



# Tense Errors Made by Children with SLI During Imitation Tasks



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## Abstract

Errors on sentence imitation tasks are typically considered errors in storage and retrieval. This study explored the possibility that errors are caused by the child's reconstruction of sentences according to his or her underlying grammatical representations. A total of 326 kindergarten children participated: 98 control children, 126 with SLI, 102 with Nonspecific Language Impairment (NLI). Previous analyses revealed that the affected children perform at lower levels than the controls on grammatical tense-marking, with the NLI group lower than the SLI group (Rice & Tomblin, 1999). All children completed the Sentence Imitation Subtest of the *Test of Language Development (TOLD-P:2)* (Newcomer & Hammill, 1991). Initial analyses confirmed that the affected groups performed at lower levels on the sentence imitation task than the control group, with no differences between affected groups. Detailed error analyses revealed that about half of the children's responses were grammatical clauses. Further analyses found that about 80% of the grammatically reconstructed responses were grammatical within the adult grammar and about 20% followed an immature child grammar. Within the child grammatical responses, roughly 1/3 involved at least one child grammar tense error, with no group differences. Overall, the findings point toward grammatical reconstructions as an important part of the story for poor performance on sentence imitation tasks. This pattern holds for children with language impairments as well as the control children.

## Background

- Sentence imitation (SI) tasks are widely used as part of language assessments to identify children with language impairments
- Often low performance is attributed to difficulties with processing or recall of the linguistic input, or breakdowns in retrieval mechanisms, i.e., memory failures
- An alternative interpretation is that children filter the input through their grammatical system and generate grammatical reconstructions that are consistent with a child grammar
- Among the features of an immature child grammar is a tendency to omit grammatical tense markers (TNS) from clausal contexts

## Purpose

- 1) Do children with language impairments perform less accurately than controls on TNS measures?
- 2) Do affected children perform less accurately than controls on SI?
- 3) Do affected children make fewer grammatical reconstructions (GRs) than control children?
- 4) What proportion of GRs from each group is attributable to adult grammar?
- 5) What proportion of child GRs contain TNS errors?

## Participants

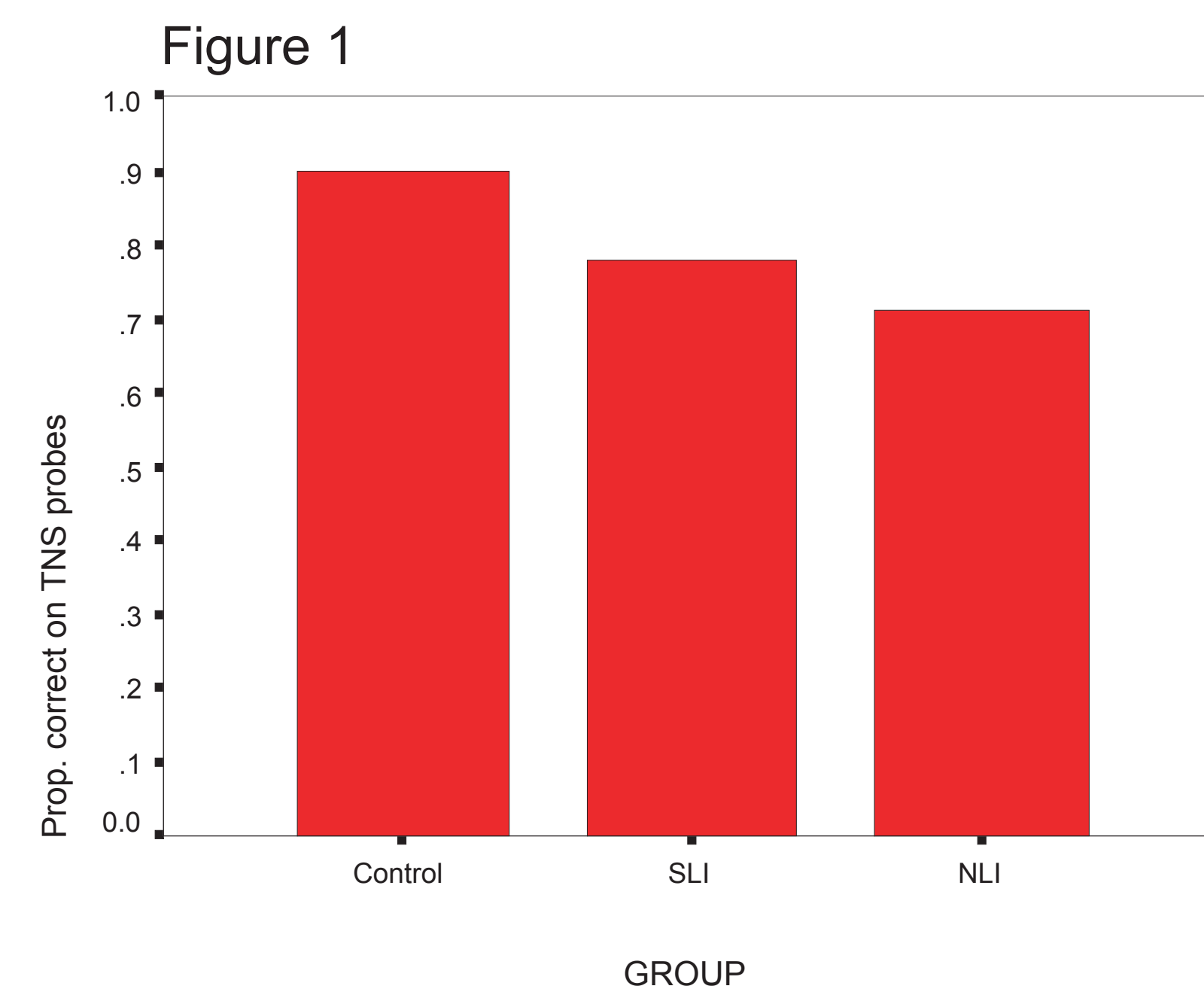
- Cohort 2 kindergarten sample of the Iowa epidemiological study (Tomblin, et al., 1997).
- Based on performance on standardized language testing (*TOLD-P:2*) and performance IQ:
  - 98 children were in a control group
  - 126 with SLI (i.e., IQ normal or above)
  - 102 with NLI (i.e., IQ below 85).
  - Hearing loss, syndromic conditions, and other frank neurological conditions were excluded.

