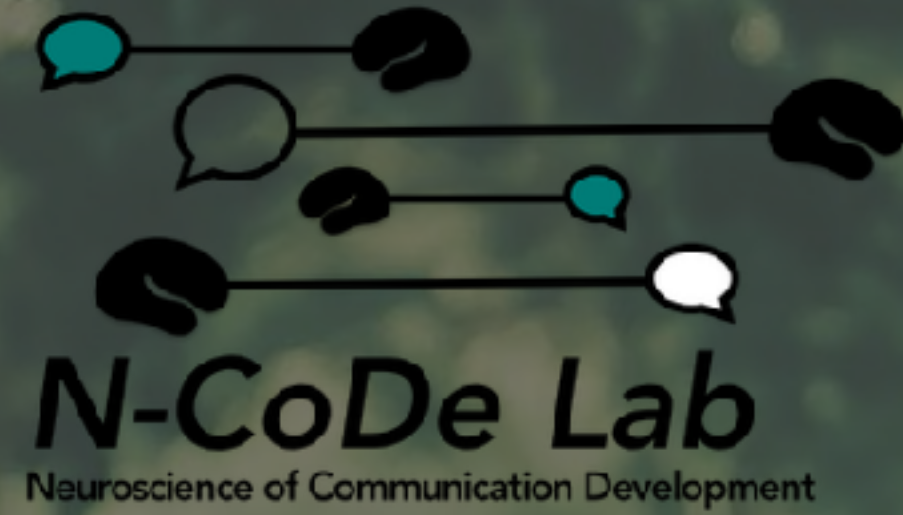




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