

Facial Expressions Do Not Reveal Emotions

Do your facial movements broadcast your emotions to other people? If you think the answer is yes, think again. This question is under contentious debate. Some experts maintain that people around the world make specific, recognizable faces that express certain emotions, such as smiling in happiness, scowling in anger and gasping with widened eyes in fear. They point to hundreds of studies that appear to demonstrate that smiles, frowns, and so on are universal facial expressions of emotion. They also often cite Charles Darwin's 1872 book *The Expression of the Emotions in Man and Animals* to support the claim that universal expressions evolved by natural selection.

This debate is not just academic; the outcome has serious consequences. Today you can be turned down for a job because a so-called emotion-reading system watching you on camera applied artificial intelligence to evaluate your facial movements unfavorably during an interview. In a U.S. court of law, a judge or jury may sometimes hand down a harsher sentence, even death, if they think a defendant's face showed a lack of remorse. Children in preschools across the country are taught to recognize smiles as happiness, scowls as anger and other expressive stereotypes from books, games and posters of disembodied faces. And for children on the autism spectrum, some of whom have difficulty perceiving emotion in others, these teachings do not translate to better communication.

Darwin's *Expression* suggests that instances of a particular emotion, such as anger, share a distinct, immutable, physical cause or state—an essence—that makes the instances similar even if they have superficial differences. Scientists have proposed a variety of essences, some of which are easily seen, such as facial movements, and others, such as complex, intertwined patterns of heart rate, breathing and body temperature, that are observed only with specialized instruments. This belief in essences, called essentialism, is compellingly intuitive. It's also pernicious because it is virtually impossible to prove that an essence doesn't exist. People who believe in essences but fail to observe them despite repeated attempts often continue to believe in them anyway. Researchers, in particular, tend to justify their belief by suggesting that tools and methods are not yet sufficient to locate the essences they seek.

A solution to this conundrum can be found in Darwin's more famous book *On the Origin of Species*, written 13 years before *Expression*. Ironically, it is celebrated for helping biology "escape the paralyzing grip of essentialism," according to heralded biologist Ernst Mayr. Before *Origin* was published, scholars believed that each biological species had an ideal form, created by God, with defining

properties—essences—that distinguished it from all other species. Think of this as the “dog show” version of biology. In a dog show, each competitor is judged against a hypothetical ideal dog. Deviation from the ideal is considered error. Darwin’s *Origin* proposed, radically, that a species is a vast population of varied individuals with no essence at its core. The ideal dog doesn’t exist—it is a statistical summary of many diverse dogs. Variation is not error; it is a necessary ingredient for natural selection by the environment. When it came to emotions, however, Darwin fell prey to essentialism, ignoring his most important discovery.

The power of essentialism led Darwin to some beautifully ridiculous ideas about emotion, including that emotional imbalance can cause frizzy hair and that insects express fear and anger by frantically rubbing their body parts together.

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