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## Facial Expressions and Emotion

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### Synonyms

[Body language](#); [Nonverbal communication](#)

### Definition

Facial expressions refer to the appearance changes in the face as a consequence of movement of facial muscles. They are one channel of nonverbal communication.

### Introduction

The study of facial expressions of emotion can be traced back to Charles Darwin's seminal work *On the expression of emotions in man and animals* (Darwin 1872/1965). Darwin discussed not only facial expressions but also included vocal expressions, postures, and other appearance changes (such as blushing). Even though his main point

was that emotion expressions serve to prepare the organism for emotion-relevant action, he very much emphasized the communicative value of what he referred to as the *language of emotions*.

Darwin's view of emotion expressions as the visible part of an underlying emotional state was disputed and rejected by those who considered facial expressions as social or cultural signals only. In fact, a number of studies in the early years of the twentieth century came to the conclusion that emotions can only be recognized at chance levels, even though some studies found good recognition rates. The disparity in findings led Bruner and Tagiuri in their 1954 *Handbook of Social Psychology* article to state that "... the evidence for the recognizability of emotional expressions is unclear" (p. 634). They concluded that, if anything, emotional facial expressions are culturally learned. This view remained basically unchanged until 1972 when Ekman, Friesen, and Ellsworth wrote a book to explicitly vindicate Darwin's idea that emotional expressions are universal and directly associated with an underlying emotional state. This book and related research by Ekman and colleagues as well as Izard (e.g., Izard 1971) were successful in making Darwin's view predominant in the field.

Yet, the notion that facial expressions are clearly linked to an underlying emotional state continued to be controversial. Thus, according to Fridlund's Behavioral Ecology Theory (Fridlund 1994) for emotion expressions to be truly useful as

a communicative signal they should be linked to the organism's social motives rather than to quasi-reflexive emotions. He concluded that emotion expressions are to be considered as unrelated to an underlying emotional state and that emotional facial expressions should be viewed as communicative signals only not as a symptom of an underlying state.

This assertion, however, is also problematic. Parkinson (2005), for example, questioned why a specific display should be linked to a specific motive, or why communicating motives should be more adaptive than communicating emotions. Parkinson's extensive review concludes that facial expressions may well serve as both symptoms of an underlying state and communicative signals. This notion was first empirically tested by Hess et al. (1995) for amusement smiles and extended by Jakobs and colleagues to different contexts and emotions (e.g., Jakobs et al. 2001).

This discussion was also informed by the fact that prototypical emotion expressions seem in fact not all that common (see below). This may at first suggest a quandary. Yet, the issue of what facial expressions "truly" express is actually somewhat less important than it may at first seem. Specifically, as is amply demonstrated by the use of facial expressions in the arts, films, and literature, people understand emotional facial expressions to express emotions, and they react in accordance with this understanding (Niedenthal and Brauer 2012). And as long as all concerned behave as if what is expressed by those behaviors we naively call emotion expressions are indeed emotions and behave in accordance, this for all intents and purposes is what is expressed.

## Basic Emotions

The main focus of research on emotional facial expressions has been the study of the so-called basic emotions – a set of six/seven emotions for which a specific prototype expression can be identified. This set can be traced to Paul Ekman (1972) who originally posited hard-wired programs that link the basic emotions (happiness, sadness, fear,

disgust, anger, surprise, and possibly contempt; Ekman and Friesen 1986) to specific (facial) expressions.

Research from a number of domains has found supportive evidence for the notion that facial expressive patterning is systematically linked to certain emotional states – but these findings are not undisputed. Thus, the basic emotions are cross-culturally recognized above chance (e.g., Elfenbein and Ambady 2002; Izard 1971) – but there is also strong evidence for cultural dialects in the expression of these emotions (Elfenbein and Ambady 2002; see also below). Evidence from comparative research suggests overlap between expressions of human and nonhuman primates (e.g., Chevalier-Skolnikoff 1973). However, the interpretation of these findings is complicated by the fact that it is often difficult to assure that expressions actually serve as homologues across species or to ascertain emotional states in animals.

Affective neuroscience has made great strides in identifying emotion-relevant brain regions involved in both emotion recognition and production, but no brain circuits that are uniquely emotional have been identified. Finally, research in infant facial expressions also suggests a genetic basis for some facial expressive displays. In one now classic study Eibl-Eibesfeldt (1973) reports that deaf and blind children show expressions of anger, happiness, and other emotions in suitable situations even though they could not have learned them through observation. Young infants also respond differently to different emotion expressions suggesting an ability to discriminate emotion expressions (see Izard et al. 1995). However, the correspondence between prototype expressions of basic emotions and infants' expressions is often rather low (see Camras et al. 1991).

