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Saving Face for Darwin: The Functions and Uses of Embarrassment

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Abstract

In this article, we review diverse studies of the antecedents, facial display, and social consequences of embarrassment. These studies indicate that embarrassment serves an appeasement function, reconciling social relations when they have gone awry. We then speculate about how embarrassment is elaborated into more complex social interactions, such as teasing and flirtation. We conclude by raising questions about the blush and embarrassment that await empirical consideration.

Keywords

Darwin; embarrassment; appeasement

In *The Expression of Emotion in Man and Animals*, Darwin (1872/1998) posited that the blush is the signature expression of shame, embarrassment, modesty, and shyness. Departing from his analysis of the other expressions, however, Darwin attributed no adaptive function to the blush (and by implication, embarrassment), nor did he identify the expressive predecessor of the blush in other species. Was Darwin wrong? We think so. In this article, we apply insights about the functions of emotion, which Darwin inspired, to reveal how embarrassment serves an appeasement function and is used

creatively in complex social interactions.

THE RISE OF FUNCTIONAL ACCOUNTS OF EMOTION

Functional accounts are now widespread in the study of emotion (Keltner & Gross, 1999). This has not always been the case. Early psychological theorizing treated emotions as disorganizing forces that are pernicious to human adjustment, echoing the metaphor, found in classical philosophy, that reason should be the master of the passions. With the rise of Darwinian thinking in the study of emotion, however, more recent theorists have argued that emotions are adaptations to survival-related problems or opportunities.

What does a functional analysis of emotion entail? Theorists in ethology, philosophy, and evolutionary psychology converge on three emphases. First, functional accounts posit that emotions solve specific problems of survival or adjustment. Second, functional accounts conceive of emotions as systems of interrelated components. Finally, functional accounts emphasize the beneficial consequences of emotions. These insights have guided the study of embarrassment in novel and illuminating ways.

THE APPEASEMENT FUNCTION OF EMBARRASSMENT

Early scholars tended to focus on the painful experience of embarrassment or its disruptive, chaotic nature. Recent studies by Edelman, Leary, Miller, Parrott, Sabini, Tangney, and their colleagues have illuminated how embarrassment, although painful to the individual, serves important social functions. Figure 1 organizes this literature according to the tenets of a functional analysis, summarizing findings relevant to the problems that embarrassment may solve, as well as its response systems and systematic consequences. These studies converge on the conclusion that embarrassment serves an appeasement function, reconciling social relations following transgressions of social norms.

What Problem Does Embarrassment Solve?

From a functional perspective, the antecedents of an emotion reflect the problem (or problems) that the emotion was designed to solve. Figure 1 shows that people report being made embarrassed by a diverse array of events, from physical pratfalls to failures to maintain privacy (e.g., having one's taboo feelings revealed by someone's comments at a dinner party). These antecedents tend to involve violations of social conventions. They also differ from the antecedents of shame, which concern the failure to live up to expectations that define the "core self," and the antecedents of guilt, which concern violations of moral rules that govern behavior toward others (e.g., lying, cheating, stealing, infidelity).

