biological functions (Table 1). Over the years there have been many different definitions of culture, with similarities as well as differences (Berry, Poortinga, Segall, & Dasen, 1992; Jahoda, 1984; Kroeber & Kluckholn, 1952/1963; Linton, 1936; Rohner, 1984; Triandis, 1972). In my work I define culture simply as *a shared system of socially transmitted behavior that describes, defines, and guides people's ways of life*.

Culture influences all aspects of our lives. It involves subjective – attitudes, values, beliefs, opinions, behaviors – and objective – clothes, food, utensils, architecture – elements (Triandis, 1972). We use culture to explain similarities within and differences between groups of people (Tooby & Cosmides, 1992). Culture is not a static entity, but is ever-evolving; what we commonly know as "the generation gap" is a cultural difference as it refers to different ways of life and being for people who are raised in different periods of time (Pipher, 1998). Culture exists on multiple levels, and it enhances survival. Cultures provide rules for living, telling people how to interact, work and play with each

other. Culture provides a hierarchy for decision-making and sets the standards for group cooperation and divisions of labor. With culture there is order; without culture there is chaos. Even people who think they have no culture have a culture; it is just the culture to believe they have no culture. Of all the possible things people could do, culture helps to limit what we should do in order to survive in the environment in which we live (Poortinga, 1990). Culture is communicated across generations. And, culture both enables behavior, allowing it to be created or invented, and it constrains and restricts it (Adamopoulous & Lonner, 2001).

Over the past two decades several scientists have identified meaningful dimensions of cultural variability. Hofstede (2001), for instance, studied work related values around the world and has proposed the existence of five dimensions – Individualism v. Collectivism, Power Distance, Uncertainty Avoidance, Masculinity v. Femininity, and Long- v. Short Term Orientation. Schwartz (1994; in press; Schwartz & Bardi, 2001) has studied values in 46 different cultures of the world, and has proposed a universal structure of seven value orientations: Intellectual Autonomy, Affective Autonomy, Mastery, Harmony, Hierarchy, Embeddedness, and Egalitarianism. Trompenaars (Smith, Dugan, & Trompenaars, 1996; Trompenaars & Hampden-Turner, 1998) has also studied work related values in many cultures, and suggests a different list of seven dimensions: universalism v. particularism, individualism v. collectivism, neutral v. emotional, specific v. diffuse, achievement v. ascription, time orientation, and attitude toward the environment.

Universal and Culture-Specific Psychological Processes

While cultures can be unique to the groups of individuals that live in them and the contexts in which they live, they all must deal with the same set of biological needs and functions and universal social problems. Thus it is very possible and in many cases very likely that the ways in which they are addressed are the same, even though the cultures may be different. That is, universal biological needs and social problems can lead to similar solutions across cultures, especially over time in our evolutionary history.

For this reason many aspects of our psychologies – mental processes and behaviors – are universal. For example all humans appear to have some degree of specific fears, such as to snakes, spiders, heights, and darkness because these types of fears have led in our evolutionary history to greater probability of survival (Seligman & Hager, 1972). All people have a tendency to perceive their own ingroup as heterogeneous, fully recognizing the individual differences that exist in that group, while they perceive other groups as more homogeneous, assuming less diversity within the group (Linville & Jones, 1980; Triandis, McCusker, & Hui, 1990). People also seem to have a natural proclivity to fears of strangers and outgroup members, which may be a universal basis for ethnocentrism, prejudice, aggression, and even war (Buss, 2001). The differences in how we treat ingroup and outgroup members are likely rooted in our evolutionary history because such distinctions were useful in the past to our reproductive success. Other universal psychological processes, such as incest avoidance, facial expressions of emotion, division of labor by sex, revenge and retaliation, mate selection and sexual

jealousy, self-enhancement, and personality can be traced to the core aspect of a universal human nature based on biological imperatives and universal social problems of adaptation and living.

But many psychological processes are also culture specific. Different cultures have developed different ways of dealing with the biological imperatives and universal social problems based on their contexts. Language is a good example of a very culture-specific behavior. Each culture has its own language, with its own vocabulary, syntax, grammar, phonology, and pragmatics. The need to have language may be a pancultural universal problem; and having a language may be a universal solution to this problem. But the specific way in which each culture solves this problem – that is develops its own language – is different in every culture.

Culture is a pretty fuzzy construct with a pretty fuzzy definition. There are no hard and fast rules of how to determine what a culture is or who belongs to that culture. But its influence on psychology and nonverbal behavior cannot be denied.

The Role of Culture in the Communication Process

Communication involves both verbal and nonverbal behaviors, and culture influences both. In this section I briefly review the role of culture in the encoding of verbal language, to give readers a larger perspective with which to engage with the subsequent material focusing on nonverbal behaviors. I also discuss the influence of culture on nonverbal behaviors in the communication process, as an introduction to the literature involving facial expressions of emotion following.

Cultural Influences on Verbal Language

Culture and language lexicons. Different cultures have different languages, and subcultures have dialects within a language. Each is a unique symbol system that denotes what a culture deems important in its world. That words exist in some languages and not others reflects the fact that different cultures symbolize their worlds differently. For example, Whorf (Carroll, 1956) pointed out that Eskimo language had three words for snow while English had only one. The German word *schadenfreude* and the Japanese word *amae*, which do not exist in English, are other examples. How we refer to ourselves and others in conversation is another example. For instance, in English, we typically refer to ourselves as "I", and to someone else as "you." Many languages, however, includes an extensive choice of terms referring to oneself and others, all dependent upon the relationship between the people interacting (Suzuki, 1978). Cultures also differ in counting methods and numbering systems, and these linguistic differences are thought to contribute to differences in math achievement between the U.S. and Asia (Stigler & Baranes, 1988).

Culture and pragmatics. Culture also affects pragmatics. For example, Kashima and Kashima (1998) examined 39 languages and found that cultures whose languages allowed for pronouns to be dropped from sentences tended to be less individualistic,

which they interpreted as reflecting different cultural conceptualizations of self and others. Gudykunst and his colleagues have shown that perceptions of personalization, synchrony, and difficulty in ingroup and outgroup communications differ according to meaningful dimensions of cultural variability (Gudykunst & Nishida, 1986; Gudykunst, Yoon, & Nishida, 1987). Culture, self-construals, and individual values affect communication styles across cultures (Gudykunst & Mody, 2001; Gudykunst et al., 1992; Kim et al., 1996). Cultural differences also exist in the use of apologies (Barnlund & Yoshioka, 1990), children's personal narratives (Minami & McCabe, 1995), self-disclosure (Chen, 1995), compliments (Barnlund & Araki, 1985), and interpersonal criticism (Nomura & Barnlund, 1983).

Culture and thought: Linguistic relativity. That language helps to structure thought is known as the *Sapir-Whorf hypothesis*. Over the past forty years, research has shown considerable support for this hypothesis (Bloom, 1981; Davies, Sowden, Jerrett, Jerrett, & Corbett, 1998; Garro, 1986; Hoosain, 1986; Hoosain, 1991; Kay & Kempton, 1984; Niyekawa-Howard, 1968). That bilinguals give different responses to various psychological tests depending on the language they are speaking also supports the Sapir-Whorf hypothesis (Abel & Kandel, 1998; Ervin, 1964; Hull, 1987; Matsumoto & Assar, 1992). But there have also been challenges to it, especially with regard to the influence of language lexicons and semantics (Au, 1983; Berlin & Kay, 1969; Rosch & Lloyd, 1978).

