

# Top-down effect on pupillary response: evidence from shape from shading

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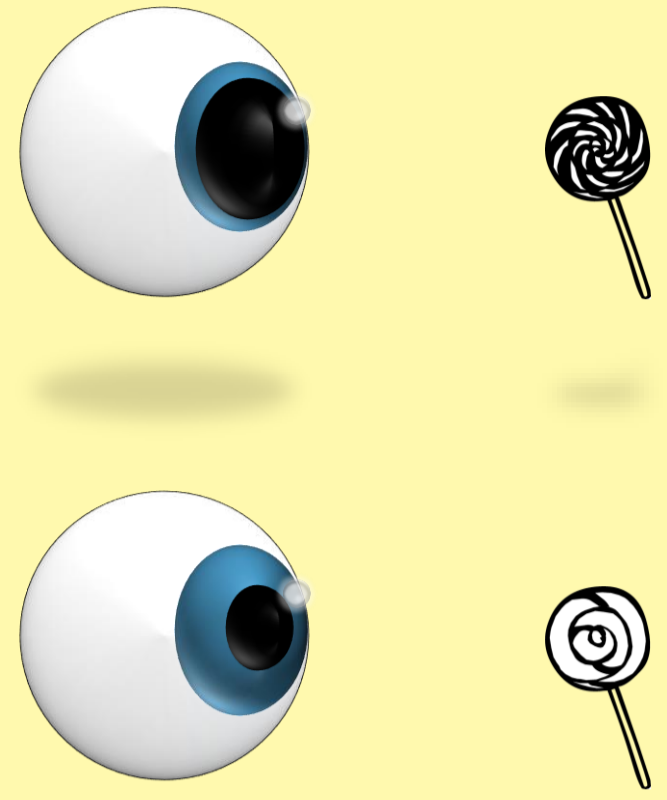


מרכז זלוצובסקי למדעי העצב  
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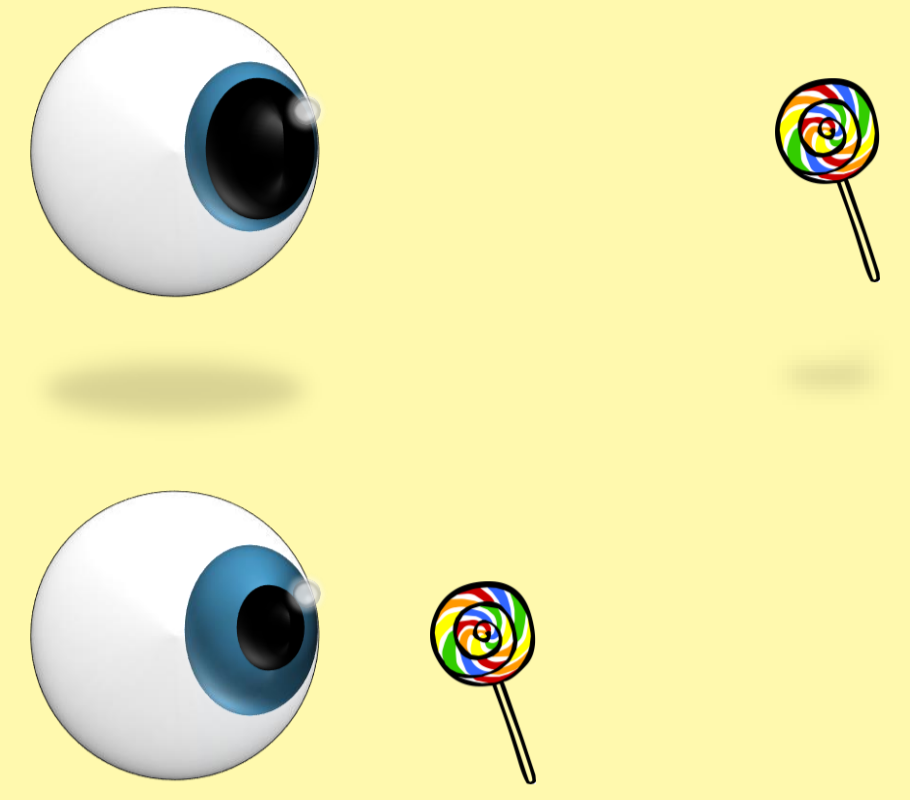
## Background – Pupil dilation