What problem does a breach of a social convention pose? Social

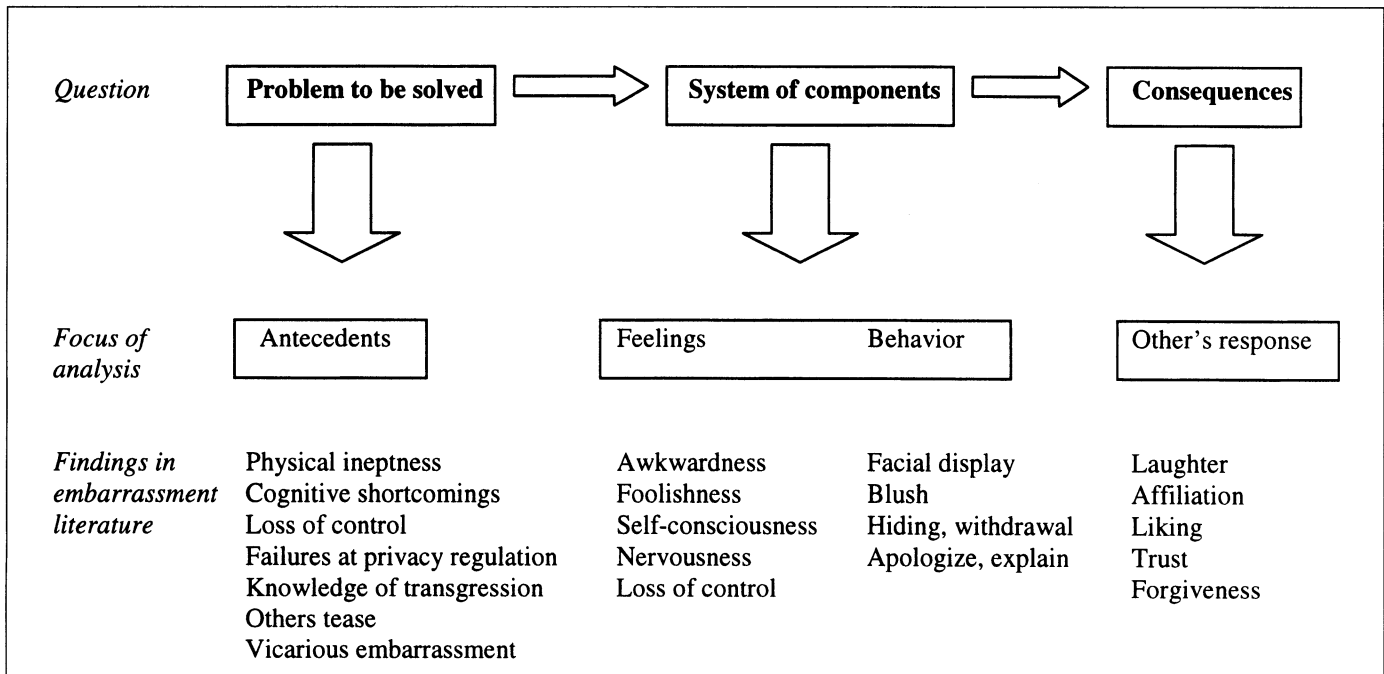


Fig. 1. Functional analysis of the empirical literature on embarrassment.

rules, from conventions to morals, are a basis of cooperative alliances and smooth-flowing interactions. To err is human, however. Embarrassing acts reveal the individual as unable or uninterested in adhering to standards of public behavior, thereby subjecting the individual to harsh judgment and ostracism. What is needed is a mechanism that allows the individual to correct the mistake, to repair the momentarily disturbed relationship. The nonverbal display of embarrassment, recent evidence shows, is a highly coordinated response that accomplishes these aims.

Embarrassment-Related Responses: Coherence Amidst Psychic Chaos

The different components or response systems of emotion, according to a functional analysis, work together to help the individual respond adaptively to problems or opportunities in the environment (although the degree to which these components are coherent is a

matter of ongoing controversy). For example, the subtle differences in the cardiovascular patterning of fear and anger reflect how different structures work together to distribute blood to different organs and muscle groups to meet physical demands (i.e., flight vs. fight) of these two emotions. Following Darwin, one would further expect emotion-related responses to be universal and observed in other species.

To address whether embarrassment-related responses might be coherent, universal, and observed across species, we have studied the nonverbal display of embarrassment. Eschewing more mischievous inductions of embarrassment (e.g., having college-aged participants suck on a pacifier publicly), in one study we had participants pose an awkwardly achieved, funny-looking facial expression while being videotaped, and then coded the nonverbal behaviors of those individuals who reported embarrassment, focusing on the behavior that followed the posing of the funny-looking face (Keltner, 1995). A prototypical embarrass-

ment display is represented in Figure 2, and is relevant to three questions.

First, was this display coherent and distinct from that of other emotions, such as shame or amusement? Yes. The embarrassment display reliably unfolded in the following coherent sequence: gaze aversion; a smile control, which inhibits the smile²; head movements down and to the left; a gaze shift; a second smile control; and a second gaze shift. Note that these various actions overlap in time (e.g., as shown in Fig. 2, gaze aversion continues throughout the entire sequence, so it combines with each of the other actions). Researchers have documented a similar display in embarrassed children, starting at about 18 months of age (Lewis, Sullivan, Stanger, & Weiss, 1989), and in people of various cultures in their naturalistic interactions (Eibl-Eibesfeldt, 1989).

