

AUTOMATIC SHAKE TO ENHANCE FRASER-WILCOX ILLUSIONS

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Microsaccades and Blinks Trigger Illusory Rotation in the “Rotating Snakes” Illusion

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Certain repetitive arrangements of luminance gradients elicit the perception of strong illusory motion. Among them, the “Rotating Snakes Illusion” has generated a large amount of interest in the visual neurosciences, as well as in the public. Prior evidence indicates that the Rotating Snakes illusion depends critically on eye movements, yet the specific eye movement types involved and their associated neural mechanisms remain controversial. According to recent reports, slow ocular drift—a nonsaccadic type of fixational eye movement—drives the illusion, whereas microsaccades produced during attempted fixation fail to do so. Here, we asked human subjects to indicate the presence or absence of rotation during the observation of the illusion while we simultaneously recorded their eye movements with high precision. We found a strong quantitative link between microsaccade and blink production and illusory rotation. These results suggest that transient oculomotor events such as microsaccades, saccades, and blinks, rather than continuous drift, act to trigger the illusory motion in the Rotating Snakes illusion.

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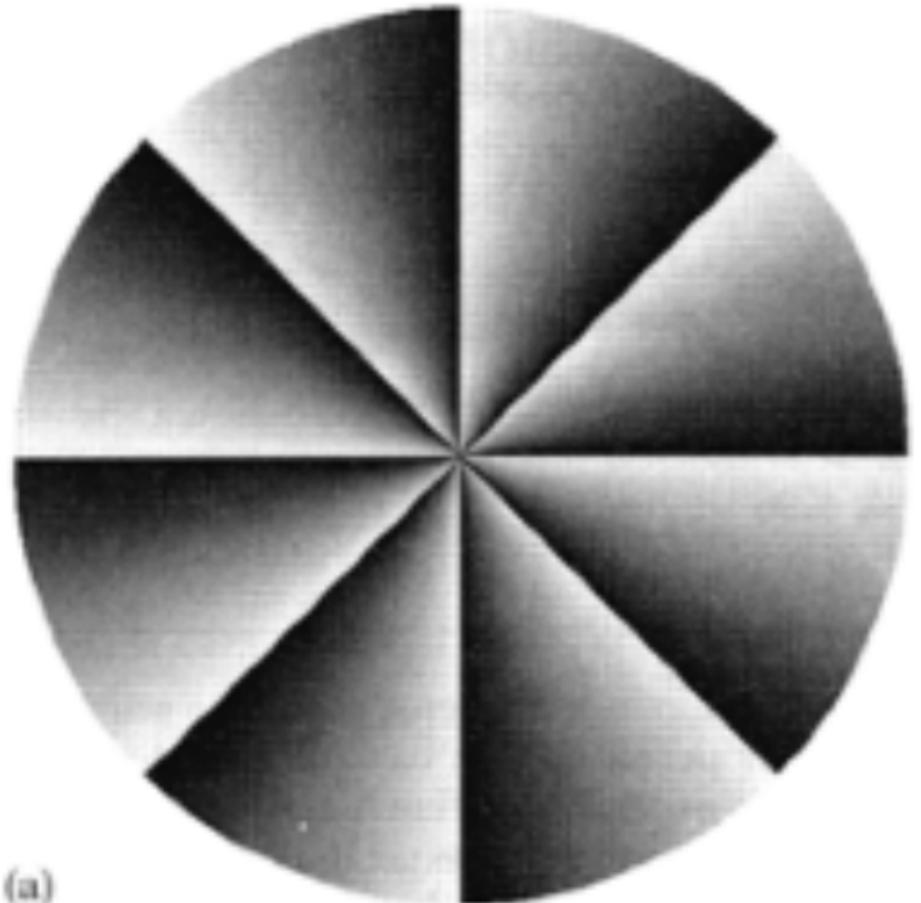
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The peripheral drift illusion: A motion illusion in the visual periphery

