16 Interpersonal accuracy in relation to culture and ethnicity

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Abstract

Classic studies by Ekman and Izard provided early evidence for the cross-cultural universality of emotion recognition, through a set of studies that were later examined from the perspective of the cultural differences they also reveal. The body of evidence as a whole supports a middle ground, suggesting that both emotional expression and its perception show basic similarities across cultures and yet meaningful differences as well. We discuss both spontaneous and motivated processes in both emotional expression and recognition. Further, this chapter attempts to review this material in terms of Brunswik's lens model, which emphasizes the creation of observable cues and their interpretation by others. We also discuss cultural differences that can arise at multiple stages of the emotion process beyond emotional expression and recognition. Namely, individuals across groups can respond differently to nonverbal cues of emotion, which involves differences in the subjective interpretation of events via cognitive appraisal, differences in internal experience, and differences in emotion regulation. These, in turn, can influence accuracy in judging emotion cues across cultures.

Introductory psychology textbooks tell the tale of Paul Ekman (1972) and Carroll Izard (1971) as they traveled the world, showing a set of black-and-white photographs depicting American facial expressions to people from many cultures. Their goal was to determine whether those expressions would be recognized accurately across the globe. Since then, the hypothesis that emotion recognition is universal has been supported, challenged, reconsidered, and incorporated into increasingly integrated theoretical perspectives. Decades since the original work, there is now a large body of evidence to understand how people from distinct cultures and ethnicities express and recognize emotional states more vs. less

The two authors contributed equally to this chapter, and appear in an arbitrary order.

accurately. This chapter attempts to provide a succinct review of this research.

This chapter starts by considering broadly the findings related to cross-cultural universality and differences in emotion expression and recognition. In order to delve further into these findings, we make use of Brunswik's (1955) lens model to examine the process by which emotional states are expressed and perceived by others. Accuracy across cultures is influenced by the flow of emotion information cues. Using this model as our foundation, first, we discuss emotional expression, which is the signal that a target sends via nonverbal cues. Emotion expression includes both spontaneous emotion cues as well as cues that are more consciously regulated. Second, we discuss emotion recognition accuracy, again making a distinction between spontaneously receiving information as well as conscious motivation to interpret emotional cues in a particular way. The story unfolds while discussing both core theoretical concepts underlying the social perception process and evidence for the effects of accuracy of emotion expression and recognition in the context of differing cultures.

Cross-cultural universality versus cross-cultural differences in emotion

Since the time of Ekman and Izard's early groundbreaking work, many researchers have conducted studies in which emotional expression stimuli have been judged within and across cultural groups. Elfenbein and Ambady (2002) conducted a large-scale meta-analysis of this body of work, including 182 independent samples in 87 articles. These studies had been conducted across the decades varied in methods, channel of communication, emotional categories, and degree of contact between the groups. In these studies, there was substantial accuracy in recognizing emotional expressions across cultural boundaries. Indeed, across the 182 samples, only one failed to reach accuracy levels greater than that expected by chance guessing, in which members of the isolated Bahinemo tribe reported that all the faces they saw of Americans appeared angry to them (Sorensen, 1975). As much as these data revealed evidence for universality, most studies also provided evidence for group differences. In particular, there was typically an in-group advantage, in that participants in the culture from which stimuli originated typically outperformed the other cultural groups that were tested (Elfenbein, 2013). Note that they found an interesting asymmetry when it came to cultural groups that lived within the same national boundary: groups in the numerical majority were at a substantially greater risk of misunderstanding their minority group neighbors than the reverse. This may result

from power differences that could make minority group members more motivated or could relate to the sheer numerical difference that allows greater exposure to majority vs. minority group members.

These findings are less controversial than their interpretation. In attempting to parse what it means for emotion to be "universal," Russell (1991) argued that minimal universality would mean that emotion cues do not become entirely unrecognizable across cultural borders, whereas strict universality would mean that there are no cultural differences. The data that have accumulated for review support a middle ground between these two extremes.