### Pupil light reflex (PLR)



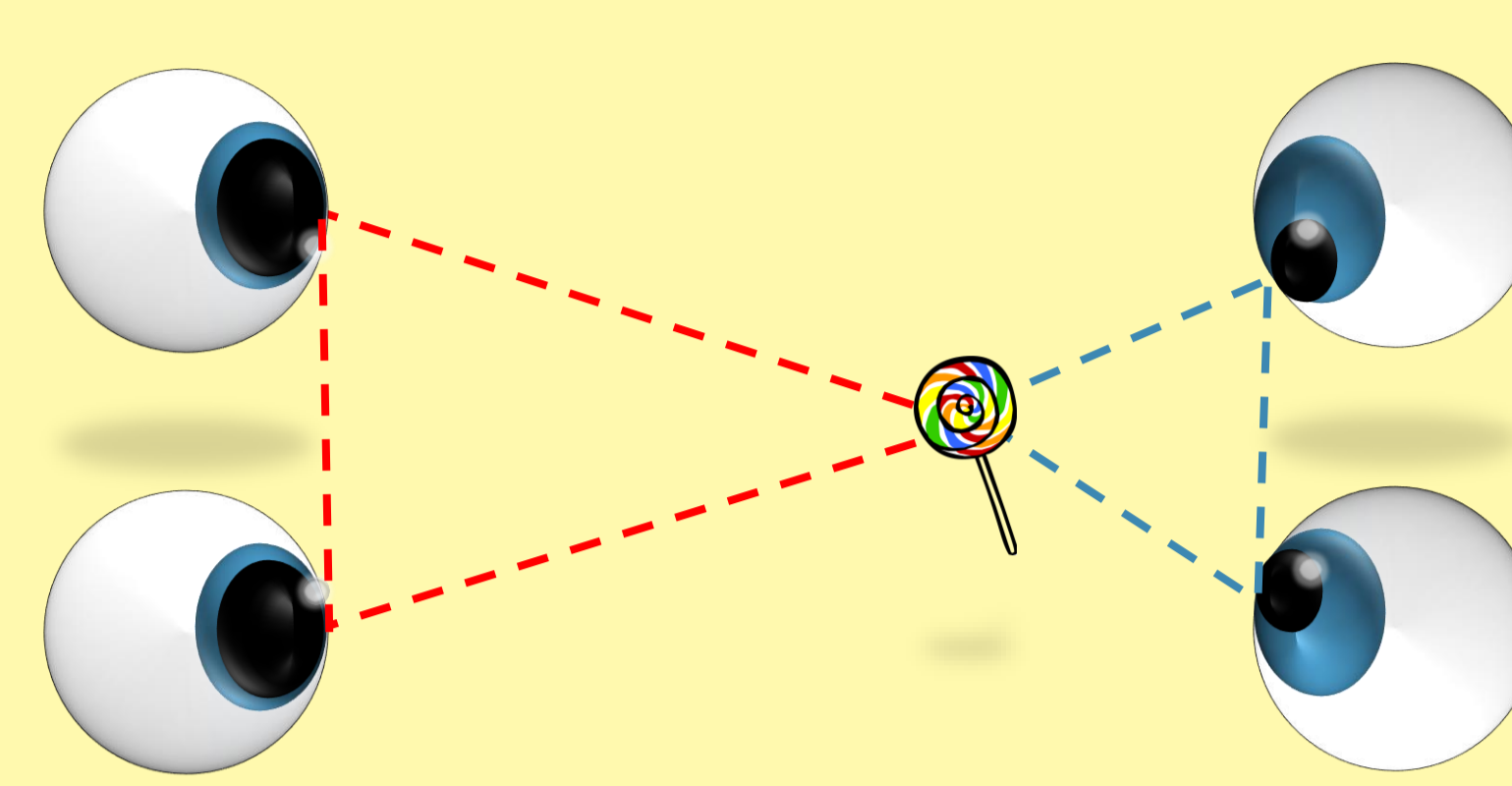
Ellis, 1981

### Pupil near reflex (PNR)



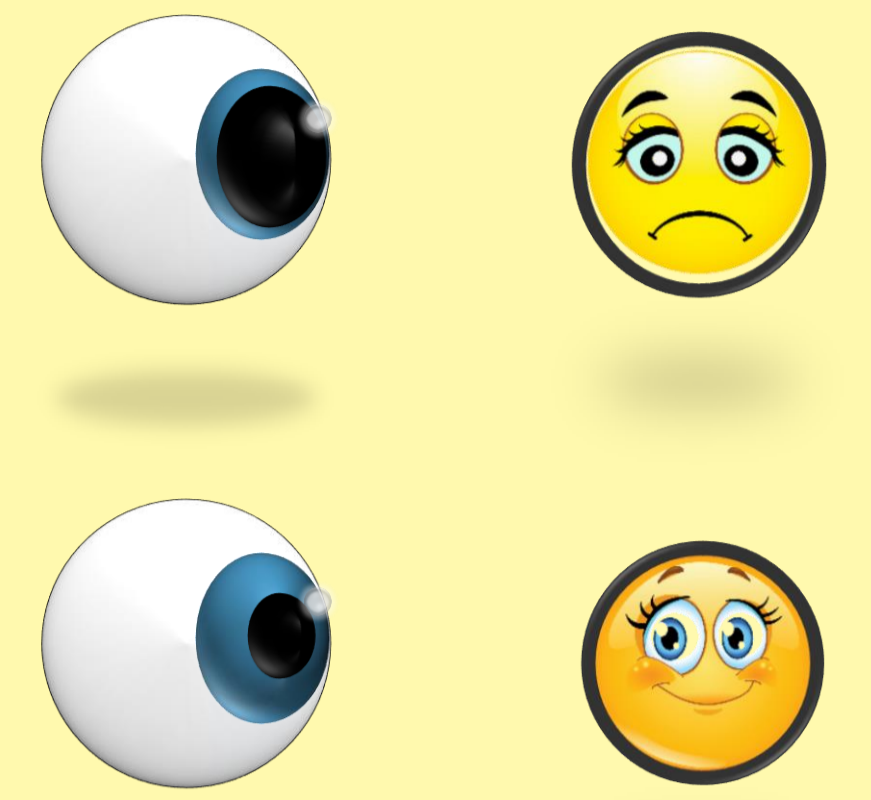
Marg & Morgan, 1949, 1950

### Convergence



Kersten, & Legge, 1983

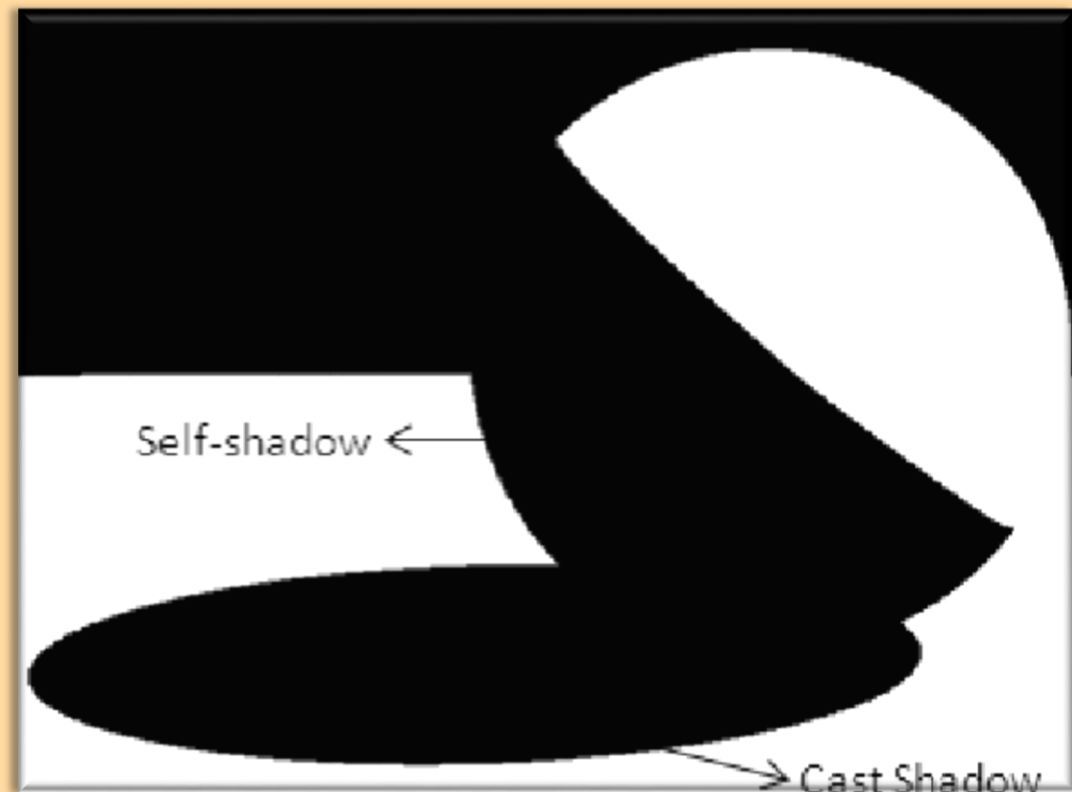
