

# Exploring patterns of ongoing thought under naturalistic and conventional task-based conditions

Delali Konu<sup>1</sup>, Brontë Mckeown<sup>1</sup>, Adam Turnbull<sup>2</sup>, Nerissa Siu Ping Ho<sup>3</sup>, Theodoros Karapanagiotidis<sup>1</sup>, Tamara Vanderwal<sup>4</sup>, Cade McCall<sup>1</sup>, Steven P. Tipper<sup>1</sup>, Elizabeth Jefferies<sup>1</sup> and Jonathan Smallwood<sup>5</sup>



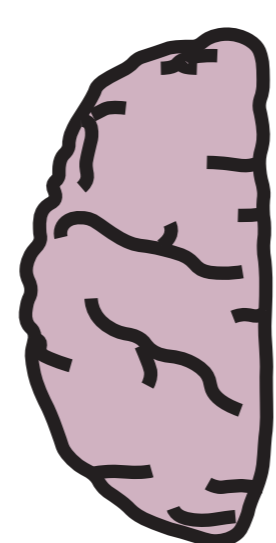
UNIVERSITY  
of York

1. Department of Psychology, University of York, UK
2. School of Nursing, University of Rochester, USA
3. School of Psychology, University of Plymouth, UK
4. Department of Psychiatry, University of British Columbia, Canada
5. Department of Psychology, Queen's University, Canada

## Background & Aims

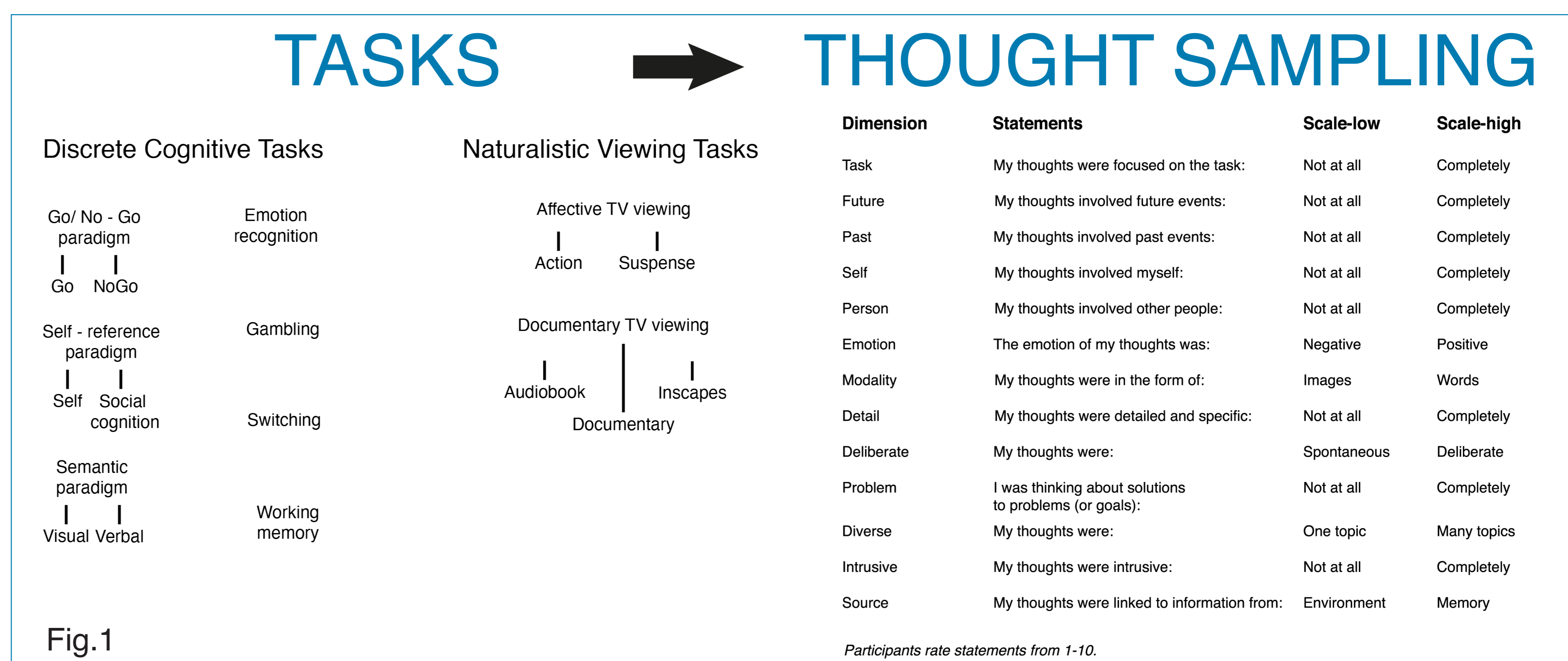
- Our minds are filled with thoughts throughout the day, but little is known about how the environment influences them.
- Thought is heterogeneous, varying across situations and individuals. [1,2]
- Despite this, studies typically sample thought within undemanding task contexts. [3]
- Such task contexts are unrepresentative of the contexts in which we think in everyday life. [4]
- Do different task contexts influence thought?
- Do individual differences affect the way thought is expressed in a given context?

