# Art as creative inspiration



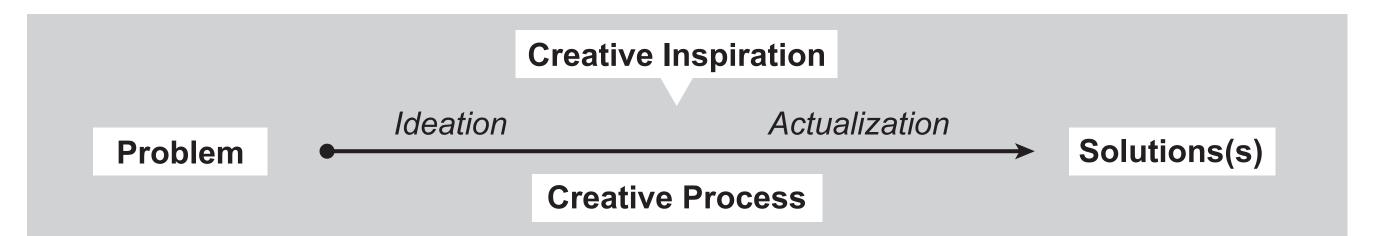
#### Edward A. Vessel<sup>1</sup>, Dominik Welke<sup>1</sup>, Isaac Purton<sup>2</sup>

- <sup>1</sup> Max Planck Institute for Empirical Aesthetics | Neuroscience
- <sup>2</sup> New York University | Psychology

# Introduction | Background

Creativity is often characterized as a personality trait, but inherently relates to a series of mental processes.

Moments of creative inspiration (externally evoked motivation for creative activity) are critical pivot points that can mark the transition from creative ideation to actualization of an idea [1].



#### Hypothesis:

The state of being *creatively inspired* is similar to the state of being aesthetically moved, a critical point during aesthetic reception [2,3].

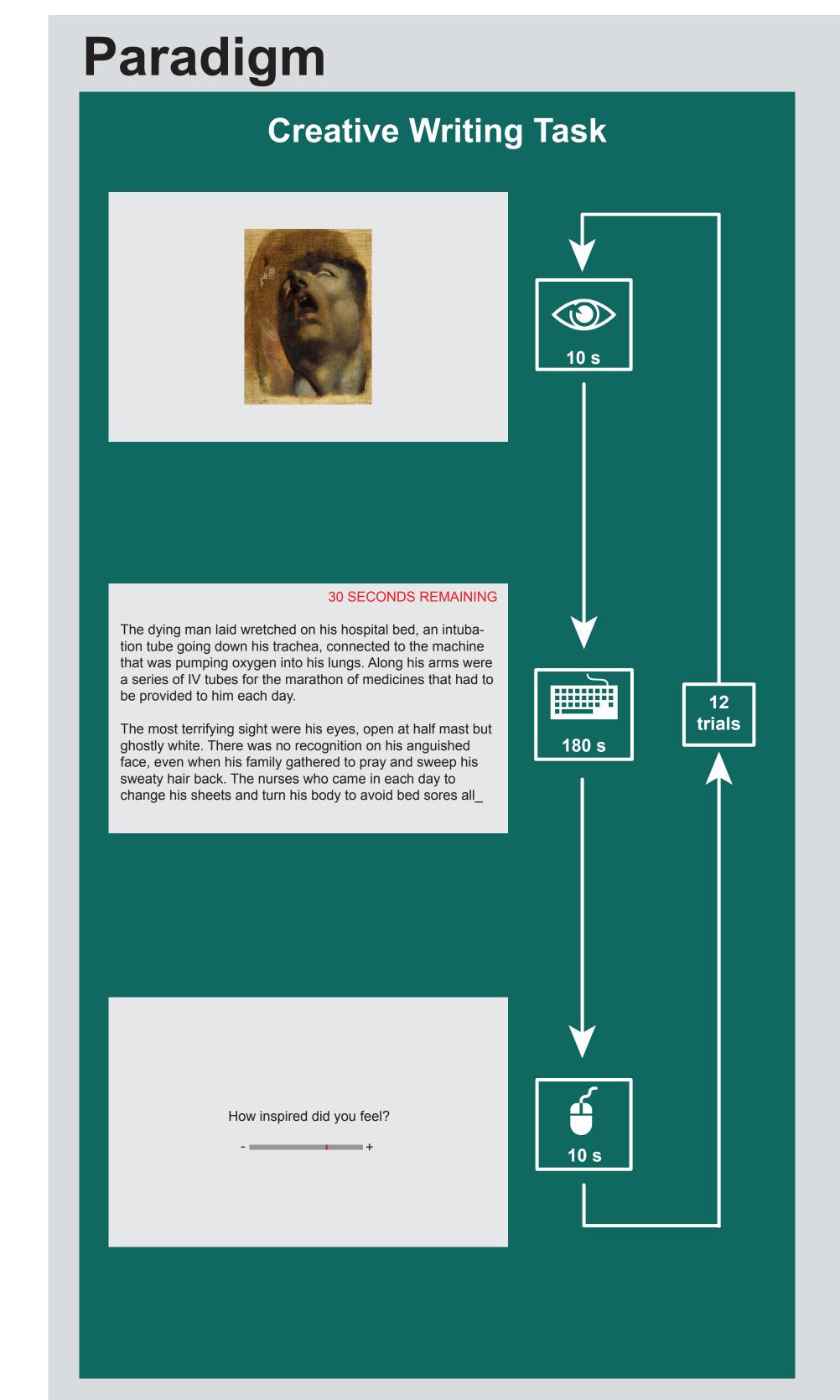
If this is the case, then being aesthetically moved may serve as an effective prime for creative inspiration.