In sum, no consistent and unequivocal picture of the genetic basis for a limited set of basic emotions emerges. However, the available evidence tends to support the notion of some partial genetic basis of facial patterning as a function of emotion. Yet, more research is needed to better understand the link between facial expression and mental states.

In fact, the research focus on basic emotions has resulted in a relative neglect of the study of

facial expressions of other emotions. Darwin himself discussed a large number of expressions of emotional states including not only states commonly accepted as emotional such as joy and anger but also such states as patience and sulkiness. This points to one problem in this line of research – the question of which states can be considered emotions. In the absence of a consensual definition of the term emotion, the question of whether a specific state is an emotion cannot always be clearly answered. Also, it might not always be the case that an emotion is preferentially expressed facially. Thus, both pride and shame require posture to be well recognized (Tracy and Matsumoto 2008).

In recent years though, efforts have been made to study other emotion expressions. In particular, expressions of different positive emotions and of other mental states such as confusion or worry have been studied. At the same time, the question of whether facial expressions actually signal emotional states and to what degree their interpretation depends on the context in which they are shown has been resurrected (Barrett 2013).

### Prototypical Expressions

Closely linked to the notion of basic emotions is the notion of prototypical expressions. The facial expressions used by Ekman and colleagues for their intercultural research, and the expressions described by Darwin for a wider range of emotions are typically constrained to just one expression to represent any specific emotional state. However, as became evident in the research conducted in the first part of the twentieth century (cf. Bruner and Tagiuri 1954) in a given emotional context a number of different emotion expressions can be shown and more than one expression is typically associated with a given emotion in recognition studies. This raises a question regarding the status of the prototype expression compared to those other expressions.

Specifically, whereas there is evidence that the patterns of emotion expressions described by Darwin and by Ekman and Friesen (1978) as prototypical for certain emotions tend to be highly

recognizable (see above), there is much less evidence that these specific expressions are actually shown by people who report feeling the relevant emotions. That is, whereas a number of studies have found that specific facial displays can be linked to self-reports of specific affective states (e.g., Cacioppo et al. 1986) or to clearly defined emotional situations (Matsumoto and Willingham 2006), others have not (see Fernandez-Dols and Ruiz-Belda 1997). These contradictory findings could of course be attributed to differences in the procedures employed to elicit specific emotions or to differences in the complexity of the experimental situations in which they were elicited. Yet, even across well-controlled studies perfect overlap with prototypes is rarely observed. One explanation may be that facial expressions do not in fact result from emotions but rather from the underlying appraisals of the social context in which the emotion is experienced (Scherer 1992) – and as these have some variation, so should the facial expressions. Appraisal theories of emotion (e.g., Scherer 1987) posit that an emotional state results from the appraisal of the situation according to the motivations, values, and resources of the individual.

It is postulated that there is a direct causal relationship between specific appraisals and specific expressive elements such that each appraisal outcome is associated with a specific facial movement (Scherer 1992). For example, goal obstruction is associated with the drawing together of the eyebrows as suggested by Darwin. As appraisals progress, the cumulative appearance of facial movements constitutes the resulting emotion expression. Support has been found especially for goal obstruction and pleasantness appraisals (e.g., Lanctôt and Hess 2007), but more systematic research is needed to verify this proposal.

From this perspective, emotion prototypes are shown only when a situation is appraised in an emotion-prototypical fashion. However, social interactions are heavily rule based. As such emotion regulation is an integral part of any interaction and is part of the appraisal process. Hence, it should not surprise us that “classic” prototypical expressions are the exception and not the rule in many everyday interactions. Considering emotion

expressions as a readout of appraisals would therefore help to solve some of the most persistent problems in the research on emotion expressions.

### **Moderating Factors for Emotion Expression and Recognition**

A number of influences on the communication of emotions have emerged as important. Of foremost interest was the question of whether there are cultural differences in facial expressions. Another often raised issue regards gender differences, a question that overlaps with the question regarding status differences. These two issues will be briefly outlined next.

#### **Culture: Are Emotional Facial Expressions Universally Recognized?**

Ekman and colleagues (1972) as well as Izard (1971) made strong claims that the so-called basic emotions are universally recognized, based on the notion that the expressions have developed due to evolutionary constraints and hence are in a continuity across mammalian species and universal across human cultures. Yet, a number of discussions in leading journals took issue with the methodology employed in the studies that found support for universality and social constructivist approaches to emotion emphasized differences in emotion vocabularies and disputed universality on these grounds.