Cultural Influences on Nonverbal Behavior

Ekman and Friesen (Ekman & Friesen, 1969) categorized the immense repertoire of nonverbal behaviors into five categories. *Emblems* are behaviors that have meaning in and of themselves, much as a phrase or sentence does. Thumbs up, for instance, is an emblem. *Illustrators* are behaviors that help to illustrate speech, such as the raising or lowering of the brows according to speech pitch. *Regulators* are behaviors that help to regulate conversations, such as nonverbal vocal cues telling interactants when one person is finished talking and it is ok for someone else to talk. *Adaptors* involve manipulations of the body, such as scratching. And finally nonverbal behaviors communicate *emotion*.

That the relative contribution of nonverbal behaviors to the communication process is larger than that of verbal behaviors is a given in the field today. As with verbal language, culture influences nonverbal behaviors in profound ways. By far the largest research literature on this topic is related to facial expressions of emotion, which I review later in this chapter. In this section I highlight the role of culture on other types of nonverbal behaviors.

Culture and gestures. The study of culture and gestures has its roots in the study by David Efron (Boas & Efron, 1936; Efron, 1941), who examined the gestures of Sicilian and Lithuanian Jewish immigrants in New York City. Efron found that there were distinct gestures among traditional Jews and Italians, but that the traditional gestures disappeared as people were more assimilated into the larger American culture. This work was followed initially by that of Ekman and his colleagues (Ekman, 1976; Friesen, Ekman, & Wallbott, 1979), who documented cultural differences in emblematic gestures

between Japanese, American, and New Guinean participants. Morris and his colleagues (Morris, Collett, Marsh, & O'Shaughnessy, 1980) have also well documented many cultural differences in gestures. The American A-OK sign, for example, is an obscene gesture in many cultures of Europe, having sexual implications. Placing both hands at the side of your head and pointing upwards with the forefingers signals one is angry in some cultures; in others, however, it means that one wants sex.

Culture and gaze. Research on humans and non-human primates has shown that gaze is associated with dominance, power, or aggression (Fehr & Exline, 1987), and affiliation and nurturance (Argyle & Cook, 1976). Fehr and Exline (1987) suggested that the affiliative aspects of gazing begin in infancy, because infants are very attentive to adults as their source of care and protection. Cultures create rules concerning gazing and visual attention, because both aggression and affiliation are behavioral tendencies that are important for group stability and maintenance. Cross-cultural research has well documented differences in these rules. People from Arabic cultures, for example, gaze much longer and more directly at their partners than do Americans (Hall, 1963; Watson & Graves, 1966). Watson (1970) classified 30 countries as either a "contact" culture (those that facilitated physical touch or contact during interaction) or a "noncontact" culture, and found that contact cultures engaged in more gazing and had more direct orientations when interacting with others, less interpersonal distance, and more touching. Within the U.S., there are differences in gaze and visual behavior between different ethnic groups (Exline, Jones, & Maciorowski, 1977; LaFrance & Mayo, 1976)

Culture and interpersonal space. Hall (1966; 1973; 1976) specified four different levels of interpersonal space use depending on social relationship type: intimate, personal, social, and public. While people of all cultures make these distinctions, they differ in the spaces they attribute to them. Arab males, for example, tend to sit closer to each other than American males, with more direct, confrontational types of body orientations (Watson & Graves, 1966). They also had greater eye contact and tended to speak in louder voices. Hall (1963; 1966) concluded that people from Arab cultures generally learn to interact with others at distances close enough to feel the other person's breath. Forston and Larson (1968) cited anecdotal evidence of how Latin American students tended to interact more closely than did students of European backgrounds. Noesjirwan (1977; 1978) reported that Indonesian subjects tended to sit closer than did Australians. Shuter (1977) reported that Italians interacted more closely than did either Germans or Americans. Shuter (1976) also reported that people from Colombia generally interacted at closer distances than did the subjects from Costa Rica.

Culture and other nonverbal behaviors. Other studies have documented cultural differences in other nonverbal behaviors as well, such as in the semantic meanings attributed to body postures (Kudoh & Matsumoto, 1985; Matsumoto & Kudoh, 1987), and vocal characteristics and hand and arm movements (Vrij & Winkel, 1991; Vrij & Winkel, 1992). Collectively, the evidence provides more than ample support for the notion that culture plays a large role in molding all of our nonverbal behaviors, which comprise an important part of the communication process.

Culture and Facial Expressions of Emotion

By far the largest research literature in the area of culture and nonverbal behavior concerns facial expressions of emotion. In this section I review the most relevant research in this area of study, illustrating the universal and culture specific aspects of both the encoding and decoding of facial expressions of emotion.

The Universality of Facial Expressions

Over a century ago, debate raged concerning whether facial expressions of emotion were universal to all peoples from all cultures, or culture specific, learned like a language. Emotion and culture were objects of study and fascination by not only contemporary psychologists in recent history, but also by philosophers and other thinkers for centuries. Indeed, emotions played a large role in the thinking and writing of Aristotle and Socrates (Russell, 1994), and were also well represented in the 3rd century Sanskrit text Rasadhyaya (Shweder & Haidt, 2000). Emotion was also central to many thinkers who were influential to modern psychology, such as Freud, Darwin, Erikson, Piaget, Bowlby, and many others.

Questions concerning the universality of facial expression, however, find their roots in the work of Darwin. Darwin's thesis, summarized in *The Expression of Emotion in Man and Animals* (Darwin, 1872/1998), suggested that emotions and their expressions had evolved across species, were evolutionarily adaptive, biologically innate, and universal across all human and even non-human primates. According to Darwin, all humans, regardless of race or culture, possessed the ability to express emotions in exactly the same ways, primarily through their faces.

Darwin's work, while influential and provocative, was not without criticism. One main issue raised about his ideas, for example, was the lack of hard evidence that supported his claims. Indeed, many of Darwin's original ideas were supported only through his own observations and descriptions of emotional expression in humans and other animals. Albeit done in painstaking detail, such descriptions could not be accepted as scientific proof for his universality thesis.

Between the time of Darwin's original writing and the 1960s, only seven studies attempted to address this gap in our knowledge. These studies, however, were methodologically flawed in a number of ways, so that unequivocal data speaking to the issue of the possible universality of emotional expression did not emerge (Ekman, Friesen, & Ellsworth, 1972).

The original universality studies. It was not until the mid-1960s when psychologist Sylvan Tomkins, a pioneer in modern studies of human emotion, joined forces independently with Paul Ekman and Carroll Izard to conduct the first of what has become known today as the universality studies. These researchers obtained judgments of faces thought to express emotions panculturally and demonstrated that all cultures agreed on the emotions portrayed in the expressions, providing the first evidence for their

universality (Ekman, 1972, 1973; Ekman & Friesen, 1971; Ekman, Sorenson, & Friesen, 1969; Izard, 1971). Ekman went on to document that members of preliterate cultures could also judge emotional expressions reliably, and that members of literate cultures could judge the expressions produced by members of preliterate cultures (Ekman & Friesen, 1971; Ekman et al., 1969). Collectively these findings demonstrated the existence of six universal expressions – anger, disgust, fear, happiness, sadness, and surprise – as judges all around the world agreed on what emotion was portrayed in the faces.