The finding of in-group advantage has been explained in terms of dialect theory (Elfenbein, 2013; Marsh, Elfenbein, & Ambady, 2003). Tomkins and McCarter (1964) wrote that cultural differences in emotional expression are like "dialects" of the "more universal grammar of emotion" (p. 127). Just as linguistic dialects can differ subtly in their accents, grammar, and vocabulary—such as American vs. British English. As in verbal language, it can be more challenging to understand someone speaking a different dialect. Although the dialects of a language are still mutually intelligible, some of the meaning can get lost along the way. While arguing that different cultures have slightly different nonverbal cues used when expressing an emotion, research on dialect theory has demonstrated that there can be culture-specific elements in expressive style and that familiarity with these culture specific elements leads to greater accuracy (Elfenbein, Beaupré, Lévesque, & Hess, 2007; Elfenbein, Mandal, Ambady, Harizuka, & Kumar, 2004). The dialect theory follows closely from Brunswik's (1956) lens model, in that cultures can vary from each other in their schemas for both displaying and utilizing cues. Accuracy is maximized when these two schemas match each other— that is, when perceiver's implicit theories for interpretation match the target's implicit theories for display.

Cross-cultural recognition accuracy can vary across emotional states. In their meta-analysis, Elfenbein and Ambady (2002) found that cross-cultural accuracy was greatest for happiness, surprise, sadness, and anger, and lowest for contempt and disgust. In-group advantage was greatest for disgust and fear, and smallest for happiness and judgment of positive–negative valence. Contempt, which is interesting to consider due to the controversy regarding its place as a potential basic emotion (Russell, 1991; Tracy & Randles, 2011), tends to be one of the most poorly recognized emotions across cultures (Elfenbein & Ambady, 2002). Recently, there has been increasing attention beyond the so-called basic emotions—which encompass anger, disgust, fear, happiness, sadness, surprise, and sometimes contempt. The self-conscious emotions of

pride and shame are also accurately recognized across cultures (Tracy & Matsumoto, 2008). Cross-cultural recognition accuracy can also vary across channel of nonverbal communication. Happiness appears to be better recognized across cultures through the face than voice, and happiness showed large in-group advantage via the voice but relatively less through the face (Elfenbein & Ambady, 2002). One might speculate that angry people need to be able to convey verbal information such as demands, simultaneously while expressing their emotional states through nonverbal cues, whereas happy people have relatively less urgency to speak.

In the following section, we take a step back to examine the process of emotional information transmission more broadly. It begins by discussing a model that describes how emotion cues form an interpersonal process between individuals, in which they are expressed by one individual and perceived by the other. It continues by examining each step of the process more fully.

The lens model: emitting and perceiving cues

Central to research on emotion recognition—and to research on social judgment more generally—has been Brunswik's (1956) classic lens model. The key insight of the lens model is that people can perceive the world only indirectly. There are cues in the environment that are probabilistically related to properties of the world, and perceivers make use of these cues probabilistically. For example, the height of a building may not be measurable readily from the street, but there are useful cues available, even if these cues are imperfect. Individuals can observe the size of the shadow on the ground or count the number of stories. Perceivers use these observable cues in an attempt to understand the properties of their world. They can vary in their accuracy due to differences in what cues are available to them and how they interpret these cues. Some cues are more diagnostic than others and some are more easily detected than others. These two factors—that is, the validity of cues and the use of cues— together combine to determine the accuracy of social judgments. Nonverbal communication provides an example where cues may be more open to varying interpretations, which increases the likelihood of perception errors. In sum, the lens model as applied to communication via nonverbal cues can help us understand how a target emits social cues into the environment, and how a perceiver attempts to interpret these cues for their underlying meaning.

The accuracy of social perception is a function of both processes—that is, the presence of diagnostic cues as well as their effective utilization.

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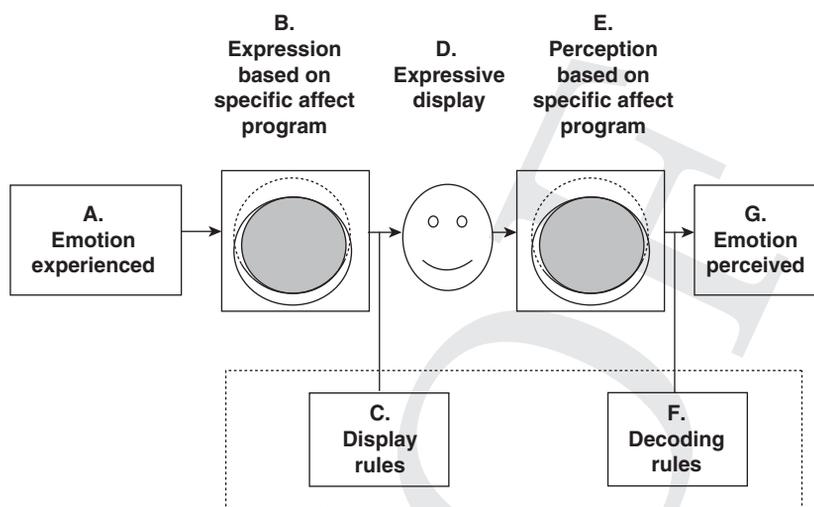

Figure 16.1 Representation of a lens model (Brunswick, 1956) of emotional expression and perception across cultures. © 2003 Hillary Anger Elfenbein.