### Mental effort



Kahneman & Beatty, 1966

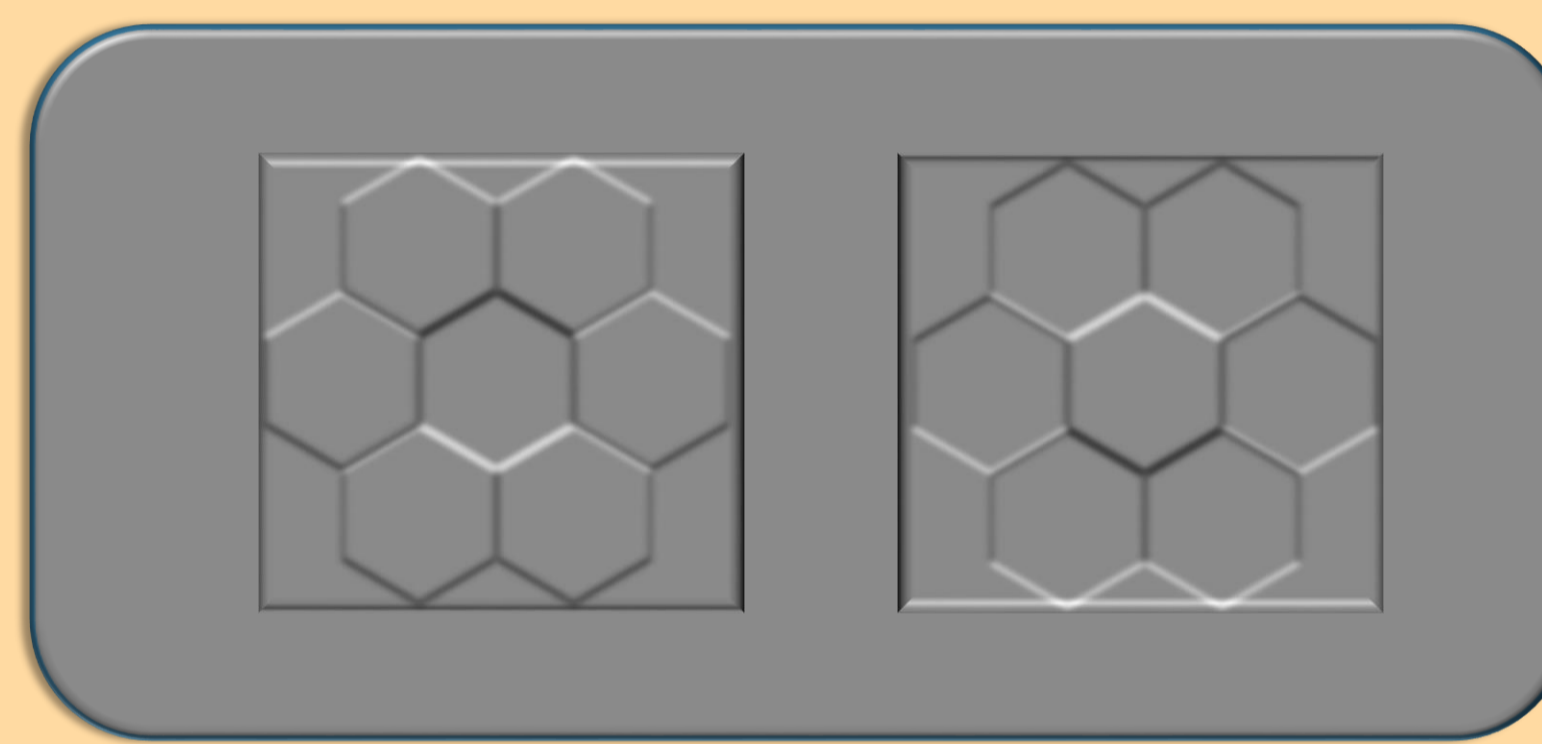
## Background – depth perception

### Shape from shading



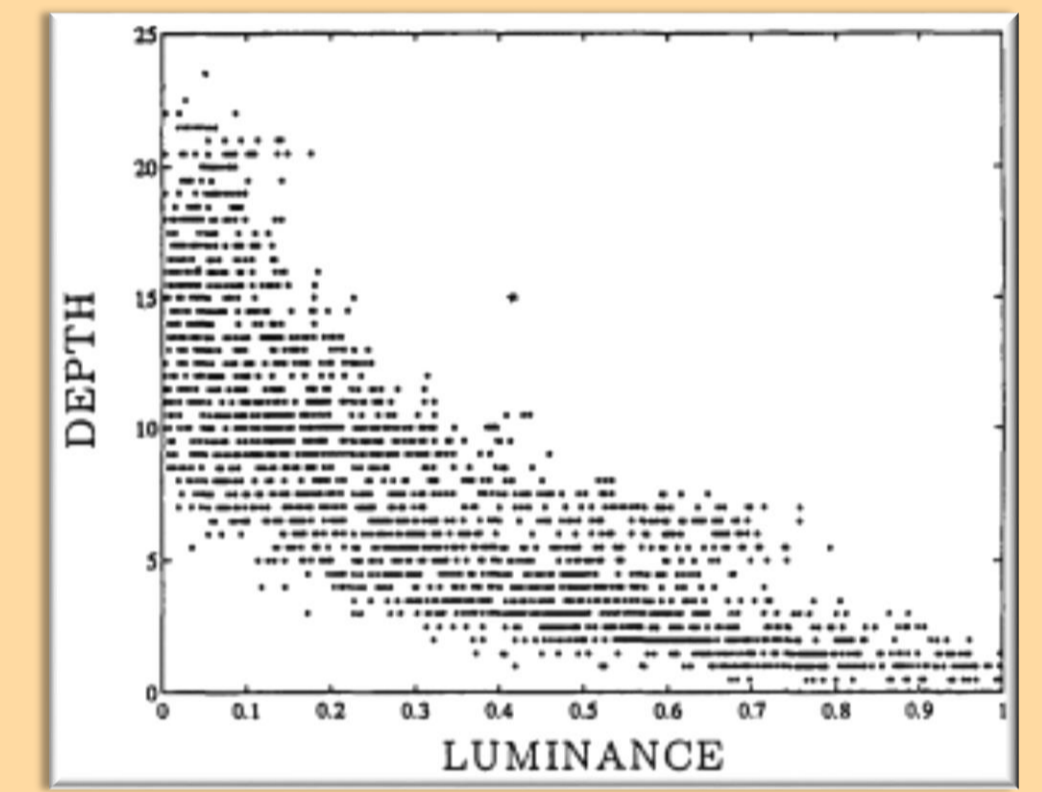
Horn, 1975; Huang, 2012; Todorović, 2014