Second, is this display universal? In a study designed to answer this question, photographs of the embarrassment display and other expressions were presented to indi-

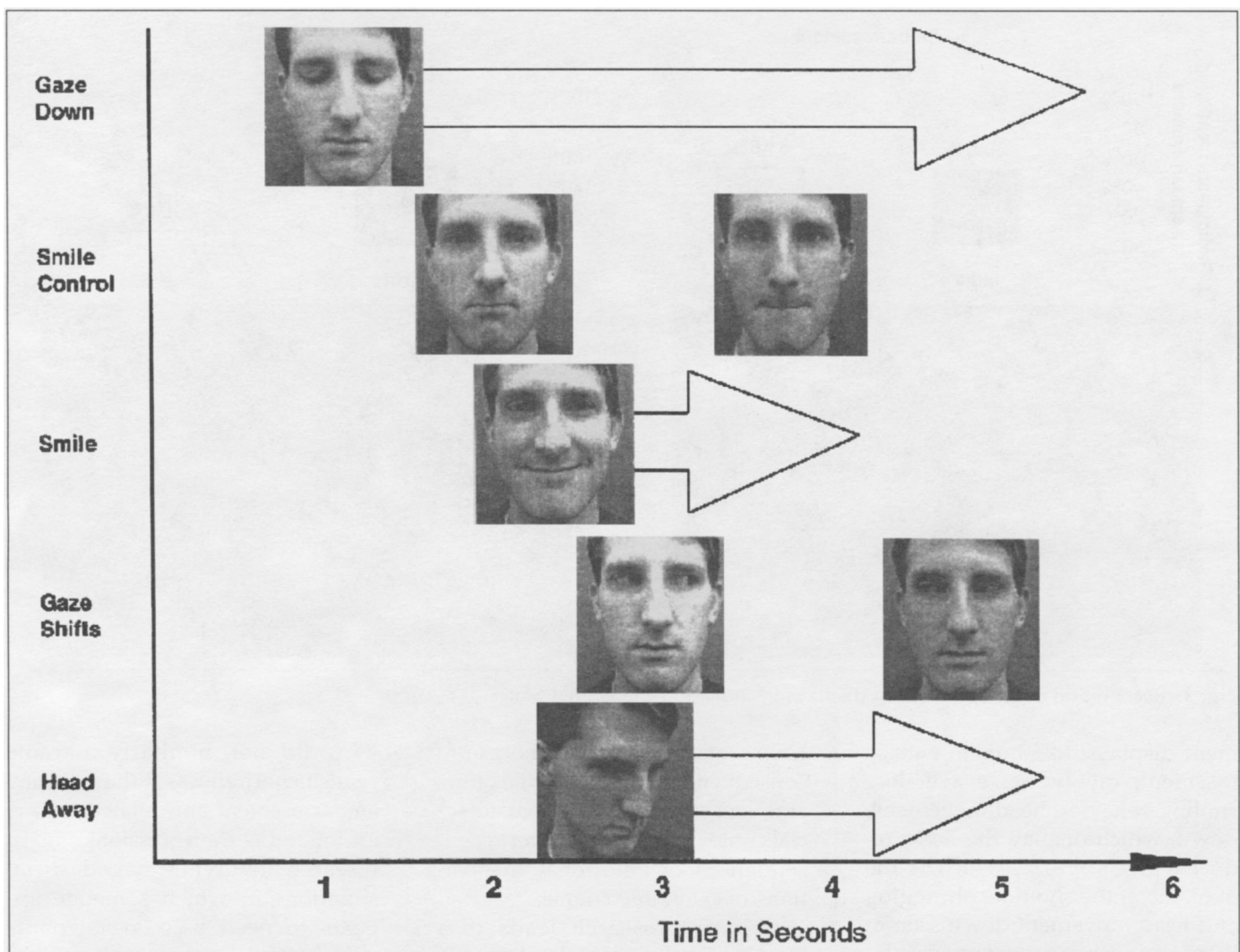


Fig. 2. Representation of the components of a prototypical embarrassment response. This prototypical embarrassment display was created by calculating the mean onset and offset times of the actions shown by at least 50% of embarrassed participants. The mean duration of each action is equal to the interval beginning with the left-most edge of the photograph and ending with the right-most edge of the photograph or the end of the arrow. Each photo in the figure represents a specific action and therefore does not represent how the actions appear when they combine as the display unfolds. From Figure 1 in "The Signs of Appeasement: Evidence for the Distinct Displays of Embarrassment, Amusement, and Shame," by D. Keltner, 1995, *Journal of Personality and Social Psychology*, 68, p. 445. Copyright 1995 by the American Psychological Association. Adapted with permission.

