

# Getting more: The relationship between age and generalization for late-acquired sounds



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## Introduction

Treatment for speech sound disorders (SSD) can involve years of work on the part of the therapist and the client. To minimize the impacts associated with SSD, it is important to aim for generalization in treatment to maximize the effectiveness and efficiency of treatment.

- Selecting treatment targets that promote maximum change to the child's phonological system can make an impact on the overall duration and success of treatment.
- Previous research has shown that children with phonologically-based SSD benefit from treatment on more marked sounds in the language, because it leads to broad change in the phonological system.
  - **Marked** items are generally more complex than unmarked items.
    - Clusters are more marked than singletons
    - Late-acquired sounds are more marked than early-acquired sounds
- Previous work in this line (Krueger, 2017) showed that younger children treated on late-acquired sounds (e.g. /ɹ/) achieved a higher level of accuracy, in less time, than older children.

The purpose of the present analysis was to examine whether the child's age influenced the amount of generalization observed after a treatment course for late-acquired sounds.

Does treating late-acquired sounds result in generalization for young and old children?  
Do younger children acquire more untreated sounds than older children as a result of treatment for late-acquired sounds?

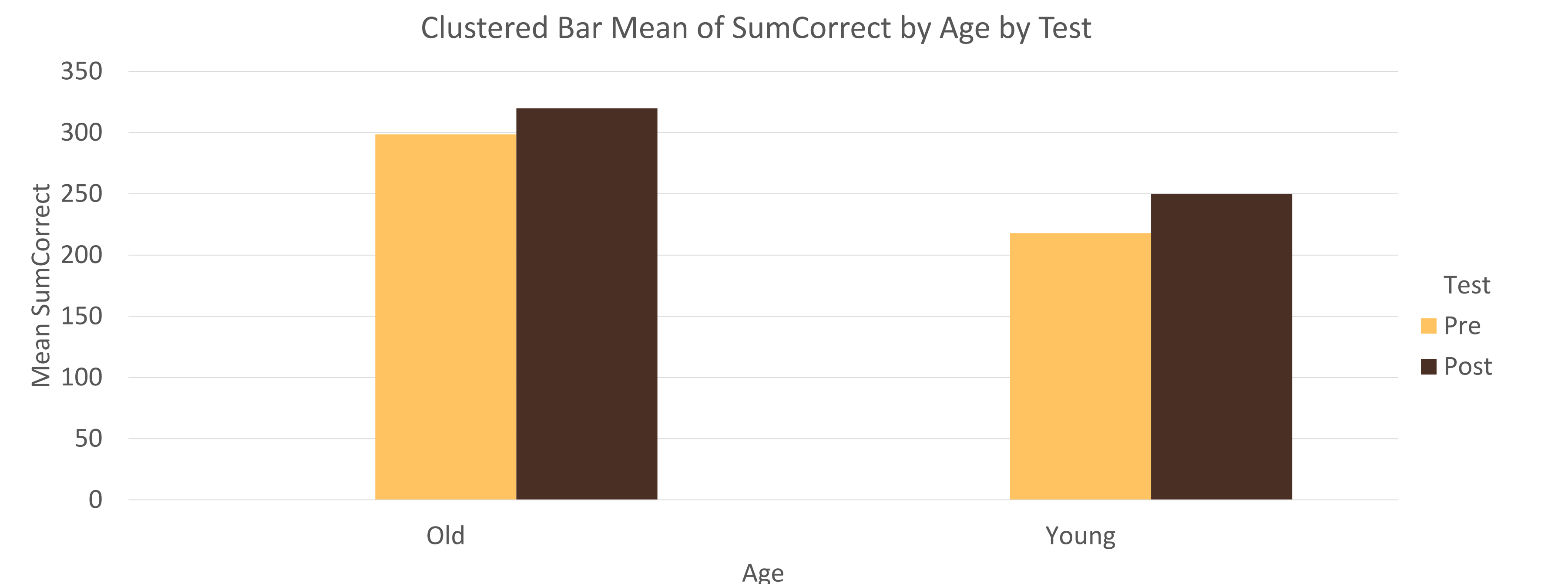
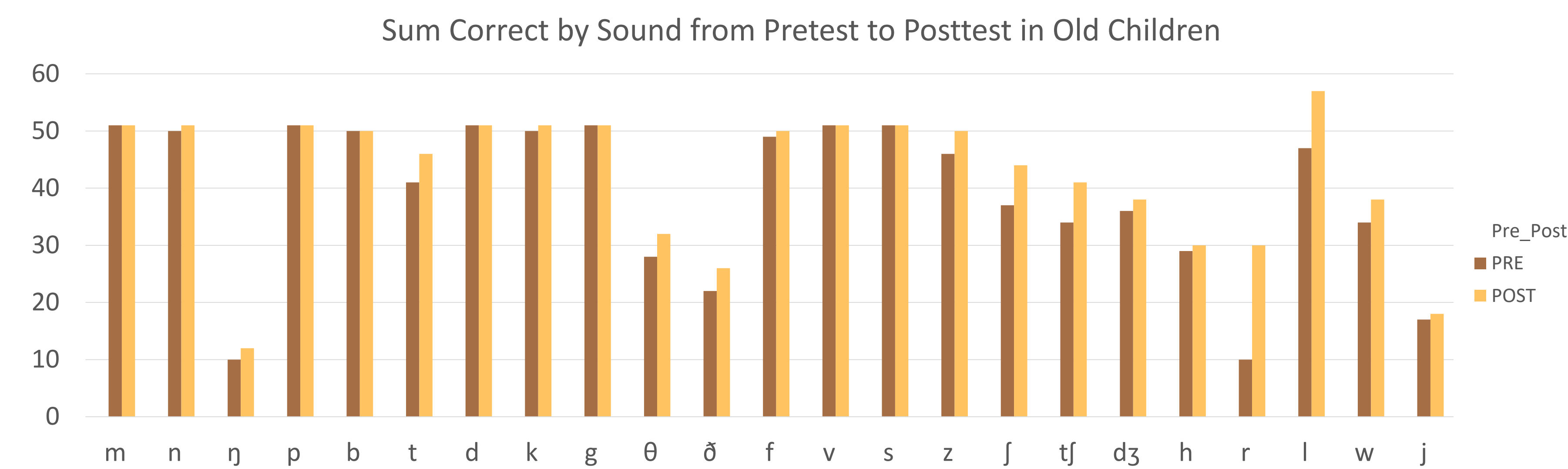
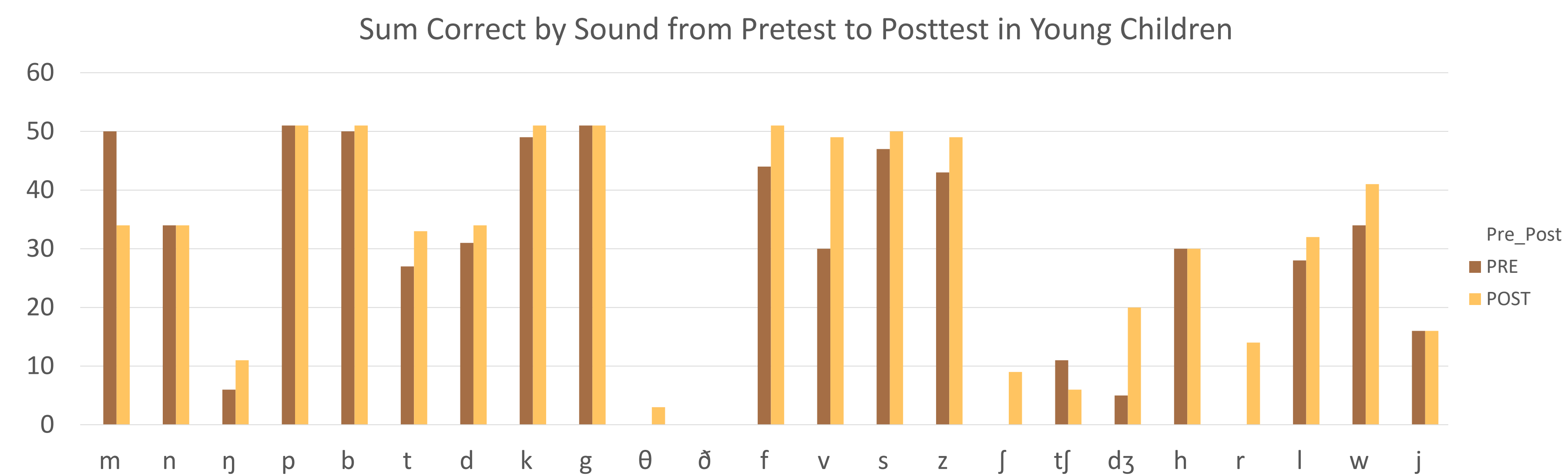
## Methods