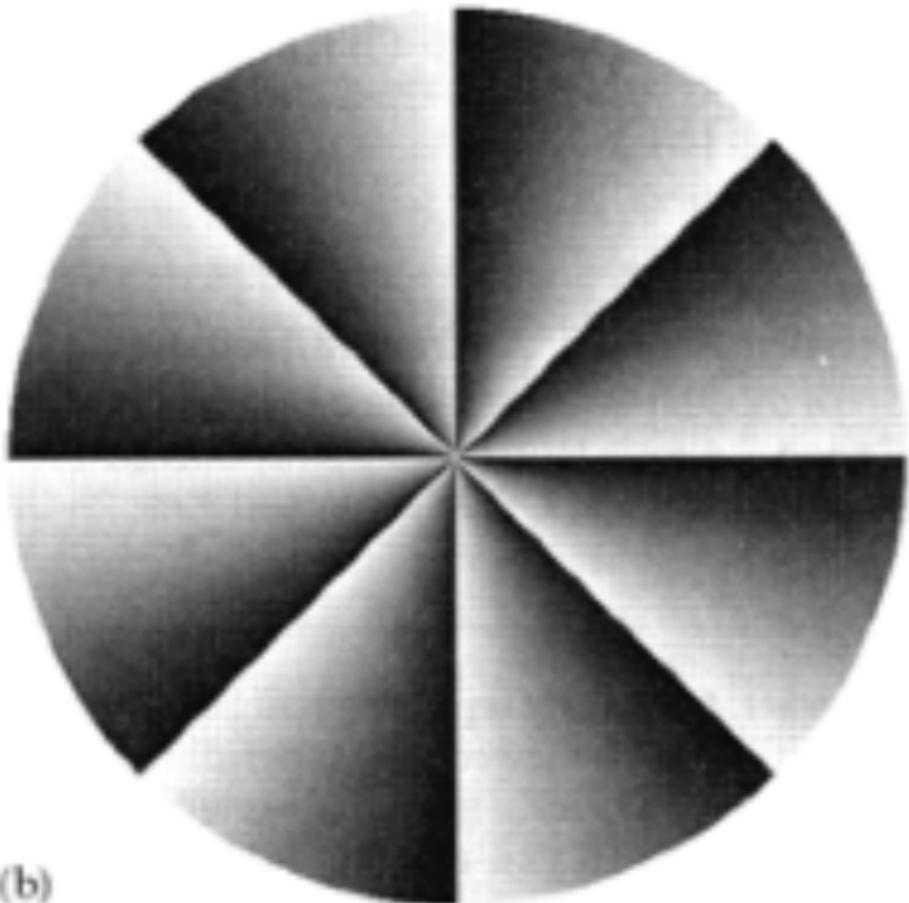
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(a)



(b)

