

# Semantic Memory for Objects, Actions & Events in Colombian People with Aphasia

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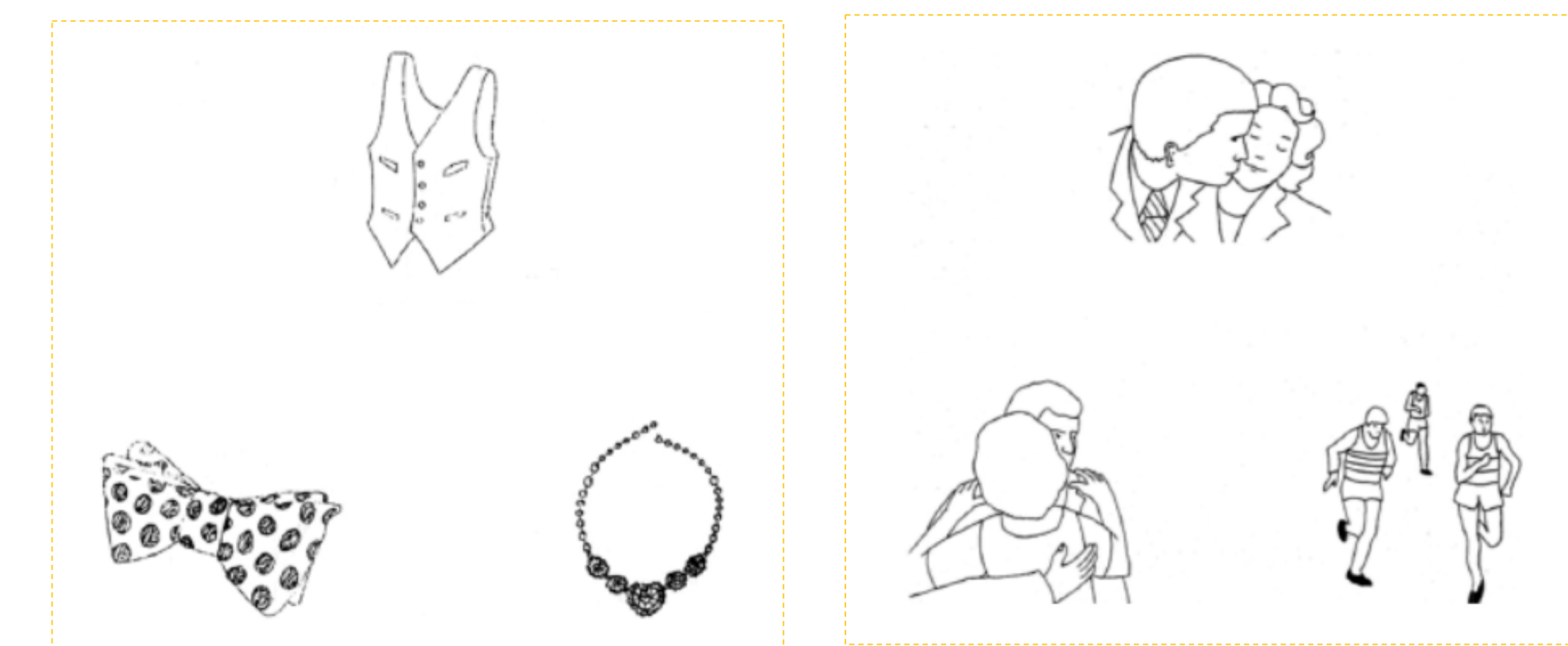
## INTRODUCTION

**Semantic memory** is explicit long-term memory containing **world knowledge** (about people, objects, and actions)

Language production and comprehension make critical reference to semantic memory

Current standards for clinical assessment of semantic memory include:

- Pyramids and Palm Trees (PPT) object-related conceptual semantics (Howard & Patterson, 1992)
- Kissing and Dancing Test (KDT) action-related conceptual semantics (Bak & Hodges, 2003)



- line drawings, simultaneous processing of multiple stimuli, complex stimulus-response mapping.
- Lack of **cross-linguistically** or **cross-culturally** standardization.
- No testing of **semantic memory for events** (higher-level representations combining action and object knowledge)

## AIMS

- Examine the relationship between this novel measure and:
  - standard measures** for object and action conceptual semantics
  - naming and comprehension of nouns and verbs**
- Assess a **novel test** of semantic memory for events (naturalistic photographic stimuli and cognitively undemanding procedures)
- Examine **cross-linguistic** and **cross-cultural** results of the novel test.

## METHODS

**16** people with chronic aphasia, and **16** age-, gender- and education-matched controls. Monolingual native Spanish-speakers living in Bogotá, Colombia