# Methods

Two experiments with N = 25 and N = 34 participants.

**Aesthetic** Aesthetic Creative **Question-Alternative** Rating of Rating of **Writing Task Uses Task** naires **Artworks Artworks** 

- 1. State and trait factors assessed by questionnaires
- 2. Trait creativity assessed by Alternative-Uses-Task (AUT)
- 3. Individual aesthetic appeal of 20 artworks assessed by rating task
- 4. Participants type 12 pieces of creative text in response to visual prompts. After each writing phase they indicate their level of felt inspiration
- 5. Individual aesthetic appeal of all used artworks assessed by 2nd rating task
- Responses modeled using Linear Mixed Effects Regression (LMM) [4]:
  - fixed effect of prompt category
  - random effects of stimulus and participant



# Stimuli

#### **Experiment 1**

#### Contrast: aesthetic vs. non-aesthetic prompts

 6 paintings rated as highly liked (selected individually for each participant)

6 triads of unrelated words

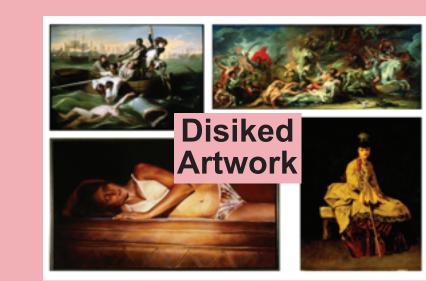
Bang		Trumpet	
Salt		<b>Bathtub</b>	
Lettuce		Grant	
	Word		
	<b>Triads</b>		
Big		Gold	
Hair		Cracker	
Scotch		Wheel	

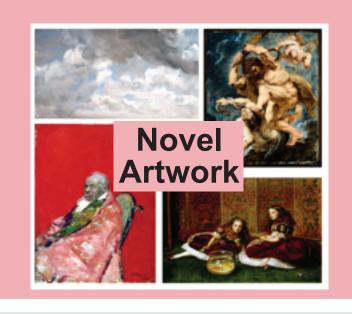
# Artwork =

# **Experiment 2**

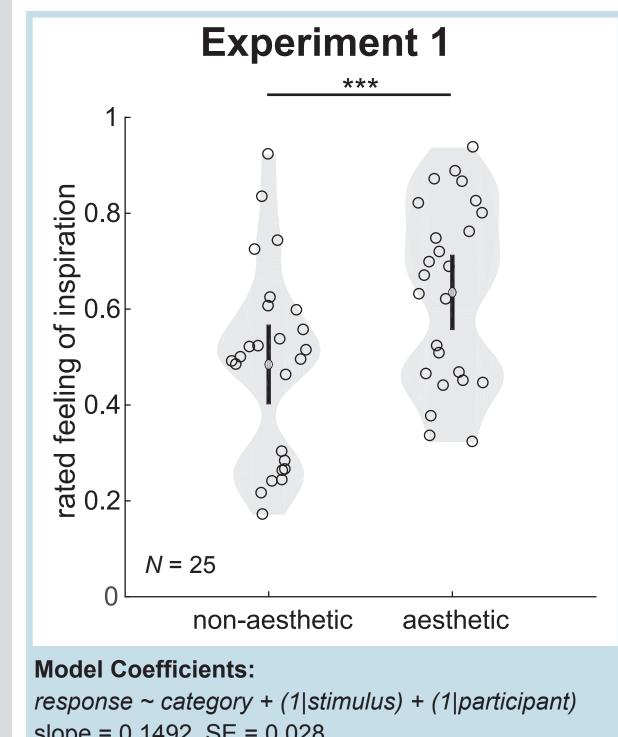
Two contrasts: liked vs. disliked and pre-exposed vs. novel