Yet, the judgment studies were not the only evidence that came to bear on the question of emotion universality. Some of the most important findings related to universality came from Ekman's cross-cultural study of expressions that spontaneously occurred in reaction to emotion-eliciting films (Ekman, 1972). In that study American and Japanese participants viewed a neutral and highly stressful film (comprised of four separate clips). Unbeknownst to them, their facial behaviors were recorded throughout the entire experiment. Ekman coded the last three minutes of facial behavior videotaped during the neutral films, and the entire three minutes of the last stress film clip. The coding identified facial muscle configurations associated with six emotions – anger, disgust, fear, happiness, sadness, and surprise; all corresponded to the facial expressions portrayed in the stimuli used in their judgment studies (Ekman, 1972; Ekman et al., 1972; Ekman et al., 1969), in their descriptions of the universal emotions in their book *Unmasking the Face* (Ekman & Friesen, 1975), in their stimulus set *Pictures of Facial Affect* (Ekman & Friesen, 1976), and in Matsumoto and Ekman's (1988) Japanese and Caucasian Facial Expressions of Emotion (JACFEE) set. Two sets of analyses were performed on the facial behavior codes, one involving separate facial areas, and one involving the whole face, combining codes from all facial areas. Analysis of the frequency of the types of emotions portrayed in the whole face indicated that disgust, sadness, anger, and surprise were the most frequently displayed emotions; but fear and happiness were also displayed. The correlation between the Americans and the Japanese on the frequencies of these whole face emotions expressed spontaneously was 0.88, indicating a high degree of consistency in the spontaneous production of whole face expressions by both Americans and Japanese. This provided convincing evidence that people of widely different cultures produced the same expressions when emotion is spontaneously elicited and there is no reason to modify the expressions.

More recent studies documenting the universality of facial expressions of emotion. Research since Ekman's original study described above has continued to mount convincing evidence for the universality of facial expressions of emotion. A review of the literature involving actual measurement of facial muscle movements when emotions are spontaneously elicited reveals at least 12 other studies in the published research literature, all of which have demonstrated that the universal facial expressions of emotion are produced when emotion is aroused and there is no reason to modify the expression because of social circumstances (see Table 2 for a listing and brief description of these studies). The participants in these studies were Americans, Japanese, Germans, Canadians, and French individuals. Collectively these studies demonstrate convincingly

the universal basis for emotional expression, which is no longer debated in contemporary psychology, and is considered a pancultural aspect of psychological functioning.

Of the studies listed in Table 1, one involving an examination of the spontaneous emotional displays of Japanese and American infants by Camras and her colleagues is notable (Camras, Oster, Campos, Miyake, & Bradshaw, 1992). These researchers videotaped babies' reactions to an experimental procedure known as arm restraint, in which experimenters hold a baby's hands folded across the stomach until the baby shows distress or for a maximum of three minutes. Videotapes of the babies' facial reactions were coded and documented the existence of facial muscle configurations corresponding to the universal configurations of anger, sadness, fear, and happiness. Examination of differences in these expressions produced a non-significant culture effect, indicating that there were no differences in the spontaneous expressions of Japanese and American infants. That these facial displays occur in infants, and that when they occur they occur in the same ways across cultures, is further evidence for the universality of these expressions. A progress report on a similar study involving American, Japanese, and Taiwanese infants has also produced similar findings with regard to expression (Campos et al., 2004).

Other evidence for the universality of basic emotions. Since the original universality studies published over 30 years ago, the field has continued to mass a considerable amount of evidence documenting and/or converging in their support of the universality of facial expressions of emotion. For instance, consider:

- Studies have shown that the universal facial expressions of emotion occur in congenitally blind individuals (Charlesworth & Kreutzer, 1973). This work is notable because it strongly suggests that emotions and their expressions are biologically innate and genetically programmed. At the same time they also strongly suggest that culture constant learning is not the basis for their universality.

- Studies of nonhuman primates have demonstrated that the expressions that are universal to humans also occur in animals, and that animals have many different yet stable signals of emotion (Chevalier-Skolnikoff, 1973; Geen, 1992; Hauser, 1993; Snowdon, 2003). These works also strongly suggest the biological bases of emotions and their expressions.

- The emotions portrayed in the universal facial expressions correspond to emotion taxonomies in different languages around the world (Romney, Boyd, Moore, Batchelder, & Brazill, 1996; Romney, Moore, & Rusch, 1997; Shaver, Murdaya, & Fraley, 2001; Shaver, Schwartz, Kirson, & O'Connor, 1987; Shaver, Wu, & Schwartz, 1992).

- There is cross-cultural similarity in the physiological responses to emotion when these facial expressions are used as markers, in both the autonomic nervous system and brain activity (Davidson, 2003; Ekman, Levenson, & Friesen, 1983;

Levenson, Carstensen, Friesen, & Ekman, 1991; Levenson, Ekman, & Friesen, 1990; Levenson, Ekman, Heider, & Friesen, 1992; Tsai & Levenson, 1997). This similarity exists in people of as widely divergent cultures as the United States and the Minangkabau of West Sumatra, Indonesia.

- There is universality in the antecedents that bring about emotion (Scherer, 1997, 1997). In no culture in Scherer's study was there an antecedent that brought about an emotion only in that culture; all antecedents were reported in all cultures (although there were different degrees to which different antecedents elicited emotions in different cultures).

- There is universality in self-reported emotional experience (Scherer & Wallbott, 1994). A very recent study that utilized both etic and emic approaches demonstrated cross-cultural similarity in the structure of both shame and guilt reactions (Fontaine et al., in press).

- And to date 27 studies examining judgments of facial expressions have replicated the universality in recognition of emotion (Matsumoto, 2001). Additionally, a recent meta analysis of 168 data sets examining judgments of emotion in the face and other nonverbal stimuli indicated convincingly that emotion recognition was universal and well above chance levels (Elfenbein & Ambady, 2002).

Other universal expressions. The six original universal emotions – anger, disgust, fear, happiness, sadness, and surprise – included only those that both Ekman and Izard had agreed were universal. In fact, Izard (1971; 1978) also suggested that other expressions were universal, including interest-excitement and shame-humiliation. Some controversy, however, existed as to whether these were actually facial expressions, or whether they were more reflective of head position or gaze direction. And in fact, many judgment studies were not equivocal in their support for the universality of expressions other than the original six.

Recently, however, a number of studies have reported the existence of a seventh universal facial expression of emotion, contempt. Initial evidence from ten countries including West Sumatra (Ekman & Friesen, 1986; Ekman & Heider, 1988) was later replicated by Matsumoto (1992) in four countries, three of which were different from Ekman and Friesen's original ten. This finding received considerable attention and criticism (Izard & Haynes, 1988; Russell, 1991, 1991), especially concerning the possible influence of judgment context and tasks on the findings. Ekman and his colleagues (1991; 1991), however, reanalyzed their data and found no effect of context. Biehl et al. (1997) also tested and found no effects for other methodological confounds, and Rosenberg and Ekman (1995) suggested that people understand the emotional connotations of the expression even if they do not freely produce an emotion label for it. The latest studies from our laboratory have demonstrated convincingly that people can reliably associate the contempt expression with situations that elicit contempt, but that they cannot label either the expression or the situations as contempt (Matsumoto & Ekman, in press).

A study by Haidt and Keltner (1999) also raises the possibility of a universal expression of embarrassment, and one by Tracy and Robins (2004) suggests the existence of an expression of pride. Replication studies across a wide range of cultures, however, are necessary before the field can safely conclude that these are indeed pancultural. Figure 2 portrays examples of the seven facial expressions of emotion for which there is considerable evidence for their universality.