The examined whether children's phonological systems grew as a result of generalization to untreated sounds and whether there was a difference between two age groups.

- Children received pre and post test probes and received an interactive book reading treatment which included 8 nonwords used in treatment, repeated 10 times per session for a total of 80 trials/session
- Six children participated in the study.
  - Young group = Age 4;0 – 5;11 (n =3)
  - Old group = Age 7;0 – 8;11 (n = 3)
- Children were treated on either /ɹ/ or /θ/, depending on their individual needs.
- Production of correct consonants on the PKP probe were charted, and compared between two age groups using a Wilcoxon Signed Rank test, and individual sound analysis.

## Results

- **Does treating late-acquired sounds result in generalization for young and old children?**
  - Yes, overall, both groups gained more sounds generalization to untreated phonemes as a result of treatment for a late-acquired sound.
    - Young children increased their overall production of phonemes in initial, medial, and final position by 13%
    - Old children increased their overall production of phonemes in initial, medial, and final position by 8%
  - Wilcoxon Signed Rank Test overall Pre to Post: [ $p = 0.028$ ]
- **Do younger children acquire more untreated sounds than older children as a result of treatment for late-acquired sounds?**
  - Yes, there was an observed trend of children acquiring more sounds across different phonemes.
  - This is partially due to young children having more sounds in error to meet criterion



## Discussion

- These findings suggest that children, regardless of age, make gains as a result of treatment for late-acquired sounds through generalization
- Younger children had a larger proportion of change than older children.
- This should be interpreted with caution, because younger children are more likely to more sounds in error than older children.
- This finding aligns with previous research that showed that treating difficult, or more phonologically marked elements, results in generalization to other untreated sounds (Gierut, 2001).
- This introduces broader phonological change to the sound system as a whole. The results of the present study converge with those of previous work in phonological complexity, and adds an additional layer with the use of age across two groups.

## References

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