Autistic Traits and Eye-Movements During Readings

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ARC CENTRE OF EXCELLENCE IN COGNITION AND ITS DISORDERS

Overview

- We used eye tracking to test two explanations of reading comprehension difficulty in ASD.
- The context processing explanation endorsed by the 'Weak Central Coherence' account was tested using a contextual constraint paradigm.
- The comprehension monitoring explanation was tested using a garden-path, homograph reading paradigm.
- The size of contextual constraint effects in the first paradigm was not moderated by subclinical autistic traits, measured using the Autism Spectrum Quotient (AQ).
- Garden-path ambiguity effects were significantly moderated by AQ score – indicating poor ambiguity resolution in the presence of comprehension monitoring (homophonic homographs only).
- Higher AQ scores associated with poorer ambiguity resolution, when contextual information required retrospective integration.

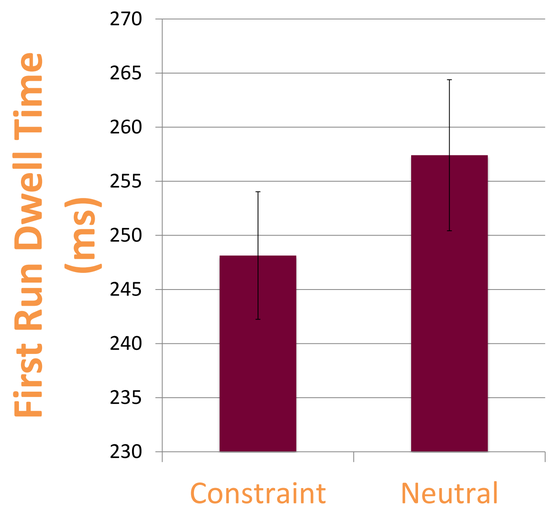
Contextual constraint paradigm

Constraint

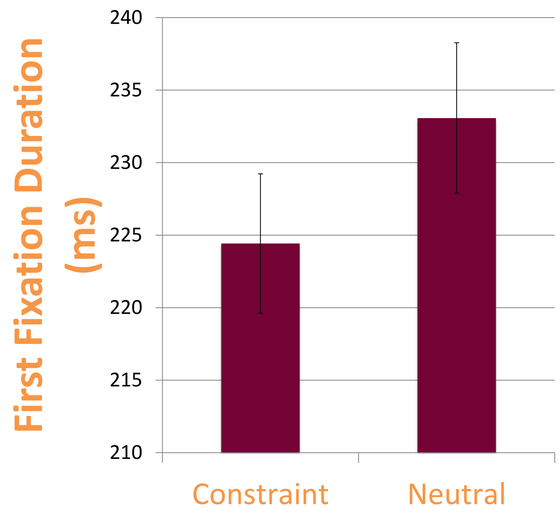
"For your birthday I baked a cake with icing."

Neutral

"Tom wants to know about the cake on the table."