viduals in India and to U.S. college students, who were asked to describe each display in their own words, because experimental prompts potentially bias research results (Haidt & Keltner, 1999). Outside observers might not readily recognize the display of embarrassment, given that people desire to hide their embarrassment. However, the participants in this study reliably identified the displays of embarrassment (see Fig. 3). Moreover, they provided simi-

lar descriptions of situations that would produce the display, even though embarrassment appears to be valued more positively in India and differs in its lexical representation (in the area of India in which our study was conducted, one word, *lajya*, is widely used to refer to both "embarrassment" and "shame"). This study also documented that the tongue bite, an appeasement gesture used throughout Southeast Asia, was judged as embarrassment in India but not in

the United States (see Fig. 3). More research and theory are needed to understand how each emotion has a family of related expressions, some of which are universal and some of which are culturally specific.

Finally, do nonhuman species demonstrate embarrassment-like behavior? A review of the literature on appeasement behaviors in nonhuman species (Keltner & Buswell, 1997) showed, interestingly, that nonhuman appease-

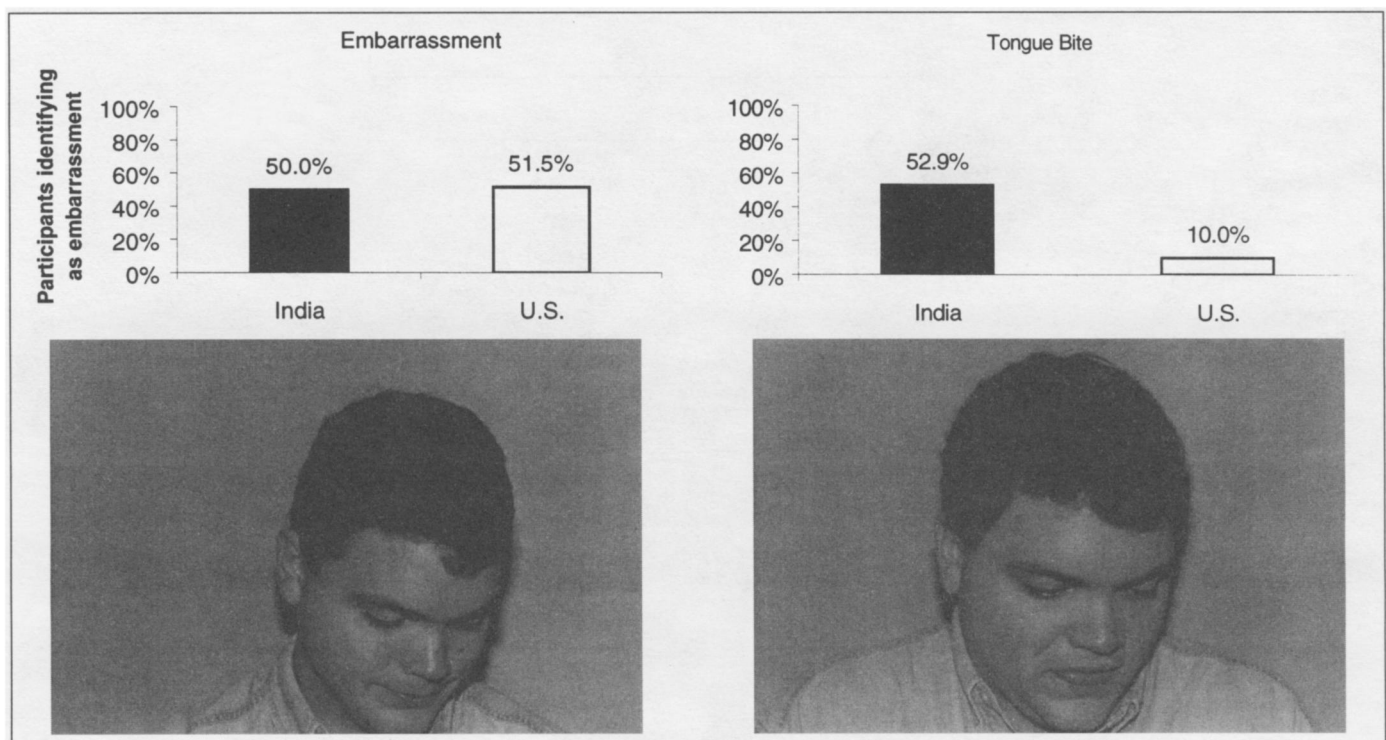


Fig. 3. Recognition of embarrassment displays in India and the United States.