Cultural Differences in Expressing Emotion: Cultural Display Rules

Ekman and Friesen's classic study. Despite the existence of universal facial expressions of emotion, people around the world do express emotions differently. The first evidence for cultural differences in expression was Friesen's study, in which the spontaneous expressions of Americans and Japanese were examined as they viewed highly stressful films in two conditions, first alone and then a second time in the presence of an older, male experimenter (Friesen, 1972). In the first condition the Americans and Japanese were similar in their expressions of disgust, sadness, fear, and anger; in the second condition, however, cultural differences emerged. While the Americans continued to express their negative emotions, the Japanese were more likely to smile.

Recent studies examining cultural differences on emotional expression. Since Ekman and Friesen's study described above, a number of other studies have also examined cultural differences in emotional expression. Gudykunst and Ting-Toomey (1988), for instance, conducted an ecological level correlational analysis between Hofstede's (1980) four cultural dimension scores with expressive data from Wallbott and Scherer's (1986) large scale questionnaire study and reported that individualistic cultures were associated with greater rates of nonverbal nonvocal expressions and verbalization. Gudykunst and Nishida (1984) used the Hofstede dimension of Uncertainty Avoidance to account for American and Japanese differences in nonverbal affiliative expressive behaviors in initial interactions with strangers. Gudykunst and Ting-Toomey (1988) also used this concept to reinterpret a previous study examining the appropriateness of displays of anger and distress in Japan, Hong Kong, Italy, and England (Argyle, Henderson, Bond, Iizuka, & Contarello, 1986), and a study testing anger expressions between Indonesians and Australians (Noesjirwan, 1978). Waxer (1985) examined American and Canadian cultural differences in spontaneous emotional expressions by participants in television game shows and found that Americans tended to be judged as more expressive than the Canadians, despite no differences in actual behaviors. Edelman and colleagues (1987) have also documented cross-cultural differences in expression among five European countries.

Recently a study from my laboratory produced interesting findings that extended those from Ekman and Friesen's original study. In this study (Matsumoto & Kupperbusch, 2001) a sample of entirely European American undergraduates was classified as either individualistic or collectivistic based on their responses to an individual difference measure (Matsumoto, Weissman, Preston, Brown, & Kupperbusch, 1997). The students were then unobtrusively videotaped as they watched films designed to elicit positive and negative emotion, first alone and then in the presence of an experimenter. They self-rated

their emotional responses to both films in both conditions, and samples of their emotional expressions were judged by a separate group of decoders. The self-report data indicated that both individualists and collectivists experienced the films as intended. There was no difference in their expressions when they were alone. When in the presence of the experimenter, however, the collectivists attenuated their negative expressions and more often masked them with smiles. This finding is exactly the same that Ekman and Friesen reported previously, and the remarkable thing about this study is that the entire sample was of European American females who were classified solely based on their responses to a questionnaire assessing individualism and collectivism. The collectivists also attenuated their expressions of positive emotion when in the presence of the experimenter (Ekman and Friesen's study did not test positive emotions); thus the effects of culture on expression was not limited to negative emotions.

Explaining cultural differences in expression: Cultural display rules. Over 30 years ago Ekman and Friesen coined the term *cultural display rules* to account for cultural differences in facial expressions of emotion (Ekman & Friesen, 1969). These are rules learned early in childhood that help individuals manage and modify their emotional expressions depending on social circumstances. Ekman and Friesen used the concept to explain the American-Japanese cultural differences in expression they observed, suggesting that in the first condition of their experiment there was no reason for display rules to modify expressions because the participants were alone and their display rules were inoperative; in the second condition display rules dictated that the Japanese mask their negative emotions in the presence of the experimenter (Ekman, 1972; Friesen, 1972).

To be sure, that the display rules were inoperative was Ekman and Friesen's original interpretation of the no differences in emotional display in the first condition. The non-differences may have occurred, however, because of different reasons. For example being alone is itself a social circumstance, and consequently display rules may very well have been operating; Americans and Japanese may have just had the same display rules for that social circumstance. Also, cognitive representations of others can still influence behavior even when alone (Fridlund, 1997; Fridlund, Ekman, & Oster, 1987).

The concept of display rules is related to emotion regulation (Gross, 1998, 1999, 1999), which can be defined as the ability to control, manage, and modify one's emotional experiences and expressions. Emotion regulation can be achieved by a variety of mechanisms that can be understood from a framework of understanding emotion. Emotion involves a package of events including cognitive, experiential, expressive, and physiological changes. Thus emotion regulation should involve regulatory efforts in all these components.

Display rules are related to emotion regulation because they concern the management and modification of the expressive component of emotion. Presumably other rules or similar types of mechanisms exist for other emotion components. Hochschild, for instance, has proposed the concept of feeling rules (Hochschild, 2001), which concern the regulation of the experiential component of emotion. Gross suggests

individuals can regulate their emotions by altering the antecedents that bring forth emotion (selecting or modifying situations, altering attention, or changing cognitions) and the behavioral and physiological responses related to emotion (Gross, 1998, 1999, 1999, 2002; Gross & John, 1995, 1997, 2003; Gross & Levenson, 1993).

In its entirety, therefore, emotion regulation is a relatively large concept that involves multiple components associated with the process of emotion. Display rules involve regulation of the expressive component of emotion. While expression regulation may not directly involve attempts at modifying subjective experience, it may indirectly lead to the regulation of the other components of emotion, producing changes in feeling states and physiological responses. For example the production of certain facial configurations will lead to specific and distinct physiological reactions (Ekman et al., 1983; Levenson et al., 1990; Levenson et al., 1992).

Recent studies examining cultural differences in display rules. After the original inception and documentation of display rules, research centering on their development in children, and especially knowledge and understanding of them, blossomed (Banerjee, 1997; Banerjee & Yuill, 1999; Gnepp & Hess, 1986; Hosie, Russell, Gray, Scott, & Hunter, 2000; Jones, Abbey, & Cumberland, 1998; Josephs, 1994; Saarni, 1979, 1988; Taylor & Harris, 1982; Zeman & Garber, 1996; Zeman & Penza, 1997; Zeman & Shipman, 1996; Zeman, Shipman, & Penza-Clyve, 2001). Cross-cultural research, however, was dormant until Matsumoto's (1990) study examining display rules in Americans and Japanese. Participants saw faces portraying seven emotions and rated the appropriateness of each in eight social situations involving people of varying intimacy and status. Americans rated negative emotions more appropriately than did the Japanese in ingroups while the Japanese rated negative emotions more appropriately than Americans in outgroups; the Japanese also rated negative emotions more appropriately than Americans toward lower status individuals. Matsumoto used the same methodology to document differences in display rules among four ethnic groups within the U.S. (Matsumoto, 1993).

Over the years a number of scientists have developed ways of assessing individual differences in expressivity. In all measures for which there is adequate psychometric evidence, expression management has been invariably operationalized according to a simple dimension of suppression (or control or inhibition). The three subscales of the Emotional Expressiveness Questionnaire (King & Emmons, 1990), for example, measure Expression of Positive Emotion, Expression of Intimacy, and Expression of Negative Emotion. The Emotional Expressivity Scale (Kring, Smith, & Neale, 1994) produces a single score of expressivity. The Berkeley Expressivity Questionnaire scales related to expression (Gross & John, 1995, 1997) are General Expressivity, Positive Expressivity, and Negative Expressivity. The two scales of the Children's Sadness Management Scale (Zeman et al., 2001) related to expression are Inhibition of Sadness Expression and Dysregulated Expression. The one scale of the Emotion Expression Scale for Children (Penza-Clyve & Zeman, 2002) related to expression is Expressive Reluctance. And the one scale of the Emotion Regulation Questionnaire (Gross & John, 2003) related to expression is Suppression.