Figure 16.1 illustrates a lens model approach to studying nonverbal communication of emotion across cultures. The left side of the model focuses on expression, which is also called encoding or the emission of cues. Encoders experience or wish to display a particular emotional state. They convey this state using a variety of cues, such as facial muscles, acoustical properties in the voice, or body movement. The right side of the model focuses on perception, which is also called decoding or the interpretation of cues. Decoders attempt to understand the speaker's emotional state through implicit analysis of these cues. As with other forms of communication, both expressing and interpreting nonverbal cues come with the risk of inaccurate judgment and misinterpretation of those signals. We will discuss in turn each of these in sides of the mirror-image process.

Cultural and ethnic differences can create barriers to accuracy in perceiving emotion. Although a great deal of the signal makes its way through—across diverse groups and even across species—some of the signal can get lost along the way. Research findings across a century and a half support the idea that the appearance of emotion expression has at least basic universality and has evolved biologically, notably through work comparing human and nonhuman emotional expressions (Darwin, 1965; Itakura, 1994; Linnankoski, Laakso, Aulanko, & Leinonen, 1994). Some

of the most persuasive evidence comes from the classic round-the-world studies mentioned in the opening paragraph of this chapter (Ekman, 1972; Izard, 1971). There is also evidence that certain emotions may be more universally recognized because they serve evolutionary adaptive functions (Martens, Tracy, & Shariff, 2012; Verduyn, Van Mechelen, Tuerlinckx, & Scherer, 2013), leading to higher levels of cross-cultural accuracy. Another sizable but more recent body of research supports the role of cultural differences in emotion expression and recognition (Elfenbein, 2014; Jack, 2013; Lutz & White, 1986; Wierzbicka, 1994).

The model in Figure 16.1 emphasizes the role of both cultural universals and differences in all aspects of the emotion transmission process. These factors can exist alongside each other rather than in opposition. Each component depicted in the model includes a spontaneous process as well as an opportunity for deliberate regulation that can vary in its form across cultures. Cultural differences may affect accuracy in either the expression or recognition of emotion cues through spontaneous or motivated processes. We begin by discussing the process of emotional expression, and the accuracy implications for both spontaneous and motivated emotion expression. Then we will turn to the process of emotional recognition, again examining the accuracy implications for both spontaneous and motivated expression.

Emotional experience and expression: creating the signal

Central to the lens model process is emotional expression, namely emitting informational cues. To provide greater context, before discussing the emotional expression process, we discuss the emotional experience itself.

Emotional experience. Potential challenges to accuracy in emotion cues begin with the emotion-eliciting event. People vary in the types of emotionally evocative stimuli they find in their environment, and also in how they interpret them, both of which can be influenced by cultural norms. Longstanding process models of emotion emphasize that emotion is *about* something—starting with a stimulus in our environment, individuals engage in subjective interpretation in order to determine how to feel (Frijda & Sundararajan, 2007). Appraisal theory argues that humans generate a personal and subjective interpretation of the events around them, rather than an objective, factual analysis (Frijda, 1986; Lazarus, 1991; Mesquita & Frijda, 1992; Scherer, 1988). Even when there are objective attributes of an event, each person perceives those attributes differently. Basic emotion theorists in psychology argue that humans are hard-wired to code events rapidly and automatically in terms of the meaning for ourselves, using a cognitive appraisal process that consists

of an ordered sequence of checklists (Ekman, 1992; Frijda, 1986; Frijda & Sundararajan, 2007; Lazarus, 1991; Scherer, 1988, 1995). Examples of checklists include how novel the event is or whether the event is perceived to be fair (see Frijda & Sundararajan, 2007; Smith & Ellsworth, 1985). Although the use of these checklists is universal, individuals use them subjectively. If the subjective interpretation may differ, this presents a challenge to the accuracy of experiencing and subsequently expressing an emotion.

