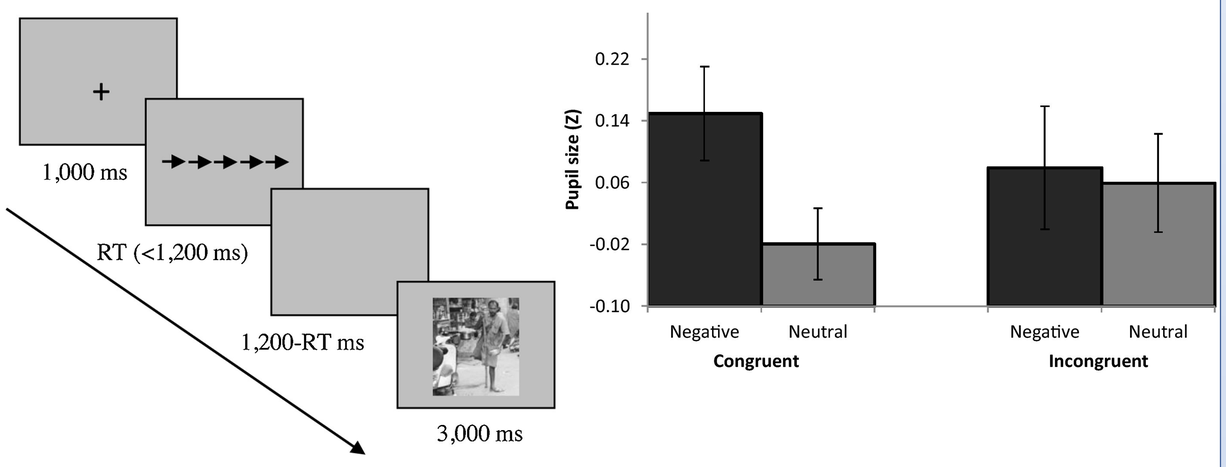
Visual Search as an Emotion Regulator

Gal Landshtain[1,2], Ronen Hershman[2,3], Natali Moyal[1] and Avishai Henik[1,3]

[1] Department of Psychology, Ben-Gurion University of the Negev, Beer-Sheva, Israel
[2] Department of Cognitive and Brain Sciences, Ben-Gurion University of the Negev, Beer-Sheva, Israel
[3] Zlotowski Center for Neuroscience, Ben-Gurion University of the Negev, Beer-Sheva, Israel

Introduction

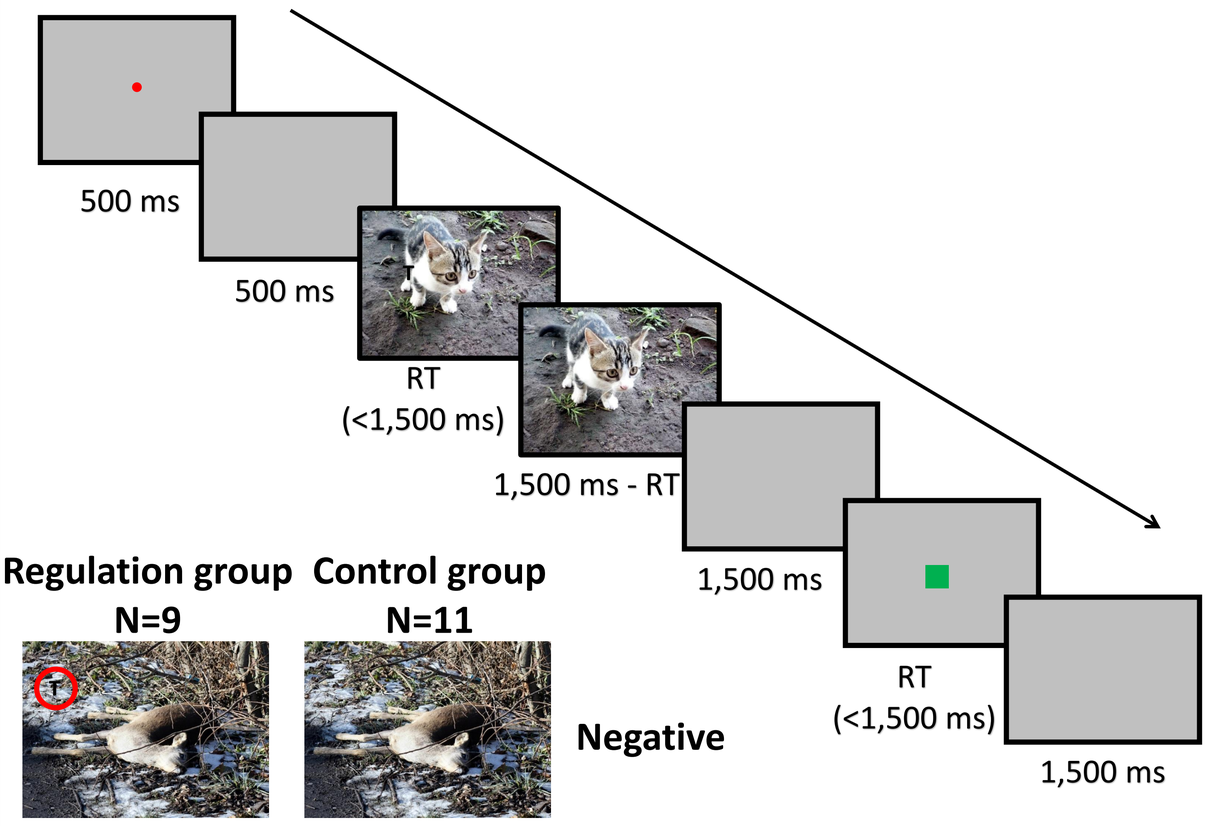
- **Bradley et al. (2008) correlated change in pupil dilation with visual emotional processing.**
- **Vasquez-Rosati et al. (2017) found similar pupillary response for positive and neutral images.**
- **Cohen et al. (2015) found that pupil dilation for aversive stimuli was attenuated after performing a cognitive task that required conflict resolution.**



