

The pain of social exclusion

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We would like to do without pain and yet without it we wouldn't be able to survive. Pain signals dangerous stimuli (internal or external) and guides our behaviour. Its ultimate goal is to prioritize escape, recovery and healing. That's why we feel it and why we're also good at detecting it in others. Pain in fact protects not only the individual but also his social bonds. The brain contains circuits related to the more physical aspects of pain and others related to affective aspects. As observed in a study just published by Giorgia Silani, Giovanni Novembre and Marco Zanon of the International School for Advanced Studies (SISSA) of Trieste in the journal *Social Cognitive and Affective Neuroscience*, social pain activates some brain circuits of physical pain whether we feel it personally or when we experience it vicariously as an empathic response to other people's pain.

The study by Silani and colleagues is innovative since it adopted a more realistic experimental procedure than used in the past and compared behaviours and the results of functional magnetic resonance imaging in the same subjects, during tests involving both physical and social [pain](#). "Classic experiments used a stylized procedure in which social exclusion situations were simulated by cartoons. We suspected that this simplification was excessive and likely to lead to systematic biases in data collection, so we used real people in videos".

The subjects took part in the experimental sessions simulating a ball tossing game, where one of the players was deliberately excluded by the others (condition of social pain). The player could be the subject herself or her assigned confederate. In another series of experiments the subject

or her confederate were administered a mildly painful stimulus (condition of physical pain). When the subject was not personally the target of the stimulus, she could witness the entirety of her confederate's experience.

"Our data have shown that in conditions of [social pain](#) there is activation of an area traditionally associated with the sensory processing of [physical pain](#), the posterior insular cortex", explains Silani. "This occurred both when the pain was experienced in first person and when the subject experienced it vicariously".

"Our findings lend support to the theoretical model of empathy that explains involvement in other people's emotions by the fact that our representation is based on the representation of our own emotional experience in similar conditions" concludes Silani.

Provided by International School of Advanced Studies (SISSA)

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