

*RacLab*

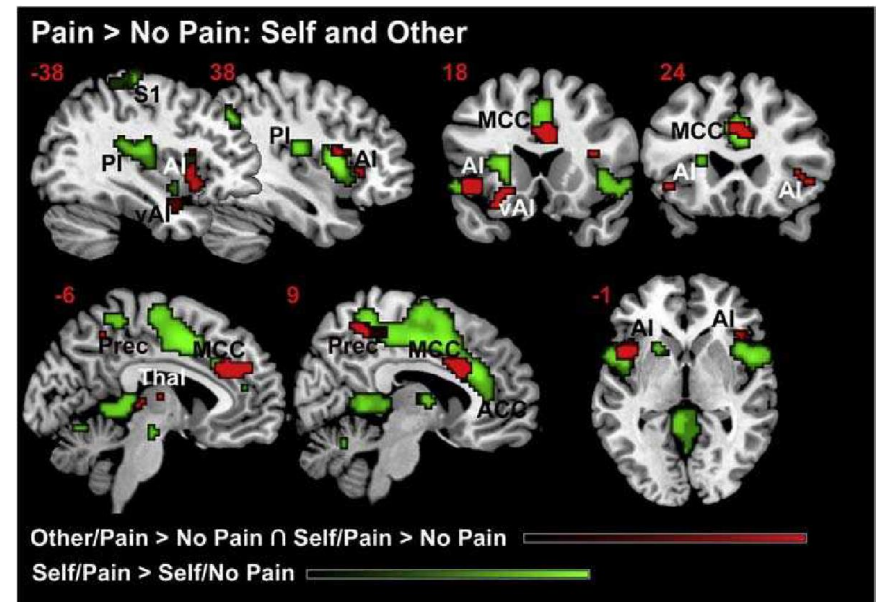
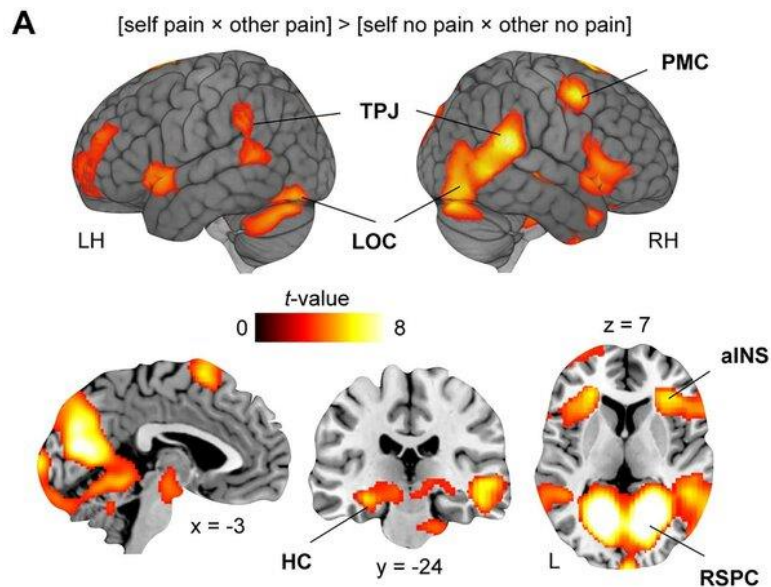
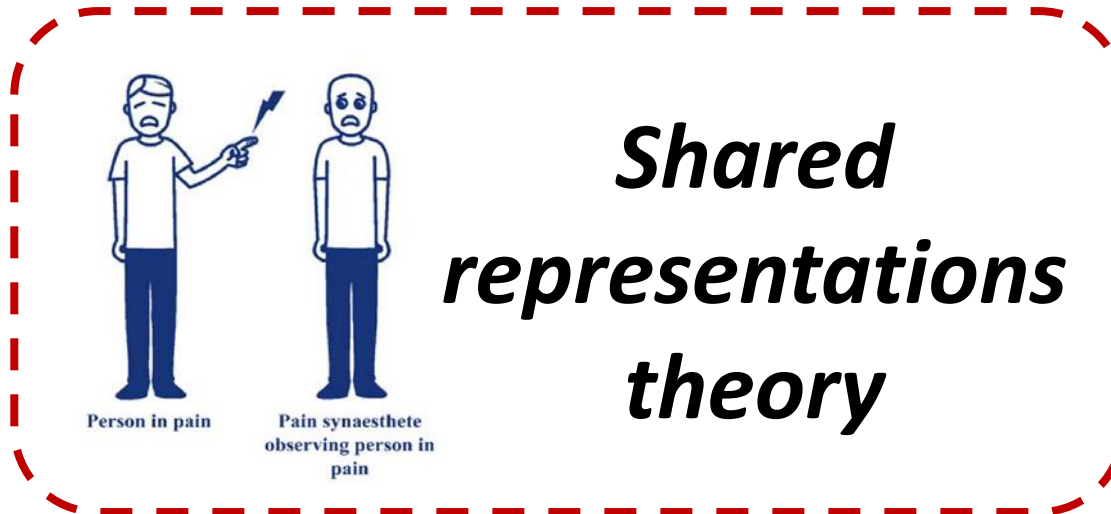
**The linkage between first-hand pain  
sensitivity and empathy for others' pain:  
*Attention* matters**