Taken from Cohen et al. (2015).

- **The aim of our study is to examine if performing a cognitive task during exposure to an emotional stimulus will trigger change in pupil dilation.**

Method



Results

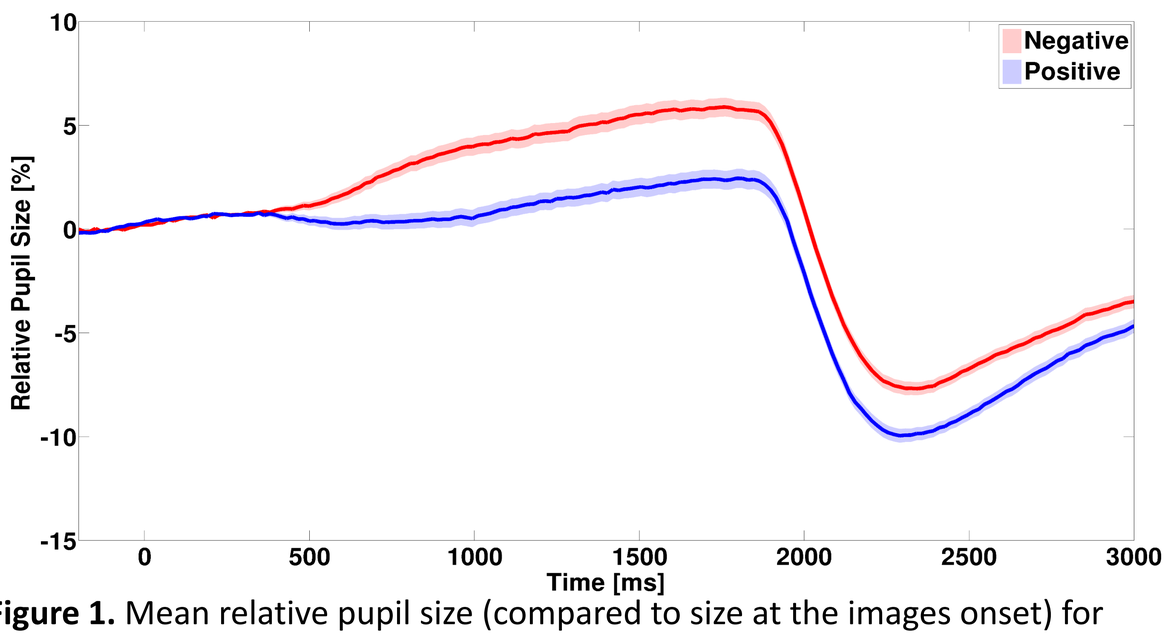


Figure 1. Mean relative pupil size (compared to size at the images onset) for the two valance conditions of the **control** group. The shaded areas represent 95% confidence intervals from the mean.