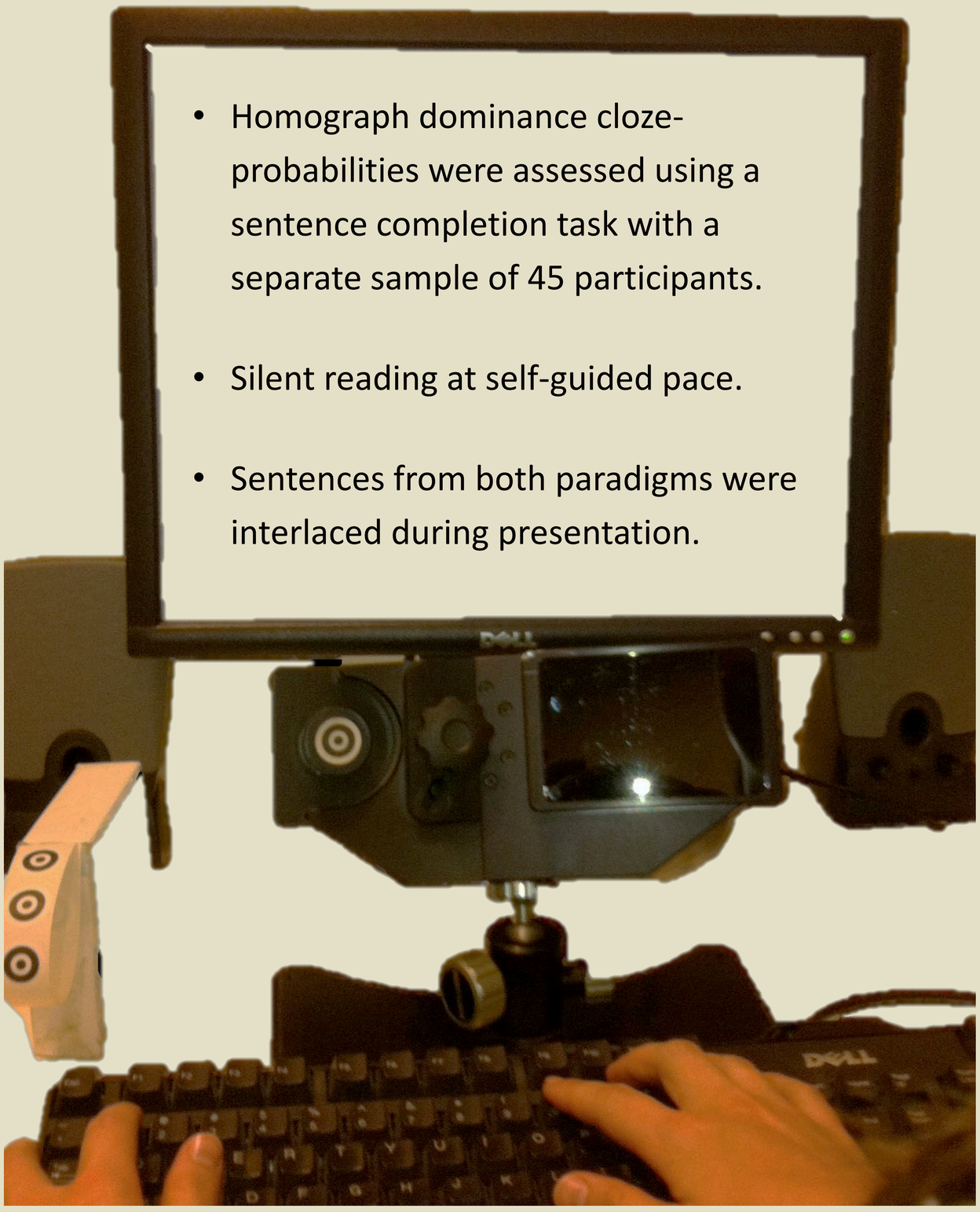


(*t* = -2.33, Pr(>|t|) = .02)



(*t* = -2.12, Pr(>|t|) = .03)

Method



- Homograph dominance cloze-probabilities were assessed using a sentence completion task with a separate sample of 45 participants.
- Silent reading at self-guided pace.
- Sentences from both paradigms were interlaced during presentation.

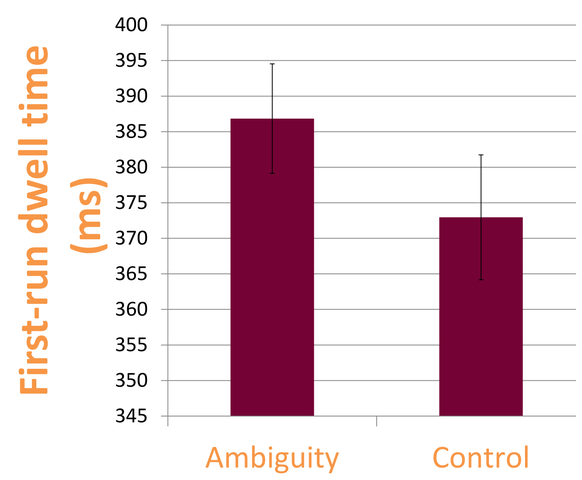
Garden-path homograph reading paradigm

Ambiguity

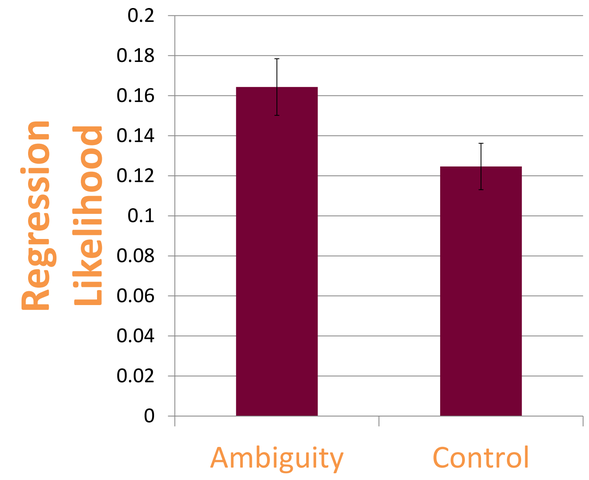
"The crane was slowly flying over the lake."

Control

"The bird was slowly flying over the lake."



(*t* = -2.16, Pr(>|t|) = .03)



(*z* = -2.45, Pr(>|z|) = .01)

Significant condition*AQ interaction for Go-Past Duration on disambiguating word: (*t* = -1.88, Pr(>|t|) = .059)

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