*Human Brain Mapping, 2020*

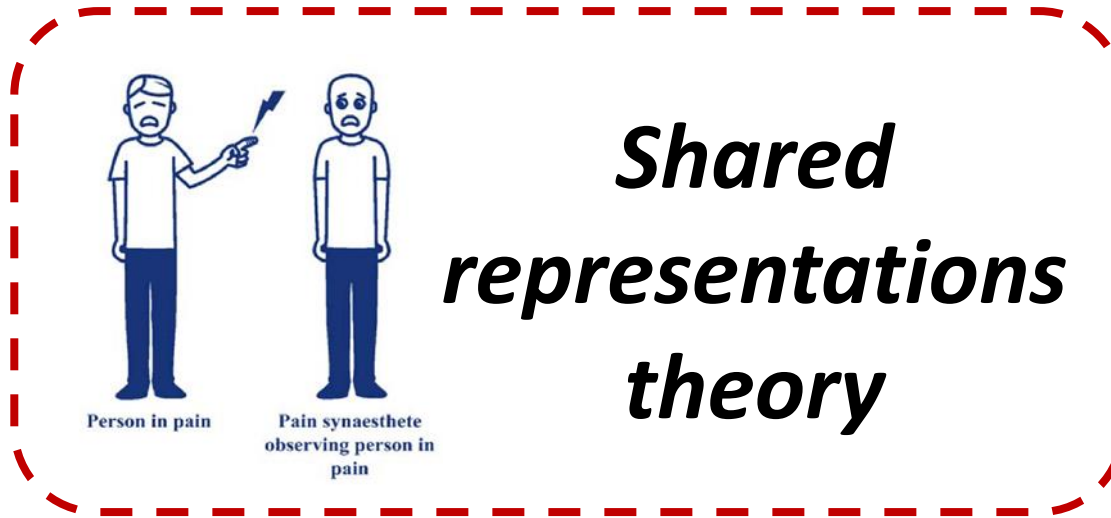
Yang Ziyang

2025.1.24

# Introduction



# Introduction



## JOURNAL ARTICLE

From painkiller to empathy killer: acetaminophen (paracetamol) reduces empathy for pain <sup>2</sup>

Dom

Socio

Placebo analgesia and its opioidergic regulation suggest that empathy for pain is grounded in self pain

Markus Rütgen, Eva-Maria Seidel, Giorgia Silani, <sup>+4</sup>, and Claus Lamm  [Authors Info & Affiliations](#)

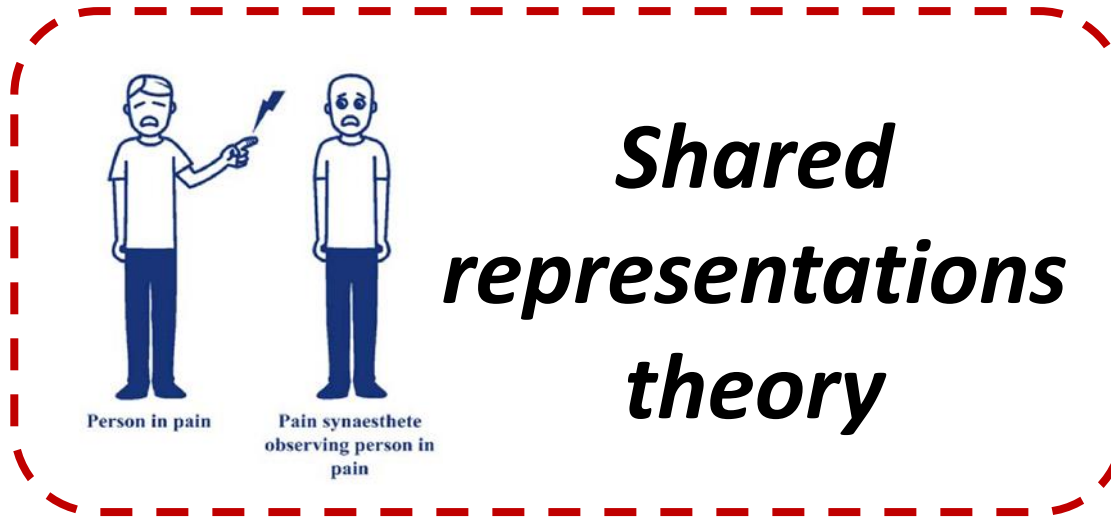
Edited by Naomi I. Eisenberger, University of California, Los Angeles, CA, and accepted by the Editorial Board August 25, 2015 (received for review June 16, 2015)

September 28, 2015 | 112 (41) E5638-E5646 | <https://doi.org/10.1073/pnas.1511269112>



