The face can express who we are as well as what we mean to say.

### Taking life at more than face value

By Prof. Jill A. Helms, U.S.

We come into this world primed to connect with the faces around us. This ability is literally hardwired into our neural circuitry. There is a specialized region in our brain, located in the temporal lobe in a region called the fusiform gyrus, that is filled with neurons that preferentially fire whenever a face comes into view. Within minutes of birth, babies begin using this brain region; studies demonstrate that even very young infants show a strong preference for looking at faces over all other objects.

The brain is responsible for coordinating every single activity that keeps you alive; and some terribly precious real estate in the brain is allocated to a pint-sized structure whose only apparent purpose is to become activated in response to a face. Since evolution is constantly shaping the brain and adapting its function to ensure our survival, the fact that a brain region is dedicated to this task indicates that facial recognition must be essential for our survival.

**But why?**

One reason is that the face is the means by which we communicate. Thirteen years after On the Origin of Species was published, Charles Darwin addressed this very question in The Expression of the Emotions in Man and Animals. In that book, Darwin wrote, “The welfare of mankind depends on the expression and recognition of emotion.”

And if you do not believe Darwin, then witness any adult with an infant. Of all the motor skills that infants must master in the first few years of life, none is as important as mimicking the facial gestures of people around them. Even at a very early age, humans devote a great deal of attention and energy to teaching infants the movements required for facial expression. In fact, we know that children who are incapable of or uninterested in learning this task are often later diagnosed with conditions such as autism.

This focus on the face ultimately translates into our faces becoming central to our sense of identity. One does not need to look much further than children’s drawings to see this. Ask a 5-year-old to draw a human being and you will get a stick figure with a lollipopsized head, complete with a face. The face defines the entity. Illustrators of children’s books exploit this very characteristic: Everything of emotional importance to a child is illustrated with a face. The sun has a face. The moon has a face. Thomas the Tank Engine has a face. It is a way to personalize the world.

**Beauty, a sign of well-being**

The face is not only important as a means to communicate; it also serves to advertise our health, youth and vitality. A face that projects an image of great health indicates our health, youth and vitality. A face that defies time is likely a sign of health and vitality. A face that is wrinkle-free, smooth, and evenly colored projects an image of great health.

### Reverse side of the coin

Diseases and injuries can create asymmetries and imbalances in the proportions of the face that can be fatal for social interaction. Because the face is often the calling card of a disease, people often intuitively shy away from disfigured people. Looking different on the outside, of course, does not mean that you are different on the inside. Nevertheless, there is no denying that a physical transformation of our face powerfully affects the way we view ourselves and the way others respond to us.

Although beauty is best defined by the kindness, compassion, intelligence and warmth of an individual, it is also expressed as optimism and perseverance in the face of adversity. For those who have suffered a mishap or a disease that leaves them looking different, reconstructive surgery and/or prosthetics supported by osseointegrated implants can be decisive for living a good life outside the confines of the home.

**About the Author**

A member of the scientific committee for the 2016 Nobel Biocare Global Symposium and a professor in the Department of Surgery at Stanford University, Dr. Jill A. Helms carries out research in the field of regenerative medicine, collaborating with experts in bioengineering, materials science, physics and the life sciences. In this article, she explains why reconstructive craniofacial surgery can be decisive for the well-being of a deformed or injured patient.

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