THE ROLE OF COGNITIVE CONTROL AND REFERENTIAL COMPLEXITY ON REFERENTIAL CHOICE OVER THE ADULT LIFESPAN

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BACKGROUND AND PREDICTIONS

1 Our study examines referential choice over the adult lifespan, where pragmatic and cognitive skills have been found to vary considerably.

Here we probed adults’ (aged 18-82) choice of referential forms (i.e., names vs pronouns) across 4 story continuation experiments, focusing on an understudied discourse stage: Maintenance.

2 We tested the role of an adult’s cognitive control in an age-related decision by 2 (Age: 18-30 vs 73-82). Psychometric and cognitive control measures were used to test this hypothesis.

3 Holding the discourse stage constant, we manipulated features of the visual scene, testing and expanding upon Fossard et al.’s scale of referential complexity [3].

According to Fossard et al., pronouns should decrease as referential complexity increases, since pronouns signal topic continuity [4].

4 Based on prior work [5-6], we predicted that younger and older adults would rely on different cognitive strategies for referential choice.

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6 We also predicted that novel factors (related to competition for topicality) would also modulate referential choice, such as:

- The NUMBER of competitor referents in the scene/discourse (0-2)
- The TIMING of competitors’ presence (early or late in the scene/discourse)
- The EMPHASIS on competitors (relative to the main character)

RESULTS

EXPERIMENT 1

**Testing Age and EF with Fossard’s scale (1 vs 2 characters)**

Participants (n=100, aged 18-82) produced story continuations in displays where scenes varied [3]:

- Panel 1: Doggie (M) cooked rice for dinner.
- Panel 2: "He/Doggie…"

**RESULTS**

- Our initial model of Pronominal use (with Age and EF as predictors) revealed a higher rate of pronominal use in older than younger adults, as expected.

- Our LMER model of Pronominal use (with Age and Complexity as predictors) revealed greater pronominal use for both 1 and 2 character scenes. This provides insight into their perception of the topic continuity at each stage.

EXPERIMENT 2

**Extending the scale: NUMBER of competitors (1-3 characters)**

New online participants (n=100, aged 18-73) were administered the task, now with 3 character scenes.

**RESULTS**

- Our initial model of Pronominal use (with Age only) revealed a higher rate of pronominal use in older than younger adults, as expected.

- Our LMER model of Pronominal use (with Age and Complexity as predictors) revealed greater pronominal use for both 1 and 2 character scenes, but no difference between 2 and 3 character scenes.

EXPERIMENT 3

**Extending the scale: TIMING of competitors (early vs late)**

New online participants (n=100, aged 18-73) were administered the task, here timing was manipulated.

**RESULTS**

- Our initial model of Pronominal use (with Age only) revealed a higher rate of pronominal use in older than younger adults.

EXPERIMENT 4

**Extending the scale: EMPHASIS on competitors (repeated mention)**

New online participants (n=100, aged 18-73) were administered the task, here emphasis was manipulated.

**RESULTS**

- Surprisingly, our initial model of Pronominal use (with Age only) revealed a higher rate of pronominal use in younger rather than older adults. Why? Further work to explore the linguistic mechanisms.

CONCLUSIONS

Our results provide insight into the relationship between pragmatics and ageing by identifying a link between older adults’ switching skills and the use of pronouns as a marker of topic continuity. Likewise, our results reveal what type of contextual information is prioritized at different ages, highlighting older adults’ preserved sensitivity to (visual) scene complexity but reduced sensitivity to linguistic complexity cues, compared to younger adults. These findings contribute to our understanding of individual differences in pragmatic behavior and can be used to refine the referential complexity scale [9] as well as current computational models of reference [10].