Placebo group

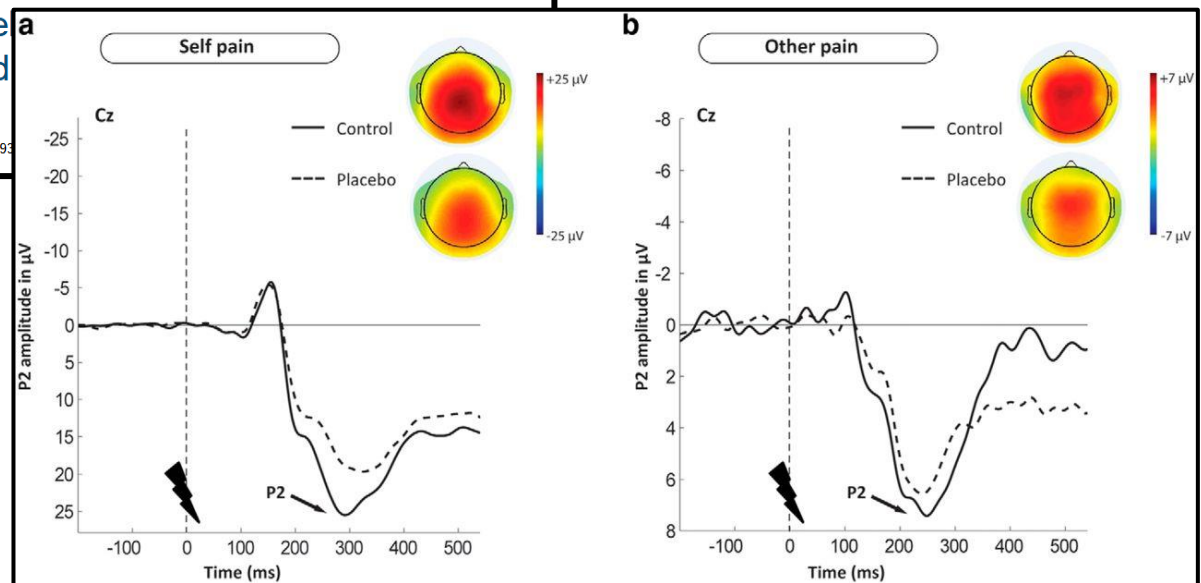
# Introduction



## Reduction of Empathy for Pain by Placebo Equivalence of Empathy and First-Hand

Markus Rütgen, Eva-Maria Seidel, Igor Riečanský, and Claus Lamm

Journal of Neuroscience 10 June 2015, 35 (23): 8938-8947; <https://doi.org/10.1523/JNEUROSCI.393>





# Introduction

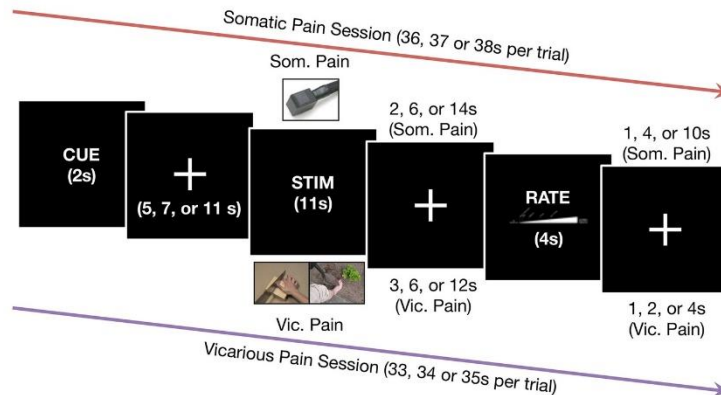
## *specialized neural cir- cuits*

Research Article  
Neuroscience

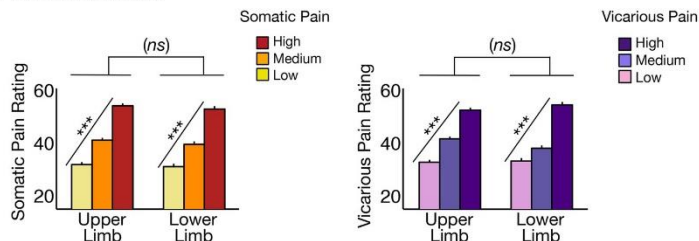
### Somatic and vicarious pain are represented by dissociable multivariate brain patterns

Anjali Krishnan , Choong-Wan Woo, Luke J Chang, Luka Ruzic, Xiaosi Gu, Marina López-Solà, Philip L Jackson, Jesús Pujol, Jin Fan, Tor D Wager 

#### A Experimental Paradigm

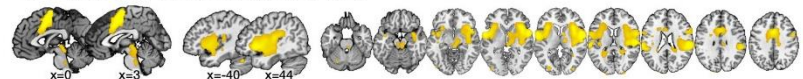


#### B Behavioral Results

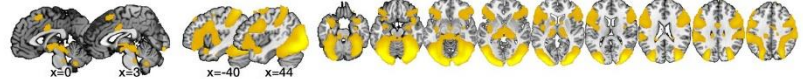


#### A General Linear Model (GLM) Analyses for Somatic and Vicarious Pain

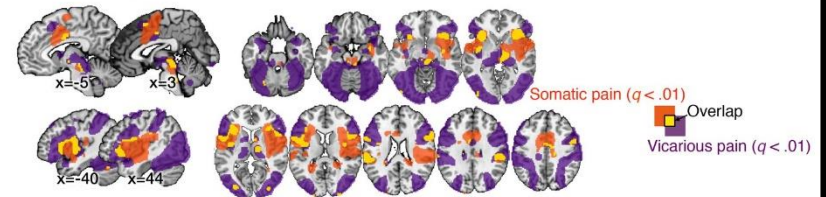
##### I. Somatic pain vs. baseline (FDR $q < .01$ )



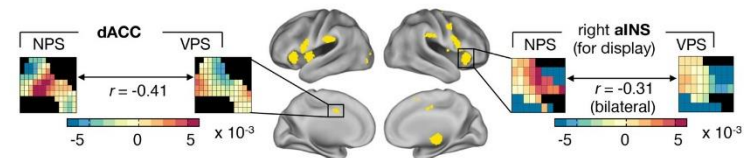
##### II. Vicarious pain vs. baseline (FDR $q < .01$ )



