Exploring cognitive linguistic processes through cloze probability tasks

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Background

- Large amount of research regarding language comprehension – mainly through reading tasks. (Rayner, Binder, Ashby & Pollatsek 2001; Luke & Christianson 2016; Clifton, Staub & Rayner 2007)

- Literature has begun to include language production alongside language comprehension.

- This is in the early stages and so only limited conclusions can be drawn from these studies.

Cloze Probability tasks.

- Independent variable 1 – the predictability of the sentences presented.

- High Cloze Probability sentence:

    To keep the dogs out of the yard he put up a fence

    (Block & Baldwin, 2010; Bloom & Fischler, 1980)

- Low cloze probability sentence:

    In the distance they heard the kettle

    (Block & Baldwin, 2010; Bloom & Fischler, 1980)

(Block & Baldwin, 2010; Bloom & Fischler, 1980)

IV2 – The display of the tasks

1. Traditional cloze tasks

Free production to complete the sentence

Father carved the turkey with a _

2. Copying tasks

The man happily sat down in the comfortable _

chair

The completion word is displayed to be copied

3. Picture naming tasks

(Block & Baldwin, 2010; Bloom & Fischler, 1980)

The completion word is displayed as a picture and requires naming to complete the sentence.

The baseball player's cap protected him from the _

(Rossion & Poirtois, 2004)

Reaction time measures

- There were two dependent variables of reaction time

  1. Response latency – time taken to begin response once all materials had been displayed

  2. Response duration – time taken to fully type the completion word for the sentence

- Independent variables were hypothesised to affect the reaction times taken to complete the sentence as previous literature suggests that cognitive linguistic processes take more time in some conditions than in others – the main aspects affecting these are production of lexical candidates and level of information available (Maess, Friederici, Damian, Meyer & Levelt, 2002).

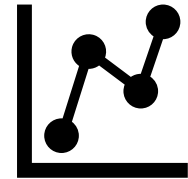# Theorised cognitive processes affecting reaction times

- Generation of lexical candidates: the production and retrieval of possible words to complete the sentences. Theorised to differ between high and low cloze probability sentences.

- The level of information provided: this is shown through the different tasks. With the addition of more information regarding the completion word (in copy and picture naming tasks) fewer lexical candidates are thought to be generated.
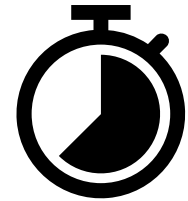
Results

- The results gained allowed for both hypotheses to be accepted.

- The cloze probability of the sentence significantly affected both latency and duration measurements:

    o High cloze probability sentences elicited faster response times than low cloze probability sentences

- The task variable also significantly affected latency and duration measurements:

    o Copy tasks had the fastest measurements

    o Picture tasks followed

    o Traditional cloze tasks had the longest measurements

Implications

It is suggested that these results were found as the independent variables affected the levels of cognitive processing required to formulate a response – therefore affecting reaction time.

The measure of response duration suggests that cognitive linguistic approaches may affect associated motor mechanisms (Afonso, Suarez-Coalla, Gonzalez-Martin & Cuetos, 2018).

More in-depth analysis showed that lexical candidates may not be generated in copying tasks

This research and results are extremely novel, many conclusions are speculation and much more research is required.

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