The specific emotions that people feel are based not only on systematic differences in life experiences (Heelas, 1984), but also on complex judgments about which reasonable people can disagree. These judgments can vary across individuals and across cultures. Although our answers to the appraisal questions are subjective and idiosyncratic, theory and evidence suggest there is a universal formula that maps these answers to categorical emotional states (Scherer & Wallbott, 1994). As such, many antecedent events lead to similar emotions across cultures. There is evidence for similarity in the types of situations that elicit, for example, jealousy (Buunk & Hupka, 1987), sadness, anger, fear, and happiness (Scherer, Matsumoto, Wallbott, & Kudoh, 1988; Scherer, Summerfield, & Wallbott, 1983). In studies comparing Japanese and North American culture, researchers found that Japanese people were more likely to experience socially engaging emotions such as friendly feelings of guilt, while North American people were more likely to experience socially disengaging emotions like pride or anger (Kitayama, Mesquita, & Karasawa, 2006). In addition, research has shown that people across cultures tend to make similar ratings of which antecedent events tend to elicit which emotions (Brandt & Boucher, 1985). For example, guilt requires a negative event that a person believes they caused, whereas fear requires a future negative event that someone believes is out of their control. How a person perceives the fairness of a situation, or how a person interprets their level of control can be subject to interpretation—which leaves room for cultural differences. For example, people from independent vs. interdependent cultures tend to show greater use of the fundamental attribution error, which involves attributing events to be under the control of the individuals involved vs. determined by situational forces outside of individuals' control (Morris & Peng, 1994). Greater attributions of control might lead to greater experience of the emotions anger, pride, and guilt—all of which require the belief that a particular person is responsible for causing an event. As such, the room for personal judgments about the world around us opens the door for culturally defined norms to influence what emotional states people tend to feel and in which situations (Mesquita & Frijda, 1992). As much as

individuals share the same basic formula, they vary in how they apply it. People can differ dramatically in how they interpret events—for example, whether they "look on the bright side," how they attribute blame, how much efficacy they feel to control their life's experiences, and what they believe about social standards.

In this chapter, we emphasize the role of internal emotional experience for its subsequent role in emotional expression. People can differ in how they experience emotion because they have access to different information, and also because they vary in their schemas for interpreting that information. These schemas provide an opportunity for substantial cultural differences to emerge, due to culturally shared schemas and shared meanings developed through each group's set of norms and values (Abu-Lughod, 1999; Mesquita & Frijda, 1992). For example, in a large-scale study of 37 different countries, negative emotions appeared to last significantly longer in people when the eliciting events were incongruent with the individual's goals and self-values (Verduyn et al., 2013). Even so, anger in general tends to last for relatively long durations across many cultures, which may result from the importance of anger for triggering the awareness of threat (Marinetti, Mesquita, Yik, Cragwall, & Gallagher, 2012).

This discussion of the appraisal processes highlights the room for diversity across individuals and cultures in the emotional states that they experience. This, in turn, influences the "downstream" process of expressing those emotions, which we discuss next.

Emotional expression. With this consideration of how emotional experience emerges, we now turn attention to its expression. There is substantial room for both universality and cross-cultural specificity in this key process. A helpful framework for organizing the various influences on emotional expression is Bühler's Organon model (1990), which outlines three distinct functions (Scherer, 1988). According to this model, emotional expressions function as (a) a symptom of the state of the speaker, thereby expressing emotions, intentions, and attitudes; (b) a signal to the perceiver or to the observer, thereby serving as an appeal to produce a reaction; and (c) a symbol that represents an object or event. The first of these is also called a "push" function—with emotional expression pushing itself out—while the second and third can be considered as "pull" functions—with emotional expression attempting to pull in the other party to interact. These different functions are not mutually exclusive and can even reinforce each other over time. Notably, simple reflexes that produce reliable signals can evolve to become used deliberately (Russell, Bachorowski, & Fernández-Dols, 2003). The push function within the Organon model—namely that expressions are symptoms of internal

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states—has received the most attention. It is at least implicitly the focus of much of the research on the communication of emotion via nonverbal cues. This function is most closely related to that which is traditionally categorized as "expression," in that the message results from the authentic internal state of the target in a spontaneous manner. However, the Organon model also emphasizes the importance of the pull functions. There has been increasing scrutiny of the idea that nonverbal cues are direct readouts that express internal feelings (Parkinson, 2005). By contrast, emotional expressions are used as signals to produce a reaction in others in a more motivated manner (Fridlund, 1994; Owren & Rendall, 2001). In pull processes, the message is intended deliberately for the perceiver's consumption. The actor hopes that his or her audience interprets the emotional cues in a particular way, in order to receive his or her deliberate message as it was intended. We consider the implications for accuracy of emotion expression related to both the push and pull functions, by engaging in separate discussions of spontaneous and motivated processes, respectively.

