

# How to Read a Face

The emerging field of social neuroscience is based on the idea that human brains are 'wired to connect.'

BY ANNE UNDERWOOD

CARL MARCI WAS JUBILANT. After a year in therapy, trying to decide whether to propose to his girlfriend, he had finally taken the plunge—and she had said yes! As Marci recounted the story to his shrink days later, his therapist appeared to share the triumph with him. And it wasn't just an act. Marci, a psychiatrist himself at Massachusetts General Hospital, had wired himself and his therapist to special equipment that records heart-rate variability and "skin conductivity"—two measures that, taken together, indicate the ebb and flow of emotional arousal. When he examined the data later, Marci was stunned. Lines on the two charts rose and fell in perfect unison, revealing that his therapist was truly sharing his excitement. "It's no accident that we speak of being on the same wavelength with someone," says Marci. "In a moment like that, you really are."

That is precisely the point that science writer Daniel Goleman makes in his new book, "Social Intelligence: The New Science of Human Relationships." As Goleman contends, human brains are "wired to connect," and to a much greater extent than we ever realized. It's not just that laughter and bad moods are "contagious." Empathizing with a friend, whether in grief or elation, can activate the very same circuits in our own brains as in our companion's. Eleven years ago, when Goleman published his best seller "Emotional Intelligence," no one understood on a neuronal level how social interactions actually worked—how the brain processed rejection, for example, or experienced loneliness. Now, thanks to brain imaging and other advanced technologies, scientists from many disciplines are joining forces to decode what Goleman dubs our "neural WiFi." Their findings could have profound implications for the future.

The fledgling field devoted to these questions is called social neuroscience. Already researchers are learning how conscious and unconscious processes help us scan a person's face for emotions, calibrate our own responses and manage nonverbal communications. And they're confirming things we've known only



intuitively until now—for example, that rejection hurts. Naomi Eisenberger and Matthew Lieberman at the University of California, Los Angeles, have shown through brain scans that rejection actually registers in one of the key areas of the brain that responds to physical pain. Now they're finding that this pain-related brain activity is greater in people who lack strong social support. "When you know that, it's hard to argue that social pain is something you should just get over," says Lieberman.

In the course of a lifetime, such interactions have physical effects that can influence our health. Researchers in Richard Davidson's lab at the University of Wisconsin-Madison have demonstrated

that support from a loved one during a stressful task not only feels good, but also calms the brain circuits that produce stress hormones. Chronic exposure to high levels of these hormones is known to have damaging effects throughout the body, particularly in the cardiovascular system, so reducing them can only be helpful. "When you realize that trivial interactions can affect a person's physiology, somehow you have to take them more seriously," says Goleman.

And in his mind, that creates new responsibilities. Bosses, for example, bear a new burden for putting employees in the optimal state of mind to work, by being positive and supportive. "Emotions flow most strongly from the most powerful person in the room to others," he says. The reason is simple—employees are most sensitive to what the boss says and does. Teachers, too, should not simply assume that students' self-defeating behaviors are inevitable. Goleman is an advocate of social- and emotional-learning programs

that teach kids how to help control their impulses and resist peer pressure. Studies show that schools with these programs are bringing down violence, substance abuse and unwanted pregnancies—and boosting test scores. "The good news is that these circuits are the last part of the brain to mature, developing well into our 20s," says Goleman. "Even after that, you can improve. It just takes more effort." And that

means there's hope for a lot of us. Next spring, Marci and a colleague are even launching an empathy course for medical students at Harvard. Maybe the next generation of physicians will be just as empathetic as his therapist was.

**BRAIN LINKS**

**EMPATHY:** Sharing the emotions of others, being sensitive to their feelings

**ATTUNEMENT:** Paying close attention, seeking to understand other people

**SYNCHRONY:** Smooth interaction at the nonverbal level

Read an excerpt from "Social Intelligence" at [xtra.Newsweek.com](http://xtra.Newsweek.com)