
COMMENTARIES

Social Rejection Can Reduce Pain and Increase Spending: Further Evidence That Money, Pain, and Belongingness Are Interrelated

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At first blush, money, pain, and social support would seem to be worlds apart. Pain is a fundamental biological fact built into the bodies of almost all animals. Social support, reflected in the subjective impact of social acceptance and rejection, is limited to social animals (of which there are many varieties, to be sure) and is a mixture of biological and social factors. Money, meanwhile, is limited to human beings who live in culture. It is entirely a cultural invention.

Despite being based in entirely different kinds of reality and different spheres of life, money, pain, and social support have surprisingly strong interrelationships, as shown in the review by Zhou and Gao (this issue). In this commentary, we seek to build on their analysis by developing two crucial points. First, the view that social rejection brings pain is too broad and simple a formulation. We present and integrate evidence that the immediate reaction to social exclusion often includes a temporary reduction of the capacity to feel pain. Second, the formula that rejected people want and cling to money is also overly simple, and we present evidence that rejected people sometimes spend more freely than others. Despite these seeming contradictions, we argue that these findings actually fit well with the broad theoretical themes that Zhou and Gao raise, even though some refinements are necessary.

Social Rejection and Numbness to Pain

Zhou and Gao (this issue) raise the question why social exclusion might lead to a reduction in pain. As

evidence that exclusion reduces pain, they cite a secondary source referring to an unpublished study by MacDonald, Kingsbury, and Shaw (2005), in which apparently some individuals, although not others, exhibited a decrease in sensitivity to pain after being socially rejected.

A much more thorough investigation of the effects of social exclusion and rejection on pain sensitivity by DeWall and Baumeister (2006) showed that laboratory manipulations of social exclusion caused a broad decrease in pain sensitivity across all participants (i.e., not dependent on individual differences, as Zhou and Gao suggest). Socially excluded participants took longer to identify a steadily increasing stimulus as painful, and likewise they took longer to reach the point at which they found it intolerable. Thus, physically identical stimuli were tolerated by the recently rejected persons as nonpainful, whereas other participants found them painful.

How can these findings be reconciled with the view that rejection is painful? Zhou and Gao's theory is actually strengthened by these findings. Experiences of physical injury and intense pain cause the body to react with shock, and one aspect of that is a temporary reduction in sensitivity to pain. Most likely the evolutionary basis for this, we suspect, is that a response blocking pain (e.g., by release of opioids) might have enabled a newly injured animal to cope with the crisis that caused the injury. For example, an animal that is fighting a desperate battle for survival, or who has been physically injured coping with fire or flood, may need to use all its cognitive and physical resources to get to

safety. Hence it would be advantageous for the pain to hold off to some degree for a time. In contrast, animals that are convulsed by intense pain would be hampered in their ability to continue the fight or to escape the crisis, and the pain would therefore contribute to their possible death.

The brain imaging work cited by Zhou and Gao (this issue), such as the imaging studies by Eisenberger, Lieberman, and Williams (2003), has often been interpreted to indicate that rejection is actually painful. The fact that the same part of the brain responds to both physical and social injury does not mean that social injury produces physical pain, however. On this, we appreciate the characterization they quote from MacDonald and Leary (2005), which is that social exclusion produces an emotional experience akin to pain without the physical sensation of pain. Yet on this, too, the initial reaction may be one of numbness. Many studies have found that social exclusion produces a response of no emotion (e.g., DeWall & Baumeister, 2006; see also Baumeister, DeWall, & Vohs, in press).

Thus, what we think happens is that social rejection is perceived by brain and other mechanisms as similar to physical injury. The coping response involves releasing opioids or other chemicals that temporarily produce a numbness to further (actual) physical pain. We think this physical numbness also creates a kind of emotional shock state, so the person does not feel much emotion and loses various other emotional faculties, including empathy.

Further work (as yet unpublished) has extended the link between physical pain and social exclusion. DeWall et al. (2008a) randomly assigned participants to take either a placebo or the pain medication acetaminophen (Tylenol) twice daily for 21 days. As one would expect, Tylenol reduced the amount of daily physical pain that people experienced. More important and relevant, participants who took the Tylenol also gradually reported less intense hurt feelings. This finding has direct relevance to social exclusion, as hurt feelings are considered a core emotional marker of social exclusion (Leary, Springer, Negel, Ansell, & Evans, 1997). Other work has shown that taking Tylenol reduces the negative consequences of perceived social exclusion on social self-esteem, presumably because Tylenol numbs people to the pain of perceived social exclusion (DeWall et al., 2008b). A separate study in that investigation extended this finding and showed that Tylenol increased social self-esteem among people who chronically perceive threat in their environment, namely, highly anxious people. The effect of Tylenol on self-esteem was specific to social self-esteem. Neither study showed effects on measures of performance self-esteem or appearance self-esteem. These findings indicate that reducing the sensitivity to physical pain makes people less vulnerable to negative reactions stemming from social events.