Spontaneous emotion expression Darwin (1965) is considered the intellectual parent of the modern study of emotional expression, with his work on the similarity of expression across cultures and species. Importantly, he argued that certain emotional cues may play a role in natural selection. Having an emotional repertoire can allow individuals to avoid threatening or dangerous situations and to enhance cooperation. As an example, Susskind et al. (2008) argued that there are sensory benefits to the physiological responses that humans engage in when expressing fear and anger. Fear provides a larger field of vision, faster eye movements, and an increase in nasal volume and air intake. There can be an evolutionary benefit to this physiological reaction, for helping individuals escape the situation that caused the fear. The opposite case is disgust, which leads to a closing in sensory perception, and can help to prevent sensory intake of whatever led to the disgust. These biological functions of emotional expression are representative of the push or spontaneous function, are a function of human biology and, thus, more universal in nature (Matsumoto & Hwang, 2011).

There is an interpersonal benefit to emotional expression having basic universality. Relationships emerge in the context of a shared culture, which subsequently can affect the way in which emotions are encoded and expressed by the target (De Leersnyder, Boiger, & Mesquita, 2013). Consistent with the first function of the Organon model is the notion that nonverbal cues are emitted as a spontaneous result of our internal states, for which humans and animals evolved over time the ability to read. As seen in Figure 16.1, after an emotion is experienced, it is expressed using

what Ekman (1972) described as a "specific action program." In his influential neuro-cultural theory (Ekman et al., 1987), he hypothesized a one-to-one mapping between the experience of emotional categories and the specific configuration or configurations of facial muscles used to display those emotions (Ekman, Friesen, & Hager, 2002). This mapping appears to be most useful when considered as a heuristic rather than an exact formula. Researchers have rarely found the appearance of the precise total configurations hypothesized, but they do find components of these configurations. In a notable study, Carroll and Russell (1997) examined the muscle movements in Hollywood film portrayals that won awards for fine acting. They found the professional actors rarely showed facial configurations that mapped fully onto the predicted patterns, but that many expressions included activity in at least some of the predicted muscles.

The same conclusion has been made in other studies of acted portrayals (Gosselin, Kirouac, & Doré, 1995) as well as spontaneous emotional expressions (Fernández-Dols, 1997). Taken together, evidence appears to be consistent with the notion of components theory (Frijda, 1986; Scherer, 1984), which posits an association between specific muscle movements and the checklists of cognitive appraisal that were described above. According to this theory, multiple facial elements can be redundant in conveying emotions (Carroll & Russell, 1997), and so exact entire facial configurations are not necessary for accuracy. Ekman's (1972) theory about specific action programs forms a valuable description of the emotional expression process—at least when it is adapted to loosen the assumption of a complete one-to-one mapping. The processes described above are representative of the "push" function in Bühler's (1990) model (Scherer, 1988) and are more spontaneous in nature. Next, we describe emotion expression resulting from more motivated processes.

Motivated emotion expression. There are multiple potential influences of culture on the motivated or conscious transmission of emotional cues, which align with the "pull" functions of Bühler's (1990) model (Scherer, 1988). Central to the discussion of this topic in the literature has been Klineberg (1938) and Ekman's (1972) concept of display rules. Display rules are deliberately obscuring emotion regulation techniques, in which individuals may regulate their emotional displays to conform to social norms. Ekman (1972) defined display rules as conscious management techniques to deintensify, intensify, neutralize, and mask particular emotional displays. He argued that members of each culture would express their emotions in exactly the same way if some groups were not constantly monitoring themselves and adjusting their displays to fit social norms. To emphasize the role of display rules as deliberate, Ekman and

colleagues (1987) argued that individual's faces read out their emotional cues at all times, *unless they chose to consciously control it* [italics added]. Anecdotal examples of individuals choosing deliberately to regulate their emotion expression might include bluffing in a poker game or hiding fear during a scary movie.