#### **Cultural Dialects**

More recently, strong meta-analytical evidence for an intermediate view has emerged and led to the formulation of Elfenbein and Ambady's Dialect Theory (Elfenbein and Ambady 2002). They argue that the universal language of emotion expression has local dialects that differ subtly from each other. A study by Elfenbein et al. (2007) comparing expressions from Quebec and Gabon found evidence for the posited dialects for serenity, shame, contempt, anger, sadness,

surprise, and happiness but not for fear, disgust, or embarrassment. A decoding study also reported by these investigators showed that individuals were better at decoding expressions from their own group but also showed that they were considerably better than chance accuracy for expressions from the other group. Consistent with an appraisal approach to emotional expressions, dialects could be explained by postulating subtle differences in appraisal patterns due to differences in cultural constraints, values, and norms that reflect themselves as differences in facial expression (Hess et al. 2013).

In sum, the evidence to date suggests that emotion expressions are by and large universally recognized – at least with regard to emotions that have been categorized as basic. However, the evidence is also clear that many emotions are not universally expressed in exactly the same manner – albeit with enough overlap that they can be recognized well across cultures and subgroups.

#### **Cultural Rules and Norms**

Stronger impact on emotion expression and recognition is presented by social rules and norms. Norms may have an indirect effect because they guide attention to specific aspects of a situation. In fact, any given situation tends to contain a variety of potential emotion-relevant signals. Thus, in the same situation, different people may focus on different cues, which they also may appraise differently. As different cultures have different value systems, it should not be a surprise that the same situation may elicit different emotions in different cultural contexts.

In this sense, members of collectivist cultures tend to react more to external, socially sharable elements of a situation, whereas members of individualist cultures tend to react more to internal cues (Suh et al. 1998). This notion explains why in North America positive feelings tend to be associated with personal achievement, whereas in Asian countries they are linked to interpersonal events (Uchida et al. 2004). Another example of the indirect influence of norms can be found in

those African countries where a strong belief in witch craft persists. There, events such as sickness and death are often perceived as immoral, unfair, and as caused by human agency and not by fate and hence elicit anger instead of sadness (Scherer 1997).

The most direct impact of norms is posed by those social norms that directly pre- and proscribe certain emotion expressions in certain contexts. Ekman and Friesen (1971) called these norms display rules. These norms are generally perceived as obligatory and their transgression is usually socially punished. They are typically learned early in the socialization process. Importantly, these norms vary with culture. For example, in North America it is more socially acceptable to show anger to close others (friend, family) than to strangers, whereas in Japan the converse is the case (Matsumoto 1990).

Finally social norms do not only regulate who shows which emotion when but also the specific form the emotion expression takes. For example, it is acceptable for women but not for men to cry when angry (Crawford et al. 1992).

## Gender and Status

Differences in the expression and recognition of emotion expressions can also be found with regard to status and gender of both expresser and decoder. Generally speaking, women are more emotionally expressive than men (Fischer 1993). This is best established for smiling – women smile more, and they smile more in situations where they experience negative affect. By contrast, men are perceived and perceive themselves as more likely to express anger. Interestingly, in experimental situations where anger is induced, this difference disappears (Fischer 1993).

The reason for these well-established gender differences can be traced to two – nonexclusive – sources: differences in status and differences in social roles. Thus, Henley (1995) emphasizes the inherent difference in status between men and women, which maintains to this day even in egalitarian cultures. Henley bases her argument on the assumption that the human smile is a homologue

of the primate *silent-bared-teeth display*, which typically is used as a sign of submission. From Henley's perspective smiles also signal submission and hence women as the lower status gender tend to smile more. This model may be a bit too simplistic though. On one hand people who smile tend to be rated as more dominant (Knutson 1996) and there is only limited evidence linking smiling as such to status and power. In fact, there are many different forms of smiles which serve different social functions, with the submissive smile being just one (Niedenthal et al. 2010). In this vein, Brody and Hall (2000) propose a more complex model, which includes social norms regarding gender-adequate behavior and social expectations but also a stronger trend toward positive affect experience in women.

As regards anger expressions in men, status seems to be more clearly relevant. Thus, Averill (1997) considers power and “entrance requirement” for anger. The notion being that the anger display of a person who does not have power to back up the threat is less effective and in fact less legitimate. As an example, one may think of the angry temper tantrum of a child versus an angry expression of a member of a biker gang. This view concords with the position of appraisal theories of emotion which consider coping potential – the power to redress a situation – as the key appraisal for anger (Scherer 1987).