Additional work has explored how Tylenol impacts the perseverance of negative reactions related to social interactions. DeWall et al. (2008) tested whether Tylenol would reduce the day-to-day carryover of how socially anxious people felt in their daily interactions. Among participants who took a placebo, carryover effects were strong: Feeling anxiety on one day significantly increased the likelihood of feeling anxiety the next day. Tylenol eliminated this effect. People did feel anxiety on some days but apparently the recovered from it (aided by the painkiller medication), so there was no discernible effect or residue on the next day. The implication is that Tylenol increases how quickly the pain of social anxiety wears away, which reduces negative emotional spillover onto one's mood for the next day.

These studies thus show further crossovers between physical and social pain. A standard medication designed to reduce physical pain seems to affect the person's social well-being. In particular, it reduces people's susceptibility to distress from social events.

Social Rejection Increases Spending

A second set of recent (and as yet unpublished) findings can help to elaborate the theory about money and social exclusion. The formula that socially rejected people hang on to their money is too simple. After all, there is at least some basis for a contrary prediction. Rejected people tend to exhibit deficits in self-regulation (Baumeister, DeWall, Ciarocco, & Twenge, 2005), and poor self-regulation could lead to higher spending.

The question of whether rejected people retain or spend their money was the focus of a series of studies by Mead, Baumeister, Vohs, and Stillman (2008). They found neither a broad pattern of tightwad miserliness nor a broad pattern of spendthrift underregulation among rejected persons. Instead, social exclusion led to a strategically intelligible pattern of selective spending. Rejected people were often more willing than others to spend money—but mainly on items that held some promise of enhancing their social appeal and making them attractive to others.

In the first study by Mead et al., social exclusion caused people to increase how much they said they would be willing to pay for some items but not others. They were willing to pay higher prices, indeed higher even than the manufacturer's suggested retail price, for products that express messages of status and interpersonal appeal, such as a Rolex watch, an Audi car, and diamond earrings. These findings directly contradict the hypothesis that rejection causes a reduction in spending, because the rejected people were willing to spend more money than other people for the same goods. In contrast, exclusion had no effect on people's willingness to pay high prices for practical products,

such as a high-definition television set, a refrigerator, and a wooden table.

In a second study, excluded participants actually spent more of their own money purchasing items from a laboratory store, as compared to included participants. Again, though, they were selective in what they purchased. Social rejection made people more likely to buy items that symbolized belongingness, specifically wristbands that carried the name of their college. They were no more likely than others to buy practical items (e.g., a notepad) or private self-gift items (e.g., a magazine, cookies, bath gel). Thus, their spending was strategically suited to make them feel connected to other people.

A final study showed that excluded people tailored their spending preferences to those of an interaction partner. They expected to meet with another person after they had been excluded or not, and they were told that the new partner was either a lavish spender or a frugal person. Participants matched their behavior to that of the interaction partner, suggesting that they wanted to use the money to make themselves similar and therefore attractive to the other person, so as to maximize their chances of making a friend.

Taken together, these studies show that rejected people sometimes spend freely and sometimes hold on to their money. The overarching theme appears to be one of seeking to connect with others and using money as a tool for doing so. Socially excluded people spent more than others on products that would make them attractive to others or would symbolize social bonds. They did not change their spending on practical items. And if they expected to interact with a frugal partner, they became more frugal in their own spending, so as to match the interaction partner.

Conclusion

Rejection may produce a temporary reduction in pain sensitivity. This does not contradict the hypothesis that social support helps buffer against pain. It merely shows that the intertwining of the pain and social connection systems is extensive. Just as physical injury can produce a temporary analgesic effect, presumably to enable the person to cope with the physical trauma, the immediate reaction to social rejection also often involves an analgesic effect. Indeed, we have suggested that the immediate response to social exclusion can include loss of both physical and emotional sensitivity.

Likewise, evidence that rejection can increase spending of money does not really contradict Zhou

and Gao's (this issue) assertion that money can help buffer against social pain. Socially rejected persons may come to want money more, but perhaps one reason they want it is to spend it in ways that can enhance their appeal to others. The link between money and social belongingness is profound and complex.

Note

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