ment displays, like human embarrassment, involve gaze aversion; smiling behavior; head movements down, which display the neck; reduced physical size, which is the outcome of the shoulder shrugging and head movement down seen in human embarrassment; self-touching or grooming; and in some nonhuman primates, the reddening of the skin.

The Systematic Consequences of Embarrassment

A third cornerstone of functional analyses is the notion that emotions tend to bring about regular consequences that are of benefit for the individual. Clearly, not all consequences are informative regarding the functions of an emotion, for emotions can lead to myriad outcomes, from lugubrious diary entries to voodoo dolls. The emphasis in functional analysis is on the regular consequences of an emotion. In this spirit, researchers

have examined both the short-term consequences of emotion (i.e., how emotions affect the immediate social context) and the long-term consequences of emotional dispositions over the life course.

Relevant research leads to a simple conclusion regarding the consequences of embarrassment: Embarrassment leads to emotions and behaviors in other people that help remedy social transgressions (see Keltner & Buswell, 1997, for relevant citations). In various studies, researchers have compared participants' reactions to individuals who displayed embarrassment and individuals who displayed other nonverbal behavior or no emotion in various embarrassing situations (e.g., knocking over a supermarket display, informing someone of bad news, being convicted of selling drugs). Across these studies, participants liked, and when relevant forgave, the individual who displayed embarrassment or similar behavior more than the comparison individual

who did not. Similarly, parents punish children less if they display embarrassment and related behavior following transgressions, and in research involving staged social situations in which someone appears to need help, participants volunteer to help an embarrassed person more than a poised person.

The findings summarized here challenge many early conceptions of embarrassment. Whereas some theorists viewed embarrassment as a problem for social interactions, closer study reveals that it helps solve a problem of social interactions. Whereas many people assumed the response systems of embarrassment were chaotic and uncoordinated, precise analysis of the nonverbal display of embarrassment reveals specific responses working together. And whereas it has been assumed that embarrassment is associated with a loss of face, the opposite has proven to be true. As the sociologist Goffman (1956) suggested, embarrassment is vital to the social order.

CULTURAL ELABORATION AND THE USES OF EMBARRASSMENT

Theorists have long observed that embarrassment is central to complex social practices. In ethnological studies, Eibl-Eibesfeldt (1989) found embarrassment-like behavior (coy glances and smiles, face touching, neck presentations) embedded in flirtatious interactions. Ethnographers have identified embarrassment in interactions that revolve around modesty and politeness (Abu-Lughod, 1986). These findings recapitulate one of Darwin's most impressive insights regarding the blush: It relates to shame and embarrassment as well as more extended social practices such as politeness and modesty. How might this be?

Recent analyses of emotions as preadaptations provide one answer (Rozin, 1996). According to this view, emotions that have evolved for one purpose (embarrassment appeases observers of social transgressions) may acquire new uses (embarrassment-related responses contribute to flirtation or polite interactions) if the emotion-related responses give advantage to certain individuals. If there is such an advantage, the new use of an emotion will become more common in succeeding generations, guided by a new set of selection pressures. This process can happen in biological evolution over the course of thousands of generations, or in cultural evolution over the course of a few years or decades.

We suggest two ways in which embarrassment, and emotions more generally, can acquire new uses in more complex, elaborated social interactions. In *antecedent generalization*, an emotional response will be recruited for new uses when features of the emotion's antecedents match character-

istics of a situation in which a solution to a similar social problem is needed. Thus, when a situation matches the antecedents of embarrassment (e.g., there is uneasy social distance), individuals will rely on embarrassment-like behavior to increase social affiliation. For example, many contexts requiring politeness, such as formal interactions or those involving strangers, are defined by uneasy social distance and awkwardness—two central themes of events that elicit embarrassment. These contexts should trigger the use of appeasement-related behaviors, including embarrassment displays, as part of more complex politeness and deference rituals (Eibl-Eibesfeldt, 1989).