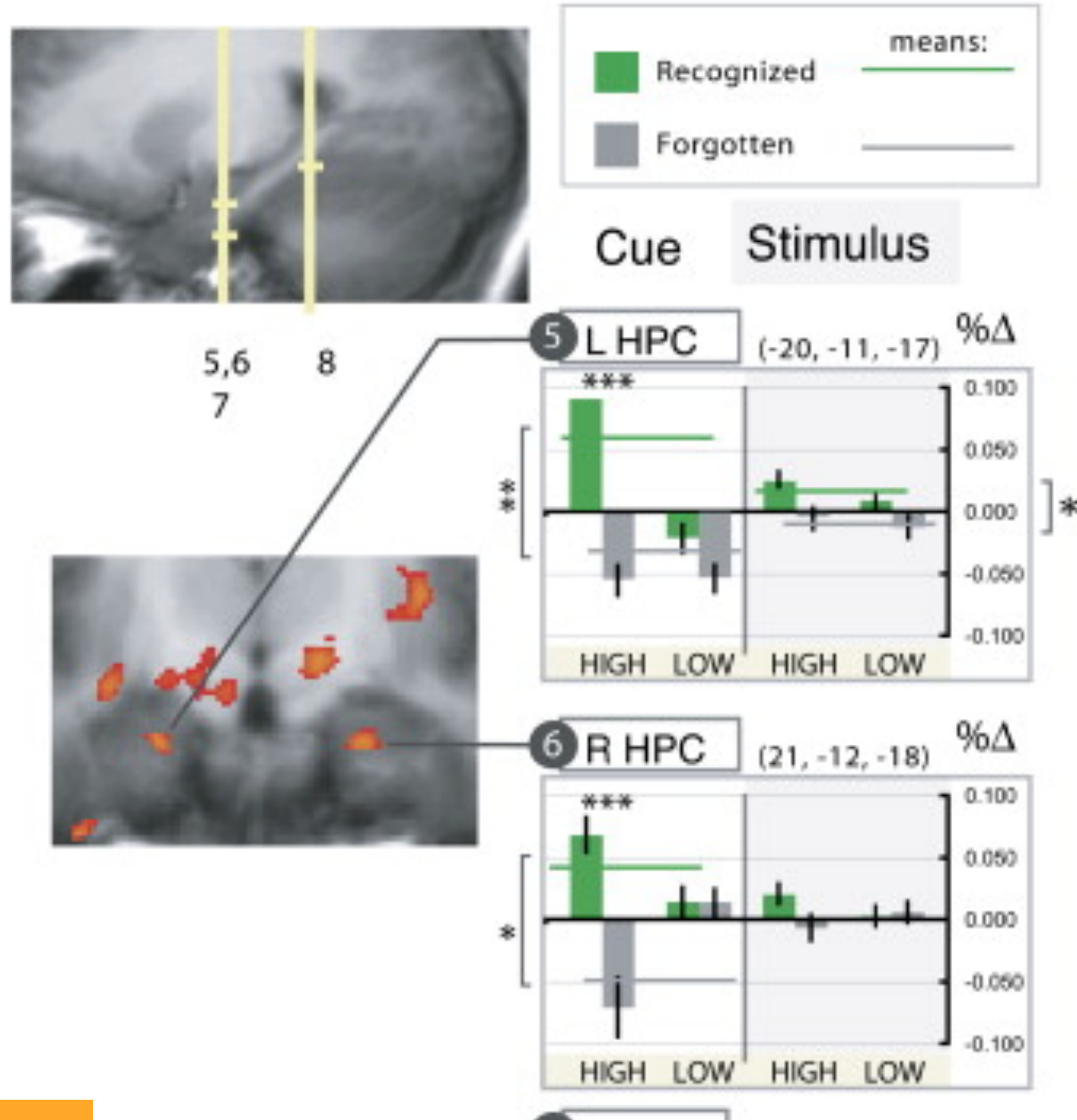
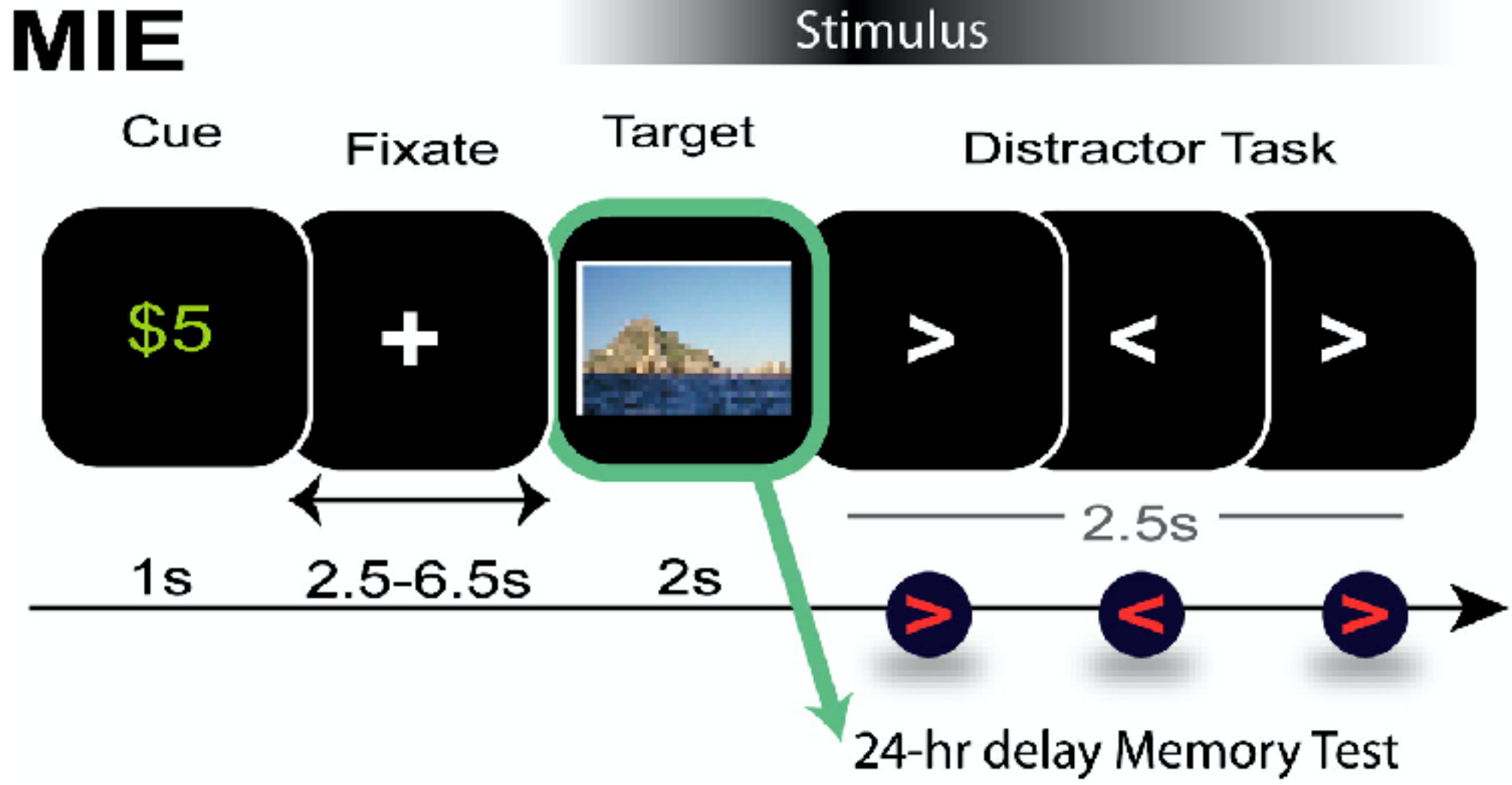


