

Men more likely to have an accurate memory of unpleasant experiences

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A woman's memory of an experience is less likely to be accurate than a man's if it was unpleasant and emotionally provocative, according to research undertaken by University of Montreal researchers at Louis-H Lafontaine Hospital.

"Very few studies have looked at how 'valence' and 'arousal' affect memories independently of each other, that is to say, how attractive or repulsive we find an experience and how emotionally provocative it is," said corresponding author Dr. Marc Lavoie, of the university's Department of Psychiatry and the hospital's Fernand-Seguin Research Center. "Our test relied on photos – we found firstly that highly arousing pictures blur women's capacity to determine whether they've seen it before, and secondly that women have a clearer memory of attractive experiences than men. Arousal has an enhancing effect on the memory of men however, as does 'low valence' or unpleasantness."

Participants were shown a variety of images on a computer screen that fell into four categories: "low-valence and low-arousal" such as scenes of babies crying, "low-valence and high-arousal," for example, war photos, "high-valence and low-arousal," which included pictures of kittens, and finally, erotic photos for the "high-valence and high-arousal" group. They were then shown a second round of photos that included the same images as the first round and some new ones. The participants had to push buttons to indicate whether they had already seen it or if it was new, and the speed and accuracy with which they responded enabled the researchers to gauge which factors had the most influence. They were

also connected to EEG, a system for measuring the brain's neuron activity, which enabled the researchers to see how their brain was working as they completed the task.

"Interestingly, the scans revealed more activity in the right hemisphere of women's brains for the recognition of pleasant pictures – the opposite of what we witnessed in men" Lavoie said. "This challenges earlier studies using unpleasant pictures that revealed more activity in the left hemisphere for women and in the right hemisphere for [men](#). Our findings demonstrate the complexity of emotional [memory](#) and underscore the importance of taking valence, arousal, and sex differences into account when examining brain activity."

The study was published online by the *International Journal of Psychophysiology* on January 18, 2012, and the research received funding from the Natural Sciences and Engineering Research Council of Canada through a discovery grant to Dr Lavoie and a summer student internship to Emma Glaser. Dr. Marc Lavoie is affiliated with the Fernand-Seguin Research Centre at Louis.-H. Lafontaine Hospital in Montreal and with the Department of [Psychiatry](#) at the University of Montreal. The University of Montreal is officially known as Université de Montréal.

More information: Emma Glaser, Adrianna Mendrek, Martine Germain, Nadia Lakis, Marc E. Lavoie, Sex differences in memory of emotional images: A behavioral and electrophysiological investigation, *International Journal of Psychophysiology*, Available online 18 January 2012, ISSN 0167-8760, [doi:10.1016/j.ijpsycho.2012.01.007](https://doi.org/10.1016/j.ijpsycho.2012.01.007)

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