### “Light from above” prior



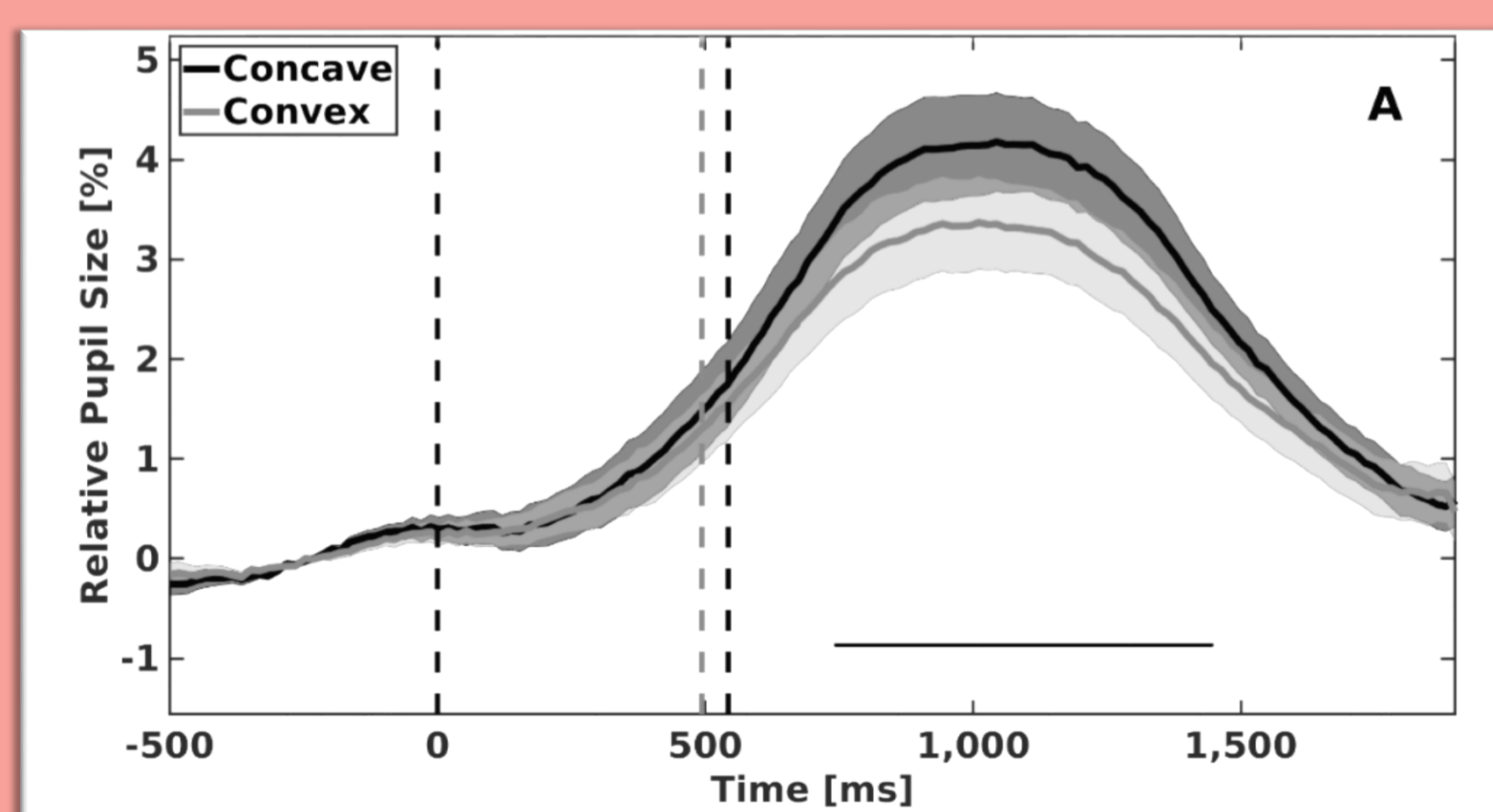
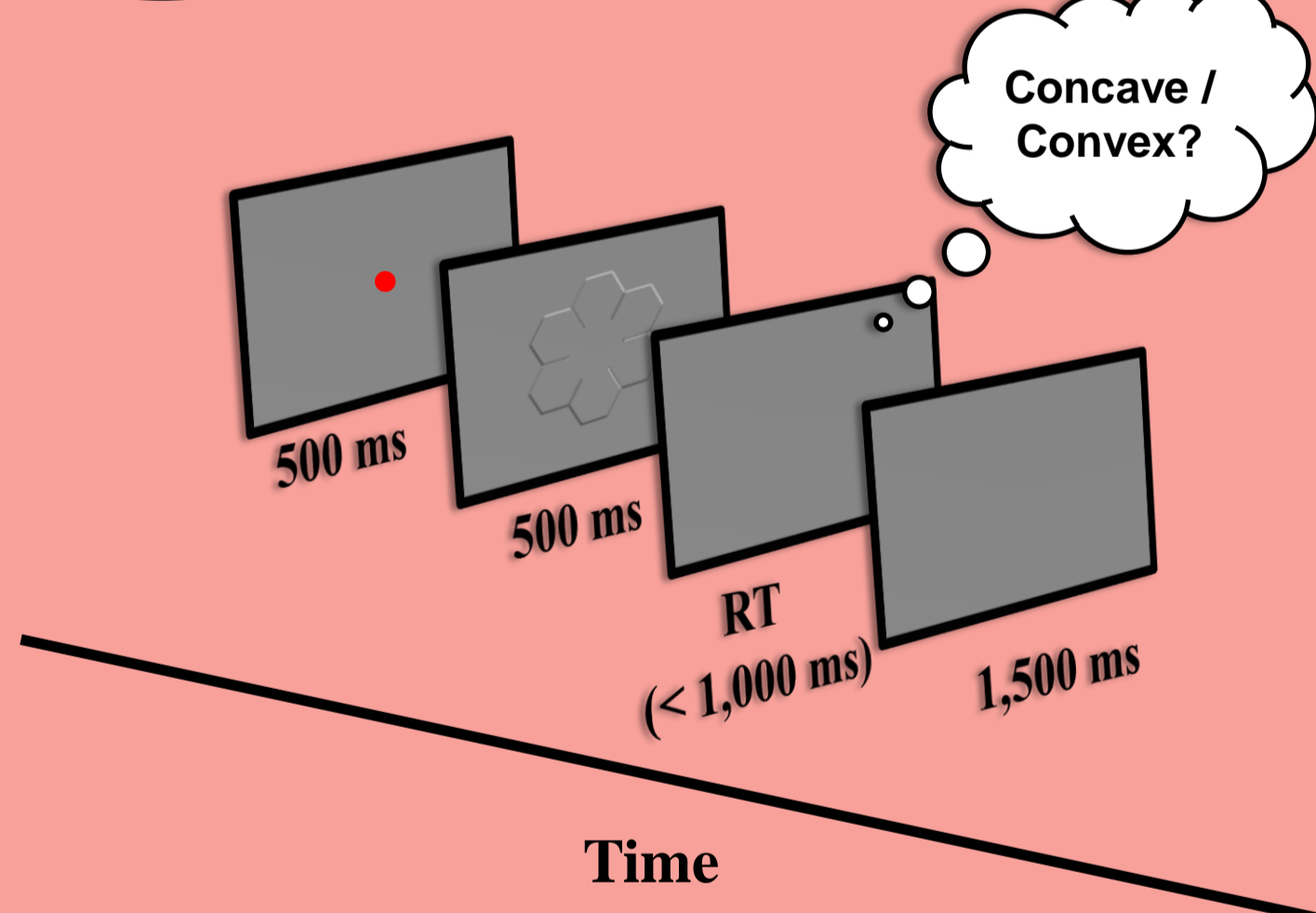
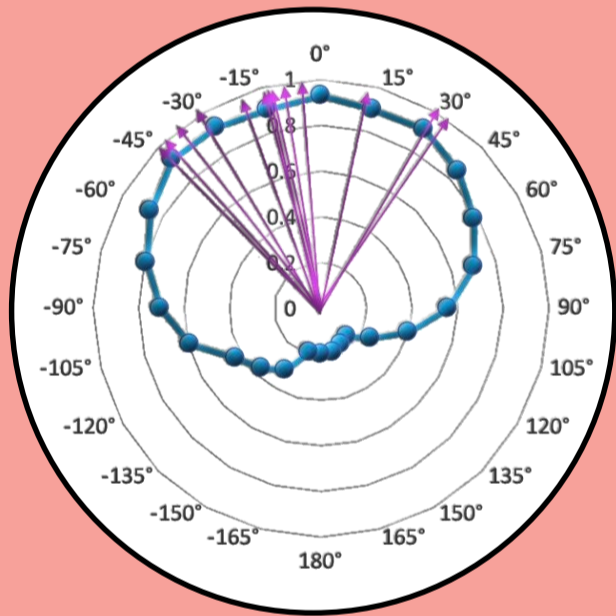
Andrews, Aisenberg, d'Avossa, & Sapir, 2013