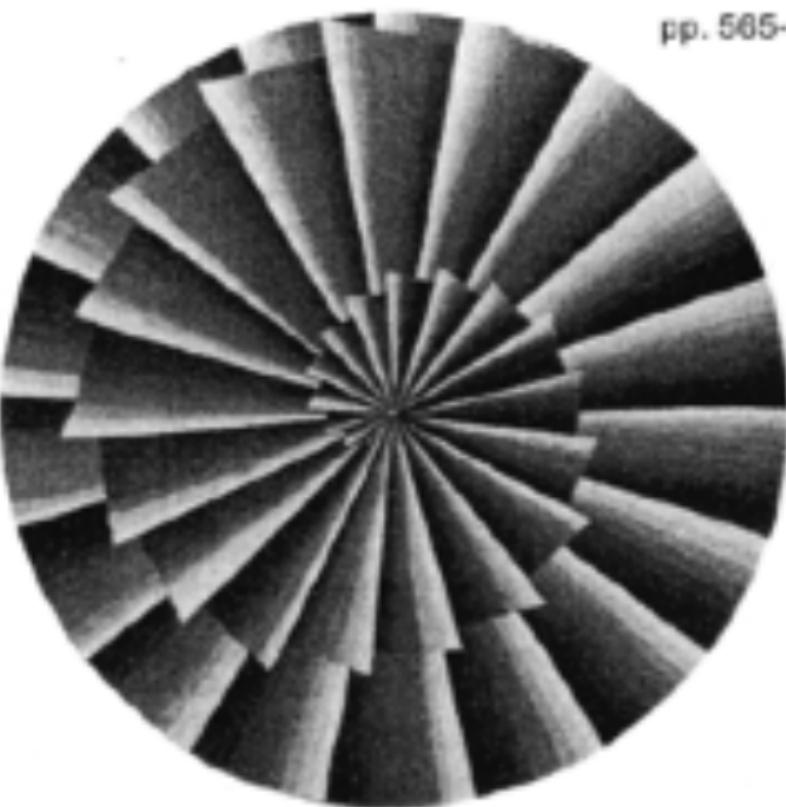
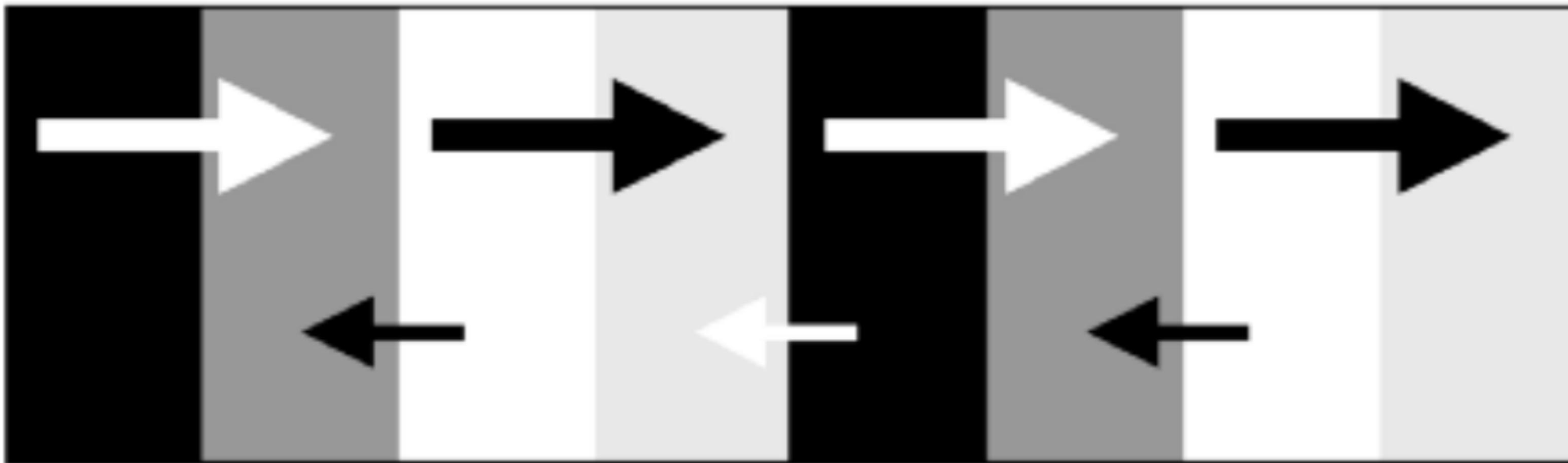