One limitation of these previous scales is their operationalization of display rules along a single dimension of expression-suppression. While suppressing or inhibiting emotional responses is certainly one way in which expressions can be managed, there are other ways as well. In fact when the concept of display rules was originally proposed as a mechanism of expression management, Ekman and Friesen noted six ways in which expressions may be managed when emotion is aroused (Ekman & Friesen, 1969; Ekman & Friesen, 1975). Of course individuals can express emotions as they feel them with no modification. But individuals can also amplify (exaggerate) or deamplify (minimize) their expressions; for instance feelings of sadness may be intensified (amplification) at funerals or minimized (deamplification) at weddings. People can mask or conceal their emotions by expressing something other than what they feel, as when nurses or physicians hide their emotions when speaking with patients with terminal illness, or when employees in service industries (e.g., flight attendants) interact with customers. Individuals may learn to neutralize their expressions, expressing nothing, such as when playing poker (poker face). And individuals may learn to qualify their feelings by expressing emotions in combination, such as when feelings of sadness or mixed with a smile, with the smile commenting on the sadness, saying "I'll be OK." All of these behavioral responses reflect the different ways by which emotional expression can be regulated via display rules.

That these types of expressive behaviors actually occur has been documented in research to date (Ekman & Rosenberg, 1998). Children even as young as four years of age will not only suppress the display of their negative feelings but also mask them with smiles (Cole, 1986). This suggests that a more comprehensive assessment of expression management would need to survey this wider range of behavioral responses.

To address this gap and to complement previous measures of display rules and expression management, my colleagues and I created the Display Rule Assessment Inventory (DRAI), in which participants choose a behavioral response when they experience different emotions in different social situations. The emotions were seven that previous research has shown to be universally expressed and recognized – anger, contempt, disgust, fear, happiness, sadness, and surprise; these were selected because universality served as a basis by which to examine display rules initially and by which comparisons across cultures would be meaningful. To build internal consistency a synonym for each emotion label was also included in the initial DRAI – hostility, defiance, aversion, worry, joy, gloomy, and shock, respectively – resulting in a total of 14 emotions terms. Participants are asked to consider what they would do if they felt each emotion in four social situations: with family members, close friends, colleagues, and strangers. These categories were chosen because they represent a broad range of social categories with which people interact, and because previous research has demonstrated considerable variability in cultural values and attitudes across these social situations (Brewer & Kramer, 1985; Tajfel, 1982; Triandis, 1994). This would allow for an initial assessment of display rules across contexts that are likely to evoke different displays. Participants are asked to complete the measure for two rating domains, once responding as to what they believe people *should* do and a second time responding to what *they*

actually do. For each emotion, social situation, and domain participants select a response from a list of possible behavioral responses. This list is based on Ekman and Friesen's (1969; 1975) theoretical delineations of the possible ways in which expressions are modified and includes the same list of six expressive modes listed earlier (i.e., expression, deamplification, amplification, neutralization, qualifying, masking). Participants are also given an *other* response, in which they can write in a different behavioral response if their choice is not listed.

In our first study using the DRAI (Matsumoto, Takeuchi, Andayani, Kouznetsova, & Krupp, 1998) participants from the US, Japan, South Korea and Russia completed it along with an individual-level measure of individualism-collectivism. We found that Russians exerted the highest control over their expressions, followed by South Koreans and Japanese; Americans had the lowest scores. These cultural differences were found across all rating domains, emotions, and social situations, as well as within both rating domains and each of the four social situations. Significant sex differences were also found, with females exerting more control on anger, contempt, disgust, and with family members, and males exerting more control on fear and surprise.

Our most recent study involving the DRAI (Matsumoto, Yoo, Hirayama, & Petrova, in press) provided evidence for its internal and temporal reliability, and for its content, convergent (with measures of emotion regulation), discriminant (correlations with personality controlling for emotion regulation), external, and concurrent predictive validity (with personality). The findings also provided the first empirical support for the independence of the various response alternatives, indicating that expression regulation occurs in the various ways discussed above, and not on a simple expression-suppression dimension. Additionally there were consistent and predictable cultural differences among American, Russian, and Japanese participants. For instance Americans and Russians both expressed anger and contempt more than Japanese. Americans expressed fear and disgust more than Russians, and Americans expressed happiness more than Russians and Japanese. The Japanese deamplified more than both Americans and Russians. Americans amplified more than Russians on sadness and disgust, while Japanese amplified surprise and fear more than Russians. Japanese qualified sadness more than Russians, but the Russians qualified their happiness more than both Japanese and Americans.

Cultural Influences on Judgments of Emotion

Universal recognition. Any discussion of cultural influences on judgments of emotion should start with the acknowledgement that there is pancultural recognition of the universal facial expressions of emotion. As we discussed earlier, studies examining judgments of facial expressions were instrumental in the original universality studies (Ekman, 1972; Ekman & Friesen, 1971; Ekman et al., 1969; Izard, 1971, 1978), and have been replicated time and again by many authors around the world (Matsumoto, 2001). Elfenbein and Ambady's (2002) meta analysis of judgment studies of emotion (not limited to facial expressions) demonstrated convincingly that people around the world recognize emotions at levels well above chance accuracy. These authors concluded that the core components of emotion recognition are universal and likely biologically based.

Cultural similarities in other aspects of emotion judgment. Research of the last decade and a half has demonstrated that people of different cultures are similar in other aspects of emotion judgment as well. For example, there is pancultural similarity in judgments of relative intensity among faces; that is, when comparing expressions, people of different countries agree on which is more strongly expressed. Ekman and his colleagues (1987) compared intensity ratings between paired expressions of the same emotion across ten countries, and found that 92% of the time, the ten countries in their study agreed on which was more intense. Matsumoto and Ekman (1989) extended this finding by including comparisons across different poser types, including Caucasian and Japanese posers. Looking separately for each emotion, within country across gender and then within gender across country, Americans and Japanese agreed on which photo was more intense 80% of the time. These findings suggest that people of different cultures judge emotions on a similar basis, despite differences in facial physiognomy, morphology, poser race, poser sex, or culturally prescribed rules governing the expression and perception of faces.

There is pancultural agreement in the association between perceived expression intensity and inferences about subjective experiences. Matsumoto, Kasri, and Kooken (1999) showed Japanese and American observers 56 expressions posed by Japanese and Caucasians. The observers judged what emotion the poser was expressing, and then the strength of both the external display and internal experience. Correlations between the two intensity ratings were computed twice, first across observers separately for each expression, and second across expressions for each observer. The correlations for both were high and positive for both countries and all expressions, suggesting commonality in that linkage across culture. This link is a topic of considerable importance in contemporary theories of emotion. Some authors have claimed that the linkage between expression and experience is unfounded (Fernandez-Dols & Ruiz-Belda, 1997; Russell, 1997). Others, however, have argued that expressions and experience are intimately linked with each other, but need not always be coupled (Rosenberg & Ekman, 1994). (See also the literature on the facial feedback hypothesis; (Matsumoto, 1987; Winton, 1986). The cross-cultural data clearly support notions of linkage.

Finally people of different cultures agree on the secondary emotions portrayed in an expression. Observers in Ekman et al.'s (1987) study judged not only which emotion was portrayed in the faces, but also the intensity of each of seven emotion categories. This task allowed observers to report multiple emotions, or no emotion, instead of being forced to select an emotion to describe the face. While previous studies showed universality in the first mode of response, countries may have differed in which emotion is next most prevalent. Analyses supported cross-national agreement. For every country the secondary emotion for the disgust expressions was contempt, and for fear expressions surprise. For anger, the second mode varied depending on the photo, with disgust, surprise and contempt as the second responses. Matsumoto and Ekman (1989) and Biehl et al. (1997) replicated these findings, suggesting pancultural agreement in the multiple meanings derived from universal faces. This agreement may exist because of overlap in

the semantics of the emotion categories, antecedents and elicitors of emotion, or in the facial configurations themselves.