#### B Overlapping Regions from the GLM Analyses for Somatic and Vicarious Pain



#### C Pattern Similarity between NPS and VPS within GLM Overlaps



***specialized  
neural cir-  
cuits***

**Autism spectrum**

**Somatoform pain disorder**

**Hypersensitivity** to first-hand pain  
but **hyposensitivity** to vicarious pain

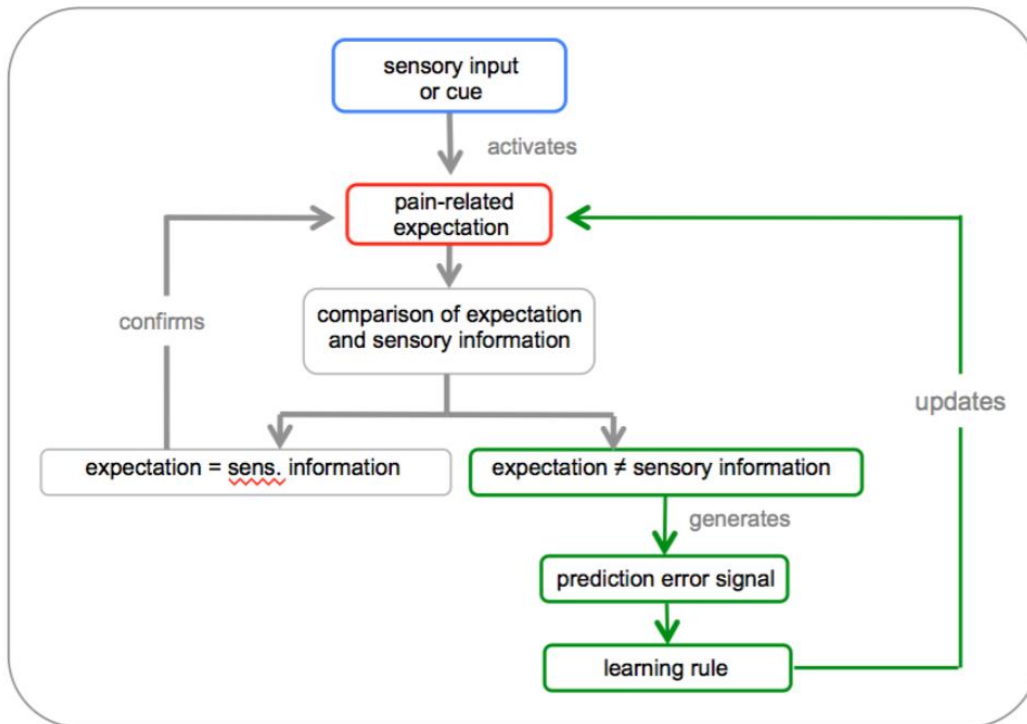
***Dissociable!***

# Introduction

## Deconstructing the sensation of pain: The influence of cognitive processes on pain perception

Science

KATJA WIECH [Authors Info & Affiliations](#)

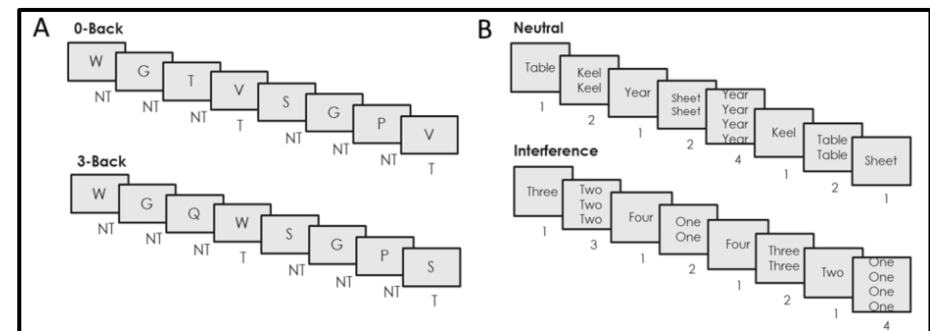
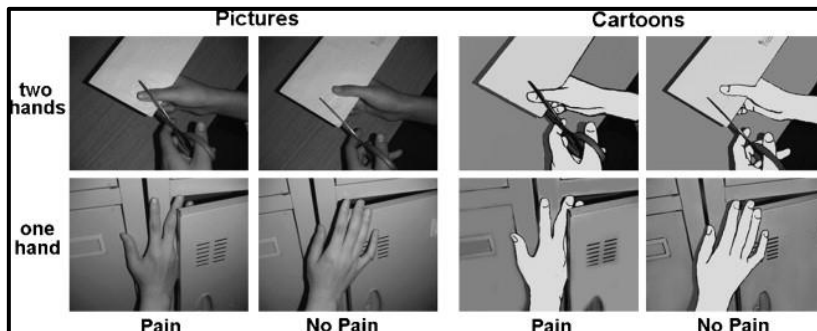
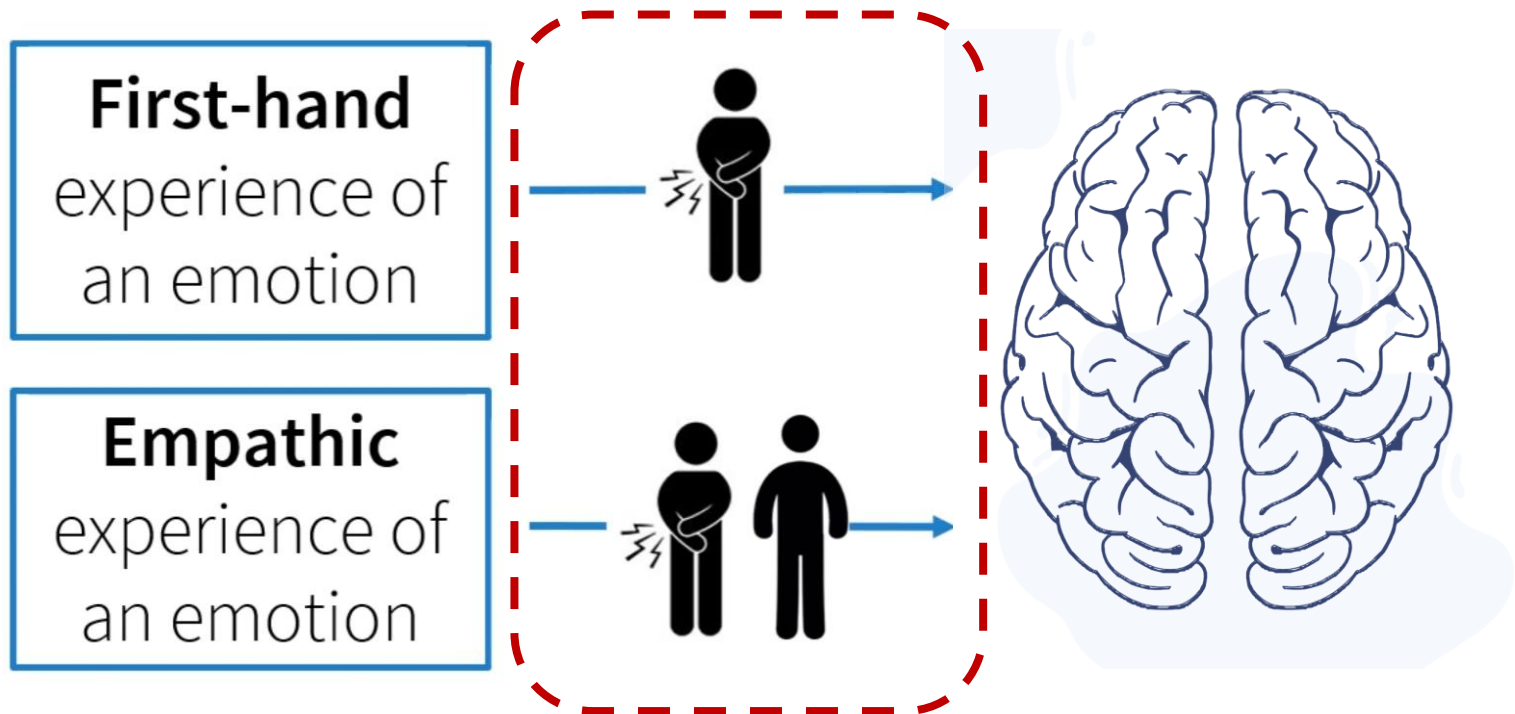