July 2021

How do enjoyment and curiosity affect learning?

SALONI KRISHNAN, ROYAL HOLLOWAY, UNIVERSITY OF LONDON

Motivation is important for learning



ADCOCK ET AL., 2006

But we can't always provide rewards...

Do we find learning intrinsically rewarding?

FEW COUNTRIES ARE NOW RULED BY A CYCHE

IN THE PALACE LIVES THE KING AND THE CYCHE

Paradigm

READING

LISTENING

READING &
LISTENING

FEW COUNTRIES ARE NOW RULED BY A CYCHE

M+

IN THE PALACE LIVES THE KING AND THE CYCHE

TYPE IN GUESS

CONFIDENCE, AROUSAL, ENJOYMENT RATINGS

JOHN NEEDED A BATTERY FOR HIS BEMBLE

M-

THE TEACHER WROTE THE DATE ON THE BEMBLE

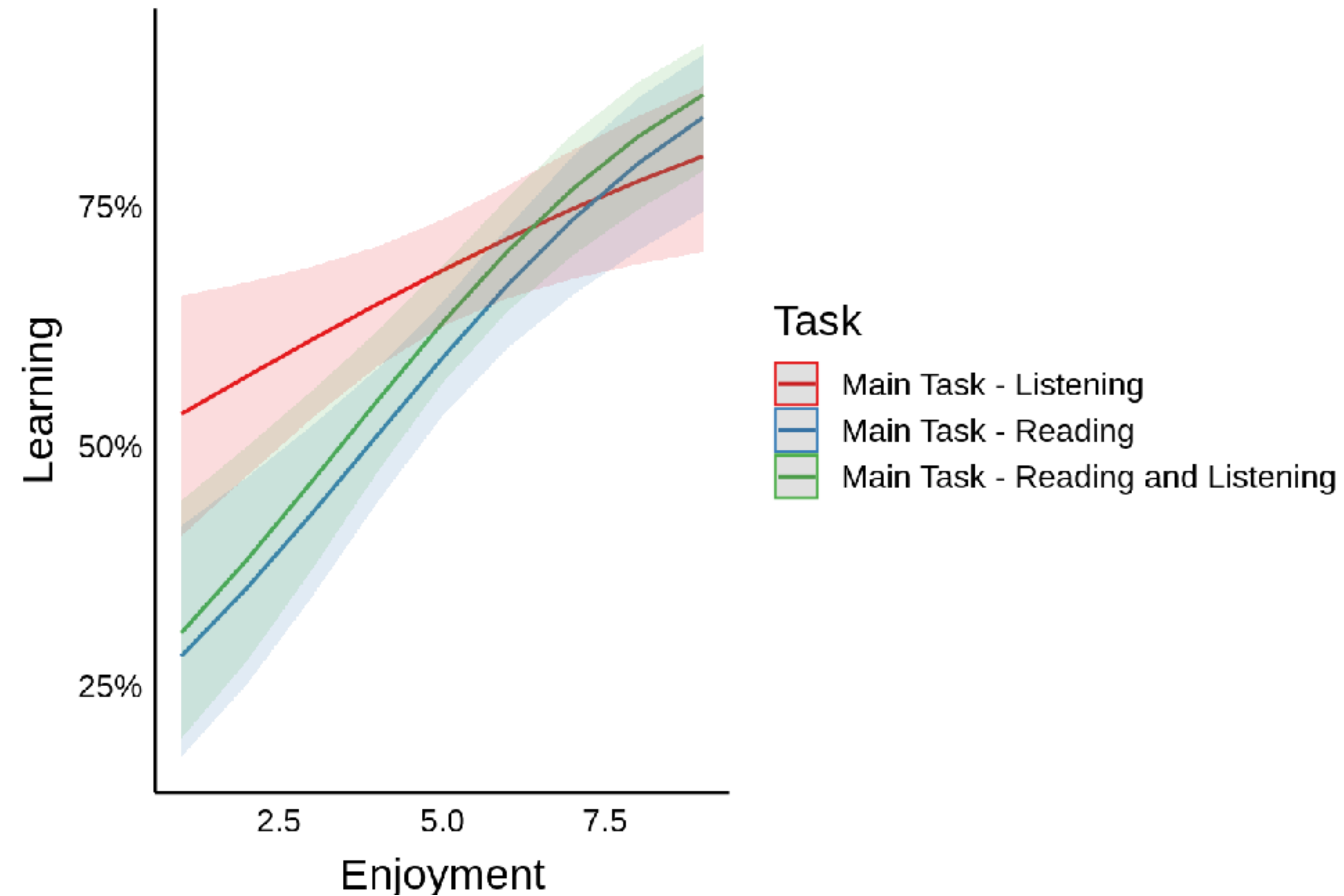
TYPE IN GUESS

CONFIDENCE, AROUSAL, ENJOYMENT RATINGS

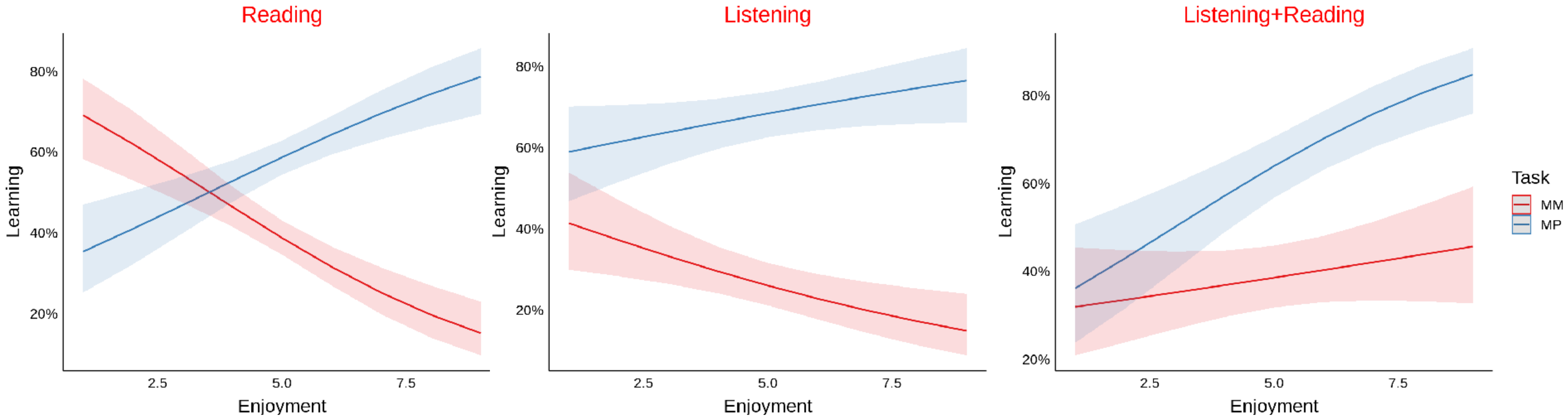
24 HOURS LATER:

RECOGNITION
TASK

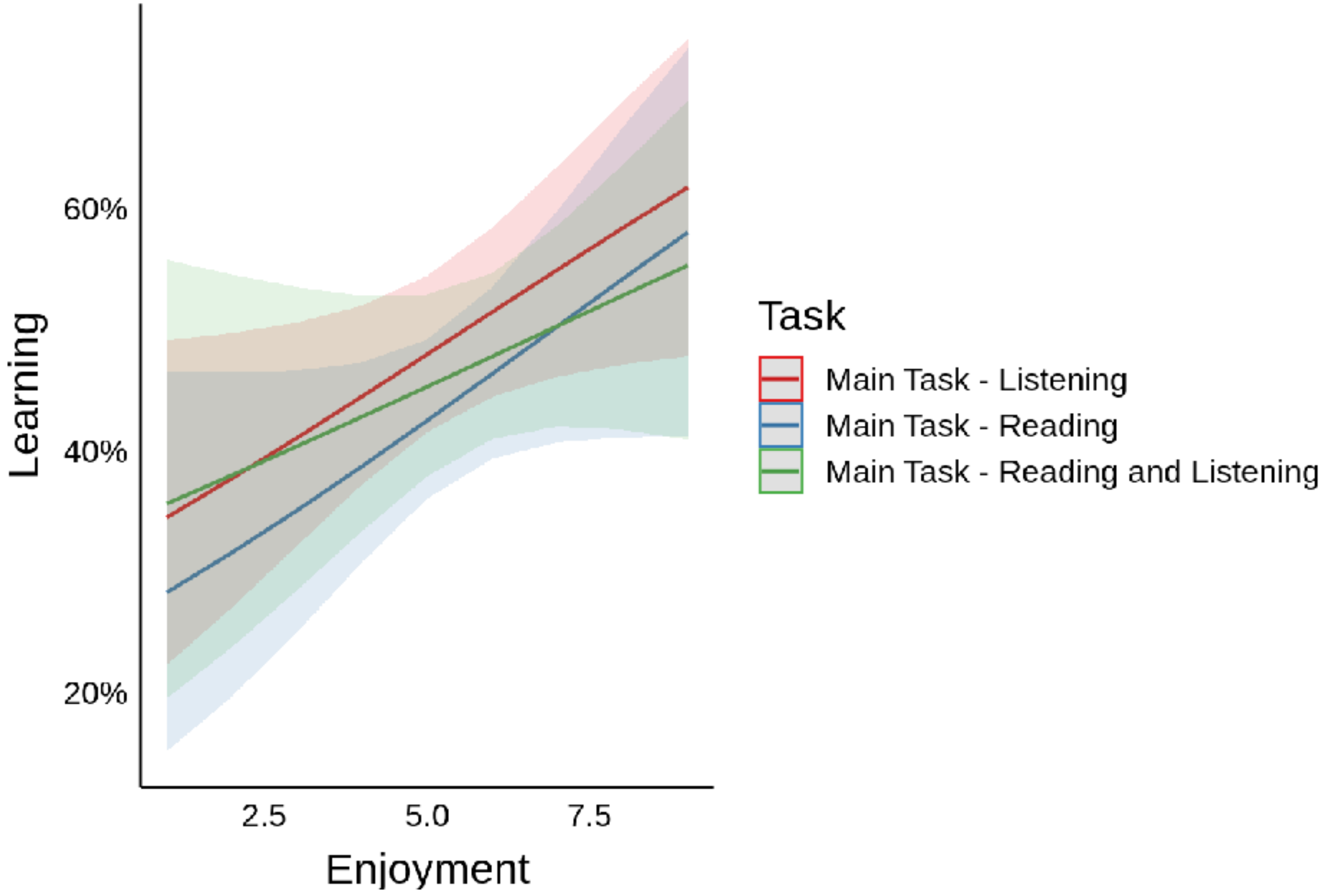
Adults find learning new words is pleasurable



Learning new words is pleasurable in all conditions



Intrinsic reward is associated with memory benefits



Registered Report: Testing 10-18 year olds

- Learning new words while reading will be intrinsically rewarding at an early developmental stage—a hypothesis that has not been tested in children and adolescents
- Intrinsic reward will be related to memory benefits.
- Intrinsic reward and word recall will increase with age, peaking in late adolescence.

**WE STILL NEED A FEW 14-
AND 15-YEAR-OLDS!**



Organizational Culture

The Business Case for Curiosity

Research shows that it leads to higher-performing, more-adaptable firms. by Francesca Gino

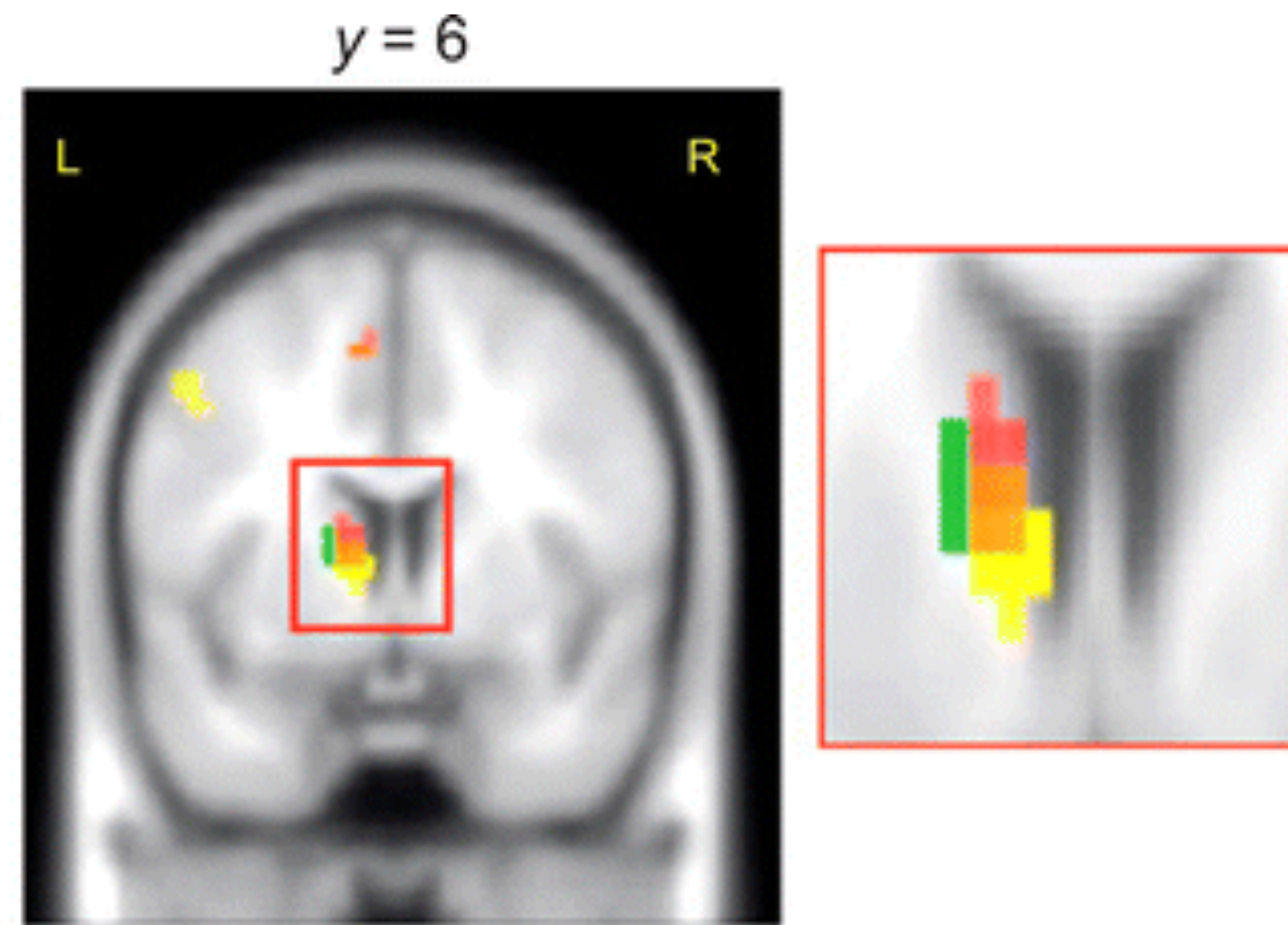
From the Magazine (September–October 2018)

