Talking the pain away

Brain research indicates putting problems into words eases emotional distress.

BY LEA WINERMAN
***Monitor* staff**

Tell your troubles to a Guatemalan worry doll, place it beneath your pillow and, according to legend, those worries will be gone by morning. That's just one example of the culture-spanning idea that putting problems into words can blunt those problems' emotional impact. Centuries of thinkers—from Spinoza to William James to every psychologist who practices talk therapy—have recognized this peculiar power of language, according to UCLA psychologist Matthew Lieberman, PhD.

"There's this idea that putting bad feelings into words can help wash worries away," said Lieberman at APA's 2006 Annual Convention. He described how he and his colleagues are investigating that idea using brain imaging.

In a study published in *Science* (Vol. 302, No. 5643, pages 290–292) in 2003, Lieberman and his colleague used functional magnetic resonance imaging (fMRI) to scan the brains of participants as they played a computer game called "cyberball." In cyberball, participants think that they're playing an onscreen version of catch with two other people who are using computers linked to their own. For a while the two other people throw the ball regularly to the participant's onscreen character, but after a while they stop and begin to throw the ball only to each other.

In reality, the other people don't exist and the "game" is simply an automatic computer program, but the participant doesn't know this and feels the sting of social rejection. Using fMRI, the researchers found that this social rejection activated an area of the brain that also lights up in response to physical pain—the anterior cingulate cortex.

However, they also found that people who had relatively less activity in that area—and who reported feeling relatively less distress—had more activity in the right ventral lateral prefrontal cortex, an area of the brain associated with verbalizing thoughts and language production. So, according to Lieberman, this suggests that putting feelings into words may activate this part of the prefrontal cortex, which may in turn suppress the area of the brain that produces emotional distress.

In another study, to be published in an upcoming issue of *Psychological Science,* Lieberman and his colleagues tested their language hypothesis more directly. They asked 30 participants to view pictures of angry, scared or happy-looking faces. Half of the time the participants tried to match the target face to another picture of a face with a similar expression. The other half of the time, they tried to match the face to a word that correctly labeled its emotion.

Using fMRI, the researchers found that when the participants labeled the faces' emotions using words, they showed less activity in the amygdala—an area of the brain associated with emotional distress. At the same time, they showed more activity in the right ventral lateral prefrontal cortex—the same language-related area that showed up in the cyberball study.

So, again, this suggests that verbalizing an emotion may activate the right ventral lateral prefrontal cortex, which then suppresses the areas of the brain that produce emotional pain.

"[In talk therapy] we tend to focus primarily on content and enhanced understandings and changed understandings," said Lieberman. "But it's not entirely irrelevant that they all involve putting feelings into words."Ψ

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