Cultural differences on absolute levels of recognition accuracy. To be sure, there are many cultural differences in emotion judgments as well. Although people of all cultures recognize the universal faces at levels well beyond chance, they differ on the absolute level of recognition. Matsumoto's (1992) study was the first to formally test cultural differences in recognition by comparing Japanese and American judgments of emotion categories. Americans were better at recognizing anger, disgust, fear, and sadness than the Japanese, but accuracy rates did not differ for happiness or surprise. Since then American-Japanese cultural differences in emotion recognition have been replicated many times (Biehl et al., 1997; Matsumoto, 2002; Matsumoto & Choi, 2004; Matsumoto et al., 2002; Matsumoto et al., 1999); other studies have demonstrated similar judge culture effects across a wide range of cultures (Biehl et al., 1997; Elfenbein & Ambady, 2002).

In a first attempt to explain why cultures differ in emotion recognition rates, Matsumoto (1989) compiled recognition accuracy data from fifteen cultures reported in four studies, and correlated them with Hofstede's four cultural dimensions (Hofstede, 1980). Individualism was positively correlated with recognition rates of negative emotions. An independent meta analysis by Schimmack (1996) also indicated that individualism predicted emotion recognition levels. These findings may be related to the fact that individualism is also correlated positively with emotional expression (Matsumoto & Koopmann, 2004). Individualistic cultures may foster the free and open expression of emotion, thereby promoting the more accurate judgment of emotion as well. Just as cultures have display rules that govern the management of emotional expression, they may have *cultural decoding rules* that help manage the judgments of emotions in others.

Cultural differences in judgments of intensity. Ekman et al.'s (1987) study of ten countries was the first to document cross-national differences in intensity attributed to the facial expressions. Although overall recognition data supported universality, Asians gave significantly lower intensity ratings on happiness, surprise, and fear. These data suggested that the judges were acting according to culturally learned rules about how to perceive expressions, especially given the fact that all posers were Caucasian. But it could also be that the Asians rated the Caucasian posers less intensely out of politeness or ignorance.

To address this question, Matsumoto and Ekman developed a stimulus set comprised of Asian and Caucasian posers called the Japanese and Caucasian Facial Expressions of Emotion (JACFEE) (Matsumoto & Ekman, 1988), and presented them to judges in the US and Japan (Matsumoto & Ekman, 1989). For all but one emotion, Americans rated the expressions more intensely than the Japanese, regardless of the ethnicity of the poser. Because the differences were not specific to the expressor, Matsumoto and Ekman (1989) interpreted the differences as a function of cultural decoding rules. Since then, a number of studies have replicated the existence of cultural

differences in intensity ratings, not only between the US and Japan, but across a wide range of cultures and ethnic groups (Biehl et al., 1997; Biehl, Matsumoto, & Kasri, in press; Matsumoto, 1990, 1993; Matsumoto, Choi, Hirayama, Domae, & Yamaguchi, 2003; Matsumoto et al., 2002; Matsumoto et al., 1999).

Although these studies demonstrated that cultures differed in their intensity ratings, the source of what was being rated was unclear, because judges may have rated the intensity of either the external display or the presumed internal, subjective experience. Cultural differences could occur on either one or both. Matsumoto et al. (1999) tested this notion by comparing American and Japanese judgments on both types of ratings, and found that Americans rated external display more intensely than the Japanese, but that the Japanese rated internal experience more intensely than Americans. Within-country analyses indicated no significant differences between the two ratings for the Japanese; the Americans, however, consistently rated external display more intensely than subjective experience. Although we had previously interpreted the cultural differences in intensity ratings to occur because the Japanese suppressed their ratings, these findings indicated that it was the Americans who exaggerated their external display ratings relative to subjective experience, not the Japanese who suppressed.

These findings were extended by Matsumoto and colleagues (2002) even further, by having American and Japanese observers rate expressions expressed at 0%, 50%, 100%, and 125% intensities. The data for the 100% and 125% expressions replicated the previous findings; Americans rated external display significantly higher than internal experience, while there were no differences for the Japanese. Also, there were no differences between external and internal ratings for either Americans or Japanese on 0% expressions, which were expected. On 50% expressions, however, the findings were intriguing. While there was no difference between external and internal ratings for the Americans, the Japanese rated internal experience higher than external display. We interpreted these findings as suggesting that, for weaker expressions, Japanese may assume that a display rule is operating, and may thus infer more emotion being felt than is actually displayed. When Americans see a weak expression, however, there need not be any such assumption; thus they interpret the same amount of emotion felt as expressed. For strong expressions, Japanese may assume that the context was such that the expression was justified; thus, they infer a level of emotion felt that is commensurate with what is shown. When Americans see a strong expression, however, they know that there is a display rule to exaggerate one's feelings; thus, they compensate for this display rule by inferring less emotion felt. Moreover the observed differences were empirically linked to individual level measures of individualism and status differentiation.

One limitation of all the studies cited in this section was that, although all findings were interpreted as occurring as a function of cultural display rules, none actually measured display rules and linked them to the judgments. A recent study from our laboratory, however, has closed this loop. In this study American and Japanese participants completed the DRAI (mentioned above) and viewed a series of facial expressions of emotion portrayed at high and low intensities (Matsumoto, Choi, Hirayama, Domae, & Yamaguchi, 2003). They made three judgments for each face: a

categorical judgment of which emotion was portrayed, and intensity ratings of the strength of the external display and the presumed subjective experience of the expressor. Both American and Japanese judges thought that the expressors of high intensity expressions displayed the emotions more strongly than they felt them. When judging the low intensity expressions, Americans and Japanese both rated the expressor's internal experience higher than they did the external display, but the effect was significantly larger for the Japanese. All of these differences were mediated by display rules as assessed by the DRAI, suggesting that one's own rules for expression management influences one's judgments of expression management in others.

A possible ingroup advantage in recognizing emotions? One type of cultural difference in judgment that has recently received attention concerns the possibility of an ingroup advantage in emotion recognition (Elfenbein & Ambady, 2002). This is defined as the tendency for *members of a cultural group to be more accurate in recognizing the emotions of members of their own cultural group than of other, relatively more disparate groups.* Previous research testing this hypothesis (Boucher & Carlson, 1980; Kilbride & Yarczower, 1983; Markham & Wang, 1996) provided mixed results. In their meta analysis, however, Elfenbein and Ambady reported support for it across the studies they analyzed as well as separately for emotion, channel of communication, cross-cultural exposure, and other potential moderators. To account for the effect they suggested the viability of an interactionist interpretation focusing on cultural learning and expressive style, differences in emotional concepts and cognitive representations, cultural specificity of emotional experiences and linguistic expressions, cultural learning of emotional behavior, and culture specific information processing systems (Elfenbein & Ambady, 2002).