As discussed above, stimuli and cognitive appraisal are key to determining emotional experience and expression, and can be affected by the sociocultural environment (Mesquita & Frijda, 1992). Cultures have shared norms, values, and expectations, which are imbued into the thinking of the members and influence what is expressed. Given that the use of display rules, in which people deliberately obscure emotion regulation techniques to conform to social norms, exist in the service of social relationships, differences in social norms across cultures influence groups' particular display rules. Gross (1998) developed a process model of emotion regulation that identifies a number of steps that individuals can undertake to regulate their emotions. At the chronologically earliest stage, they can decide how to allocate their attention. Subsequently, individuals can attempt to change their emotional expression through reappraisal—i.e., reevaluating the situation to yield a potentially new interpretation—or suppression—i.e., attempting to deny their internal experience. In general, reappraisal as a strategy can lead to lower physiological responding, whereas suppression can lead to greater physiological responses due to the inhibitory processes engaged in emotional suppression (Gross, 1998). Cultural differences in norms and expectations could lead to cross-cultural differences in emotion regulation that, in turn, influence the appearance and intensity of emotional expression.

People tend to express what is important to them on a personal, normative, and, cultural basis. As such, there are important differences in the base rates of what emotions people tend to express. This is important to incorporate into our understanding of cultural differences and universals in emotional expression and recognition because "practice makes perfect." Cultural groups that more openly show certain emotions may be better able to recognize them as well. In a recent meta-analysis of research on emotion expression and culture, van Hemert and colleagues (2007) identified a variety of ecological, sociopolitical and aggregated psychological determinants of levels of emotion expression. They found higher levels of emotional expressivity in countries with looser norms, higher levels of democracy, higher individualism and more service industry workers. By contrast, countries with tighter social norms—i.e., norms that are enforced more strictly— demonstrated lower general levels of expressiveness. They found that countries with higher levels of religiosity actually demonstrated higher levels of positive emotion, which

interestingly they had hypothesized in the opposite direction. Boiger and colleagues (2013) demonstrated that elements deemed important to the national culture had an effect on the type of emotion people from that culture were likely to express. The authors compared American culture, identified as more individualistic, with Belgian culture, identified as having stronger egalitarian goals. They found support for their hypothesis that Americans would be more likely to demonstrate anger, as it is more aligned with an individualistic culture; while the egalitarian culture of Belgians would be more likely to display shame. These emotions, they argued, were contextually relevant to the distinctions in the cultures. Likewise, Mesquita (2001) found that people in more interdependent cultures were more likely to express emotions that were connected to their social worth, were more likely to represent reality, and recognized the role of relationships. People in independent cultures were less likely to focus on their social worth, more likely to represent and individual and subjective perspective of reality, and less likely to recognize the role of relationships. In studies comparing Japanese and North American culture, researchers found that Japanese people were more likely to experience socially engaging emotions like friendly feelings of guilt while North American people were more likely to experience socially disengaging emotions like pride or anger (Kitayama et al., 2006). Cultural differences can also affect an individual's emotional reactivity. One study identified that cultural factors determine the focus on the aspect of the self, whether individual or relational, and that this determined the intensity of emotional reactivity (Chentsova-Dutton & Tsai, 2010). Based on familiarity, types of cultural differences in the frequency of expressing particular emotions feed into the likelihood of recognizing them.

Emotion recognition: perceiving the signal

Returning to Brunswik's lens model (1956), we now examine the right side of the model, namely emotion recognition. The lens model emphasizes that accurate perception is a matter of detecting cues in the environment, and there needs to be a match between the style of display produced and the style expected by that of the perceiver (Jack, Caldara, & Schyns, 2012). Perceivers receive nonverbal cues and interpret them based on prior knowledge, idiosyncratic habits and preferences, and social norms. As such, the recognition of emotion cues can not only be automatic and spontaneous, but it can also be motivated and regulated.

Spontaneous emotion recognition. As discussed above, there is a substantial body of research on accuracy in recognizing emotional cues across cultures, starting with the work of Ekman (1972) and Izard (1971).

In their research designs, participants made multiple-choice judgments of images of people expressing emotion, and achieved far better performance than the recognition rates that would be expected by chance guessing alone, e.g., 16.7% for a response among six choices. Ekman and Izard interpreted this finding in favor of the universality of accuracy in emotion recognition—which is a conclusion that was initially controversial, came to be accepted, and in recent years has become understood as incomplete.

