

OPINION

Anticipation as Pain: The Temporal Construction of Suffering

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Pain is not easy to define. A widely accepted definition in neuroscience describes it as an unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage [1]. This formulation already reveals the issue: pain is not purely physical, but also constructed.

Some studies offer insight into the complexity of pain. A particular analysis apply a controlled thermal stimuli in two groups: untrained subjects and Zen practitioners meditators with thousands of hours of practice. Both groups reported pain intensity while brain activity was measured using functional magnetic resonance imaging (fMRI). The results show a systematic difference: untrained subjects tend to anticipate pain, activating regions associated with evaluation and expectation before the stimulus reaches its peak. In contrast, meditators exhibit a more localized response in sensory areas, with reduced activation in regions related to anticipation and judgment [2].

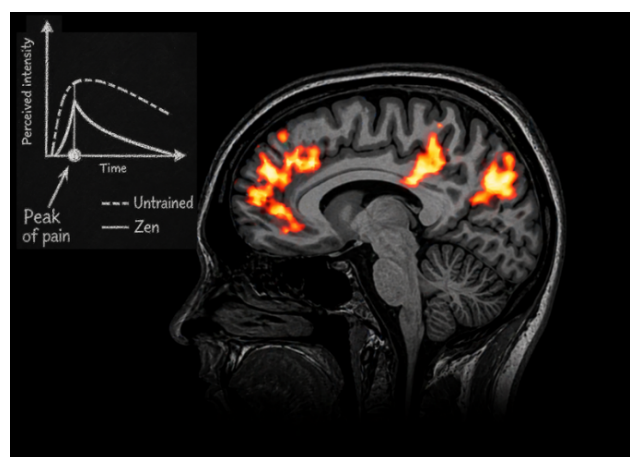
If we describe pain as a function of intensity perception over time, two individuals may be exposed to the same stimulus—such as a peak of temperature—and yet experience different amounts of pain.

This suggests that pain is not only an objective quantity, but also a cognitive and, above all, temporal construction. Part of this construction involves anticipatory mechanisms, which may be understood as evolutionarily advantageous, as early responses to potential harm increase the likelihood of avoiding significant damage.

In this light, pain can be understood as a signal amplified over time, where anticipation plays a subjective role [3]:

This explains why, in response to certain stimuli, the initial reaction can be disproportionate to the actual damage.

If there is an evolutionary advantage in anticipating pain, it is then natural to ask whether there may also be an advantage in suspending, at least partially, that anticipation. Avoiding an immediate response may prevent disproportionate reactions.



What is clear, however, is that reducing anticipation decreases the total experience of pain, avoiding, in a sense, the suffering associated with events that have not yet occurred—or may never occur.

References

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