Why did the cat get up the tree?
What picture descriptions can tell us about conceptualisation deficits in aphasia.

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BACKGROUND

• Thinking and speaking are highly interlinked processes (e.g., Slobin, 1996; Dipper, Black, & Bryan, 2005)

• Conceptualisation = transforming general thought about an event in to a form that can be verbally expressed (Levett, 1989) by e.g.: 1. Selecting information 2. Ordering information

• Case studies on conceptualisation deficits in people with aphasia (PWA) report: difficulties in selecting the most important information and assigning it to foreground & background (Marshall, 2009; Cairns, 2006)

AIM

• To investigate the prevalence of conceptualisation deficits in PWA by identifying possible key symptoms in a picture description

WORKING HYPOTHESES

• Compared to healthy controls PWA with conceptualisation difficulties will produce...
  1. Fewer main concepts
  2. Fewer inferences
  3. A different concept order

METHODS

Participants:
  • 50 healthy participants (mean age: 72.8 ± 5.9, 21♀)
  • 50 PWA (mean age: 69.3 ± 11.4, 25♀)
    • Randomly selected from the AphasiaBank database (MacWhinney, Fromm, Forbes, & Holland, 2011)
    • Severity (Western Aphasia Battery): 3x severe, 28x moderate, 19x mild impairments
    • Majority of PWA classified with either Broca’s aphasia (38%), conduction aphasia (22%) or an anomic variant of aphasia (30%)

Concept Analysis:
  • Analysis of “Cat Rescue” picture descriptions
  • Identification of:
    1. 25 relevant concepts (produced by ≥ 10% of controls)
    2. 10 main concepts (produced by ≥ 60% of controls)
  • Analysis of: number of main concepts, order of concepts, number of inferences

RESULTS

Number of Main Concepts:
  • 94% of controls produced 7/10 main concepts
  • 25/50 PWA produced significantly fewer main concepts than controls (<.05, Crawford-Howell)
  • 8 main concepts produced by significantly more controls than PWA

Number of Inferences:
  • Equal numbers of PWA and controls produced “GIRL” concept
  • “DOG” concept was produced by significantly more PWA than controls

Order of Main Concepts:
  • Typical beginning of the picture description
    1. Why did the cat get up the tree? How did the fire brigade know that they have to come?
    2. Example: significantly fewer PWA who mentioned the “CAT” & “FIRE BRIGADE” concepts, made an inference about them

DISCUSSION

• Small number of main concepts suggest conceptualisation difficulties in some PWA
  • High number of PWA produced “DOG” concept ➞ Possible effect of frequency on lexical selection influencing concept production
  • Fewer inferences and different concept order suggest difficulties in identifying relationships between individual concepts &/or foregrounding concepts (e.g., Cairns, 2006)
  • Causal relation between found symptoms and conceptualisation deficits will be further investigated

Figure 1: Stimulus picture “Cat Rescue” (Nicholas & Brookes, 1993) & the identified main concepts

Figure 2: Concepts that were produced by the same number of controls and PWA (Any mention of the “GIRL”) or by more PWA than controls (Any mention of the “DOG”)

Figure 3: Percentage of participants who produced an inference about these concepts

Figure 4: Entities that were mentioned within the first 3 concepts in the majority of healthy controls’ picture descriptions