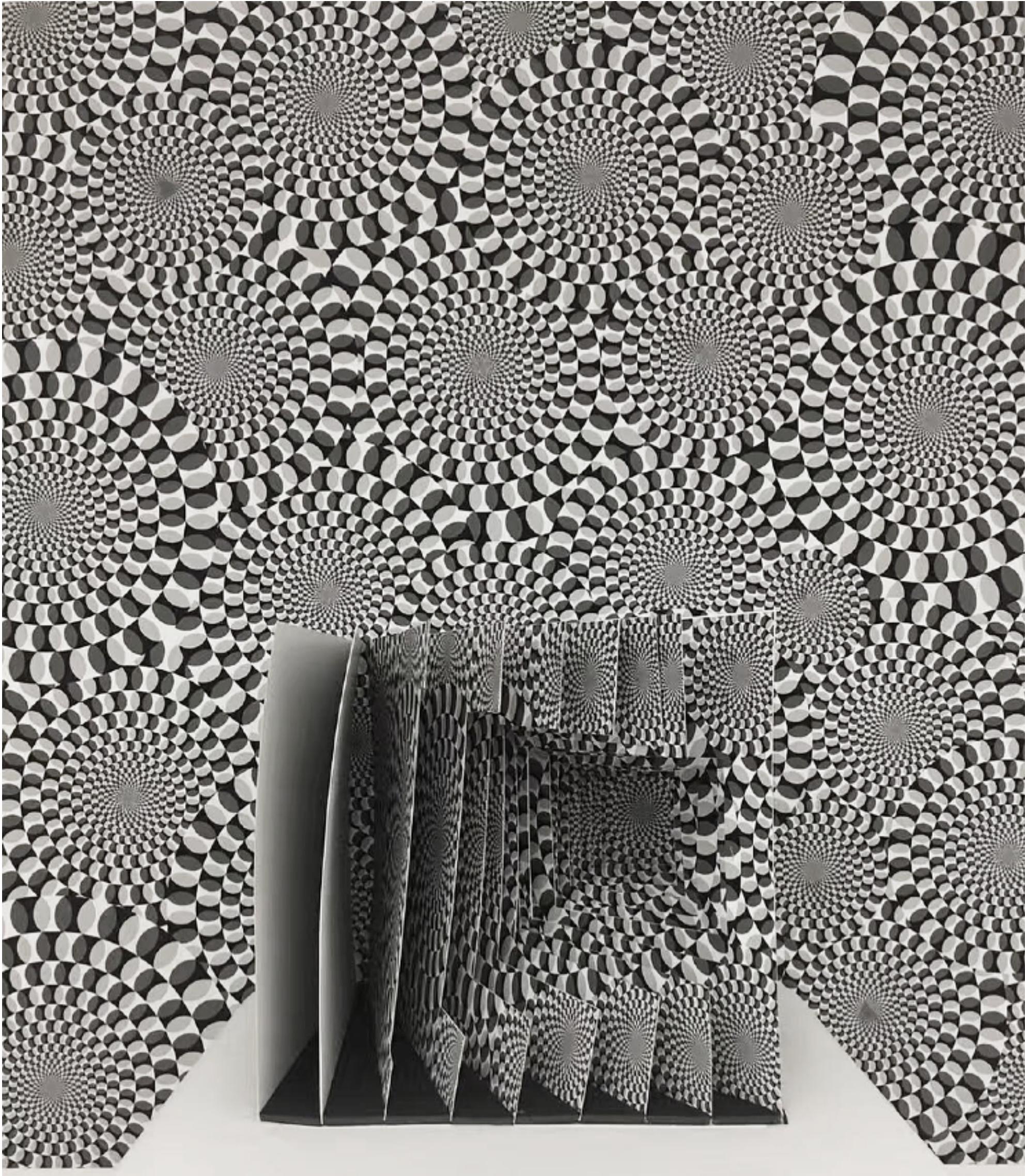