### Darker is deeper

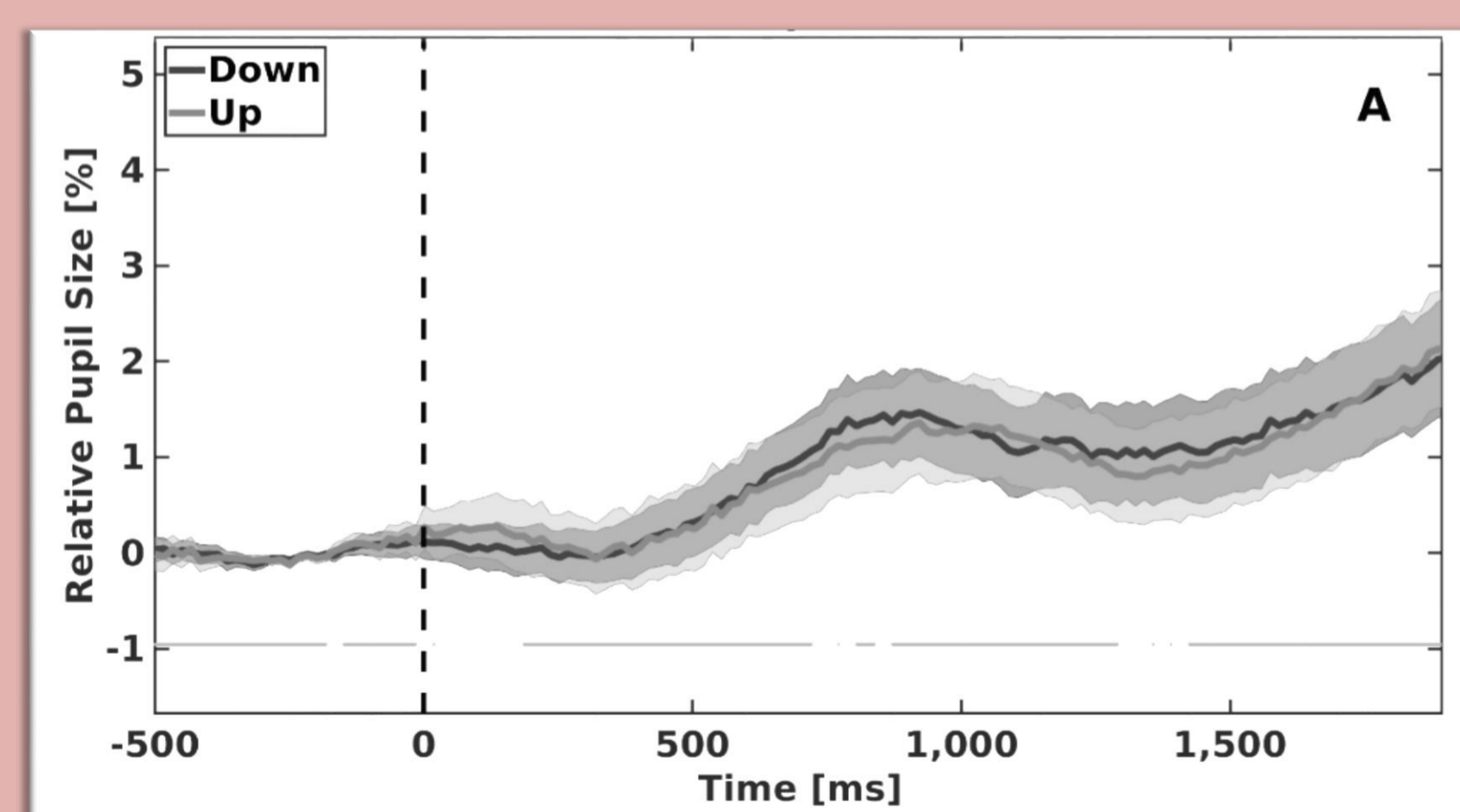
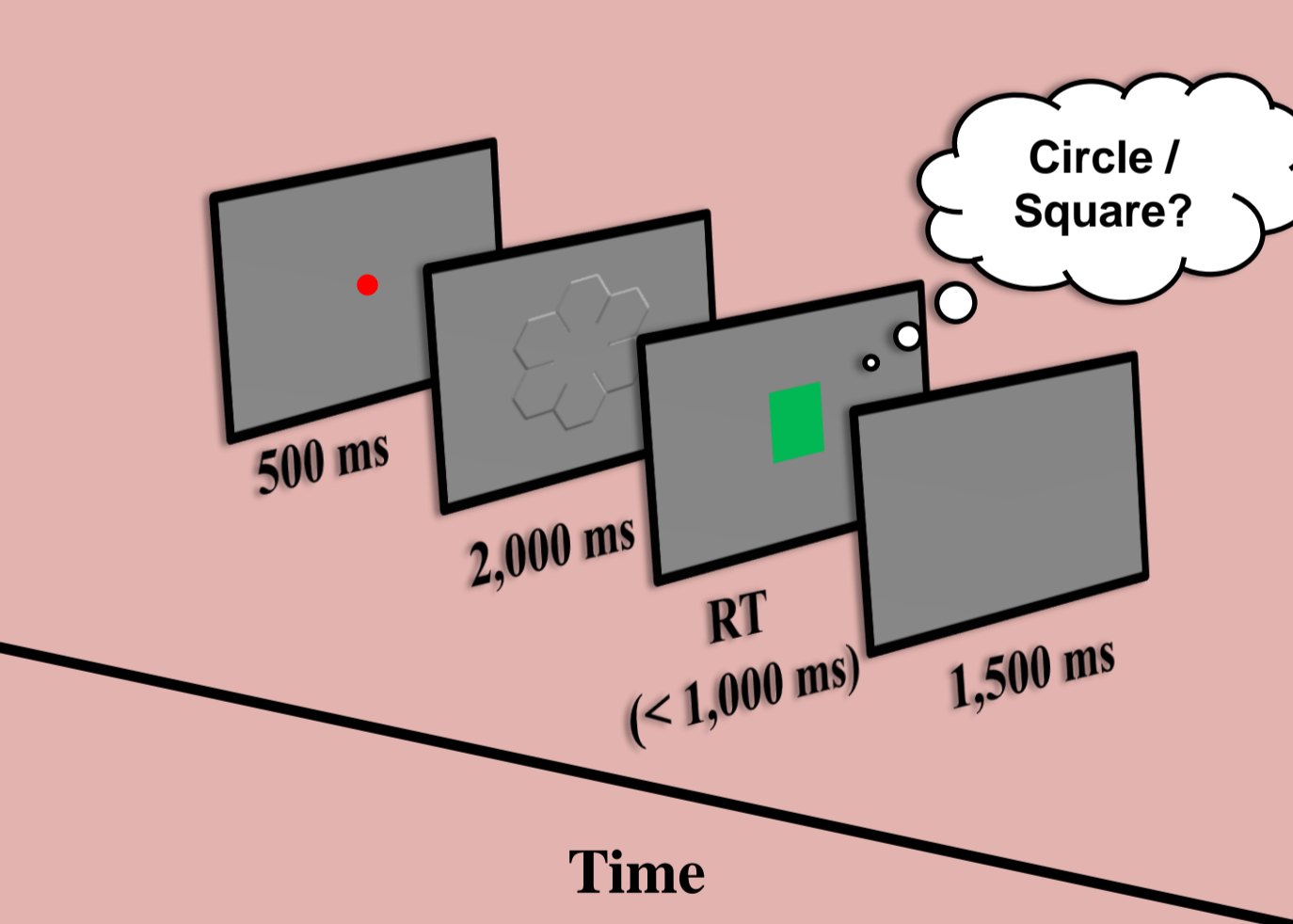