PAIN

high-level executive functions



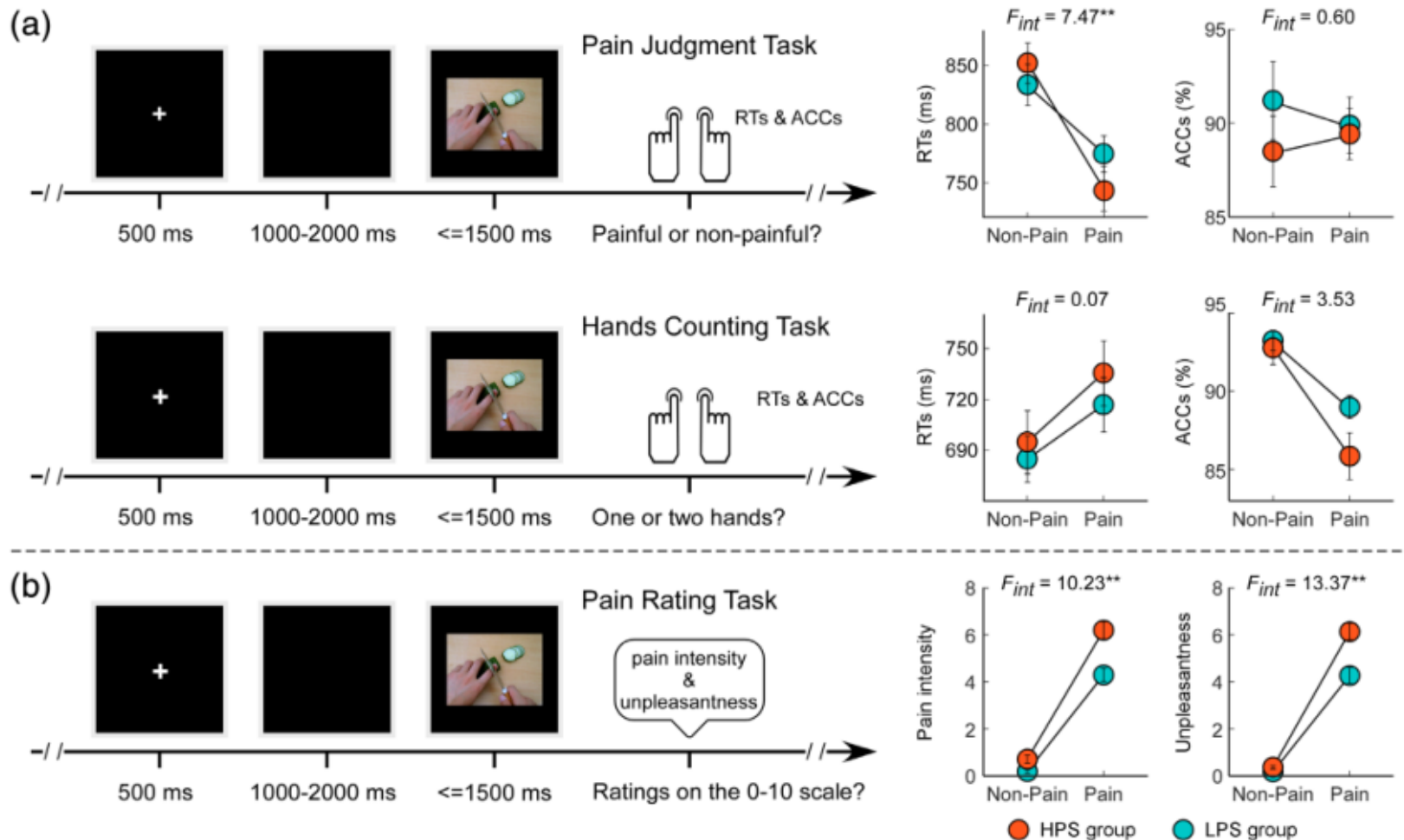
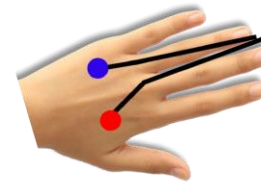
# Introduction