## Individual Differences in Emotional Expressivity

Despite the fact that all people tend to express their emotions outwardly, they also differ in the extent to which they tend to do so. Emotional expressiveness refers to the general disposition toward expressing different emotions outwardly including by facial expressions (Kring et al. 1994). Whereas one reason for differences in expressivity stems from personality differences, other factors such as gender, status, and culture also can determine the extent to which persons tend to outwardly express their emotions. For example, generally speaking, women are more emotionally expressive than men (Fischer 1993).

## Conclusions

Facial expressions of emotions are both symptoms of an underlying emotional state and communicative signals. Whereas there are characteristic expressions associated with specific emotions which are also highly recognizable across cultures and contexts, people rarely express their emotions by showing these characteristics expressions. In addition, contextual factors strongly affect both the expression and detection of expressions of emotions by their observers.

## Cross-References

- ▶ [Basic Emotions](#)
- ▶ [Body Language](#)
- ▶ [Darwin, Charles](#)
- ▶ [Ekman, Paul](#)
- ▶ [Emotional Expressivity](#)
- ▶ [Emotional Intelligence](#)
- ▶ [Person Perception and Accuracy](#)
- ▶ [Social Emotional Learning \(SEL\) Programs](#)

## References

- Averill, J. R. (1997). The emotions: An integrative approach. In R. Hogan, J. A. Johnson, & S. R. Briggs (Eds.), *Handbook of personality psychology* (pp. 513–541). San Diego: Academic.
- Barrett, L. F. (2013). Psychological construction: The Darwinian approach to the science of emotion. *Emotion Review*, 5(4), 379–389.
- Brody, L. R., & Hall, J. A. (2000). Gender, emotion, and expression. In M. Lewis & J. M. Haviland (Eds.), *Handbook of emotions* (2nd ed., pp. 447–460). New York: Guilford Press.
- Bruner, J. S., & Tagiuri, R. (1954). The perception of people. In G. Lindzey (Ed.), *Handbook of social psychology* (Vol. 2, pp. 634–655). Cambridge, MA: Addison-Wesley Publishing.
- Cacioppo, J. T., Petty, R. E., Losch, M. E., & Kim, H. S. (1986). Electromyographic activity over facial muscle regions can discriminate the valence and intensity of affective reactions. *Journal of Personality and Social Psychology*, 50(2), 260–268.
- Camras, L. A., Malatesta, C., & Izard, C. E. (1991). The development of facial expression in infancy. In R. Feldman & B. Rime (Eds.), *Fundamentals of non-verbal behavior* (pp. 73–105). New York: Cambridge University Press.
- Chevalier-Skolnikoff, S. (1973). Facial expression of emotion in nonhuman primates. In P. Ekman (Ed.), *Darwin and facial expression* (pp. 11–83). New York: Academic.
- Crawford, J., Clippax, S., Onyx, J., Gault, U., & Benton, P. (1992). *Emotion and gender: Constructing meaning from memory*. London: Sage.
- Darwin, C. (1872/1965). *The expression of the emotions in man and animals*. Chicago: The University of Chicago Press. (Originally published, 1872).
- Eibl-Eibesfeld, I. (1973). The expressive behavior of the deaf-and-blind born. In M. V. Cranach & I. Vine (Eds.), *Social communication and movement* (pp. 163–194). London: Academic.
- Ekman, P., & Friesen, W. V. (1971). Constants across cultures in the face and emotion. *Journal of Personality and Social Psychology*, 17, 124–129.
- Ekman, P., & Friesen, W. V. (1978). *The facial action coding system: A technique for the measurement of facial movement*. Palo Alto: Consulting Psychologists Press.
- Ekman, P., & Friesen, W. V. (1986). A new pan-cultural facial expression of emotion. *Motivation and Emotion*, 10, 159–168.
- Ekman, P., Friesen, W. V., & Ellsworth, P. (1972). *Emotion in the human face: Guidelines for research and an integration of findings*. New York: Pergamon Press.
- Elfenbein, H. A., & Ambady, N. (2002). On the universality and cultural specificity of emotion recognition: A meta-analysis. *Psychological Bulletin*, 128, 203–235.
- Elfenbein, H. A., Beaupré, M. G., Levesque, M., & Hess, U. (2007). Toward a dialect theory: Cultural differences in the expression and recognition of posed facial expressions. *Emotion*, 7, 131–146. doi:10.1037/1528-3542.7.1.131.
- Fernandez-Dols, J. M., & Ruiz-Belda, M. A. (1997). Spontaneous facial behavior during intense emotional episodes: Artistic truth and optical truth. In J. A. Russell & J. M. Fernandez-Dols (Eds.), *The psychology of facial expression*. Cambridge, UK: Cambridge University Press.
- Fischer, A. (1993). Sex differences in emotionality: Fact or stereotype? *Feminism & Psychology*, 3, 303–318.
- Fridlund, A. J. (1994). *Human facial expression: An evolutionary view*. New York: Academic.
- Henley, N. M. (1995). Body politics revisited: What do we know today? In P. J. Kalbfleisch & M. J. Cody (Eds.), *Gender, power, and communication in human relationships* (pp. 27–61). Hillsdale: Lawrence Erlbaum Associates.
- Hess, U., Kappas, A., & Banse, R. (1995). The intensity of facial expressions is determined by underlying affective state and social situation. *Journal of Personality and Social Psychology*, 69, 280–288.
- Hess, U., Thibault, P., & Levesque, M. (2013). Where do emotional dialects come from? A comparison of the understanding of emotion terms between Gabon and Quebec. In J. R. J. Fontaine, K. R. Scherer, &