- 4 paintings rated as highly liked
- 4 paintings rated as disliked
- 4 novel paintings





# Results



slope = 0.1492, SE = 0.028

**Likelihood Ratio Test against intercept-only:**  $\chi^2(5) = 16.8, p < 1 \times 10^{-4}$ 

#### **Experiment 2** insp = 0.34\*pref + 0.40\*\*\* inspiration 0 9 ation teeling 6.4 N = 136rated 2.0 0.4 0.6 8.0 rated preference (post-hoc) dislike novel **Model Coefficients: Model Coefficients:** response ~ category + (1|stim.) + (1|part.) with 2 linear contrasts response ~ aesth.rating + (1|stimulus) +

slope = 0.12562, SE = 0.03285, p = 0.0002liked vs. disliked: (liked+disliked) vs. novel: slope = 0.01755, SE = 0.04545, p = 0.71**Likelihood Ratio Test against intercept-only:** 

(1|participant) slope = 0.398, SE = 0.074

**Likelihood Ratio Test against intercept-only:**  $\chi^2(5) = 23.8, p = 1 \times 10^{-6}$ 

# Results summary

### **Experiment 1**

- Higher self-reported inspiration for liked paintings than for word-triads.
  - proof of concept
  - potential confound of stimulus preference and novelty

# **Experiment 2**

- Self-reported inspiration is:
  - significantly higher for liked paintings than for disliked paintings
  - not affected by pre-exposure
- Higher inspiration associated with preference even for novel paintings
- Potential confound by stimulus modality avoided

# Conclusion

 $\chi^2(6) = 13.3, p = 0.0013$ 

- Aesthetically moving visual prompts can induce felt inspiration in a creative writing task
  - driven by personal preference
  - for known and novel prompts
- State of creative inspiration can be operationalized
  - potentially well suited for investigation using the methods of cognitive neuroscience
- Engagement with aesthetic material may be a potent tool for increasing individuals' likelihood to engage in creative production
  - valuable in scientific and educational settings

### Contact

Ed Vessel | ed.vessel@ae.mpg.de ae.mpg.de | +49 69 8300479 327

#### **Acknowledgements**

Thanks to Gabrielle Starr, Katherine Markowski, Darin Strauss, David Poeppel, Şeyma Turk, Christine Knoop and Vanessa Kegel. Supported by Max Planck Society.

### References

[1] Oleynick, V.C., Thrash, T.M., LeFew, M.C., Moldovan, E.G., Kieffaber, P.D. (2014) The scientific study of inspiration in the creative process: challenges and opportunities, Frontiers in Human Neuroscience, 8, 436, doi:10.3389/fnhum.2014.00436 [2] Vessel, E.A., Starr, G.G., Rubin, N. (2012). The brain on art: intense aesthetic experience activates the default mode network. Frontiers in human neuroscience, 6, 66. doi:10.3389/fnhum.2012.00066 [3] Tinio, P.P.L. (2013). From artistic creation to aesthetic reception: The mirror model of art. Psychology of Aesthetics, Creativity, and the Arts, 7(3), 265-275. doi:10.1037/a0030872 [4] Bates, D., Maechler, M., Bolker, B., Walker, S. (2015). Fitting Linear Mixed-Effects Models Using Ime4. Journal of Statistical Software, 67(1), 1-48. doi:10.18637/jss.v067.i01 [5] Bowers, K. S., Regehr, G., Balthazard, C., & Parker, K. (1990). Intuition in the context of discovery. Cognitive Psychology, 22(1), 72-110. doi:10.1016/0010-0285(90)90004-N