Langer & Zucker, 1994

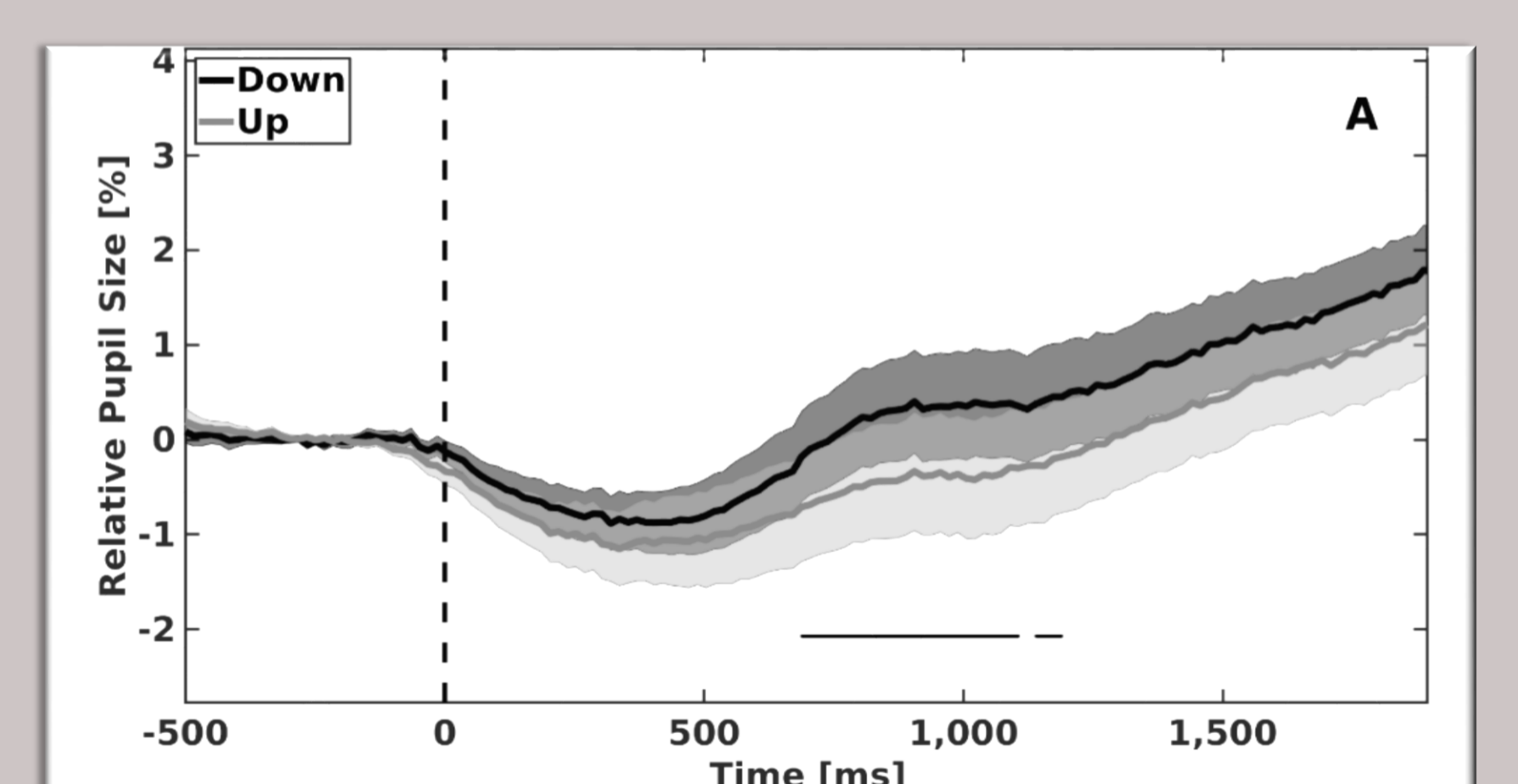
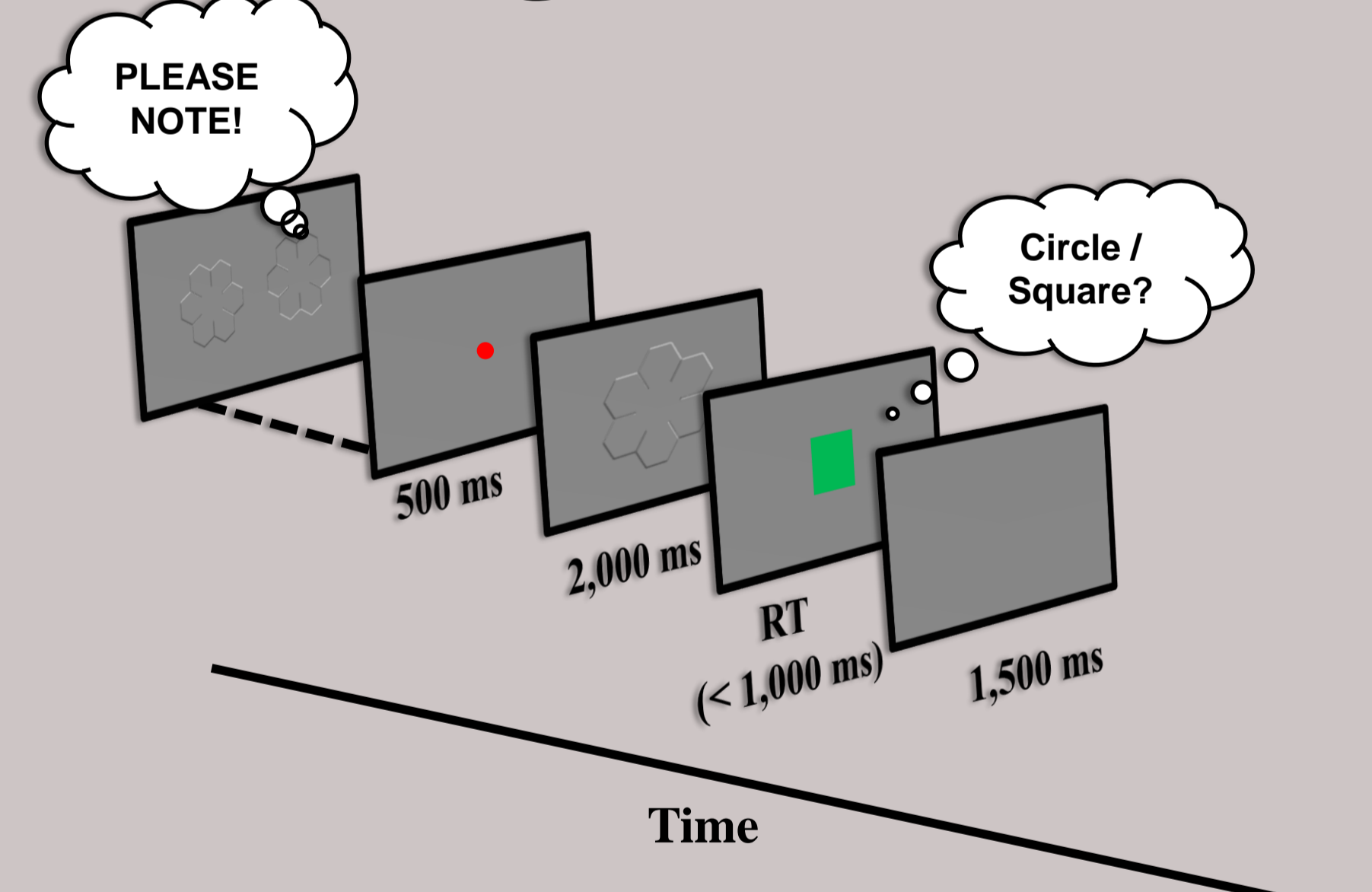
## Exp. 1