‘Schools are killing curiosity’: why we need to stop telling children to shut up and learn



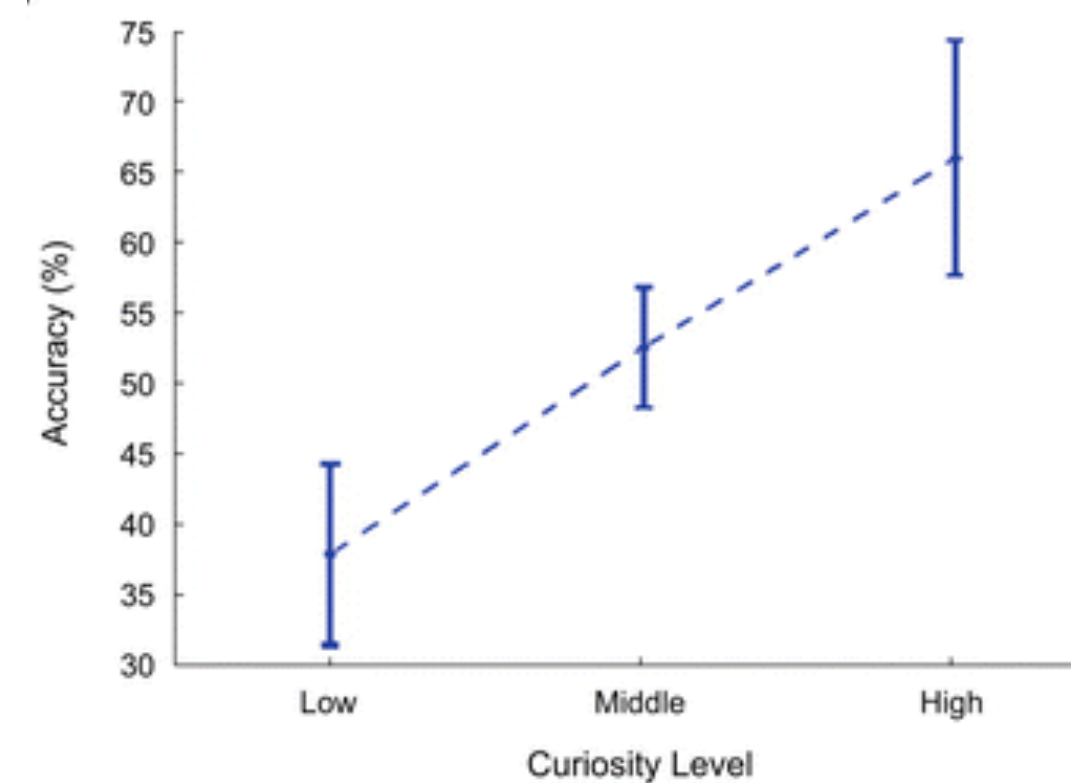
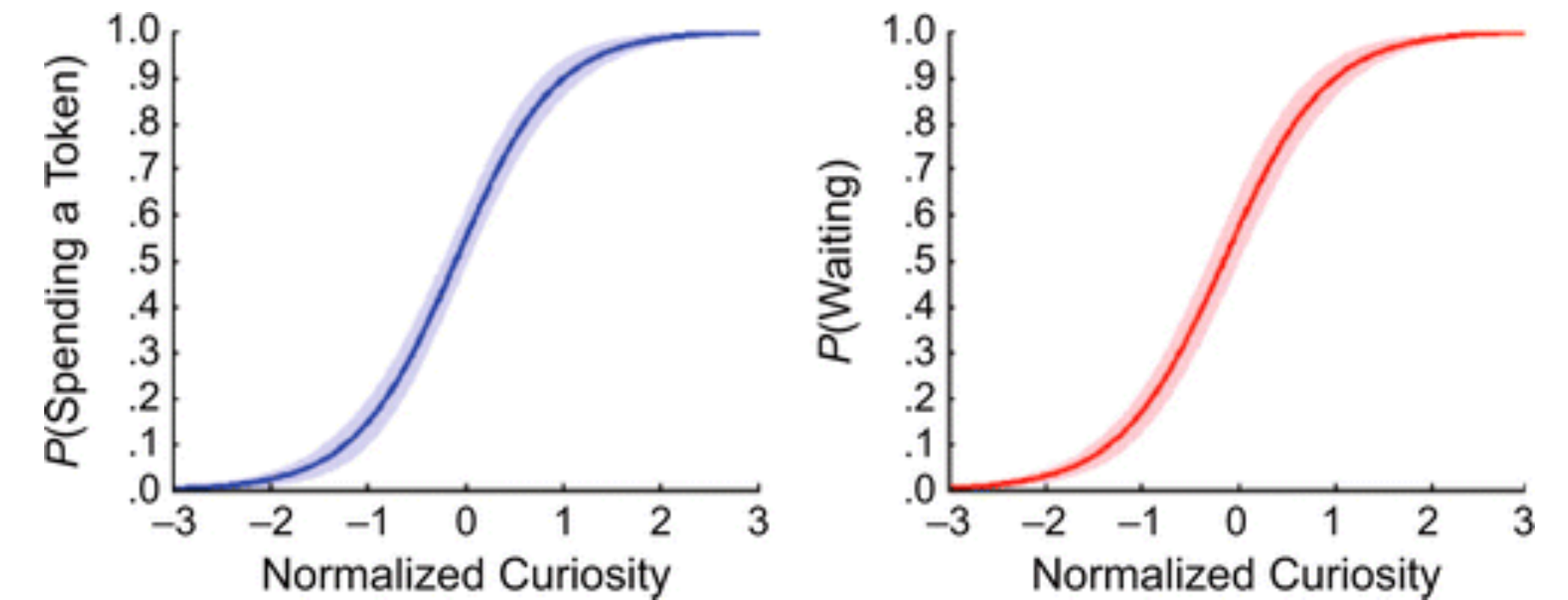
Let's talk about curiosity...

