**INTRODUCTION**

Hearing readers are sensitive to whether a string of letters is pronounceable (barve) or not (brvae). However, dyslexic readers are not, suggesting that pronounceability effects may have a phonological rather than orthotactic basis [1].

Deaf readers are an interesting group for comparison because they are sensitive to orthography just like hearing readers, but they have reduced access to phonology [2].

Are deaf readers sensitive to priming with pronounceable and unpronounceable previews? Do they process the target word more efficiently [3]?

**METHODS**

**PARTICIPANTS**

40 deaf readers (21F, mean age = 36.1 years)

40 hearing readers (19F, mean age = 29.9 years)

Deaf participants were all native or early signers of ASL.

Groups matched on reading ability and nonverbal intelligence.

**TASK**

Participants read 184 single-line sentences and answered comprehension questions for 20% of sentences. Each sentence contained a 5-letter target word.

The little girl acted brave when she fell down.

**PARADIGM**

A preview word took the place of the target word when the sentence was first displayed.

The preview word was pre-processed in the reader’s parafovea, acting as a prime for the target word.

Without the reader noticing, the target word replaced the preview word when her gaze crossed an invisible boundary on the screen.

Eye movements were recorded with an Eyelink 1000+.

**RESULTS**

- **No pronounceability effects in either group**
  - Pronounceable
    - Skipped Targets (%)
    - Deaf: 35
    - Hearing: 40
    - p = 0.04
  - Unpronounceable
    - Skipped Targets (%)
    - Deaf: 25
    - Hearing: 30
    - p = 0.06

- **Deaf readers skipped more target words compared to hearing readers**
  - Refixations
    - Deaf: 15
    - Hearing: 10
    - p = 0.004
  - Refixated Targets (%)
    - Deaf: 20
    - Hearing: 15

- **Deaf readers had fewer refixations on target words compared to hearing readers**
  - First Fixation Duration
    - Deaf: 175 ms
    - Hearing: 200 ms
    - p = 0.06

**CONCLUSIONS**

- Pronounceability effects were found in single word processing [1] but not sentence level reading, perhaps due to additional context and top-down processing.
- Replicating the Word Processing Efficiency Hypothesis [3], deaf readers were more efficient at processing words in the parafovea.
- Findings highlight differences between deaf and hearing readers and the importance of naturalistic reading tasks.