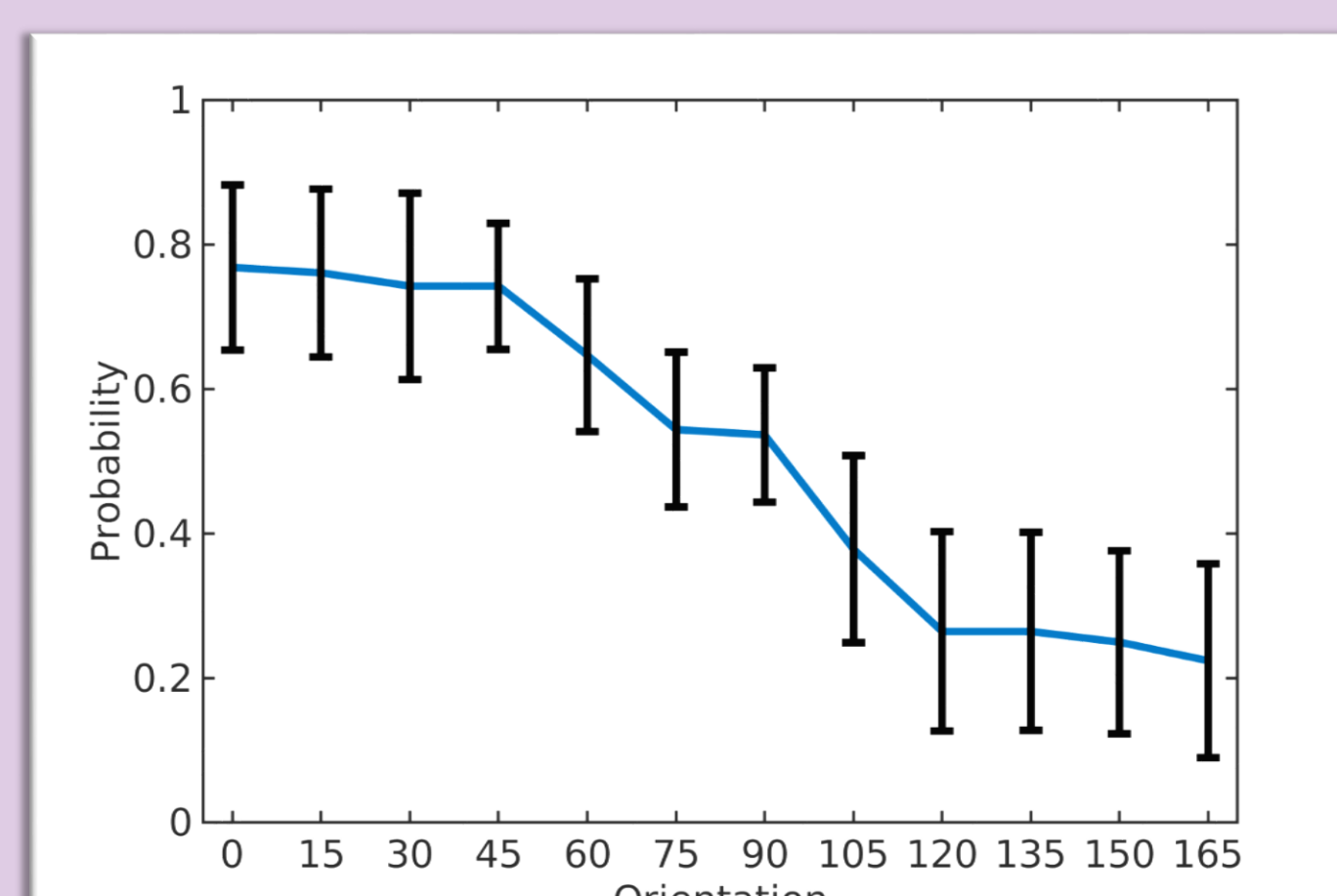
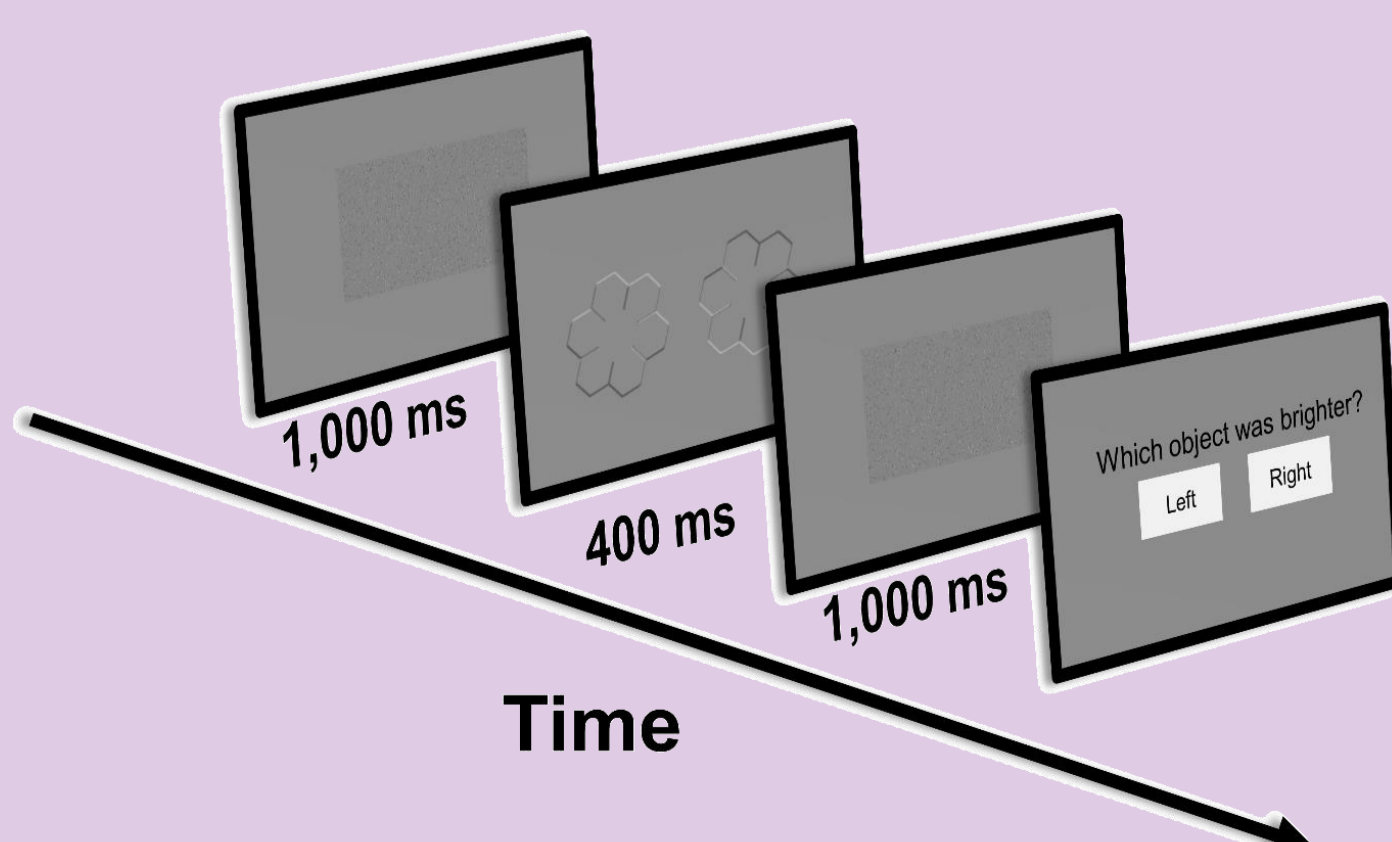
## Exp. 2 – passive viewing



