

# You Read Me Often But Never Reply : Effects of Reporting and Cognitive Load on Intracranial Recording of Conscious Access

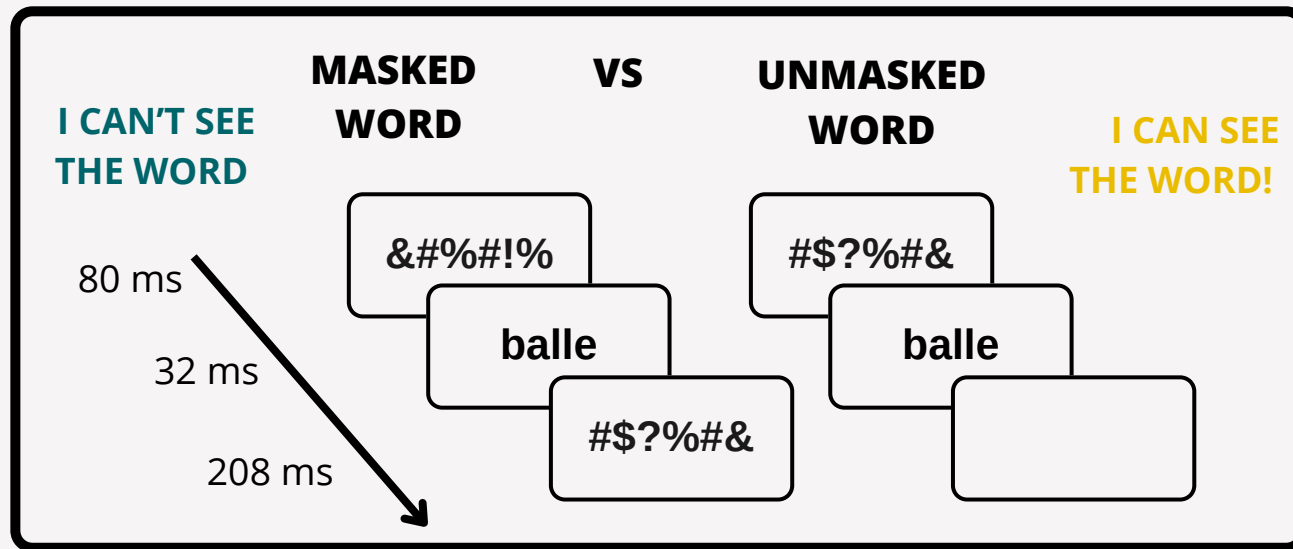
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## Introduction

### NEURAL CORRELATES OF CONSCIOUSNESS (NCC)

The minimal neuronal mechanisms jointly sufficient for any specific conscious experience (1) may be studied through visual masking paradigm (2,3)



### WHEN PARTICIPANTS SEE THE STIMULUS

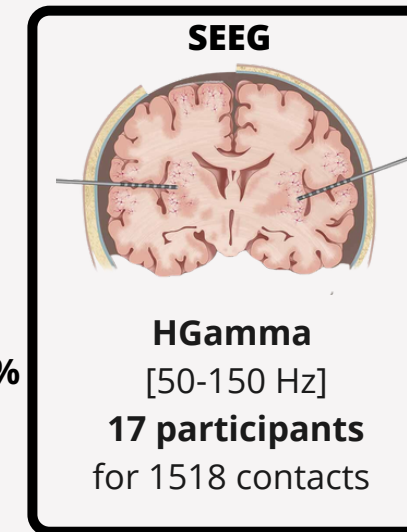
- 1) If asked, are researchers measuring the participants' report or the NCC (4) ?
- 2) Are researchers measuring the cognitive load of the stimulus or the NCC (5) ?

#### TASK - RELEVANT AND TASK - IRRELEVANT

REPORT CONDITION - 20%



NO-REPORT CONDITION - 80%



#### COGNITIVE LOAD THROUGH LEARNING

DIFFERENT WORD COND (+)