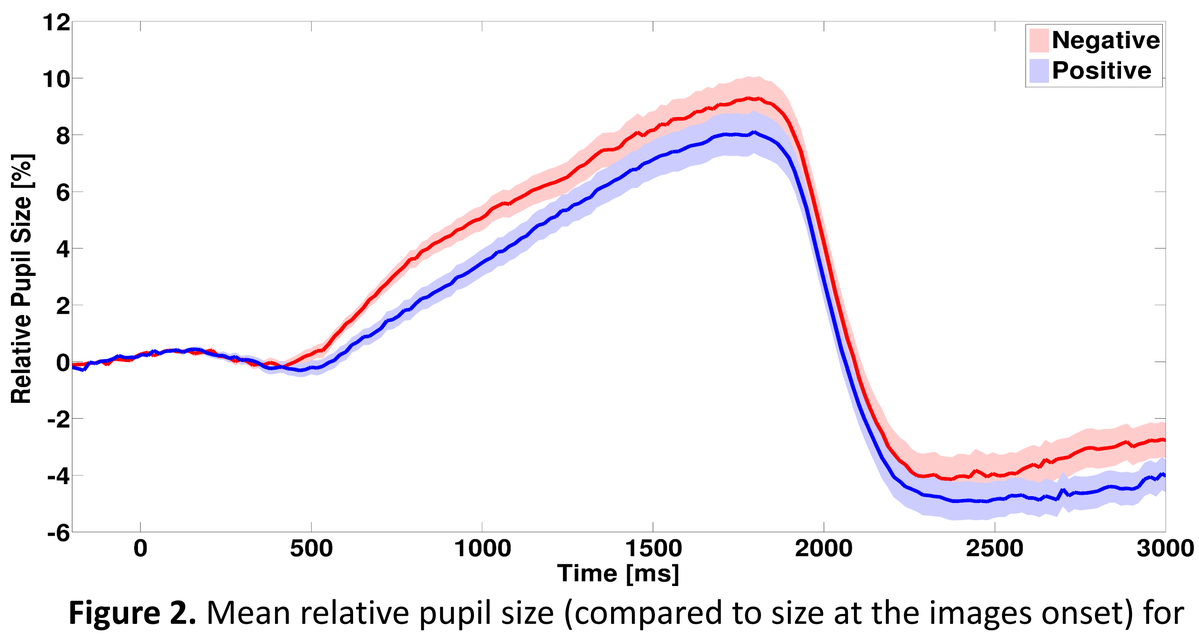


Figure 2. Mean relative pupil size (compared to size at the images onset) for the two valance conditions of the **regulation** group. The shaded areas represent 95% confidence intervals from the mean.