What instrument was invented to sound like a human voice singing?



High curiosity elicits activity in reward processing areas of the brain

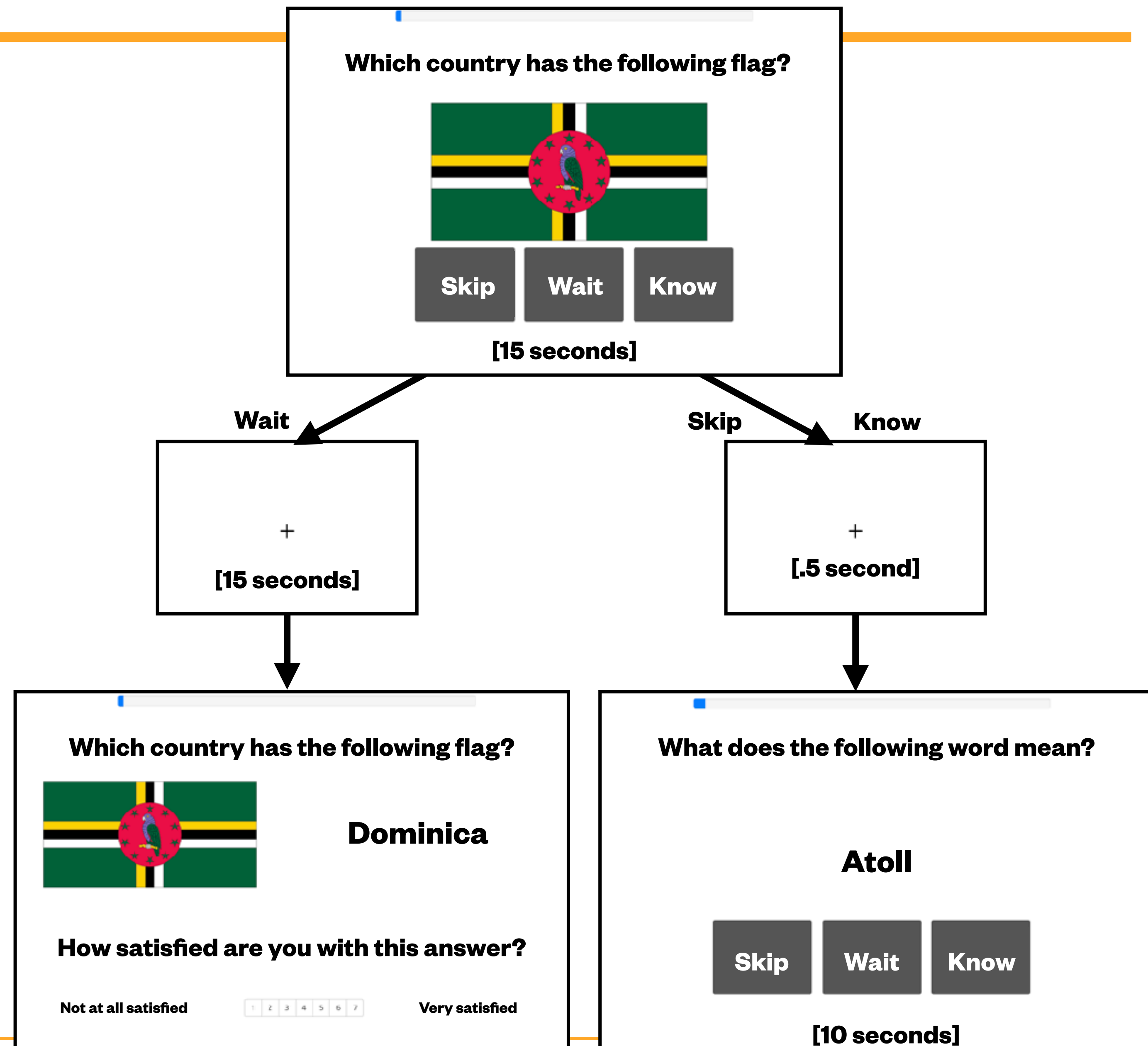
People are willing to spend time or money when they are curious