## Procedures

- Administration of the SI subtest of the *TOLD-P-2*
- Administration of two experimental probes of TNS, one for 3<sup>rd</sup> person singular present -s and one for past tense

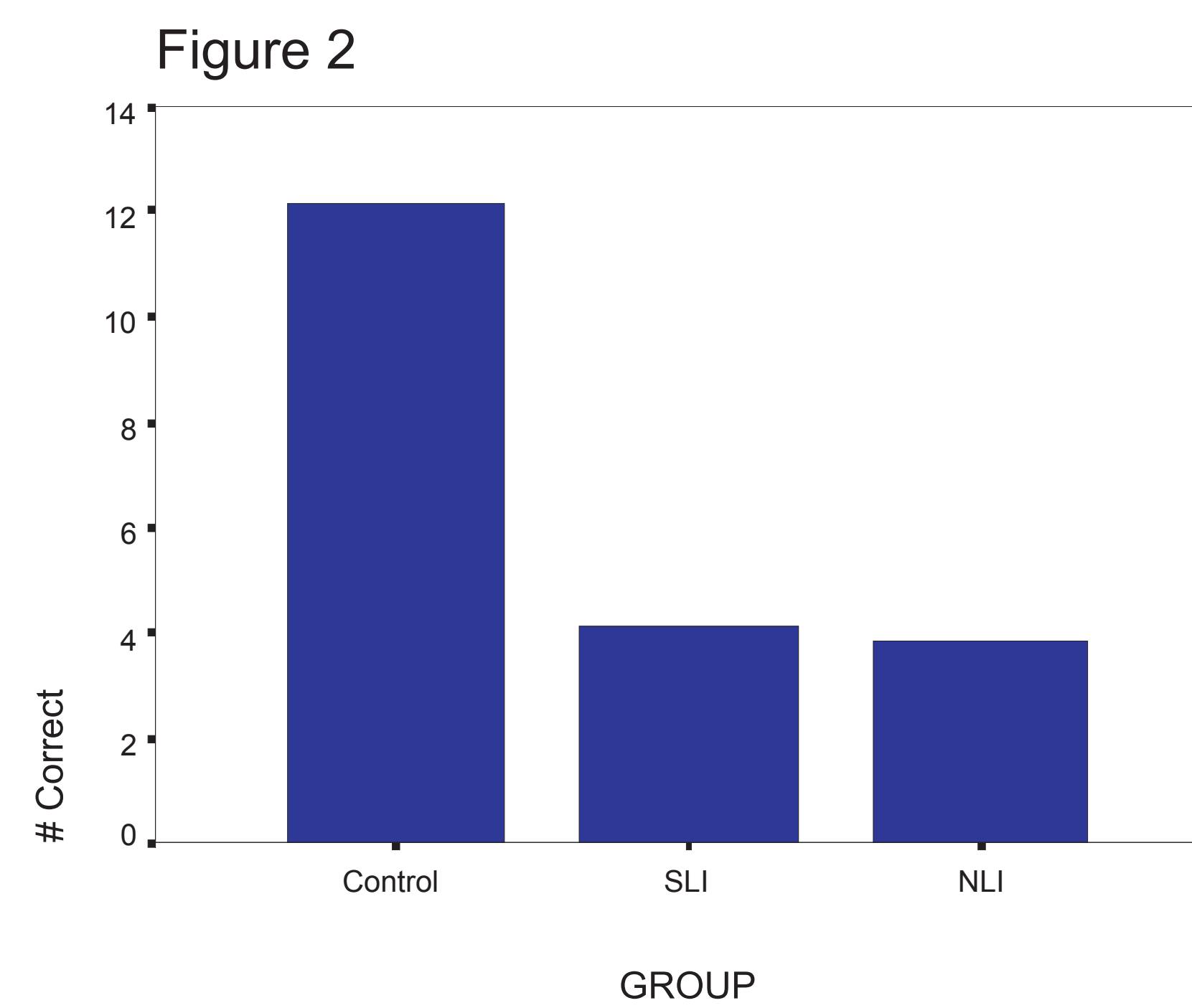