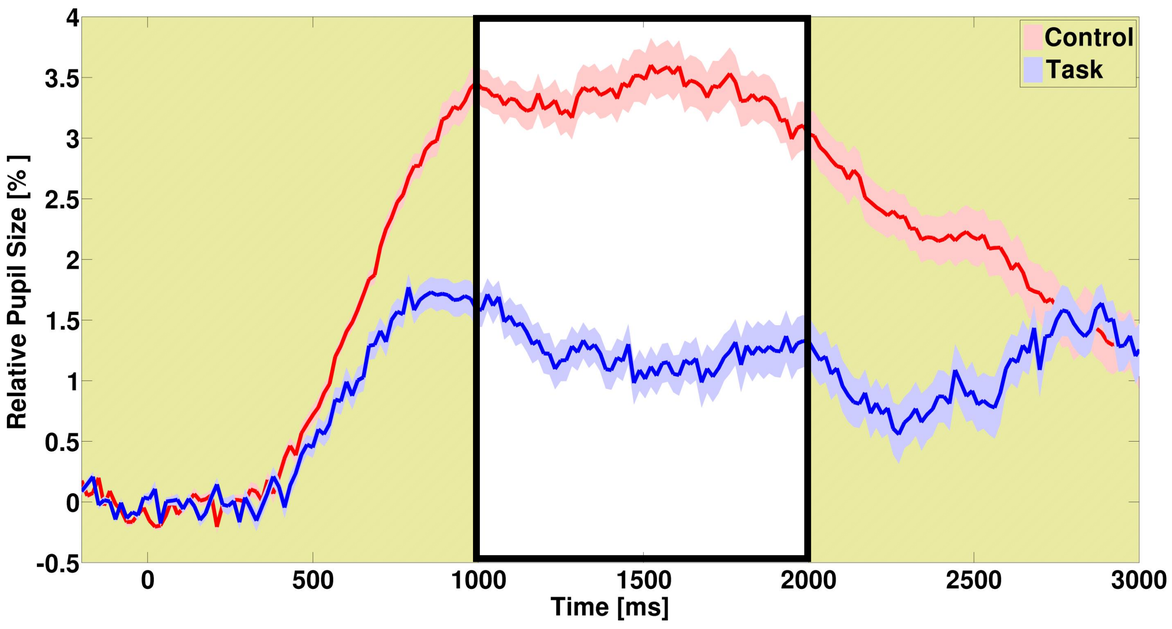


Figure 3. Difference in mean relative pupil size (compared to size at the images onset) between negative and positive stimuli of the two groups. The shaded areas represent 95% confidence intervals from the mean.

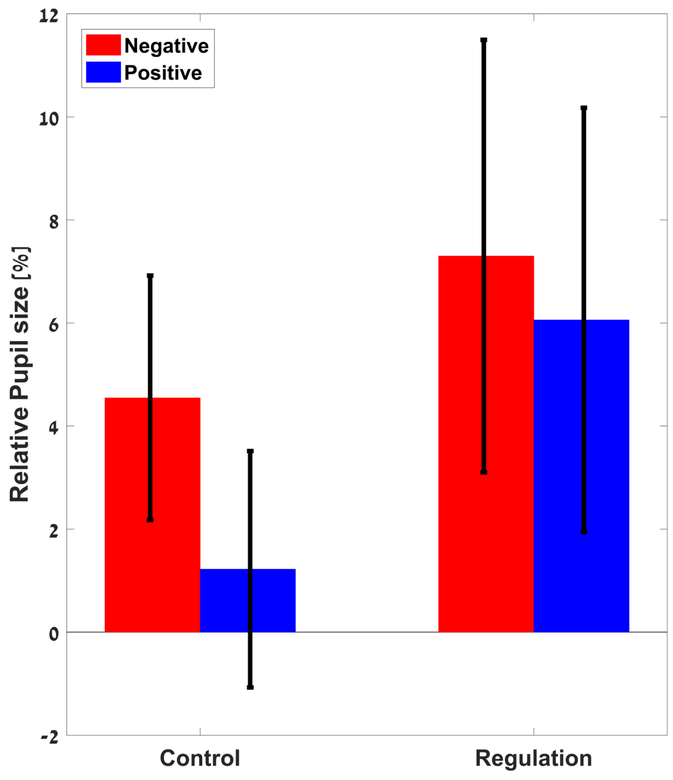


Figure 4. Mean relative pupil size (compared to size at the images onset) for the two valance conditions of the two groups between 1,000-2,000 ms after the stimuli onset. Bars indicate 95% confidence intervals from the mean.

- **Significant main effect for valance, $F(1, 19) = 39.98$, $MSE = 53.54$, $p < .001$ ($BF_{10} = 1021.92$)**
- **Significant interaction between valance and task, $F(1,19) = 8.36$, $MSE = 11.2$, $p = .009$ ($BF_{10} = 3.93$)**
- **No effect for task, $F(1, 19) = 2.82$, *NS* ($BF_{10} = 1.12$).**

Discussion

- **We found a main effect for valance and a significant interaction between valance and task but we did not find a main effect for task.**
- **Therefore we conclude that preforming a cognitive task during exposure to an emotional stimulus triggers emotion regulation.**
- **Future directions:**
  - **Manipulating the difficulty of the cognitive task.**
  - **Comparing between neutral (rather than positive) and negative pictures.**

References

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- Vasquez-Rosati, A., Brunetti, E. P., Cordero, C., & Maldonado, P. E. (2017). Pupillary responses to negative emotional stimuli is differentially affected in meditation practitioners. *Frontiers in Human Neuroscience, 11*, 209.

Correspondence: galland@post.bgu.ac.il