

# Hearing positive verbs can induce unconscious physical response

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Hearing a verb related to physical action automatically increases the force with which people grip objects, but has no effect on their physical reaction if the word is presented in the negative form, according to research published December 5 in the open access journal *PLOS ONE* by Pia Aravena and colleagues from the L2C2, Institute of Cognitive Sciences (CNRS/UCBL), France.

Volunteers in the study were asked to hold a grip sensor as they heard a variety of [verbs](#) related to manual actions, like 'throw' or 'scratch', in different sentence structures. The researchers observed a significant increase in the strength of participants' grip when words were presented in an affirmative sentence, but no such reaction when the same action words were presented in a negative context, such as 'don't throw'.

Several previous studies have explored how the brain processes negative sentence structures like "The door is not open", but this is among the first research studies to explore the effects of this sentence-dependent context on language-induced motor activity. "These findings could open possibilities for the evaluation and rehabilitation of motor and language disorders" says Aravena.

**More information:** Aravena P, Delevoye-Turrell Y, Deprez V, Cheylus A, Paulignan Y, et al. (2012) Grip Force Reveals the Context Sensitivity of Language-Induced Motor Activity during "Action Words" Processing: Evidence from Sentential Negation. *PLoS ONE* 7(12): e50287. [doi:10.1371/journal.pone.0050287](https://doi.org/10.1371/journal.pone.0050287)

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