Subsequent research by Elfenbein and colleagues has continued to build a case for the ingroup hypothesis. One of their latest studies, for instance, involved a meta analysis of four studies in which observers in multiple cultures judged the expressions portrayed by one of those cultures (Elfenbein & Ambady, 2003). Physical distance, determined by the distance between the capital cities of the countries included in the samples, and cultural distance, computed by difference scores of Hofstede cultural dimensions between the expressor and judge cultures, were both negatively correlated with emotion recognition accuracy rates, providing evidence in support of a "distance theory" of emotion recognition. In two other studies Elfenbein and colleagues demonstrated the existence of an ingroup effect among American, Japanese, and Indian observers who judged faces of American, Japanese, and Indian expressors (Elfenbein, Mandal, Ambady, & Harizuka, 2002), and among non-Asian American and Chinese observers who judged Caucasian and Chinese expressions (Elfenbein & Ambady, 2003).

It is questionable as to whether or not this effect truly exists, or whether it exists because of methodological artifacts in the studies that test it. Elsewhere I (Matsumoto, 2002) have suggested that studies must meet two methodological requirements in order to test the ingroup hypothesis adequately. First studies should employ balanced designs in which all judge cultures view expressions portrayed by members of all the other cultures in the study. Secondly, because balanced studies include stimuli expressed by people of

multiple cultures, it is necessary to ensure that the stimuli are equivalent across the cultural groups in terms of their physical signaling properties related to emotion. That is, if the expressions of Culture A were different than those of Culture B in a balanced design, then cultural differences in the judgments are inextricably confounded with differences in the expressions being judged. One would not be sure that the differences observed truly reflected the cultural ingroup advantage or were due to differences in the stimuli. Given both of these concerns Matsumoto (2002) concluded that Elfenbein and Ambady's original meta analysis could not support the ingroup hypothesis because they did not review the studies as to whether or not they met these two requirements.

Elfenbein and Ambady (2002; 2002) have suggested that the ingroup hypothesis exists precisely because of non-equivalence in the expressions being judged. While this is an interesting and testable argument, there are conceptual and methodological problems that arise from the use of non-equivalent stimuli because it is impossible to separate encoder from decoder effects in the design, because judge cultures are inherently confounded by expression differences across encoder cultures. Consider, for instance, a hypothetical study in which members of Cultures A and B judge culture specific, non-equivalent expressions of both A and B, and the data show that A is relatively more accurate when judging expressions of A and B is relatively more accurate when judging expressions of B. While this finding may be interpreted as evidence for an ingroup advantage, it is impossible to know whether the effect occurs because people judge others of their same culture better, or whether they judge those particular expressions more accurately. While some may conclude that cultural meaning and expression cannot be separated in this fashion, I suggest that that is an empirical question that should be addressed by data. For example, the study would also need to include local expressions of A expressed by B and local expressions of B expressed by A. In this fully balanced and equivalent design, it is possible that judges of Culture A are more accurate than judges of B when judging local expressions of A expressed by B. If this were the case then the first set of findings that suggest the existence of an ingroup advantage really are not occurring because people judge other people of their same culture more accurately, but rather because they judge certain *expressions* more accurately, and that they will do so *regardless* of the culture of the expressor, thus not reflecting a cultural ingroup advantage per se. Such a finding would also empirically test the assumption that culture and expressions are inseparable. (To be sure, if people of B do not actually do the culture specific expressions of A, the ecological validity of this experiment would be questionable. Data on expression usage would be needed to address this issue.)

Take, for example, the study conducted by Ricci-Bitti and colleagues (Ricci-Bitti, Brighetti, Garotti, & Boggi-Cavallo, 1989), in which American, Northern Italian, and Southern Italian encoders role played situations designed to elicit contempt, and were allowed to try out the expressions repeatedly to obtain ones that best corresponded to contempt (cited in Elfenbein and Ambady's original meta analysis in support of the ingroup effect). Two independent judges from the same cultural background as the encoders then selected the best exemplars for a judgment study. The findings indicated that, while there were no differences in the recognition rates of Northern Italians judging Northern or Southern Italian expressions, Southern Italians had significantly higher

recognition rates for Southern Italian expressions than for Northern Italian expressions, providing partial support for the ingroup hypothesis. FACS coding of the expressions, however, indicated that Southern Italians' contempt expressions included strong, bilateral upper lip raises (AU 10), sometimes but not always in combination with weak nose wrinkles (AU 9); the Northern Italians' expressions included combinations of upper lip raises and unilateral lip tightening (AUs 10 + 14). Thus although an ingroup effect was produced, it is impossible to determine whether the effect was due to sources in the decoders or the differences in the expressions, precisely because expression differences confounded the judge cultures.

When balanced studies are examined as to whether or not they employed stimuli that were equivalent in their physical signaling properties or not, the data are clear: all of the studies reported by Elfenbein and colleagues to date supporting the ingroup hypothesis have used stimuli that were not equivalent across the cultural groups (Elfenbein & Ambady, 2003, 2003; Elfenbein et al., 2002; Elfenbein, Mandal, Ambady, Harizuka, & Kumar, 2004). Further, a close examination of the balanced studies they reviewed in Table 4 of their original meta analysis (Elfenbein & Ambady, 2002) shows that only five studies actually provided some evidence that the physical signaling properties of the expressions used as stimuli were equivalent across the expressor ethnicities (Albas, McCluskey, & Albas, 1976; Kilbride & Yarczower, 1983; McCluskey, Albas, Niemi, Cuevas, & Ferrer, 1975; McCluskey & Albas, 1981; Mehta, Ward, & Strongman, 1992). Four of these were associated with non-significant interaction Fs that test the ingroup effect. Two involved studies of facial expressions (Kilbride & Yarczower, 1983; Mehta et al., 1992), and both involved FACS coding of the facial muscles in the expressions. Both are important because the FACS codes were equivalent but not exactly the same across the expressor ethnicities as they are in the JACFEE, thus allowing for minor cultural differences in the expressions to exist (perhaps corresponding to Elfenbein and Ambady's, 2002a, 2003a; Elfenbein et al., 2002, notion of "emotion dialects"). Yet they did not produce significant interaction Fs.

When balanced studies employ expressions that are equivalent in their physical signaling properties (the JACFEE), there is no support for the ingroup hypothesis (Matsumoto, 2002; Matsumoto & Choi, 2004). This is true whether the expressions being judged are full-face, high intensity expressions, or low intensity expressions where signal clarity is weaker (Matsumoto & Choi, 2004). And while these studies employed stimuli that were posed (with the exception of the smiles, which were shot when expressors smiled spontaneously), there is one study that actually examined possible ingroup bias with spontaneous expressions. Ekman and Friesen's classic report with Japanese and American participants included two studies that involved the judgment of spontaneous expressions that were equivalent (but not the same) across the two cultures (Ekman, 1972). In the expression condition of their experiment, American and Japanese students viewed neutral and stressful stimuli. As described in the Introduction, their spontaneous expressions of disgust, anger, fear, sadness, and happiness were comparable to each other (correlation between the coded facial behaviors of Americans and Japanese = 0.88). But they were not perfectly matched (77.44% overlap; 22.56% non-overlap), thus providing some evidence of culture specific responding. One minute clips of the participants'

spontaneous behaviors from both the neutral and stress film conditions were shown to different samples of both American and Japanese observers, who judged which film the participants were watching. Separate simple effects comparisons of observer and expressor culture effects were all non-significant. These correspond exactly to the target interactions predicted to be significant by the simple effects version of the ingroup hypothesis. Also correlations between the Japanese and American observer responses separately for each expressor were high for both expressor cultures in both studies (ranging from 0.77 to 0.86), also arguing against the ingroup hypothesis. These studies are the only ones to date that involve spontaneous emotional expressions by two different cultures that were somewhat equivalent across the two cultures and judged by both cultures, and it did not support the ingroup hypothesis.

