Emotion and motion in facial expression modulate the attentional blink

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Abstract

The attentional blink (AB) refers to that period of time (200-400 ms) during which the cognitive system is processing a first target (T1), thereby unable to process a second target (T2) (Raymond et al., 1992, J Exp Psych, 18, 849-860). It unfolds over time, probing the competition between incoming stimuli during each stage of early visual attention. We used the AB to examine how static and dynamic emotional facial expressions direct attention. In experiment 1, T1 was a neutral face. T2 was either a fearful, happy or neutral face, and was either static or dynamic—the expression unfolded from 0 to 100%. Participants performed a gender decision on T1, and reported whether they perceived a second face. We used curve-fitting techniques (Cousineau et al., 2007, Can J Exp Psyc, 60, 175-189) to analyze aspects of the data related to the ignition of the blink and its duration. We show that (1) emotional faces suffer from this effect earlier, and that (2) it lasts for a shorter period of time compared to neutral faces. (3) Dynamic facial expressions alleviate the AB more than static faces. Experiment 2 addressed the effect of the [...]

Reference


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Emotion and motion in facial expressions modulate the attentional blink

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The attentional blink (AB) refers to that period of time (200–400 ms) during which the cognitive system is processing a first target (T1), thereby unable to process a second target (T2) (Raymond et al, 1992 Journal of Experimental Psychology: Human Perception and Performance 18 849–860). It unfolds over time, probing the competition between incoming stimuli during each stage of early visual attention. We used the AB to examine how static and dynamic emotional facial expressions direct attention. In experiment 1, T1 was a neutral face. T2 was either a fearful, happy, or neutral face, and was either static or dynamic—the expression unfolded from 0 to 100%. Participants performed a gender decision on T1, and reported whether they perceived a second face. We used curve-fitting techniques (Cousineau et al, 2007 Canadian Journal of Experimental Psychology 60 175–189) to analyse aspects of the data related to the ignition of the blink and its duration. We show that: (i) emotional faces suffer from this effect earlier; (ii) it lasts for a shorter period of time compared with neutral faces; and (iii) dynamic facial expressions alleviate the AB more than static faces. Experiment 2 addressed the effect of the motion contained in dynamic emotional facial expressions. T1 was a neutral face. T2 was a fearful static, dynamic, or scrambled-dynamic face-tailored to show scrambled configural and featural information, avoiding emotion recognition while displaying the same intrinsic motion as dynamic facial expressions.

Results confirmed the AB was modulated by emotion and not simply by dynamic targets. These findings suggest that emotional salience plays a critical role in the allocation of attentional resource during early stages of visual attention.