In *outcome generalization*, individuals will use emotion-related behavior when the goal of an interaction resembles the systematic consequences of the emotion. Embarrassment leads to increased forgiveness, trust, and liking. Individuals motivated to forgive, trust, or like (or to be forgiven, trusted, or liked) will therefore rely on embarrassment-related behavior or induce it in others. Thus, flirtation is motivated by the desire for increased liking, and involves the creative display and evocation of embarrassment (e.g., through disclosure, teasing). Similarly, the repair of a social transgression, an outcome of embarrassment, is a common motive of teasing, an interaction in which the teaser provokes embarrassment in the target, to prompt appeasement and the process of reconciliation.

REMAINING QUESTIONS

Fascinating questions about embarrassment remain. A first group of questions pertains to culture and ethnicity. It is often noted that

other cultures evaluate embarrassment more positively, or afford it a more prominent role in social life, than many European cultures. Is this so? And if it is, what are the consequences for cultural differences in embarrassment-related experience, display, and social interaction?

A second group of questions revolves around the blush, Darwin's point of departure in his analysis of self-conscious emotion. Researchers have recently discovered that the blush is most commonly caused by undesirable social attention (Leary, Britt, Cutlip, & Templeton, 1992), and that it differs from an anxiety-related cardiovascular response (Shearn, Bergman, Hill, Abel, & Hinds, 1990). Several questions await attention. It is still not known what regions of the body are affected in the typical blush response, nor whether the blush is unique to embarrassment, or instead a concomitant of many emotional states (e.g., shame, guilt, certain forms of anger). It is not known to what extent the blush response is universal. And it is not known whether the blush signals appeasement and therefore functions as a social signal, or is simply a by-product of other emotion-related responses.

Darwin's legacy in the field of emotion continues to unfold, and will do so as long as researchers continue to consider the nature of facial expression. Although he may have taken a wrong turn in ignoring the functions of embarrassment, committing what in hindsight seems like an intellectual *faux pas*, he provided conceptual tools for other researchers to refine his many other interesting observations about the blush and self-conscious emotions, to right his wrongs in illuminating ways. And of course, in saving face for Darwin, we like him all the better.

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Notes

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fornia, Berkeley, CA 94720-1650; e-mail: keltner@socrates.berkeley.edu.

2. Duchenne smiles involve the action of the *zygomatic major* muscle, which pulls the lip corners up, and the action of the *orbicularis oculi* muscle, which tightens around the eyes and raises the cheeks. The latter muscle is not involved in the non-Duchenne smile. Research has shown that only the Duchenne smile relates to the experience of pleasure.

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Gesture Reflects Language Development: Evidence From Bilingual Children

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Abstract

There is a growing awareness that language and gesture are deeply intertwined in the spontaneous expression of adults. Although some research suggests that children use gesture independently of speech, there is scant research on how language and gesture develop in children older than 2 years. We report here on a longitudinal investigation of the relation between gesture and language development in French-English bilingual children from 2 to 3 1/2 years old. The specific gesture types of iconics and beats correlated

with the development of the children's two languages, whereas pointing types of gestures generally did not. The onset of iconic and beat gestures coincided with the onset of sentence-like utterances separately in each of the children's two languages. The findings show that gesture is related to language development rather than being independent from it. Contrasting theories about how gesture is related to language development are discussed.

Keywords

gesture; bilingualism; language development

When asked what language is, most people would probably say that language is what people speak. They would be in noble company—most scholars since the beginning of philosophical inquiry have assumed that language is conveyed solely by the vocal-auditory pathways. However, there is a growing awareness that language, at least for adults, is deeply intertwined with gestures made with hands and arms (e.g., Kendon, 1980; Krauss, Chen, & Purima, 1996; McNeill, 1992). We report here on a study that investigated when gesture becomes linked with spoken language in human development.

CONCEPTIONS OF CHILDREN'S GESTURE AND SPEECH ONSET

Adults use hand and arm gestures a great deal of the time when speaking, but little is known about how young children use gestures in relation to speech. Studies of