

Supplemental Material

Research Articles | Behavioral/Cognitive

Causal evidence for prefrontal-motor coupling in reward-responsive goal-directed behavior

<https://doi.org/10.1523/JNEUROSCI.1289-25.2026>

Received: 4 July 2025

Revised: 15 December 2025

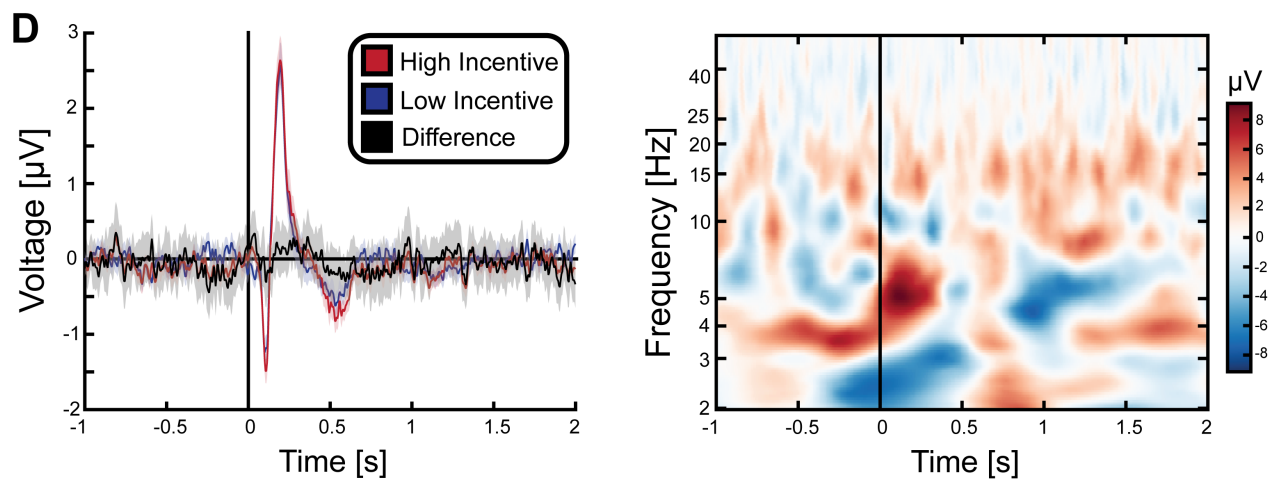
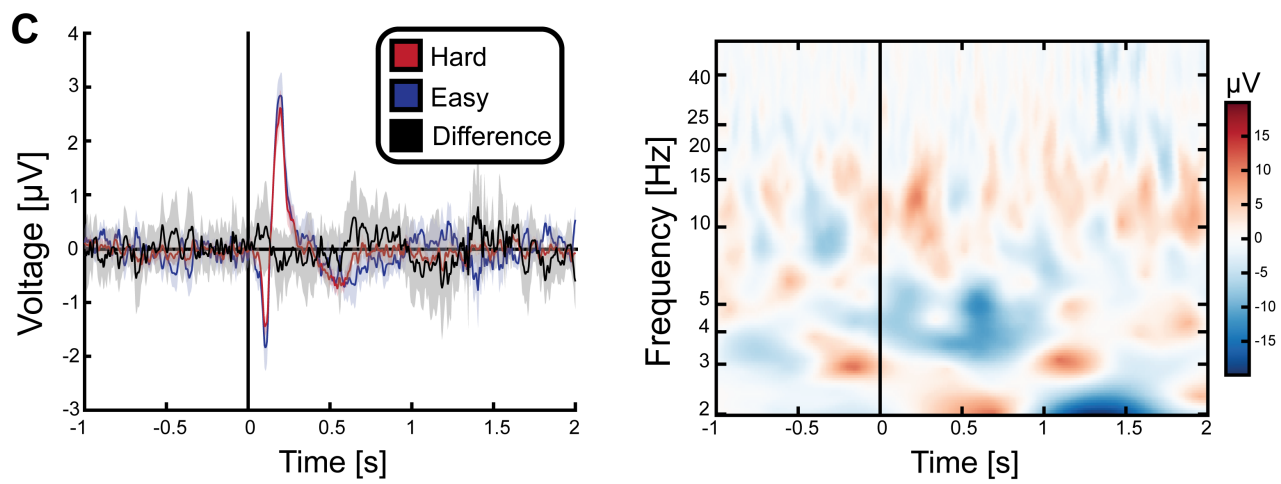
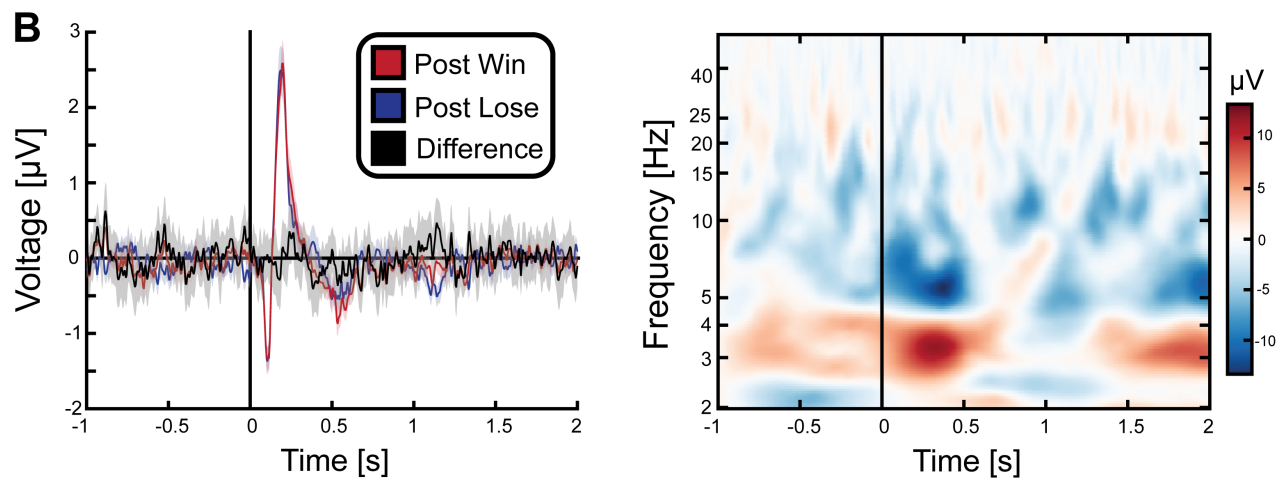
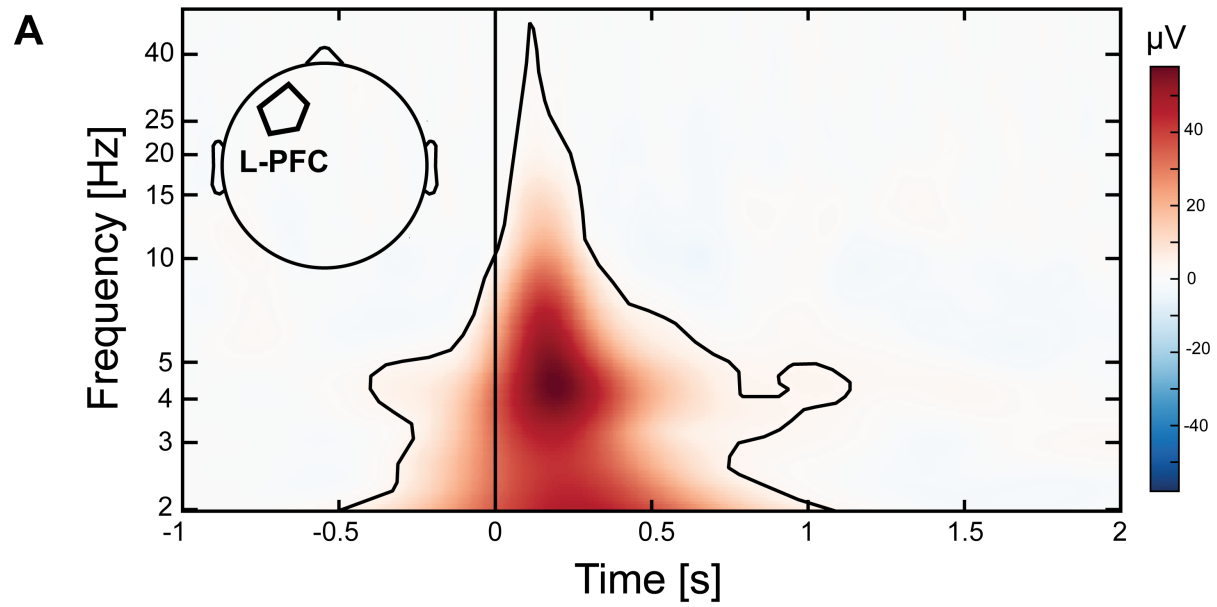
Accepted: 13 January 2026

