Influence of opioidergic neurotransmission on vicarious acquisition of fear

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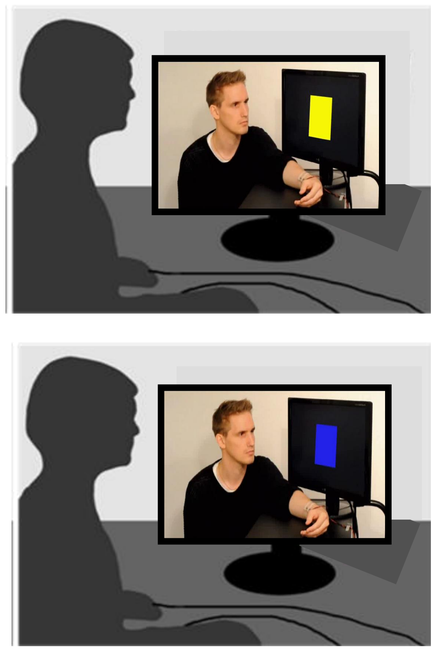
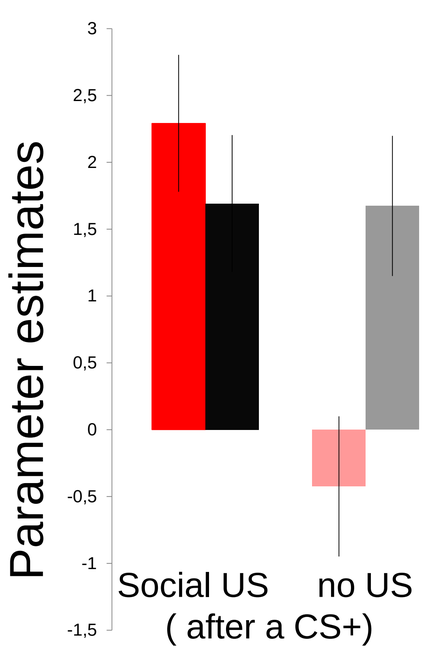
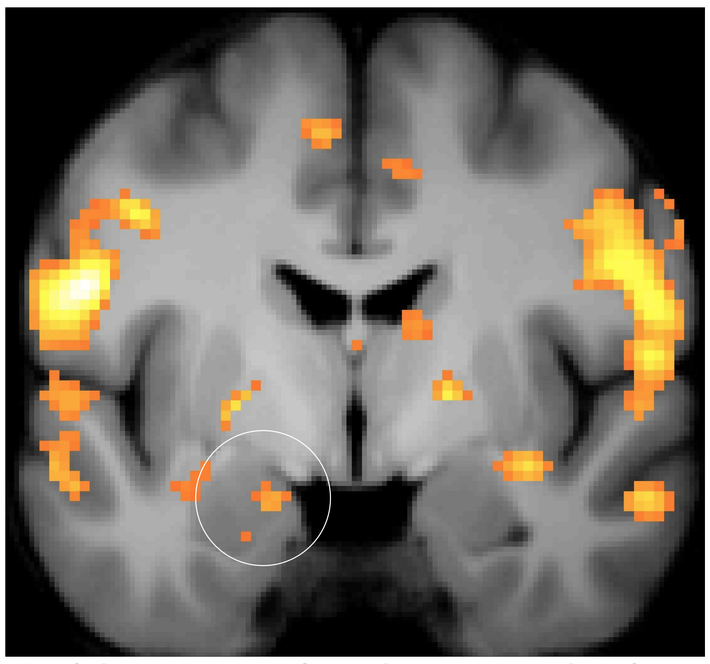
Acquisition
(Vicarious reinforcement)

Fear-expression / Extinction
(Direct non-reinforcement)

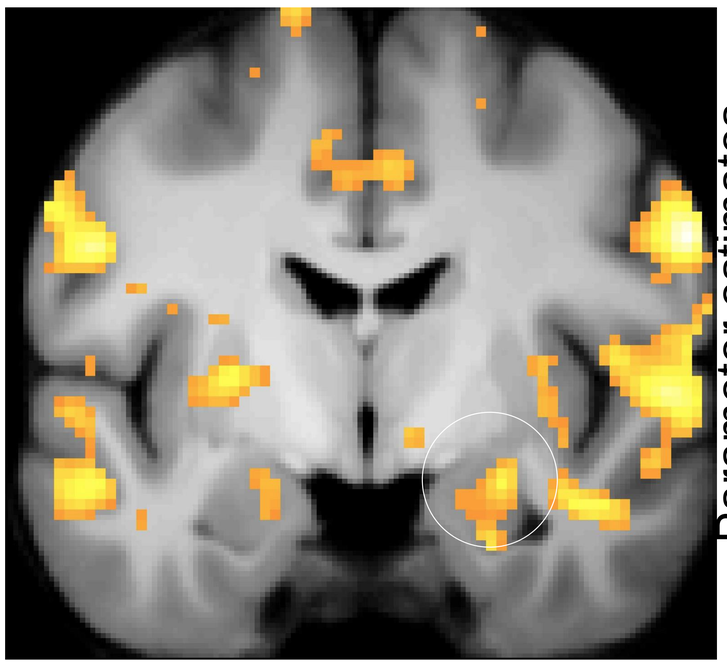
Naltrexone/Placebo



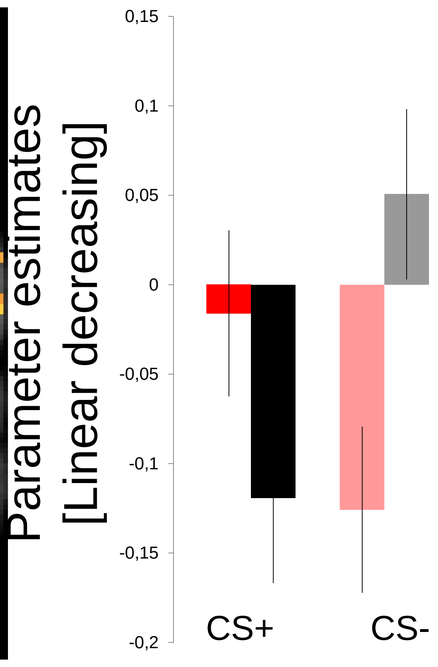




Social US> no US in Naltrexone > Placebo
-16;-4;-18 T=3.36, p(SVC) 0.031



CS+ > CS- in Naltrexone > Placebo
26;-8;-14 T=3.27, p(SVC) 0.044



Naltrexone 50 mg (N=22)
Placebo (N=21)

Introduction

Observing others in pain mirrors the physiological and behavioural correlates of direct pain experiences (e.g. Langford et al., 2006, Singer et al., 2004) . Accordingly, social USs have been used during vicarious acquisition of fear (Olsson & Phelps 2007). Pharmacological blockade of opioidergic receptor function has been found to interfere with the expectancy of direct USs (Johansen, 2010) and affects direct fear and extinction learning in rodents (McNally, 2009) and humans (Eippert et al., 2008).

Conclusions

Blockade of endogenous opioid receptors

- Interferes with the expectancy of a social US
- Attenuates amygdala responses during extinction of socially acquired fear

Eippert, F. 2008. J Neurosci
Johansen, J.P., et al. 2010. Nat. Neurosci
Langford, D.J., et al 2006. Science
McNally, G.P., 2009. Intern Jo Com Psychology
Olsson, A. & Phelps, E.A., 2007. Nat Rev Neurosci
Singer, T. et al. 2004 Science

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DFG Deutsche Forschungsgemeinschaft

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