Open arms and open minds: The effects of posture and modality on the recall of affect-related 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., Alport, 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; Connell et al., in press)

• 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; Carney et al., 2010)

QUESTIONS

1. Will expansive postures facilitate later recognition or recall of high power words?

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

METHODS

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

Participants: UConn undergrads.

Experiment 1: Assigned (between subjects) to expansive (N=35) or contractive (N=36) posture condition

Experiment 2: Expansive (N=30), neutral (N=31), and contractive (N=29)

Experiment 3: Expansive (N=38), neutral (N=37), and contractive (N=36)

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 or neutral posture for 1 min each

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

3. Free Recall:
   a. Distractor task: List US States (1 min)
   b. Write down non-animal words (3 min)

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

REFERENCES


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 appear to be involved in representations (or retrieval) of affect related “abstract” concepts

Questions:
• Posture per se or internal state associated with posture?
• Is posture “just” a retrieval cue or can it also affect encoding?