

## Experimental Pain Study Investigating the Distinction between Pain and Relief Reports

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**Abstract :** Although relief is commonly assumed to be a direct reflection of pain reduction, it seems to be driven by complex emotional interactions in which pain reduction is only one component. For example, termination of a painful/aversive event may be relieving and rewarding. Accordingly, in this study, whether terminating an aversive negative prediction of pain would be reflected in a greater relief experience was investigated, with a view to separating apart the effects of the manipulation on pain and relief. We use aversive conditioning paradigm to investigate the perception of relief in an aversive (threat) vs. positive context. Participants received positive predictors of a non-painful outcome which were presented within either a congruent positive (non-painful) context or an incongruent threat (painful) context that had been previously conditioned; trials followed by identical laser stimuli on both conditions. Participants were asked to rate the perceived intensity of pain as well as their perception of relief in response to the cue predicting the outcome. Results demonstrated that participants reported more pain in the aversive context compared to the positive context. Conversely, participants reported more relief in the aversive context compared to the neutral context. The rating of relief in the threat context was not correlated with pain reports. The results suggest that relief is not dependant on pain intensity. Consistent with this, relief in the threat context was greater than that in the positive expectancy condition, while the opposite pattern was obtained for the pain ratings. The value of relief in this study is better appreciated in the context of an impending negative threat, which is apparent in the higher pain ratings in the prior negative expectancy compared to the positive expectancy condition. Moreover, the more threatening the context (as manifested by higher unpleasantness/higher state anxiety scores), the more the relief is appreciated. The importance of the study highlights the importance of exploring relief and pain intensity in monitoring separately or evaluating pain-related suffering. The results also illustrate that the perception of painful input may largely be shaped by the context and not necessarily stimulus-related.

**Keywords :** aversive context, pain, predictions, relief

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