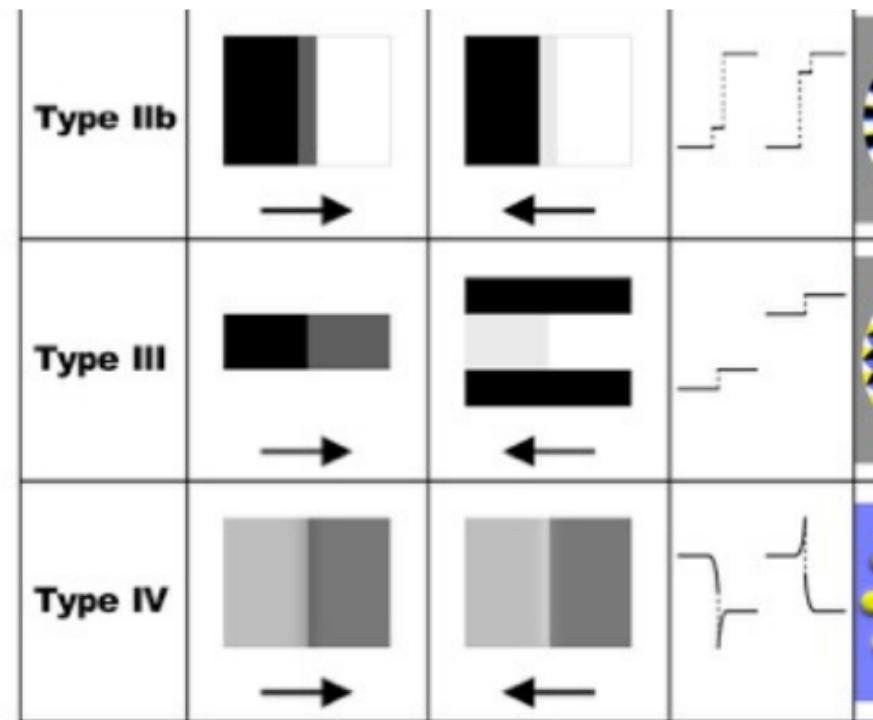
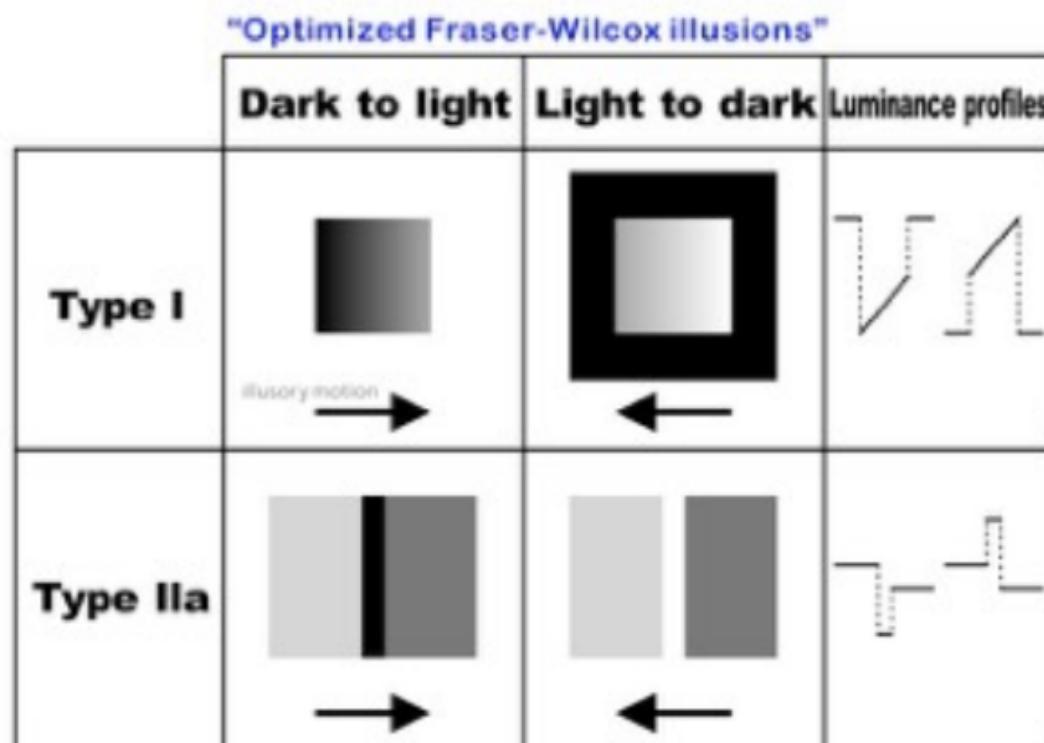