People are more likely to remember information when they express curiosity

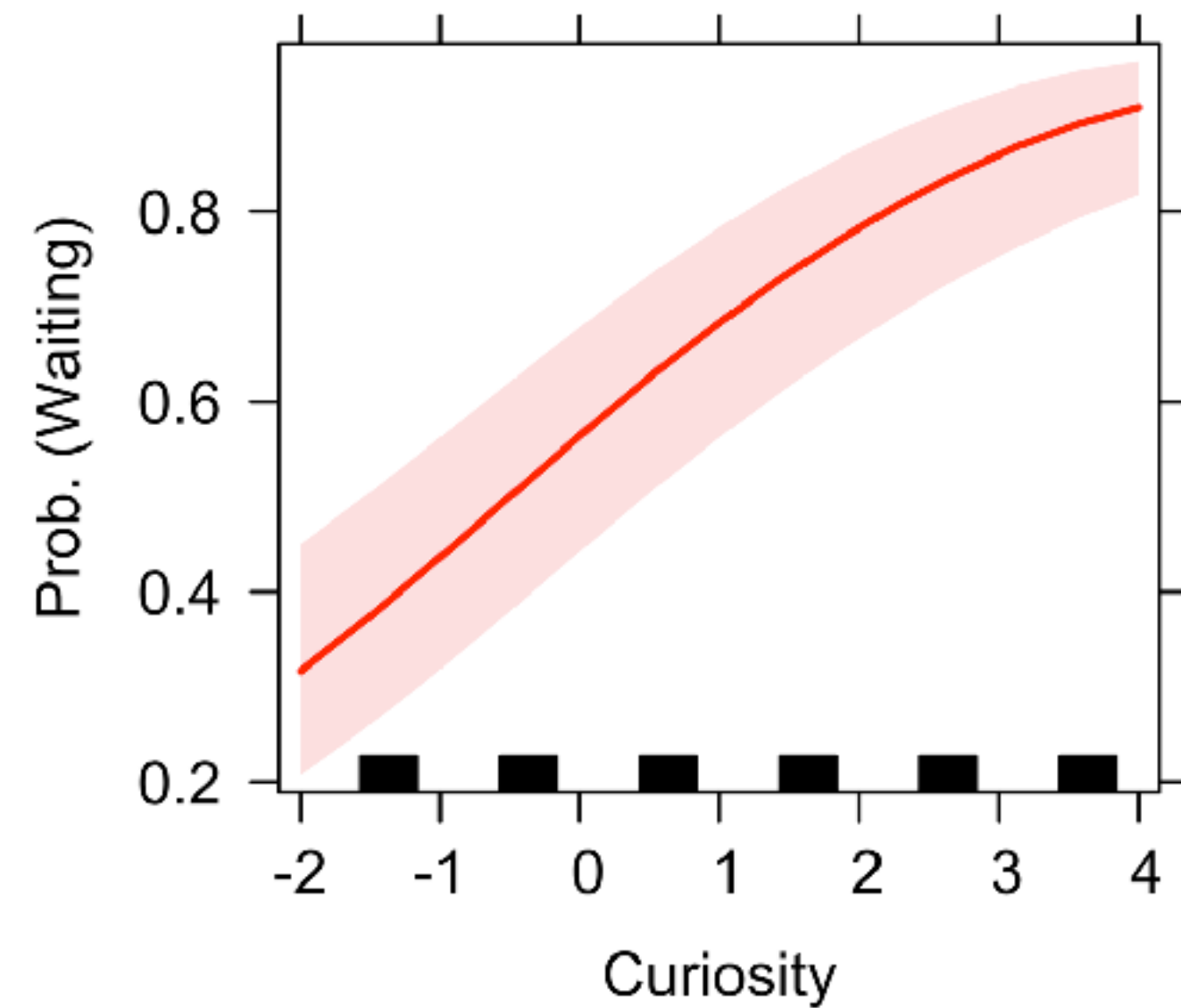
Methods

- Screening using self-report + sentence verification task + AHRQ-Brief
- 31 adults with dyslexia, 31 adults without dyslexia
- 60 verbal stimuli and 60 visual stimuli
- Willingness-to-wait task
- Followed by curiosity ratings
- 24 hours later: memory task (correct answer, “I don’t know”, and 2 lures)