- C. Soriano (Eds.), *Components of emotional meaning: A sourcebook*. Oxford: Oxford University Press.
- Izard, C. E. (1971). *The face of emotion*. New York: Appleton-Century-Crofts.
- Izard, C. E., Fantauzzo, C. A., Castle, J. M., Haynes, M., Rayias, M. F., & Putnam, P. H. (1995). The ontogeny and significance of infants' facial expressions in the first 9 months of life. *Developmental Psychology, 31*, 997–1013.
- Jakobs, E., Manstead, A. S. R., & Fischer, A. H. (2001). Social context effects on facial activity in a negative emotional setting. *Emotion, 1*, 51–69.
- Knutson, B. (1996). Facial expressions of emotion influence interpersonal trait inferences. *Journal of Nonverbal Behavior, 20*, 165–182.
- Kring, A. M., Smith, D. A., & Neale, J. M. (1994). Individual differences in dispositional expressiveness: Development and validation of the emotional expressivity scale. *Journal of Personality and Social Psychology, 66*(5), 934–949. doi:10.1037/0022-3514.66.5.934.
- Lanctôt, N., & Hess, U. (2007). The timing of appraisals. *Emotion, 7*, 207–212.
- Matsumoto, D. (1990). Cultural similarities and differences in display rules. *Motivation and Emotion, 14*, 195–214.
- Matsumoto, D., & Willingham, B. (2006). The thrill of victory and the agony of defeat: Spontaneous expressions of medal winners of the 2004 Athens Olympic games. *Journal of Personality and Social Psychology, 91*, 568–581.
- Niedenthal, P. M., & Brauer, M. (2012). Social functionality of human emotion. *Annual Review of Psychology, 63*(1), 259–285. doi:10.1146/annurev.psych.121208.131605.
- Niedenthal, P. M., Mermillod, M., Maringer, M., & Hess, U. (2010). The simulation of smiles (SIMS) model: Embodied simulation and the meaning of facial expression. *Behavioral and Brain Sciences, 33*, 417–433.
- Parkinson, B. (2005). Do facial movements express emotions or communicate motives? *Personality and Social Psychology Review, 9*, 278–311.
- Scherer, K. R. (1987). Towards a dynamic theory of emotion: The component process model of affective states. *Geneva Studies in Emotion and Communication, 1*, 1–98. Retrieved from <http://www.affective-sciences.org/node/402>.
- Scherer, K. R. (1992). What does facial expression express? In K. Strongman (Ed.), *International review of studies on emotion* (Vol. 2, pp. 139–165). Chichester: Wiley.
- Scherer, K. R. (1997). The role of culture in emotion-antecedent appraisal. *Journal of Personality and Social Psychology, 73*, 902–922.
- Suh, E., Diener, E., Oishi, S., & Triandis, H. C. (1998). The shifting basis of life satisfaction judgments across cultures – Emotions versus norms. *Journal of Personality and Social Psychology, 74*(2), 482–493.
- Tracy, J. L., & Matsumoto, D. (2008). The spontaneous expression of pride and shame: Evidence for biologically innate nonverbal displays. *Proceedings of the National Academy of Sciences, 105*(33), 11655–11660.
- Uchida, Y., Norasakkunkit, V., & Kitayama, S. (2004). Cultural constructions of happiness: Theory and empirical evidence. *Journal of Happiness Studies, 5*, 223–239.