



Body Posture and the Representation of “Abstract” Concepts

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BACKGROUND

- According to sensorimotor-based models of meaning, brain regions that are active when a *concrete object* is perceived or interacted with also represent its meaning (e.g., Allport, 1985)
- But *how do we represent concepts* that are not so concrete, e.g., *authority or defeat*?
 - Are such (“abstract”) affect-related and social concepts also sensorimotor? I.e., *are they (partially) based in body postures and/or the corresponding internal states?* (e.g., Barsalou, 1999; Vigliocco et al., 2009)
 - If they are, body posture may be involved in the representations of concepts like *authority* and *defeat* (cf. Riskind, 1983; see also Laird et al., 1982; Foster & Strack, 1996)



QUESTIONS

1. Will expansive postures (cf. “power posing”) facilitate later recognition or recall of high power words?



Expansive postures (Carney et al., 2010)

2. Will contractive postures facilitate later recognition or recall of low power words?

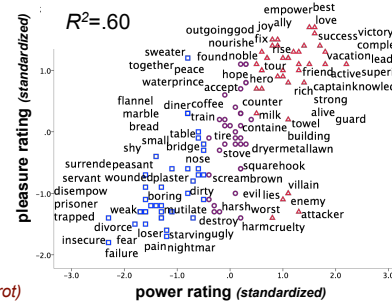


Contractive postures (Carney et al., 2010)

METHODS

Stimuli:

- 240 Critical words:
 - Selected from ANEW database & intuitions
 - Rated on power & pleasantness
 - Split into thirds:
 - High Power**
 - Neutral**
 - Low Power**
- 120 animals (e.g., parrot)



Participants: UConn undergrads. Assigned (between subjects) to expansive (N=38) or contractive (N=40) posture condition

Procedure:

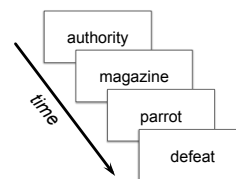
0. Cover Story: “We’re manipulating your posture to measure its effect on your heart rate and blood oxygen levels.”



1. Postures: Hold *expansive* or *contractive* postures for 1 min each



2. Exposure: Semantic categorization (animal or not?)



3. Free Recall:

- Distractor task: List US States (1 min)
- Write down non-animal words (3 min)

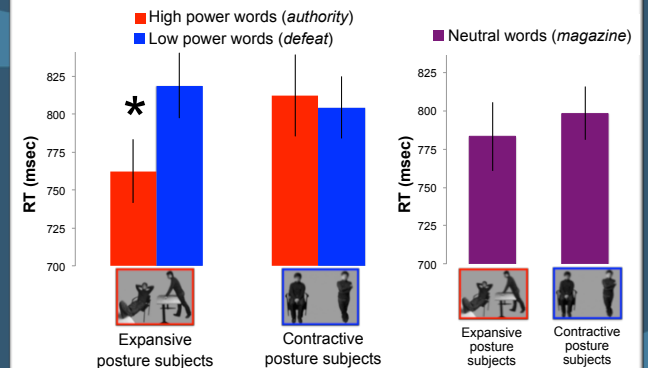
4. Old/New Recognition: Did you see the word earlier? (50% old words, 50% new words)

RESULTS

No relationships between posture and word type on semantic categorization or free recall tasks. But in old/new recognition ...

People who held *expansive*, but not *contractive* postures were faster to correctly recognize high power words:

No difference between postures for neutral words:



Same pattern when high and low power words matched for frequency, concreteness & number of letters

DISCUSSION & CONCLUSIONS

- No evidence that *initial* activation of word is affected by body posture... (ceiling effect?)
- But, remembering a word associated with power is easier if, before reading it, your body posture was congruent with its meaning
- Body posture and/or the corresponding internal state may be involved in representations (or retrieval) of “abstract” concepts related to power

Questions:

- Posture *per se* or internal state associated with posture?
- Is posture “just” a retrieval cue or can it also affect encoding?
- Interference or facilitation? (neutral “baseline” postures)

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