Because there has been no study employing culture-specific expressions (to test Elfenbein and Ambady's notion of these contributing to the ingroup effect) that were equivalent in their physical signaling properties (to address Matsumoto's point regarding the nature of the stimuli), one cannot conclude that the ingroup effect exists. Although Elfenbein and Ambady (2002) interpreted my position as suggesting that culture specific expressions generated by culture specific display rules cannot be studied, on the contrary I strongly feel that studies involving culture specific expressions can and should be conducted. But they need to be conducted in studies balanced for ethnicity and the stimuli need to be equivalent in the physical signaling characteristics of emotion. How can this be done? To study culture specific expressions expressed by people of different cultures researchers will need to ensure that, in a two group comparison, culture specific expressions from Culture A are also represented in expressions by members of Culture B and vice versa, and that observers of both cultures judge all expressions. Even though an expression may be specific to a culture, it is entirely possible that it exists in other cultures but to different degrees, or may not be labeled as such. It may be necessary to get members of Culture B to pose those expressions that occur spontaneously in A; this is acceptable as long as the physical signaling characteristics of the expressions judged are equivalent. This would be true regardless of whether one studies spontaneous, naturally occurring expressions, imitated, posed, partial, or any other type of expression; the key would be for the expressions to be equivalent in their physical signaling properties related to emotion and be expressed by members of all observer cultures. Studies involving an expression from Culture A without the same expression from Culture B and an expression from Culture B without the same expression from Culture A cannot isolate encoder or decoder influences on the ingroup advantage because the judgments are inherently confounded by expression type.

Moreover future studies will need to isolate differences in expressions across encoder cultures while holding constant non-morphological features of the face that may contribute to emotion signaling. There are many aspects of the face that may contribute to emotion signaling, including facial physiognomy, cosmetics and hairstyle, in addition to the actual expressions themselves. (Ekman, 1979; Matsumoto & Choi, 2004). Research is yet to test the possible contributory roles of these aspects of the face to emotion signaling, which is a possible rich source of information in the future.

Conclusion

In considering cultural influences on nonverbal behavior, it is first important to recognize the universal bases of those behaviors, and to realize that culture's influence on nonverbal behaviors occurs above and beyond the universal bases of those behaviors that we are all born with. With regard to emotion communication, we all start with the same base of universal, pancultural expressions. We learn rules about how to modify and manage them based on social circumstance (cultural display rules); and we learn rules about how to manage our judgments of them (cultural decoding rules). While we all recognize universal emotions at levels well beyond chance, there are cultural influences on the absolute levels of recognition accuracy, and on judgments of external intensity and internal subjective experience.

Most of our knowledge concerning culture and nonverbal behaviors come from studies of facial expressions of emotion. The few cross-cultural studies on other nonverbal behaviors that do exist suggest considerable cultural differences in these. Yet, there may be universal aspects to these other nonverbal behaviors as well that research has just not yet uncovered. One example may be the raising of one or both arms in achievement, or clapping as a sign of approval. Future research will not only to continue to unravel the influence of culture on facial expressions, but will also need to delve into these other possibilities for other nonverbal behaviors as well.

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Table 2

Studies Examining Spontaneous Facial Expressions of Emotion

Citation	Participants	Eliciting stimuli	Measurement system	Emotions corresponding to facial muscle configurations coded in the face that match those in JACFEE
(Rosenberg & Ekman, 1994)	American University students	Videos selected for their ability to elicit primarily disgust and secondarily fear	FACS	Disgust, sadness, fear, happiness, contempt, and anger
(Ruch, 1995)	German university students	Slides of jokes and cartoons	FACS	Happiness
(Ruch, 1993)	Germany university students	Slides of jokes and cartoons	FACS	Happiness
(Frank, Ekman, & Friesen, 1993), Study 1	American University students	Films designed to elicit various emotions	FACS	Happiness
(Gosselin, Kirouac, & Dore, 1995), Study 1	Actors from the Conservatory of Dramatic Arts in Quebec	Actors were asked to interpret two of 24 scenarios designed to elicit happiness, fear, anger, surprise, sadness, and disgust	FACS	Happiness, fear, anger, surprise, sadness, and disgust
(Ekman, Matsumoto, & Friesen, 1997)	Depressed inpatients	Intake and discharge interviews	FACS and EMFACS	Happiness, contempt, anger, disgust, fear, sadness
(Berenbaum & Oltmanns, 1992)	German schizophrenic and psychosomatic patients, and healthy controls	Engaging in a political conversation with a partner they had never met before	EMFACS	Contempt, disgust, anger, sadness, fear, surprise, happiness
(Ellgring, 1986)	German depressed patients	Interviews	FACS	Happiness

(Heller & Haynal, 1994)	French depressed patients	Interviews with the patient's psychiatrists	FACS and EMFACS	Contempt
(Keltner, Moffitt, & Stouthamer-Loeber, 1995)	American adolescents with behavior problems	Administration of the WISC-R	EMFACS	Anger, fear, and sadness
(Chesney, Ekman, Friesen, Black, & et al., 1990)	American salaried employees in managerial positions at an aerospace firm	Structured Interview designed to assess Type A behavior	FACS	Disgust, fear, sadness, happiness, anger, contempt, surprise
(Camras et al., 1992)	American and Japanese infants	Arm restraint, which produces distress	FACS	Anger, sadness, fear, and happiness

Figure 1
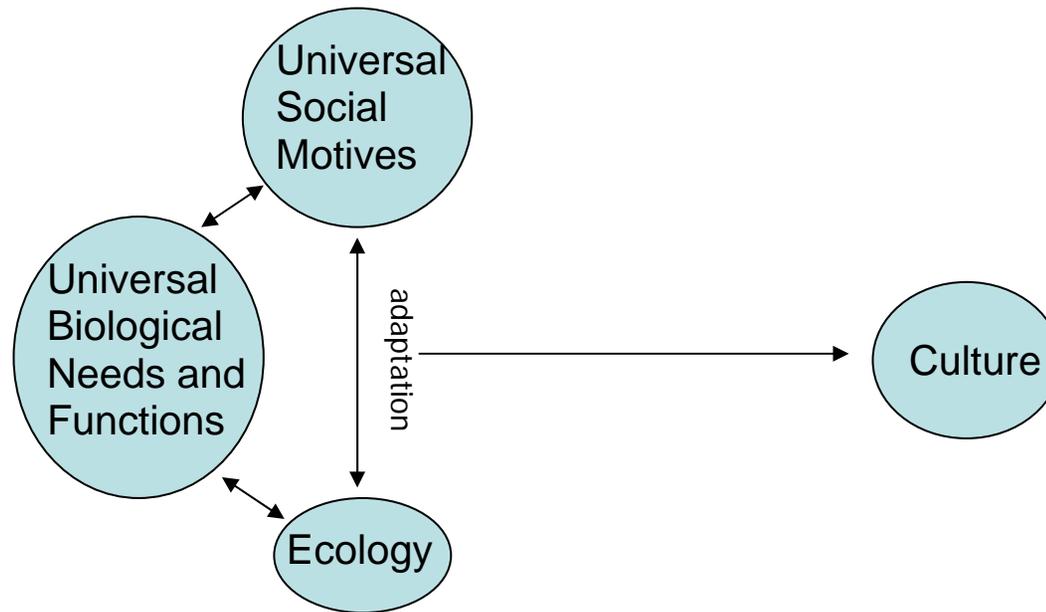Theoretical Framework for Understanding Personality as a Product of Culture

Figure 2
Examples of the Seven Universal Facial Expressions of Emotion