The pain of social rejection

As far as the brain is concerned, a broken heart may not be so different from a broken arm.

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Anyone who lived through high school gym class knows the anxiety (http://www.apa.org/topics/anxiety/index.aspx) of being picked last for the dodgeball team. The same hurt feelings bubble up when you are excluded from lunch with co-workers, fail to land the job you interviewed for or are dumped by a romantic partner.

Rejection feels lousy.

Yet for many years, few psychologists tuned into the importance of rejection. “It’s like the whole field missed this centrally important part of human life,” says Mark Leary, PhD, a professor of psychology and neuroscience at Duke University. That’s changed over the last decade and a half, as a growing number of researchers have turned their eyes toward this uncomfortable fact of life. “People have realized just how much our concern with social acceptance spreads its fingers into almost everything we do,” he says.

As researchers have dug deeper into the roots of rejection, they’ve found surprising evidence that the pain of being excluded is not so different from the pain of physical injury. Rejection also has serious implications for an individual’s psychological state and for society in general. Social rejection can influence emotion, cognition and even physical health. Ostracized people sometimes become aggressive and can turn to violence (http://www.apa.org/topics/violence/index.aspx). In 2003 Leary and colleagues analyzed 15 cases of school shooters, and found all but two suffered from social rejection (Aggressive Behavior, 2003).

Clearly, there are good reasons to better understand the effects of being excluded. “Humans have a fundamental need to belong. Just as we have needs for food and water, we also have needs for positive and lasting relationships,” says C. Nathan DeWall, PhD, a psychologist at the University of Kentucky. “This need is deeply rooted in our evolutionary history and has all sorts of consequences for modern psychological processes.”

Pain in the brain

As clever as human beings are, we rely on social groups for survival. We evolved to live in cooperative societies, and for most of human history we depended on those groups for our lives. Like hunger or thirst, our need for acceptance emerged as a mechanism for survival. “A solitary human being could not have survived during the six million years of human evolution while we were living out there on the African savannah,” Leary says.

With today’s modern conveniences, a person can physically survive a solitary existence. But that existence is probably not a happy one. Thanks to millions of years of natural selection, being rejected is still painful. That’s not just a metaphor. Naomi Eisenberger, PhD, at the University of California, Los Angeles, Kipling Williams, PhD, at Purdue University, and colleagues found that social rejection activates many of the same brain regions involved in physical pain (Science, 2003).

To study rejection inside an fMRI scanner, the researchers used a technique called Cyberball, which Williams designed following his own experience of being suddenly excluded by two Frisbee players at the park. In Cyberball, the subject plays an online game of catch with two other players. Eventually the two other players begin throwing the ball only to each other, excluding the subject. Compared with volunteers who continue to be included, those who are rejected show increased activity in the dorsal anterior cingulate and the anterior insula — two of the regions that show increased activity in response to physical pain, Eisenberger says. As far as your brain is concerned, a broken heart is not so different from a broken arm.

Those findings led DeWall, Eisenberger and colleagues to wonder: If social rejection aches like physical pain, can it be treated like physical pain? To find out, they assigned volunteers to take over-the-counter acetaminophen (Tylenol) or a placebo daily for three weeks. Compared with the placebo group, volunteers who took the drug recounted fewer episodes of hurt feelings in daily self-reports. Those reports were backed by an fMRI study, which found that people who had taken acetaminophen daily for three weeks had less activity in the pain-related brain regions when rejected in Cyberball, in contrast to those taking a placebo (Psychological Science, 2010).

The same patterns are seen in situations of real-world rejection, too. University of Michigan psychologist Ethan Kross, PhD, and
colleagues scanned the brains of participants whose romantic partners had recently broken up with them. The brain regions associated with physical pain lit up as the participants viewed photographs of their exes (Proceedings of the National Academy of Sciences, 2011).

The link between physical and social pain might sound surprising, but it makes biological sense, DeWall says. “Instead of creating an entirely new system to respond to socially painful events, evolution simply co-opted the system for physical pain,” he says. “Given the shared overlap, it follows that if you numb people to one type of pain, it should also numb them to the other type of pain.”

Lashing out
Being on the receiving end of a social snub causes a cascade of emotional and cognitive consequences, researchers have found. Social rejection increases anger, anxiety, depression, jealousy and sadness. It reduces performance on difficult intellectual tasks, and can also contribute to aggression and poor impulse control, as DeWall explains in a recent review (Current Directions in Psychological Science, 2011). Physically, too, rejection takes a toll. People who routinely feel excluded have poorer sleep quality, and their immune systems don’t function as well as those of people with strong social connections, he says.