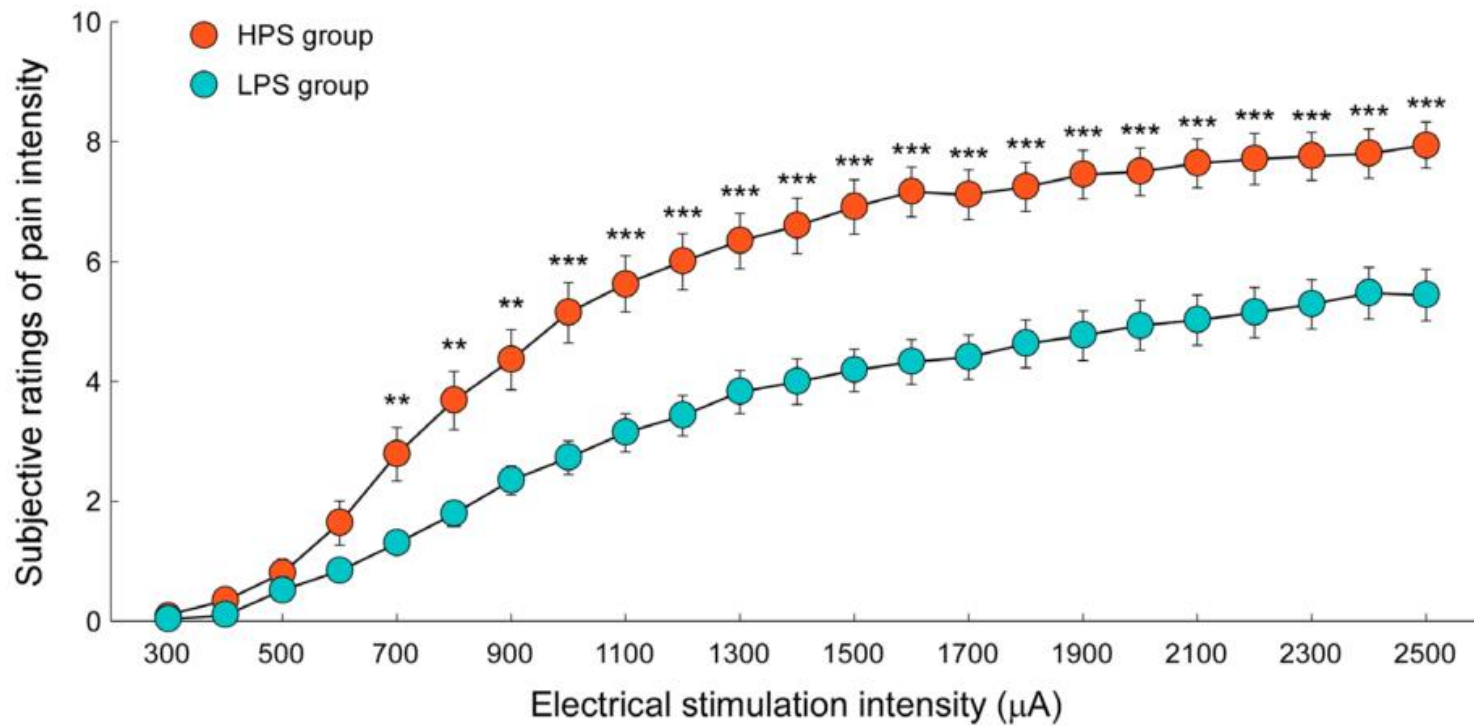


# Design

29 LPS  
33 HPS



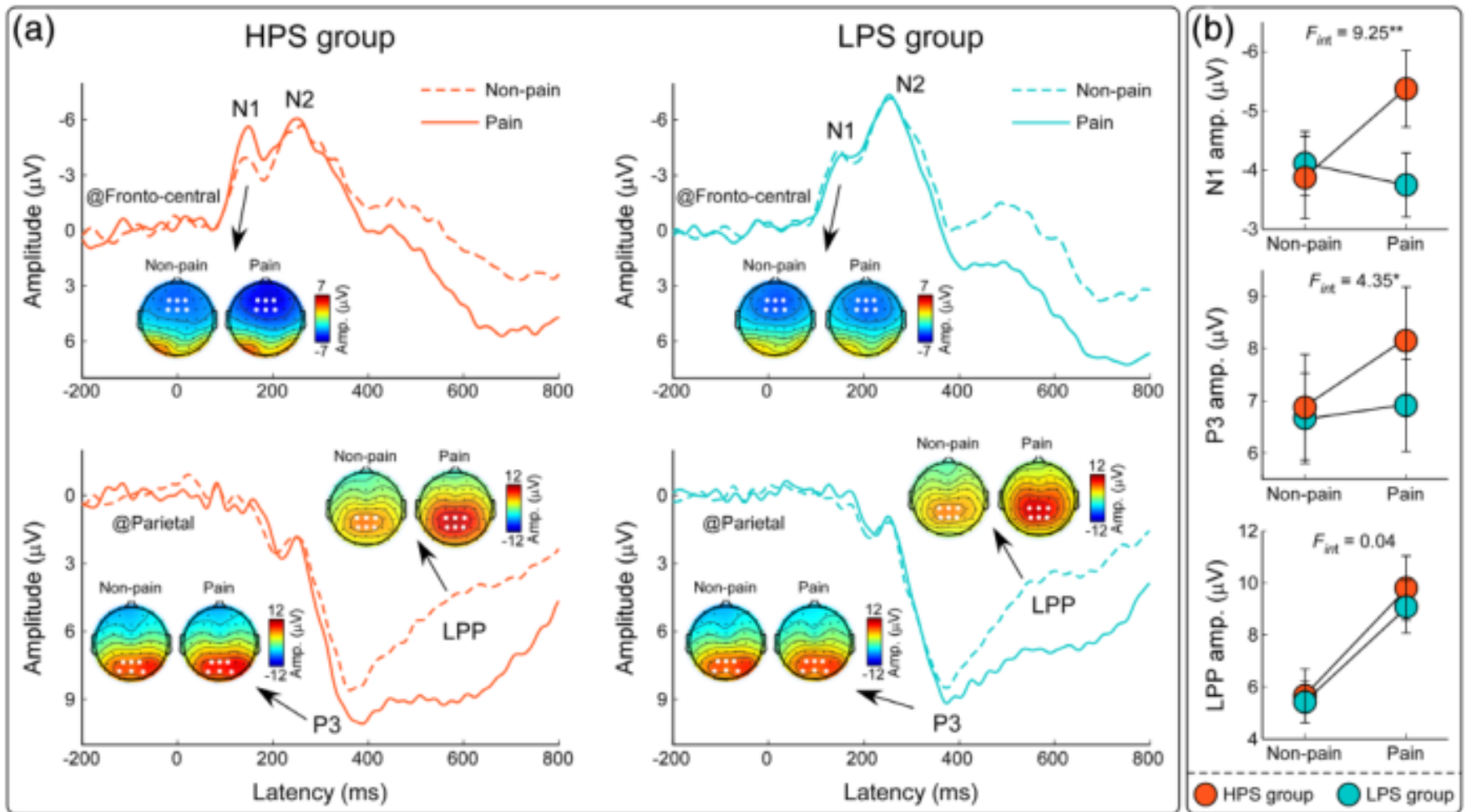
# Result



## IRI

Perspective taking	15.59 ± 0.76	14.91 ± 0.53	0.70	.48
Fantasy	17.55 ± 0.73	15.39 ± 0.62	2.27	.027