## Results

- Question 1: Previous report of lower performance on TNS probes by the affected groups, with NLI < SLI < Controls.



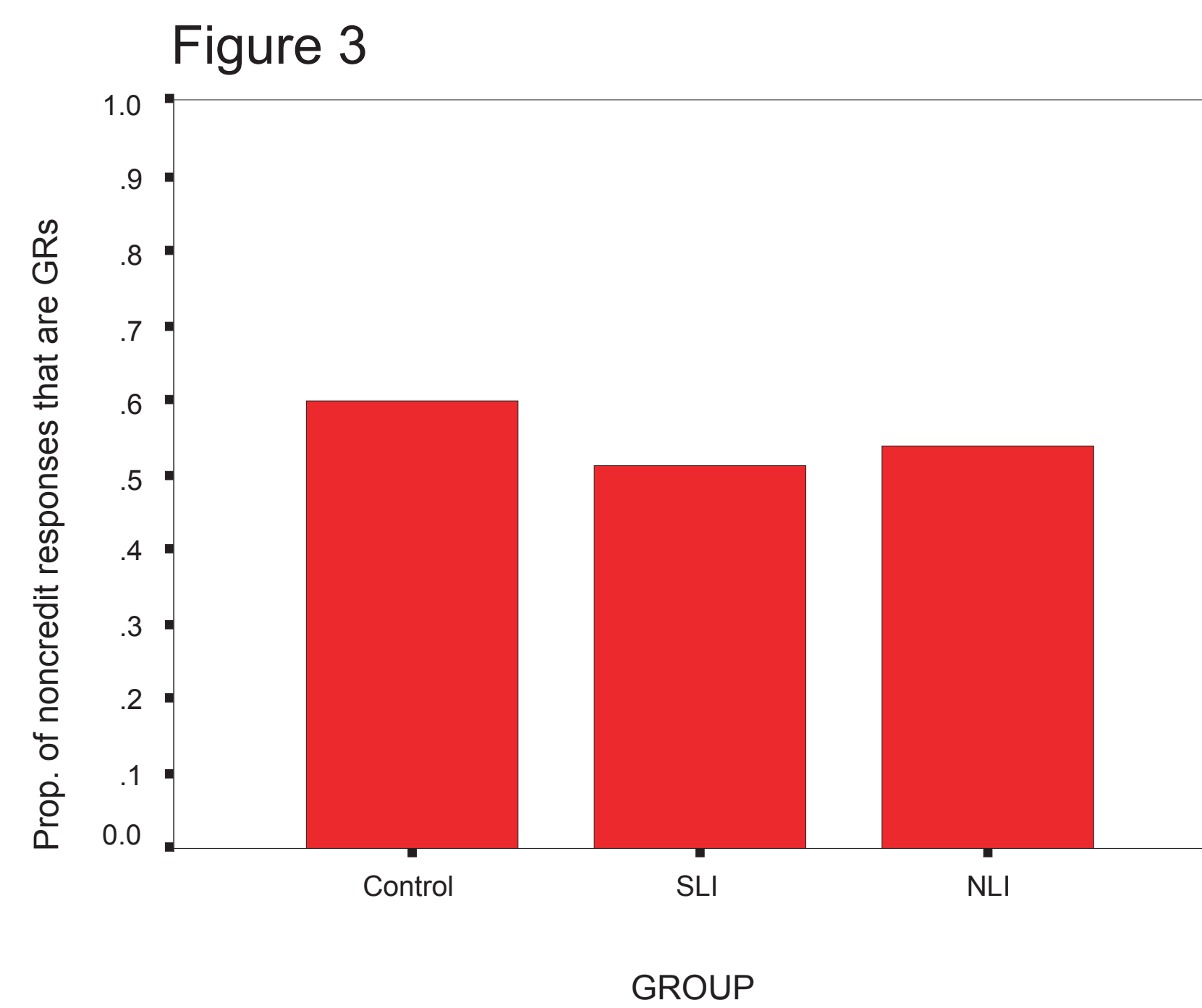
- Question 2: Number correct on SI task

Outcome: NLI = SLI < Controls (ANOVA: Sig group effect, NLI < Controls; SLI < Controls)



