How negative experiences influence the brain in pain: neuroimaging and biobehavioral insights

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Propositions for the dissertation

1. The nocebo effect is a good example of how negative experiences and learning can affect biobehavioral processes.

2. The experience of pain depends on a complex biobehavioral system that incorporates bottom-up and top-down processing of ascending pain signals.

3. Fear of pain has an important role in potentially aggravating negative pain experiences and may lead to long-lasting nocebo effects that are difficult to overcome (this dissertation).

4. The brain employs many cognitive and emotional mechanisms to integrate past negative experiences in the processing of pain signals (this dissertation).

5. Medication such as D-cycloserine may enhance some types of learning, but may not affect the learning of a nocebo association in pain (this dissertation).

6. Counterconditioning by replacing a negative learned association with a positive association is effective in minimizing nocebo pain responses (this dissertation).

7. Words are powerful enough to alter our subjective experience of pain (this dissertation).

8. If you are like most people, expecting to feel intense pain may indeed increase your pain sensitivity.

9. Scientific research ought to be open and accessible, and research findings should be effectively communicated beyond academia and into society.

10. Negative experiences can influence the brain, in pain and beyond.