**Semantic Memory Performance:**

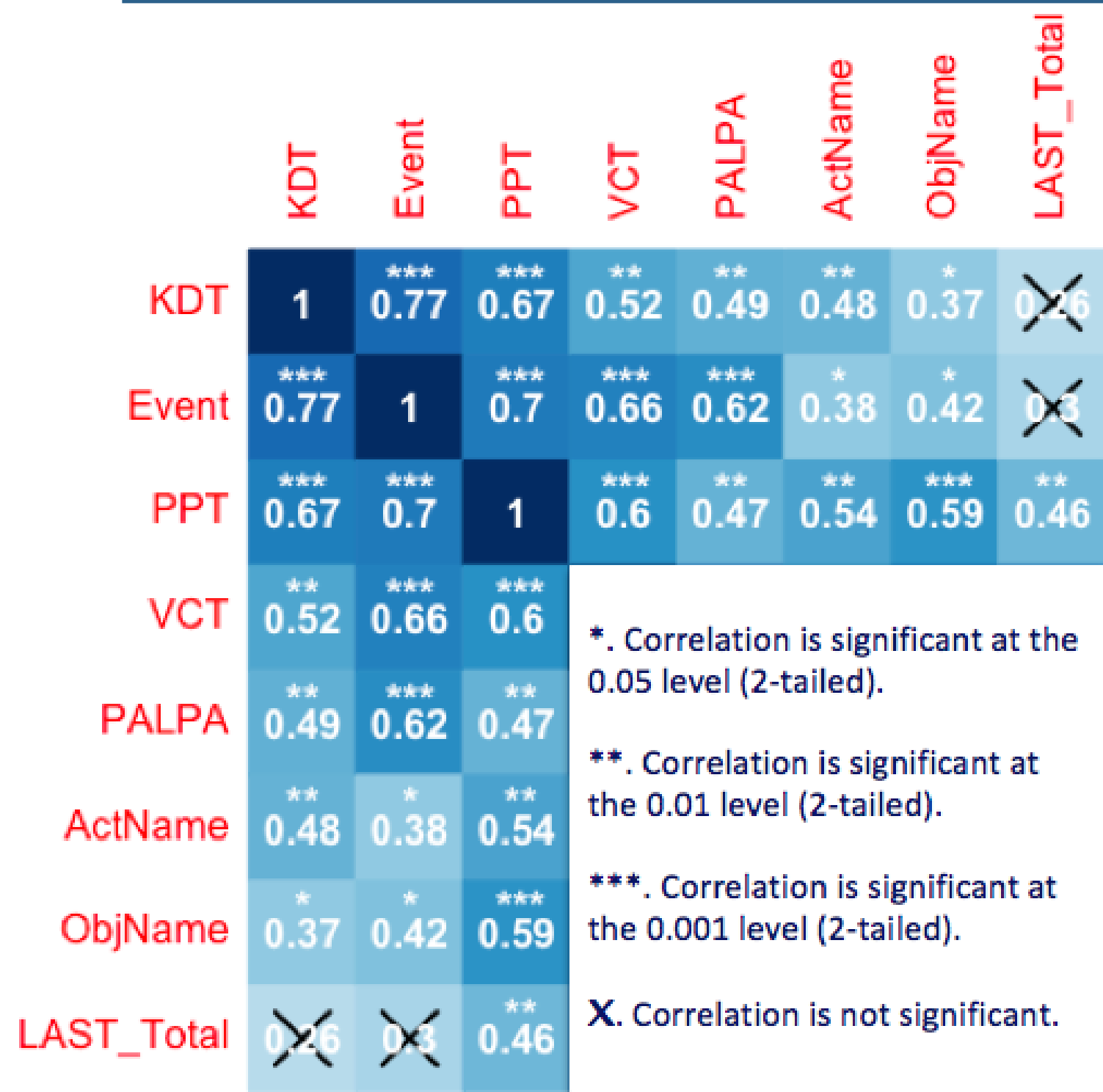
- Participants completed computerized versions of **PPT** and **KDT**
- Event Task (Event):** 260 color photographs of people participating in simple actions. Some actions were congruent and others were not.



**Language Performance:**

- Language Screening Test (**LAST**; Flamand-Roze, C., et al. 2011)
- Object and Action Naming Battery (**OANB**; Druks, 2000)
- Verb Comprehension Test from the Northwestern Assessment of Verbs and Sentences (**VCT**; Cho-Reyes & Thompson, 2012)
- Psycholinguistic Assessments of Language Processing in Aphasia subtest 47 (**PALPA47**; Kay et al., 1996)

## RESULTS



strong relationships among Event and the existing semantic memory tasks (correlations)

## RESULTS

Logistic regression models.

**Event as a measure of event-related semantic memory:**

- Fixed effects: KDT, PPT → predicting Event performance.

**Relationship between Event and language-task performance:**

- Fixed effects: LAST and Event performance → predicting performance on language tasks.
- Random effects: intercepts for participants, random slopes within items for each fixed effect.

- Effect of **KDT on Event** performance ( $\beta=0.48$ ,  $SE=0.14$ ,  $p<0.001$ ), with better KDT performance being associated with higher Event accuracy.
- Effect of **LAST on object** ( $\beta=0.81$ ,  $SE=0.37$ ,  $p=0.03$ ) and **action naming** ( $\beta=1.89$ ,  $SE=0.39$ ,  $p<0.001$ ) on the OANB, with higher LAST scores being associated with higher naming accuracy.
- Event performance did **not predict either object or action naming**.
- Neither LAST nor Event performance had an effect on noun or verb comprehension (PALPA47, VCT).

## DISCUSSION

- Colombian PWA exhibit **co-impairments** within and across semantic memory domains
- KDT predicted Event performance. KDT and PPT strongly correlated with Event.
- Results consistent **with events being a combination of action and object knowledge**
- Event was not a predictor of performance in naming or comprehension of verbs/actions

## CONCLUSION

- Event is an **aphasia-friendly test of semantic memory for events**, combining object- and action-knowledge.
- Further work is required to shed light on whether **event representations vary cross-linguistically or instead are "universal."**

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