Dialect theory has attempted to provide a middle ground, by arguing that emotions can be interpreted accurately across cultures, and yet there is an in-group advantage that allows individuals to interpret emotions more accurately from their own group members. Evidence for dialect theory comes from multiple labs, and the body of findings has been increasing over time (Dailey et al., 2010; Kang & Lau, 2013; Kleinsmith, De Silva, & Bianchi-Berthouze, 2006; Thompson & Balkwill, 2006; Wickline, Bailey, & Nowicki, 2009). There has even been recent research with members of relatively isolated populations, such as a judgment study of nonlinguistic vocalizations that compared Americans with Namibian villagers (Sauter, Eisner, Ekman, & Scott, 2010). Other studies use far different methods: In-group advantage has been generated in simulations of machine learning (Laukka, Neiberg, & Elfenbein, 2014). In a two-step process that matches the expression and perception stages of Brunswik's (1956) lens model, first cross-cultural differences were detected in the acoustic expression patterns of speech that were diagnostic to distinguish one emotional state from another. In the second step, machine algorithms that were trained to recognize these expressions were more accurate when they were tested on stimuli from the same cultural origin used to train them. Accuracy suffered when the algorithms trained with expressions from one culture and yet had to recognize expressions from another. This strongly suggests the role of familiarity and learning in cross-cultural accuracy in emotion recognition. Along these lines with human participants, cultural learning appears to reduce the cross-cultural gap, such that students abroad learn over time how to recognize the expressions from their host culture (Elfenbein & Ambady, 2003). New members to a culture will learn over time the values and norms that are most important or most ubiquitous to that culture. This acculturation process has been shown to enhance the emotion recognition accuracy of new members (Prado et al., 2013). Interestingly, individuals are not only more accurate when judging in-group expressions, but they also tend to be more confident about those judgments (Beaupré & Hess, 2006).

Some research on dialect theory has also demonstrated practical implications, notably in applied psychiatry research. A number of studies over the years had demonstrated that there was greater emotional impairment for African American versus Caucasian schizophrenics, which was a source of concern that researchers attempted to explain. In attempting to explain the discrepancy, Pinkham and colleagues (2008) noted that all the stimuli in these previous studies were based on Caucasian facial expressions. When they tested both ethnic groups with stimulus material that originated from both ethnic groups, they found that this observation no longer held.

As in the discussion above about the influence of base rates on emotional expression, the base rates of particular emotions in the social environment can influence accuracy in emotion perception. Some groups have greater familiarity with some emotions than others. In terms of recognizing expressions, groups vary in their opportunities for practicing and learning over time. Particularly in the case of ambiguity, this type of Bayesian processing provides a heuristic to judge a person as experiencing a state that seems to them statistically more probable. In an extreme example, Umiltà, Wood, Loffredo, Ravera, and Gallese (2013) tested a sample of survivors of Civil war in Sierra Leone and found that, relative to other emotions, participants were particularly likely to judge sad displays as anger, and yet also judge other emotions as sadness. This effect was pronounced for participants who had been child soldiers. Over time, individuals can learn to avoid the recognition of emotions that are not productive for their particular environments. As such, individuals can vary across cultures in which emotional states they judge more accurately.

Motivated emotion recognition. Up until this point, emotion recognition has been described somewhat passively, as something that happens to the perceiver when in the presence of emotion cues. However, the perceiver is an active participant in the communication process. Perceivers can be more vs. less interested in perceiving a signal and can have their own opinions about what they wish the signal to be.

Out-group bias exists when individuals are less motivated to understand the emotions of people from visibly foreign cultural groups. This can result from indifference or even lack of caring (Hugenberg, Miller, & Claypool, 2007). Evidence for out-group bias comes from studies that use stimuli in which the nonverbal cues of emotion are exactly identical across cultural groups, and yet participants still achieve higher accuracy when judging individuals from their own group. In such cases, nonverbal dialects cannot explain away higher levels of in-group accuracy. The out-group bias effect has been found with real cultural groups (van der Schalk

et al., 2011), minimal groups (Young & Hugenberg, 2010), and even false feedback about group membership (Thibault, Bourgeois, & Hess, 2006).