## Exp. 3 – passive viewing + awareness

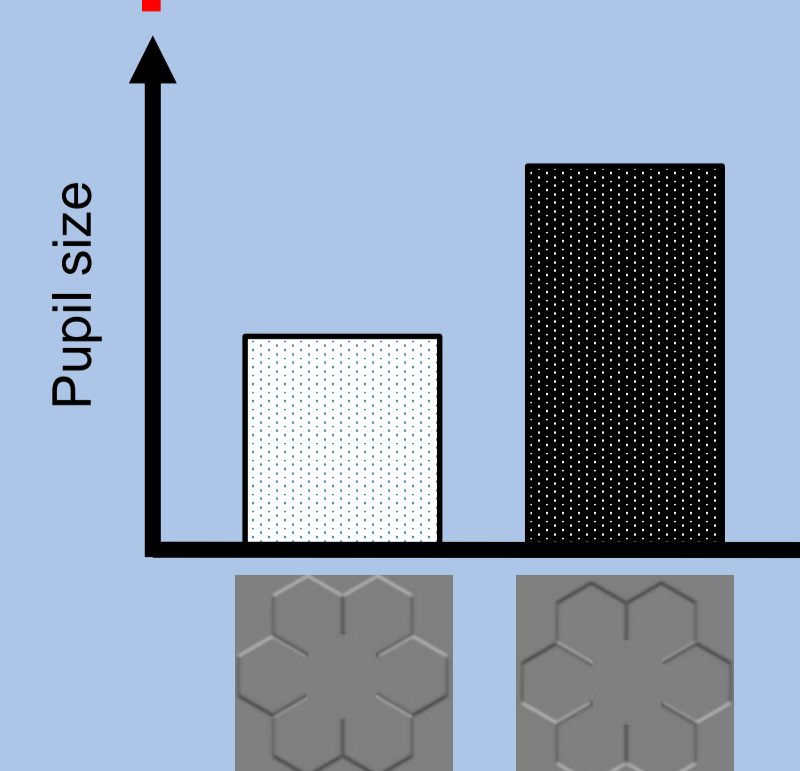


## Exp. 1b - control



## What does it mean?

Deeper ⇒ Darker



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