Itsy Bitsy Spider? Individual Differences Modulate Mental Representation of Size

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Abstract

Previous studies have shown that different personality traits and psychopathologies are characterized by cognitive biases of attentional and memory processes. Several studies also showed that bias in size perception characterizes different psychopathologies such as obsessive compulsive disorder (OCD) and anorexia nervosa. Nonetheless, these studies examined bias in estimation of the physical size of a specific stimulus. There is almost no data regarding bias in conceptual size (or mental representation) of stimuli. In this study we examined whether mental representation of a spider's size is modulated by individual differences in fear of spiders. Students who reported an extremely high or extremely low fear of spiders (according to a screening questionnaire) were recruited for the study. Participants rated the relative conceptual size of different pictures (birds, butterflies and spiders) on a visual analogue scale (VAS) ranging from a fly picture (conceptually small) to a lamb picture (conceptually large). The physical sizes of all the pictures were equal. Results show that people who reported high levels of fear of spiders had a biased size representation of spiders, but not of other stimuli. These findings imply that bias in conceptual size may be a core factor in psychopathologies such as specific phobias. We suggest that the relationship between emotional processing and size representation is modulated by the relevance of a specific stimulus to the individual.

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