Empathic concerns	16.00 ± 0.58	16.39 ± 0.54	0.49	.62
Personal distress	14.55 ± 1.01	10.24 ± 0.70	3.58	.001

# Result

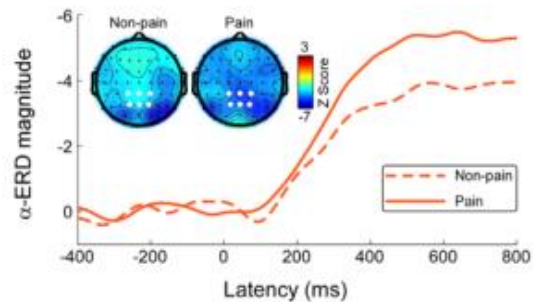
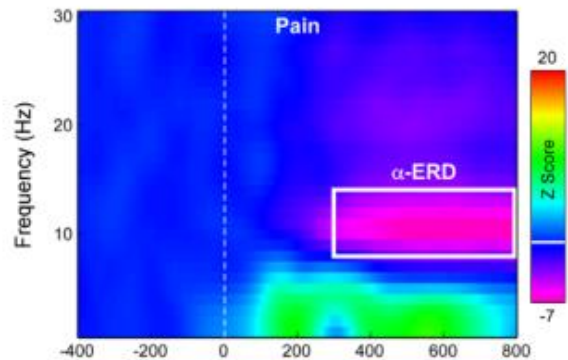
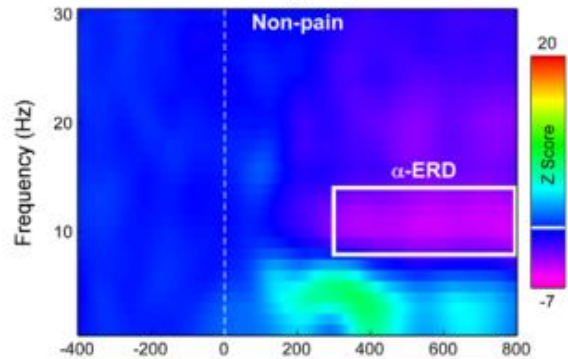


