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Social influences on pain beyond the here and now

[Commentary on Bajcar et al., in press, EJP]

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This journal recently published a paper by Bajcar et al., entitled "From past pain to future pain through the pain of others: Information about other people's pain ratings can alleviate our subsequent pain." This paper adds novel insight to a growing literature on social influence effects on pain, by demonstrating that social feedback about one specific painful event can change how people will report pain for another, subsequent event.

In their experiment, Bajcar and colleagues tested whether seeing the pain ratings of other people can change their participants' own memory of a recent experience of pain and whether such social information might alter how they respond to a second, subsequent pain stimulation. All participants first experienced a 1-minute heat pain stimulation and rated how much pain they felt. Following a short break, they were asked to recall their initial pain and rate its intensity again. After this first recall, participants of the experimental group, but not the participants of the control group, were shown the pain ratings of other people, which were systematically lower than participants' own initial pain ratings. Then all participants were again asked to recall their initial pain and to rate it. After a 30-minute break, all participants experienced a second pain stimulation and rated the intensity of this second pain stimulation. The authors reasoned that, if other people's ratings can change how we remember our own pain, then participants who had seen the low pain ratings of others would provide lower recalled pain intensity ratings at the time of the second recall. However, no significant group difference was observed during the pain recall. But the groups did differ significantly in how they rated the second pain stimulation half an hour later: those participants, who had seen the lower pain ratings of other people, reported the intensity of the second pain stimulation as less intense than the participants in the control group. This indicates that even if social information does not necessarily alter the memory of *past* pain experience, it can shift how another, *future*, painful event is experienced.

This work resonates with previous findings that have shown that both direct observation of other people's pain (e.g., Craig & Prkachin, 1978) and more abstract social information such as presentation of others' pain ratings (e.g., Koban & Wager, 2016) can change participants' pain reports and even physiological responses to painful stimulation (indicating a change in arousal and affective brain responses). Bajcar and colleagues' findings also stimulate several ideas for future research. First, while they could not find evidence for a social influence effect on pain memory, research has shown that other types of memories can be modulated by social information. Thus, the idea that this might also

be the case for pain memories should be further pursued. In the current study's design, both pain recalls (before and after seeing other people's ratings) were close in time. Therefore, participants likely remembered their previous recall as well as their initial pain rating and therefore might have strived to be consistent. While most people are influenced by others' opinions, they will usually not readily admit or reveal this. Future studies could build on this work to test for social influence effects on pain memories by using more indirect probes of participants' pain memories (for example measuring their pain recall in a different rating modality such that the need for self-consistency is not threatened).

Second, the findings of Bajcar et al. put forward the exciting idea that social influences on pain may go beyond the effects of a specific and immediate pain event, and instead extend in time to also influence subsequent experiences of pain. In other words, what we learn about others' experiences of a specific painful event could potentially generalize to how we experience other instances of pain. This suggests that by observing other people's behavior (i.e., pain ratings) in a specific situation, we implicitly learn about broader implicit social norms (i.e., how much pain *should* be reported and expressed in similar circumstances). Future studies could build on these findings to test how far social influence effects might extend in time. Future studies could also test whether social influence on a specific type of pain can generalize to other types of painful experiences. For example, if we learn that other people have rated heat pain as low, will this change how we experience and rate other type of pain? Uncovering whether and how social influences on pain extend over time, space, and situations could be key to better understand why social-contextual and cultural factors exert such powerful influences on pain in clinical and applied settings.

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