Fig. 1. The two illustrations presented to observers.





"A classification of the Fraser-Wilcox illusion group"



The peripheral drift illusion: A motion illusion in the visual periphery

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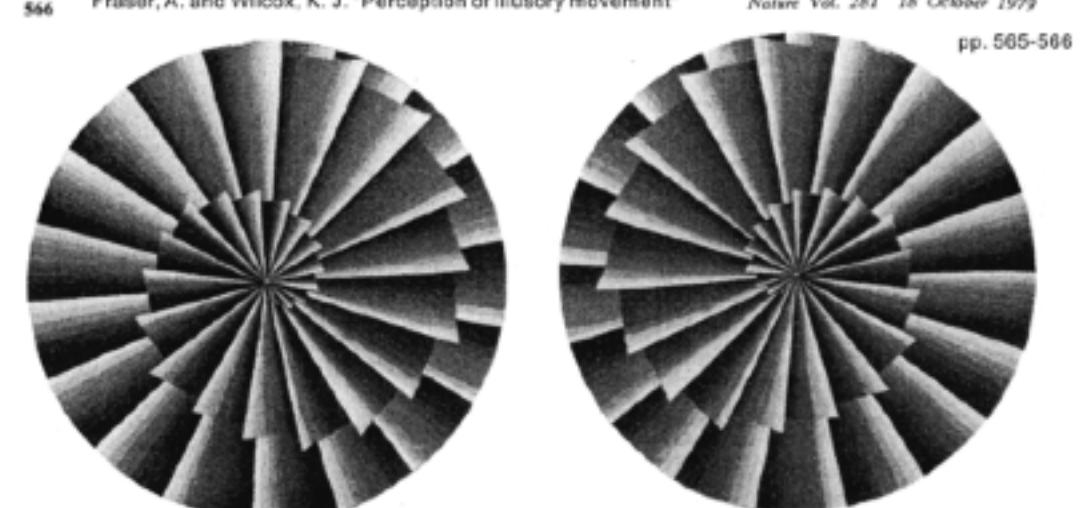
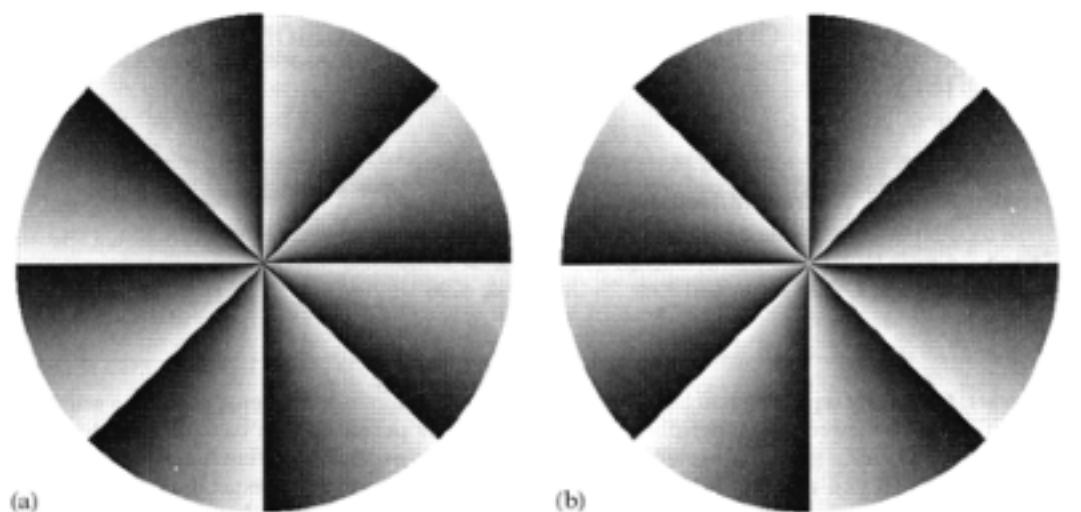