Even brief, seemingly innocuous episodes of rejection can sting. In one recent study, Williams, Eric Wesselmann, PhD, of Purdue University, and colleagues found that when participants passed a stranger who appeared to look “through” them rather than meeting their gaze, they reported less social connection than did people who made eye contact with a passing stranger (Psychological Science, 2012).

In fact, it’s remarkably hard to find situations in which rejection isn’t painful, Williams says. He wondered whether people would be hurt if they were rejected by a person or group they disliked. Using his Cyberball model, he found that African- American students experienced the same pain of rejection when they were told that the people rejecting them were members of the Ku Klux Klan, a racist group. In other studies, participants earned money when they were rejected, but not when they were accepted. The payments did nothing to dampen the pain of exclusion. “No matter how hard you push it, people are hurt by ostracism,” he says.

Fortunately, most people recover almost immediately from these brief episodes of rejection. If a stranger fails to look you in the eye, or you’re left out of a game of Cyberball, you aren’t likely to dwell on it for long. But other common rejections — not being invited to a party, or being turned down for a second date — can cause lingering emotions.

After the initial pain of rejection, Williams says, most people move into an “appraisal stage,” in which they take stock and formulate their next steps. “We think all forms of ostracism are immediately painful,” he says. “What differs is how long it takes to recover, and how one deals with the recovery.”

People often respond to rejection by seeking inclusion elsewhere. “If your sense of belonging and self-esteem have been thwarted, you’ll try to reconnect,” says Williams. Excluded people actually become more sensitive to potential signs of connection, and they tailor their behavior accordingly. “They will pay more attention to social cues, be more likable, more likely to conform to other people and more likely to comply with other people’s requests,” he says.

Yet others may respond to rejection with anger and lashing out. If someone’s primary concern is to reassert a sense of control, he or she may become aggressive as a way to force others to pay attention. Sadly, that can create a downward spiral. When people act aggressively, they’re even less likely to gain social acceptance.

What causes some people to become friendlier in response to rejection, while others get angry? According to DeWall, even a glimmer of hope for acceptance can make all the difference. In a pair of experiments, he and his colleagues found that students who were accepted by no other participants in group activities behaved more aggressively — feeding hot sauce to partners who purportedly disliked spicy foods, and blasting partners with uncomfortably loud white noise through headphones — than students accepted by just one of the other participants (Social Psychological and Personality Science, 2010).

Social pain relief
It may take time to heal from a bad break-up or being fired, but most people eventually get over the pain and hurt feelings of rejection. When people are chronically rejected or excluded, however, the results may be severe. Depression, substance abuse and suicide are not uncommon responses. “Long-term ostracism seems to be very devastating,” Williams says. “People finally give up.”

In that case, psychologists can help people talk through their feelings of exclusion, DeWall says.

“A lot of times, these are things people don’t want to talk about,” he says. And because rejected people may adopt behaviors, such as aggression, that serve to further isolate them, psychologists can also help people to act in ways that are more likely to bring them social success.

The pain of non-chronic rejection may be easier to alleviate. Despite what the fMRI scanner says, however, popping two Tylenols probably isn’t the most effective way to deal with a painful episode of rejection. Instead, researchers say, the rejected should seek out healthy, positive connections with friends and family.

That recommendation squares with the neural evidence that shows positive social interactions release opioids for a natural mood boost, Eisenberger says. Other activities that produce opioids naturally, such as exercise, might also help ease the sore feelings that
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Putting things into perspective also helps, Leary says. True, rejection can sometimes be a clue that you behaved badly and should change your ways. But frequently, we take rejection more personally than we should. "Very often we have that one rejection, maybe we didn’t get hired for this job we really wanted, and it makes us feel just lousy about our capabilities and ourselves in general," Leary says. "I think if people could stop overgeneralizing, it would take a lot of the angst out of it."

Next time you get passed over for a job or dumped by a romantic partner, it may help to know that the sting of rejection has a purpose. That knowledge may not take away the pain, but at least you know there’s a reason for the heartache. “Evolutionarily speaking, if you’re socially isolated you’re going to die,” Williams says. “It’s important to be able to feel that pain.”

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