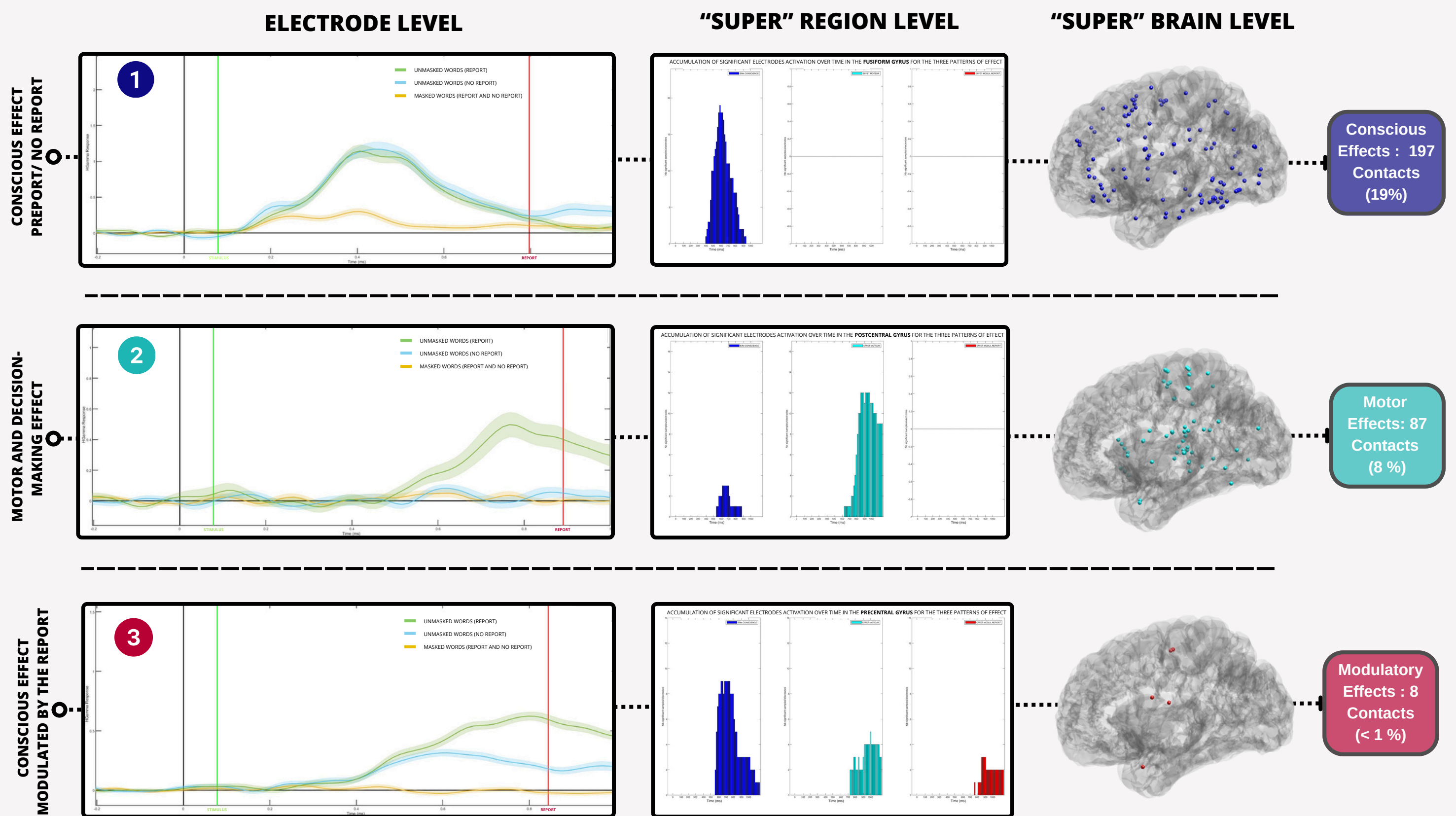


SAME WORD COND (-)



- 1 EXPLORING THE NEURAL CORRELATES OF SHORT PERCEPTUAL CONSCIOUS ACCESS
- 2 EXPLORING THE RELATIONSHIP BETWEEN NCC'S MEASUREMENTS WITH REPORT AND WITH COGNITIVE LOAD

## Electrophysiological Results



## CONCLUSIONS AND DISCUSSION

Analyses presented were conducted on the **different-words** condition (higher cognitive load). A **largely bilateral distribution of brain areas** is observed in both the report and no-report conditions. The conscious effect pattern (1) appears to be more pronounced **after 300 ms**, while the motor and decision-making effect pattern (2) appears to be more pronounced **after 600 ms**. Several ambiguous effects were observed and couldn't be classified within the conscious (1) or the motor and decision-making patterns of effects (2), likely due to a lack of statistical power. Further analyses are required in the **same-word** condition - consisting of presenting a single word throughout trials - to reduce cognitive load when measuring conscious experience.

**THESE ARGUMENTS SUPPORT THE IDEA THAT WHEN PARTICIPANTS HAVE A CONCISE CONSCIOUS EXPERIENCE OF READING WORDS, LARGELY DISTRIBUTED BRAIN AREAS SUPPORT CONSCIOUS ACCESS IN THE EARLY TIME WINDOW, REGARDLESS OF WHETHER THE PARTICIPANTS REPORT THEIR EXPERIENCES OR NOT.**

### BIBLIOGRAPHY

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