Pain Judgment Task **✓**

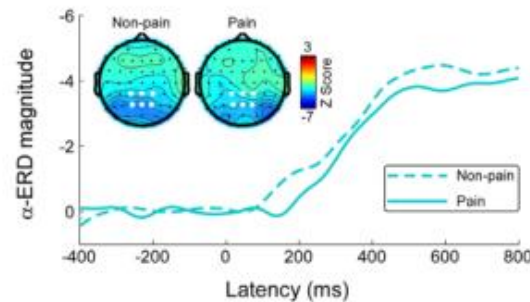
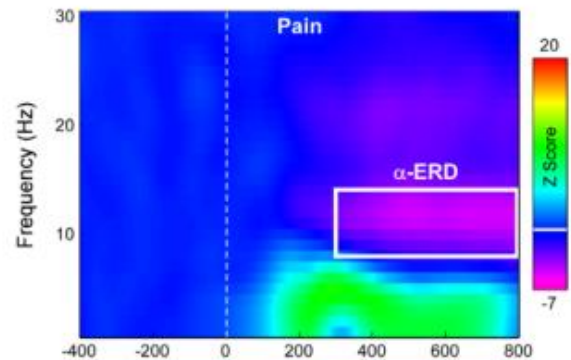
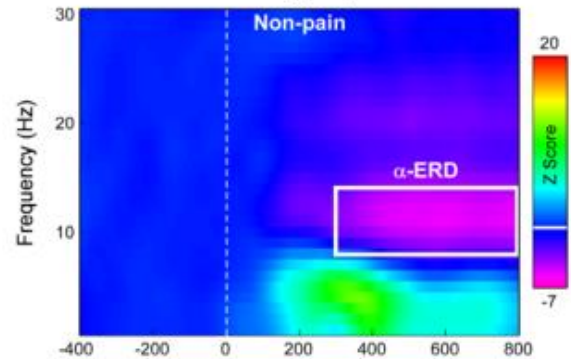
Pain Judgment Task **✗**

# Result

HPS group



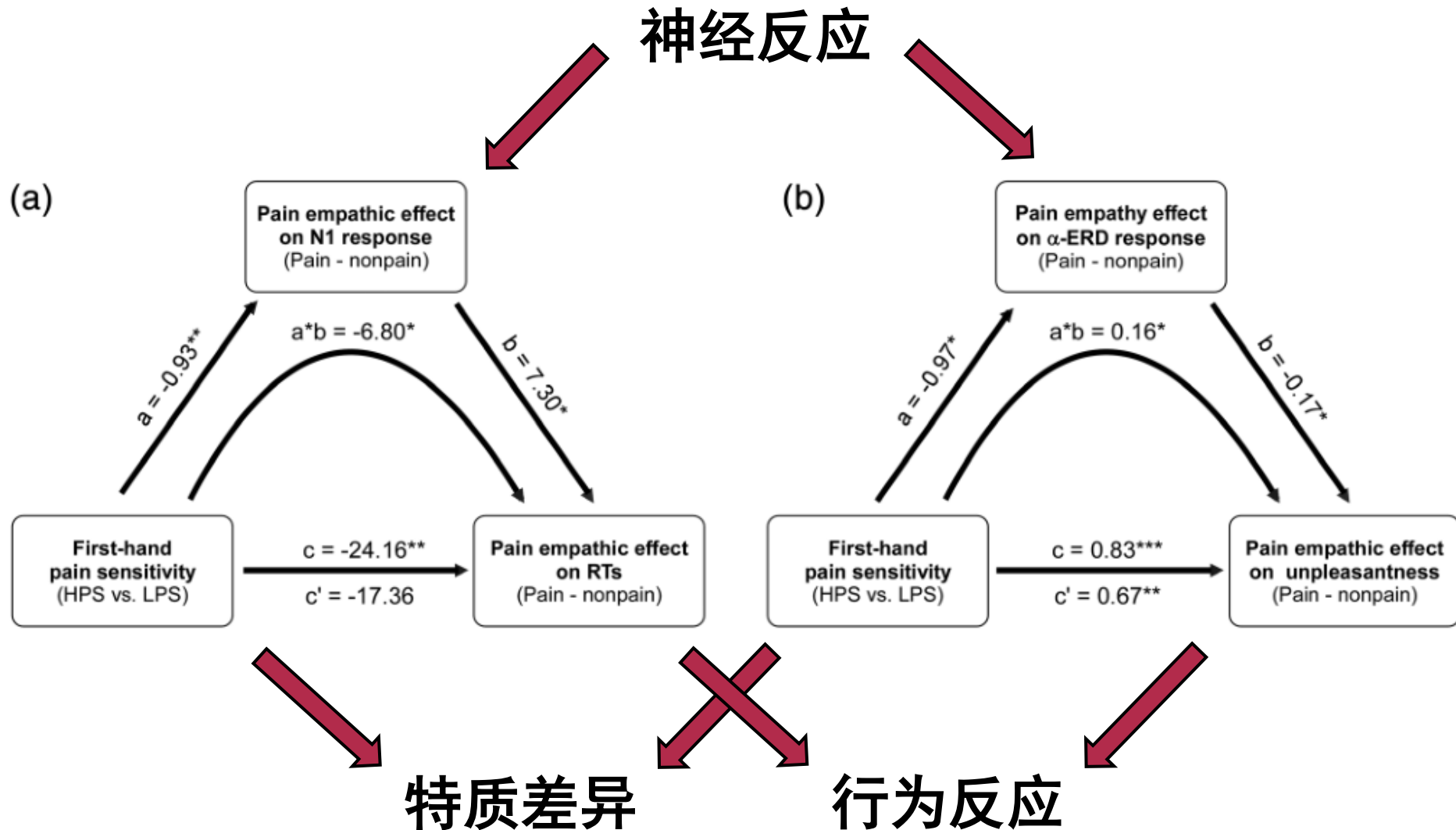
LPS group



Pain Judgment Task ✓

Pain Judgment Task ✗

# Result



第一手痛感敏感性通过大脑中的神经反应（N1和 $\alpha$ -ERD）影响个体的共情

***specialized  
neural cir-  
cuits***

**Autism spectrum**

**Somatoform pain disorder**

**Hypersensitivity** to first-hand pain  
but **hyposensitivity** to vicarious pain

***Dissociable!***

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*Human Brain Mapping, 2020*

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