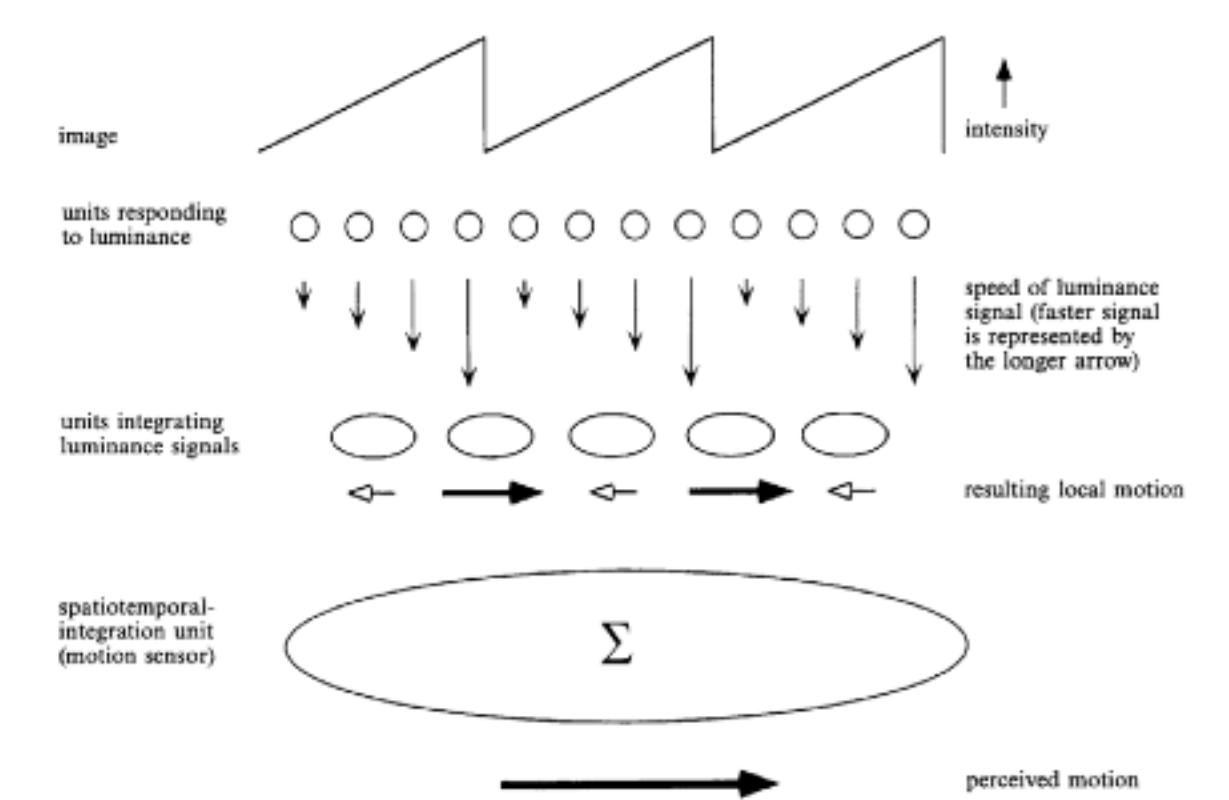
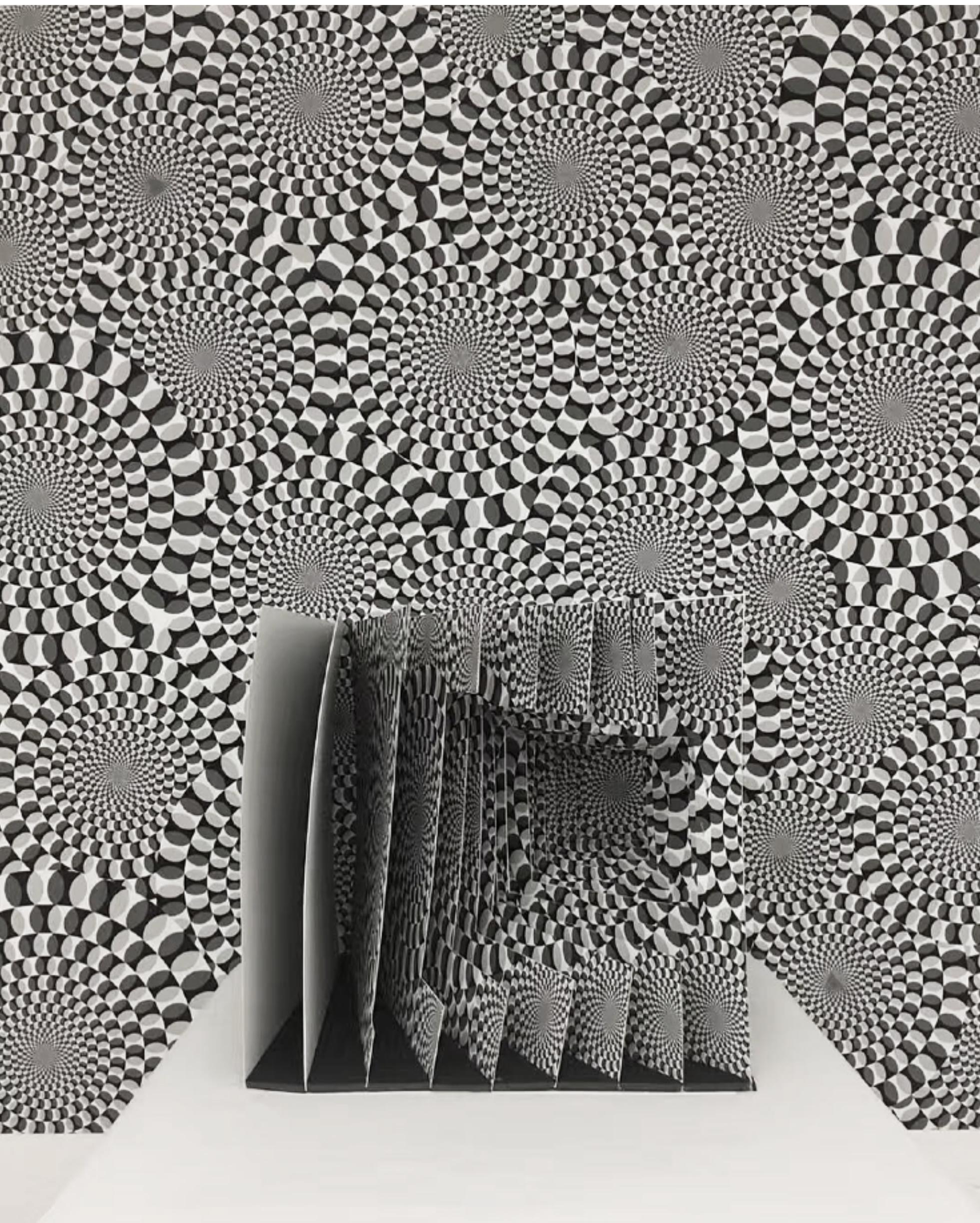
Fig. 1 The two illustrations presented to observers.