Decoding rules can also influence emotion recognition across cultures. Matsumoto (1989) extended the concept of display rules to coin the term "decoding rules," which are norms for deliberately deceptive regulation in perceiving others' emotions. He argued that Americans are simply more effective at recognizing emotions because Americans do not suppress their true understanding of emotional displays out of concern for group harmony. In this sense, like any other type of information, people can perceive what they want to perceive. As such, decoding rules can be a "flip side" of display rules. In an act of dyadic emotion regulation, people can assist each other with conforming to norms. Individuals who display inappropriate emotions can be assisted by other people who interpret them the way ideally they should have behaved. This notion fits within theories of ideal affect (Tsai, 2007), which describes the way that people want ideally to feel—and how they want other people to feel. Individuals interpret situations actively, through cognitive appraisals that can help to conform to the internal states they desire in others. Cultural groups can also differ in the extent to which people tend to hold particular emotions in favor vs. disfavor. An example comes from a recent study comparing American and German cultures, which found cultural differences in the desire to avoid negative affect (Koopmann-Holm & Tsai, 2014). In particular, Americans were more likely to focus on the positive, while Germans were more likely to focus on the negative. There can be cultural variation in the extent to which individuals make use of contextual cues in emotion recognition. Masuda and colleagues (2008) found that people in the Japanese culture were more likely than the United States to incorporate into their judgment of a target's emotions the emotional displays of other people surrounding the target. Participants from a Western culture were more likely to ignore the emotion information of the surrounding group, and to interpret the emotion expression of the central stimulus person in terms of their individual affective response. Research increasingly points out the important and often underappreciated importance of context in forming judgments. In particular, Chinese and American subjects utilized cultural context differently when identifying emotion expression (Stanley, Zhang, Fung, & Isaacowitz, 2013). These effects can create roadblocks in judging other people's emotions even when perceivers try to be as accurate as possible. This illustrates how individuals can be motivated by the social context regarding group vs. individual norms (Masuda et al., 2008).

Interestingly, individuals can also differ across cultures in their assumptions for the reason why an emotional expression was produced in the first

place. Again, we can consider the functions of emotional expression as delineated by Bühler's (1990) Organon model (Scherer, 1988), and consider the perceiver as an active partner in attempting to judge which of these functions ("pull") is operating. Cultures with looser social normative constraints—such as Western groups—may be more likely to assume that the push function is operating and infer that the emotion they judge truly represents the target's internal state. By contrast, individuals from cultures with greater need to constrain behavior might be more likely to anticipate that the target is self-regulating (Scherer & Brosch, 2009; Yuki, Maddux, & Masuda, 2007). Related to this is how individuals judge the authenticity of others' expressions. One often-studied judgment of authenticity is that of the Duchenne marker, which is a wrinkling around the corner of eyes that purportedly distinguishes real from false smiles (Ekman, Davidson, & Friesen, 1990). In a study testing this physical expression of emotion among Gabonese and Mainland Chinese living in Canada, Thibault, Levesque, Gosselin, & Hess (2012) found that the Gabonese did not use the Duchenne marker at all, whereas Mainland Chinese only showed sensitivity to the marker when judging faces of French-Canadians. As such, our judgments of others' emotions are shaped by culture-specific schemas for interpreting the link between intentions and displays. In the process of judging displays, people implicitly judge not only the emotional category but also the extent to which they believe those displays resulted from push vs. pull processes.

Likewise, there can be cultural variability in which particular cues are the focus of attention, even which part of the face is the most salient. In cultures where emotional norms are driven toward more subdued emotion expression, such as Japan, perceivers focus more attention on the target's eyes, which are surrounded by facial muscles that are relatively harder to control (Jack, Blais, Scheepers, Schyns, & Caldara, 2009; Yuki et al., 2007). By contrast, in cultures where emotional norms are more open to expression, such as the United States, perceivers focus more attention on the mouth, because it is the more openly expressive part of the face that can be readily manipulated for display. In this way, United States vs. Japanese participants in these studies paid attention to the cues that were most likely to represent pull vs. push processes.

Conclusion

The perception of emotional cues across cultures has been an active and often dramatic area of research for decades, and continues to evolve. Examining the body evidence as a whole, the heated debate needs to be replaced with calmer voices because only one conclusion

can fit the data: Both emotional expression and its perception show basic similarities across cultures and yet meaningful differences as well. Cultural group membership has influences throughout the emotion process, starting with environmental stimuli, and extending to an expressor's subjective appraisal of the stimuli, internal experience, regulation, expression, and then the other party's emotion perception. Being part of the same cultural group can provide access to shared experiences and internal states, norms for expressing oneself, styles for producing expressive cues conditional on wanting to express, expectations for the appearance of cues, and schemas for interpreting them. It is important to emphasize that although there is a gap, it appears that people can overcome it. The boundaries between cultures are becoming more porous as interaction between people across distinct cultures is increasingly common and necessary. The ability to read nonverbal cues is an important element of social interaction, and we argue that continued research in this area has the potential to inform and enhance communication in the global environment.

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