Copyright © 2026 the authors

Legends for Supplemental Materials

Figure S1. *Analysis of the event-related potential (ERP).* (A) Time-frequency deconstruction of all ERPs in the left prefrontal cortex (PFC) revealed spectral components in the theta and delta range. (B) For reward-responsive goal-directed behavior, there was no significant difference in the ERP, nor in the spectral properties of the ERP. Furthermore, there were no difference in ERP or spectral properties of the ERP for (C) effort motivation or (D) reward-valuation.

Table S1. *Side effects for each type of stimulation.* Participants rated on a scale of 0 (not present) to 4. Here, we report the percentage of participants that reported that the side effect was present.



1

	<i>Delta-beta tACS</i>	<i>Theta-gamma tACS</i>	<i>Sham tACS</i>
<i>Headache (> 0)</i>	54.5%	16.7%	41.7%
<i>Neck pain (> 0)</i>	27.3%	33.3%	25.0%
<i>Scalp pain (> 0)</i>	54.5%	50%	41.7%
<i>Tingling (> 0)</i>	72.7%	58.3%	100%
<i>Itching (> 0)</i>	63.6%	41.7%	25%
<i>Ringling (> 0)</i>	9.1%	25%	25%
<i>Burning (> 0)</i>	18.2%	50%	41.7%
<i>Local redness (> 0)</i>	18.2%	8.3%	16.7%
<i>Sleepiness (> 0)</i>	72.7%	66.7%	50%
<i>Trouble concentrating (> 0)</i>	72.7%	66.7%	50%
<i>Improved mood (> 0)</i>	36.4%	25%	16.7%
<i>Worsening mood (> 0)</i>	27.3%	0%	16.7%
<i>Dizziness (> 0)</i>	36.4%	8.3%	8.3%
<i>Flickering lights (> 0)</i>	45.5%	33.3%	41.7%
<i>Other (> 0)</i>	9.1%	8.3%	0%

2

3 **Table S1.** *Side effects for each type of stimulation.* Participants rated on a scale of 0 (not present)
4 to 4. Here, we report the percentage of participants that reported that the side effect was
5 present.

6

7

8

9

10