Curiosity is associated with willingness to wait

A



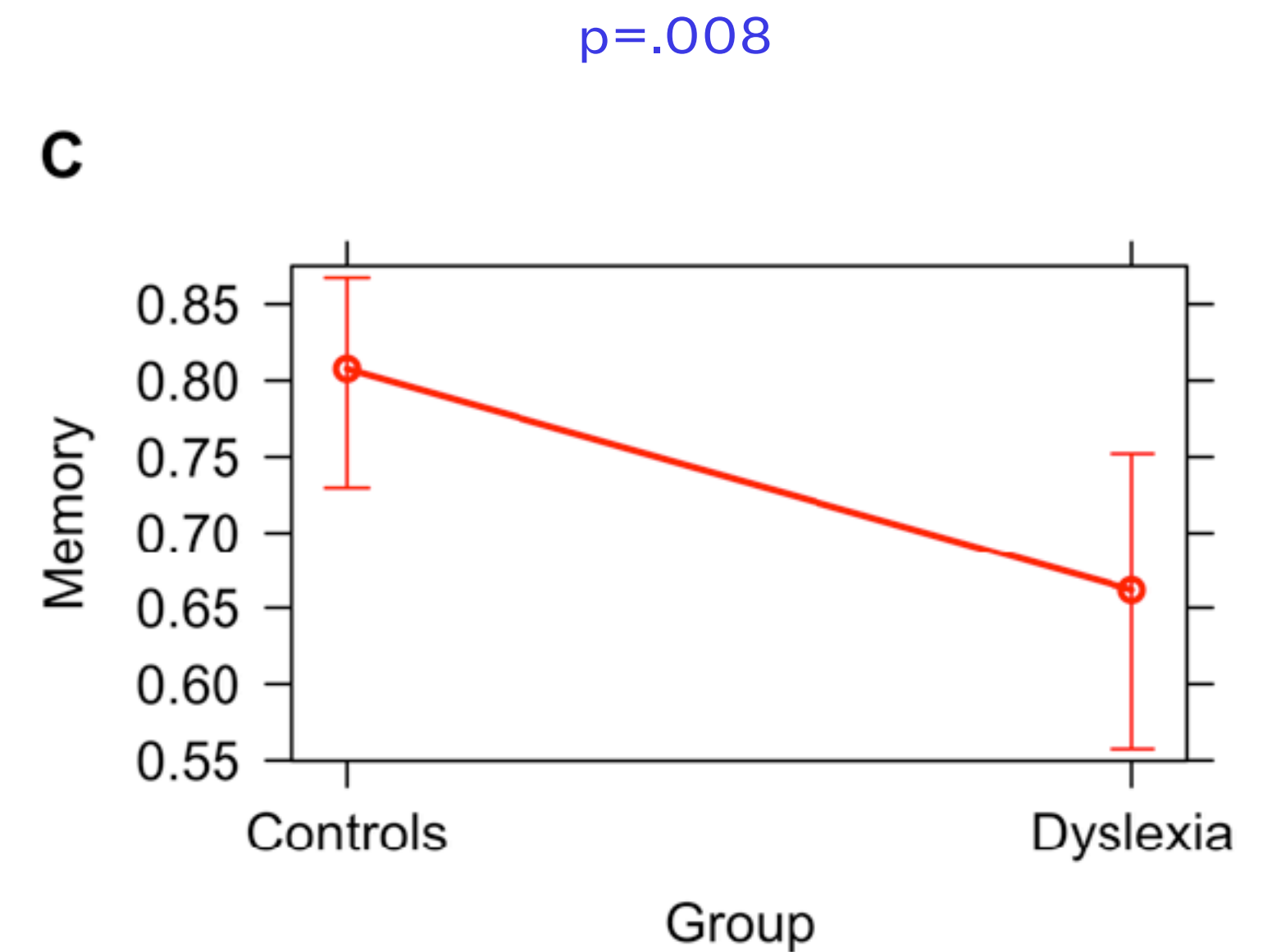
$p=.009$

Information Prediction Error (IPE)

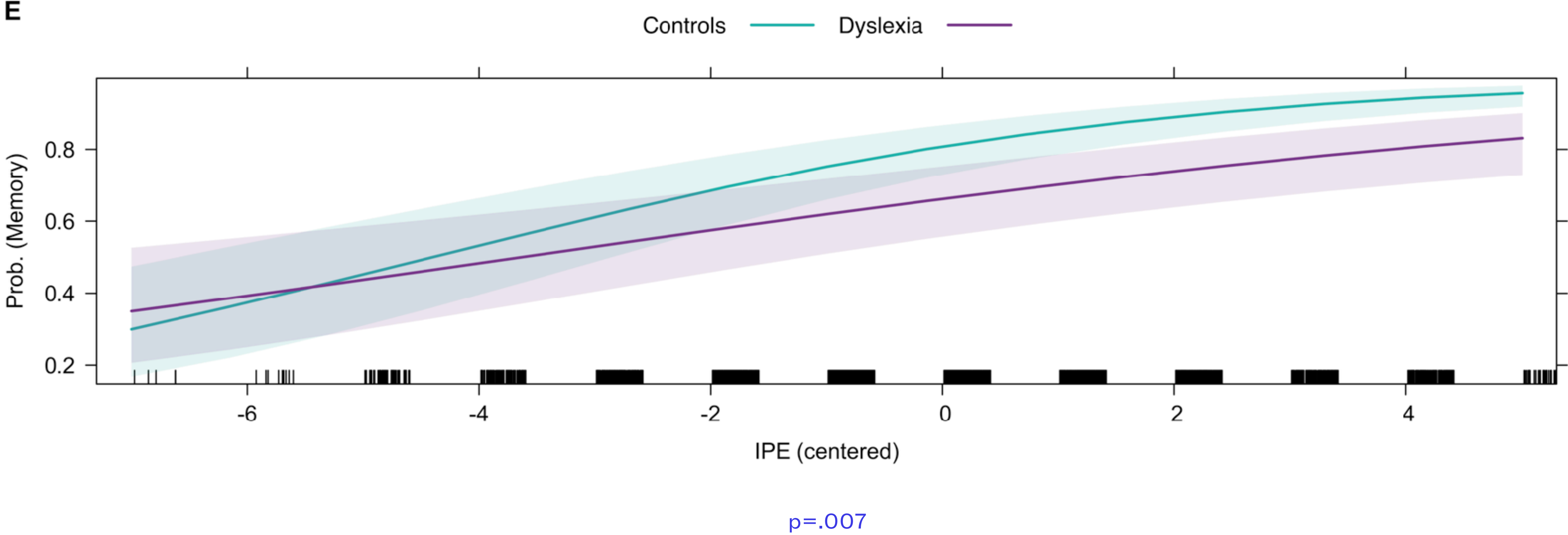
$$\text{IPE} = \text{Satisfaction} - \text{Curiosity}$$



Curiosity, IPE, and group are associated with memory for information



Adults with dyslexia show a weaker relationship between IPE and memory



Summary

Curiosity and Enjoyment show clear links with learning

People are willing to incur costs when they are curious

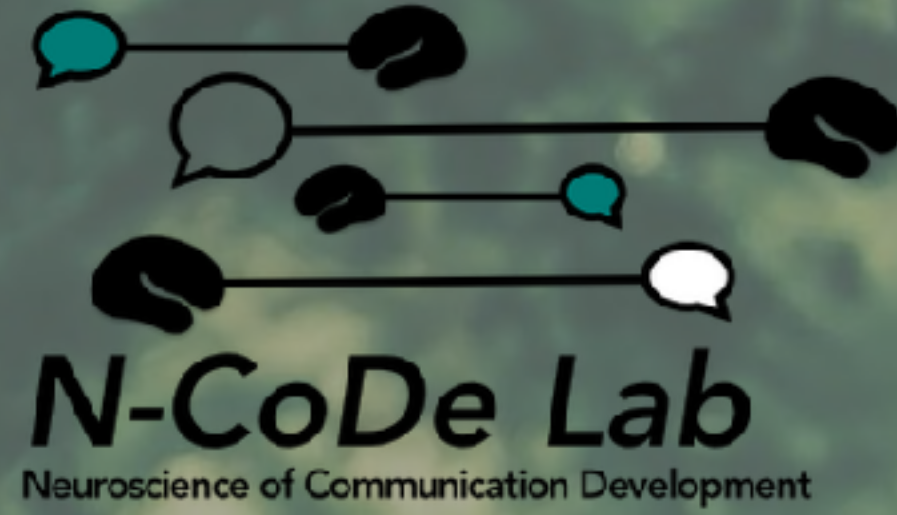
Curiosity appears to be similar in adults with dyslexia, but the “updating” response might be a little different

Does stimulating curiosity and enjoyment change learning?

More work needed here!



ROYAL
HOLLOWAY
UNIVERSITY
OF LONDON



saloni.krishnan@rhul.ac.uk

Twitter: [@salonikrishnan](https://twitter.com/salonikrishnan)

www.ncodelab.com

