Verbal Fluency Performance in Older Adults on a Novel Computerized Test Battery

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Background:

Previous studies have suggested that impaired verbal fluency is a sensitive measure of semantic impairment in dementia that appears several years prior to diagnosis. This early impairment has been associated with neural changes and altered activation in key regions of bilateral temporal and frontal cortex.

Method:

In the current study, we report verbal fluency findings from a large group of healthy older adults (n = 270, ages 56-89) on a new computerized neuropsychological battery that utilizes advanced automatic speech recognition and transcription software. In an ongoing longitudinal study, we are testing healthy older participants on the California Cognitive Assessment Battery (CCAB) every six months for three years, in order to track changes in cognition associated with aging, including evolution of mild cognitive impairment (MCI) and dementia. The CCAB includes six semantic categories: Animals, vegetables, countries, sports, furniture, and fruit. Participants are given one minute per category to generate as many exemplars as possible. Online speech-to-text transcription was implemented using consensus automatic speech recognition (CASR) software, which utilizes six different speech recognition systems and chooses the most common transcription.
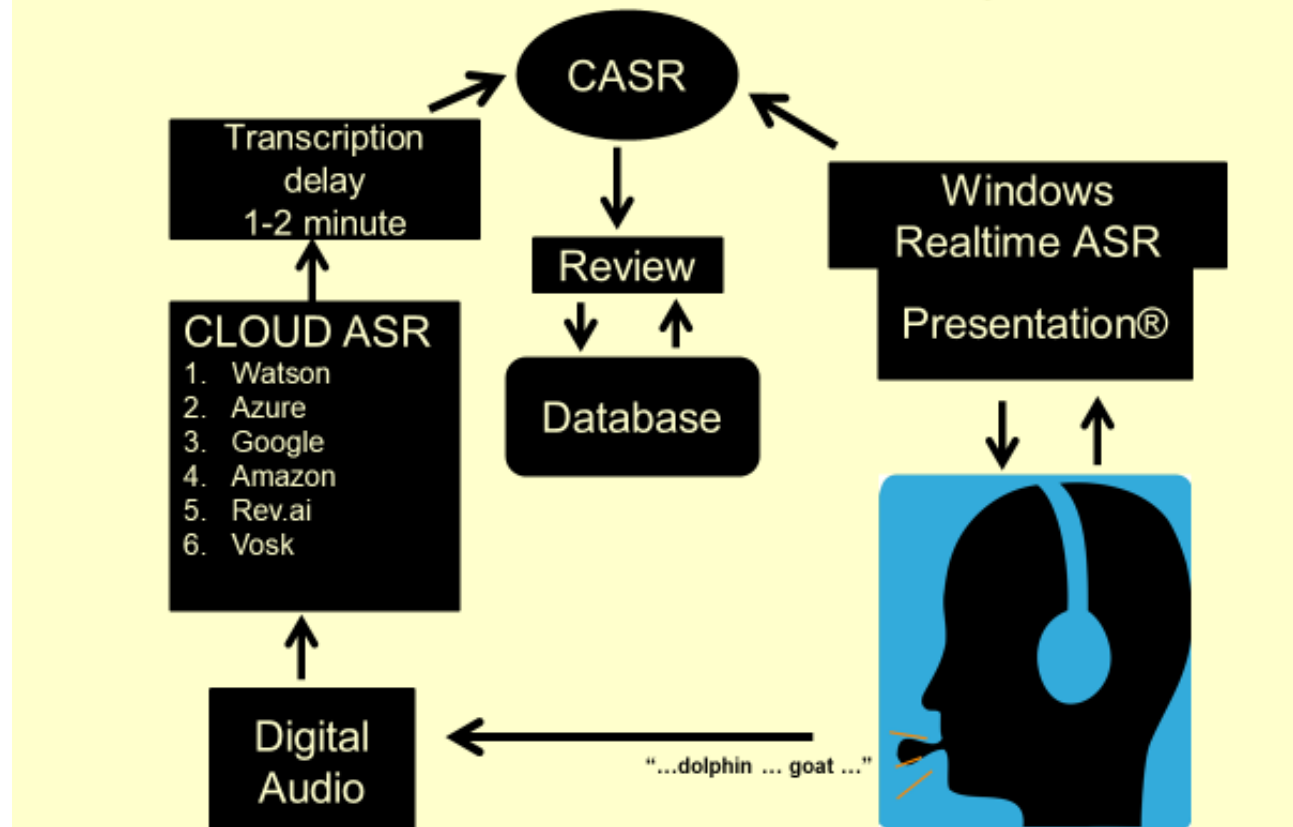
Result:

Overall verbal fluency performance was significantly predicted by age. However, this effect depended on the semantic category. For example, females and more educated participants generated more exemplars for the category "countries."