## Sample & Procedure



- 70 participants
- 86% female
- $M^{Age} = 20.60$  yrs
- $M^{SD} = 2.10$

- Lab experiment
- 2 sessions (counterbalanced)
- Multiple task conditions completed (Fig. 1)
- Thought sampling after each task condition (Fig. 1)
- Depression and anxiety questionnaires completed



## Results

- Principal Component (PC) Analysis:  
4 types of thought identified (top left Fig.2)  
Total variance: 53.22%

PC1 (Episodic social cognition) = 15.28%  
PC2 (Unpleasant intrusive) = 13.91%  
PC3 (Concentration) = 12.31%  
PC4 (Self focus) = 11.73%

- Linear Mixed Modelling:  
Significant influence of task condition on distribution of thought (bottom left and right Fig.2)

PC1:  $F(14, 2205.64) = 86.89, p < .001$   
PC2:  $F(14, 2205.54) = 27.39, p < .001$   
PC3:  $F(14, 2205.72) = 37.70, p < .001$   
PC4:  $F(14, 2205.81) = 123.17, p < .001$

- Repeated Measures ANOVA:  
Negative intrusive thought expressed most in individuals with higher depression scores  
 $F(3, 198) = 2.93, p = .035$

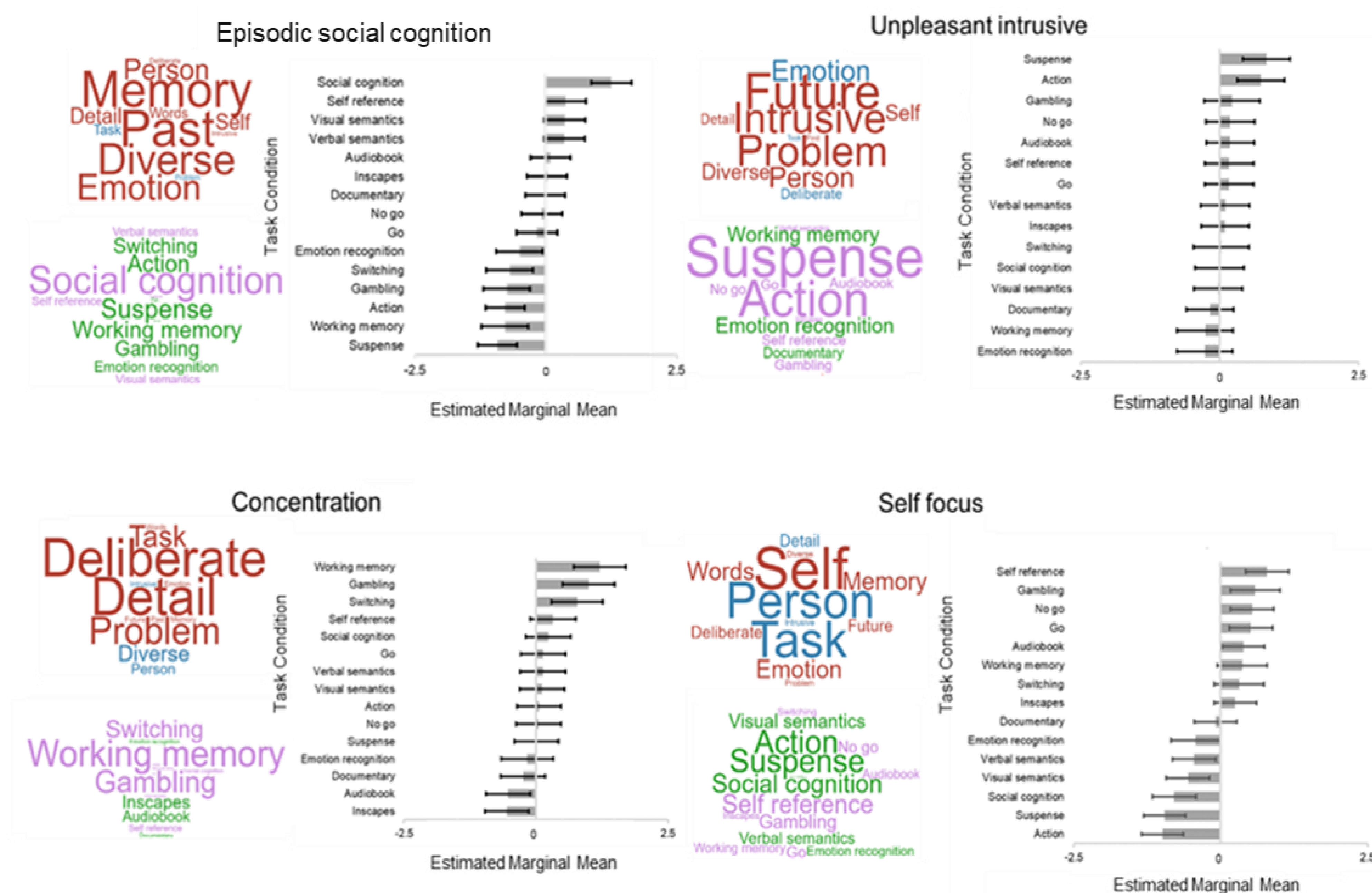


Fig.2 - Error bars 99.7 % CI (control for familywise error for these analyses)

## Conclusions

- Thoughts are influenced differentially by context.
- Individual differences influence the way thought is expressed in a given context.
- There is a need to broaden task contexts used to study thought.

## References

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- [2] Smallwood, J., Turnbull, A., Wang, H.-T., Ho, N. S., Poerio, G. L., Karapanagiotidis, T., ... & Murphy, C. (2021). The neural correlates of ongoing conscious thought. *iScience*, 102132.
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## Contact info

delali.konu@york.ac.uk

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