

The conflict of reward in depression

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In *Love and Death*, Woody Allen wrote: “To love is to suffer... To be happy is to love. To be happy, then, is to suffer.” The paradoxical merging of happiness and suffering can be a feature of depression. *Biological Psychiatry*, on April 1st, is publishing a new study of regional brain activity using functional magnetic resonance imaging, which may help further our understanding of how happiness and suffering are related in depression.

Stanford University researchers recruited both depressed and non-depressed volunteers to undergo brain scans, via functional magnetic resonance imaging (fMRI), while they participated in an activity where they won and lost money. Dr. Brian Knutson, first author on this article, explains their findings: “When they anticipated winning money, both depressed and nondepressed individuals showed neural activation in the nucleus accumbens, a region implicated in the anticipation of reward. Only the depressed participants, however, additionally showed increased activation in the anterior cingulate, a region of the brain that has been implicated in conflict.”

John H. Krystal, M.D., Editor of *Biological Psychiatry* and affiliated with both Yale University School of Medicine and the VA Connecticut Healthcare System, notes that this finding indicates that “this complex mixture of findings suggests that depression is not simply the absence of reward, but rather a contamination of neural processing of rewards with features of neural processing of punishments.” Dr. Knutson agrees, commenting that “these findings are consistent with formulations that depression involves difficulties in the processing of positive information,

and suggest more specifically that depressed people actually experience conflict when they are faced with the likelihood of receiving a reward.”

Dr. Krystal concludes that “one intriguing potential implication of this work is that some forms of depression may be experienced, not as the absence of pleasure, but as the ubiquitous presence of emotional pain, disappointment, or frustration.” Dr. Knutson and his colleagues are currently examining whether this increased experience of conflict when anticipating reward hinders recovery from depression.

Source: Elsevier

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