Conclusion:

Findings from the current study enhance understanding of aging effects on verbal fluency and serve as a critical baseline against which to monitor alterations in performance that coincide with the development of MCI and dementia in older adults.
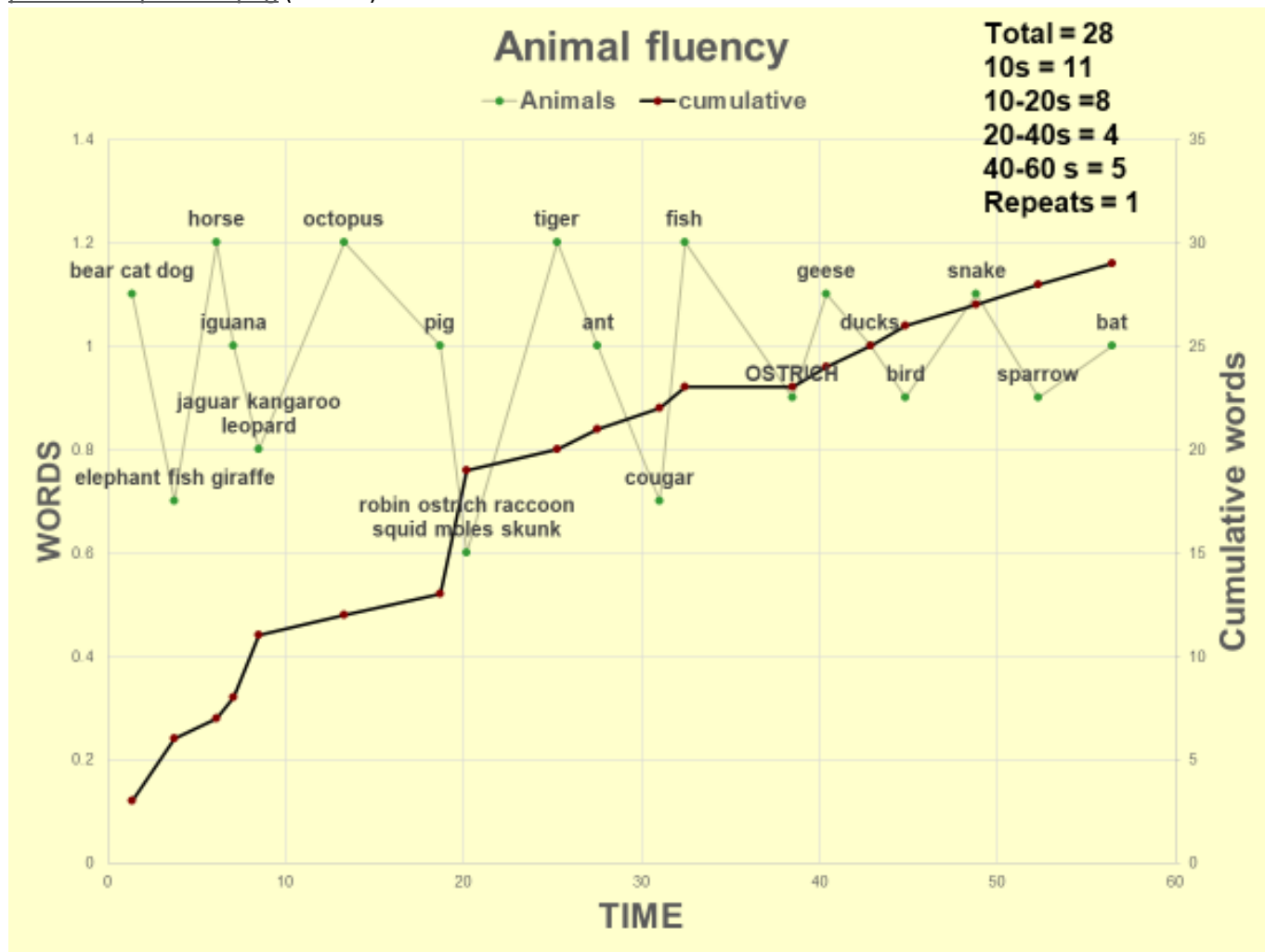
Tables and Figures:

CASR: verbal fluency

patient sample data.png (40.6KB)

Animal fluency
— Animals — cumulative

Total = 28
10s = 11
10-20s =8
20-40s = 4
40-60 s = 5
Repeats = 1

horse   octopus   tiger   fish
bear cat dog   geese   snake
iguana   pig   ant   ducks   bat
jaguar kangaroo   OSTRICH   bird   sparrow
leopard
elephant fish giraffe   cougar
robin ostrich raccoon
squid moles skunk

WORDS
TIME
Cumulative words

Title:

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No

Abstract Submission Affirmations:

I agree to the Abstract Submission Affirmations.

Do you plan to upload figures or tables to supplement your abstract text?

Yes

Theme:

Clinical Manifestations

Topic:

Neuropsychology

Sub Topic:

Computerized neuropsychological assessment

Learning Objectives:

- Interpret verbal fluency data from elderly participants.

Keywords:
clinical assessment, cognition and neuropsychology

Fellowship:

No.

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Signed on 01/24/2022 by *Juliana Baldo*

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