Behavioral/Systems/Cognitive

Microsaccades and Blinks Trigger Illusory Rotation in the “Rotating Snakes” Illusion

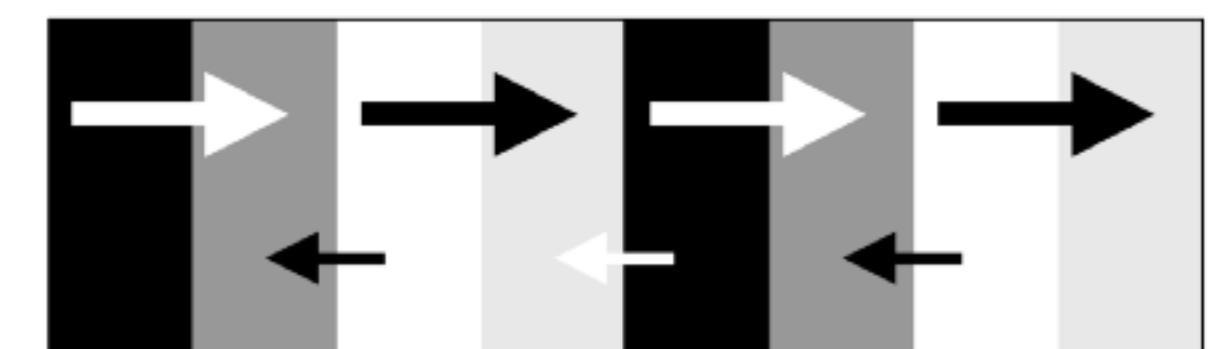
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“A classification of the Fraser-Wilcox illusion group”

“Optimized Fraser-Wilcox illusions”		
	Dark to light	Light to dark
Type I	 illusory motion →	 ←
Type IIa	 →	 ←
Type IIb	 →	 ←
Type III	 →	 ←
Type IV	 →	 ←

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