- Question 3: Proportion of noncredit responses that are GRs (GR = response is grammatical according to an adult or child grammar)

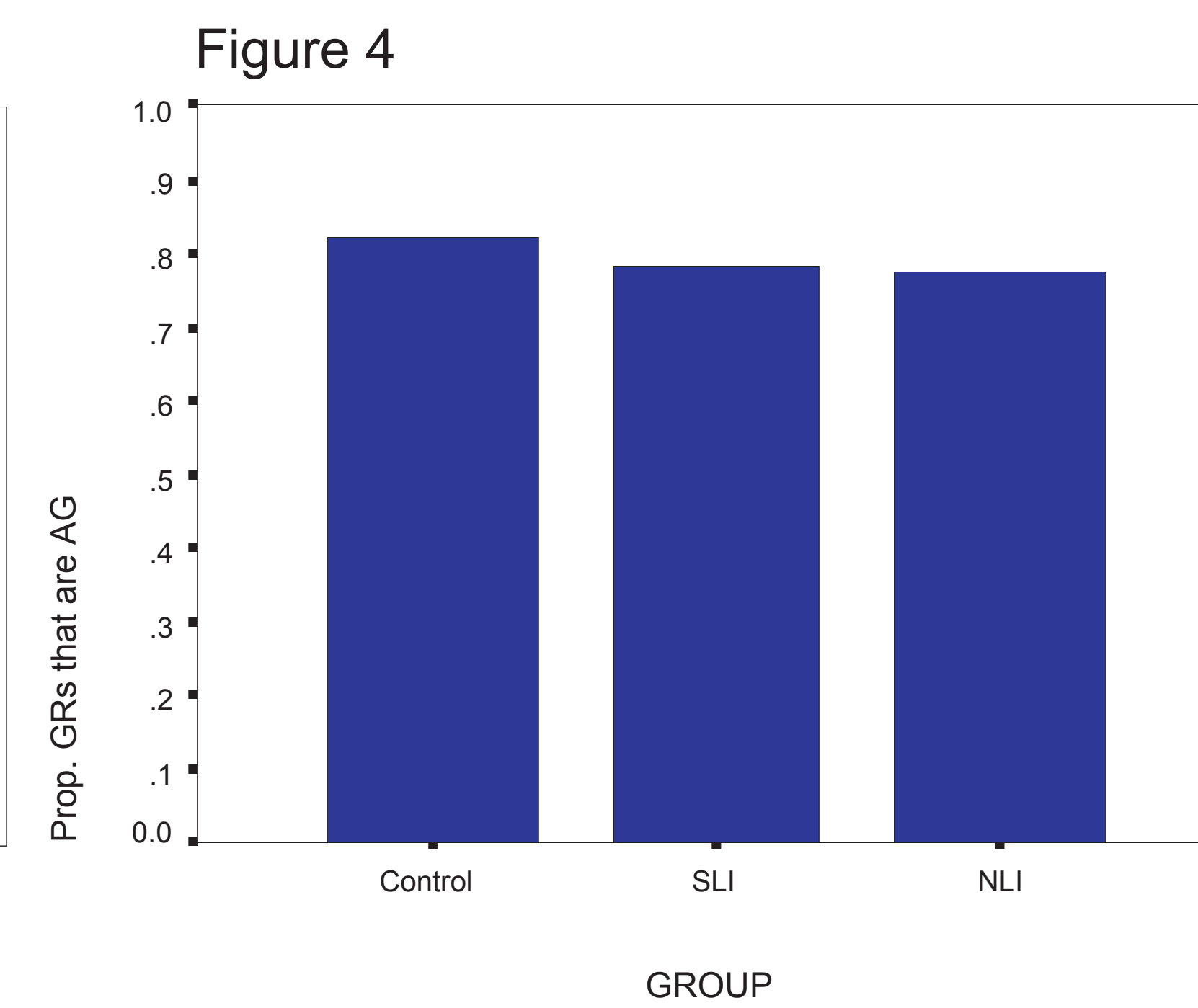
Outcome: NLI = SLI < Controls (ANOVA: Sig group effect, NLI < Controls; SLI < Controls)



## Results Cont.

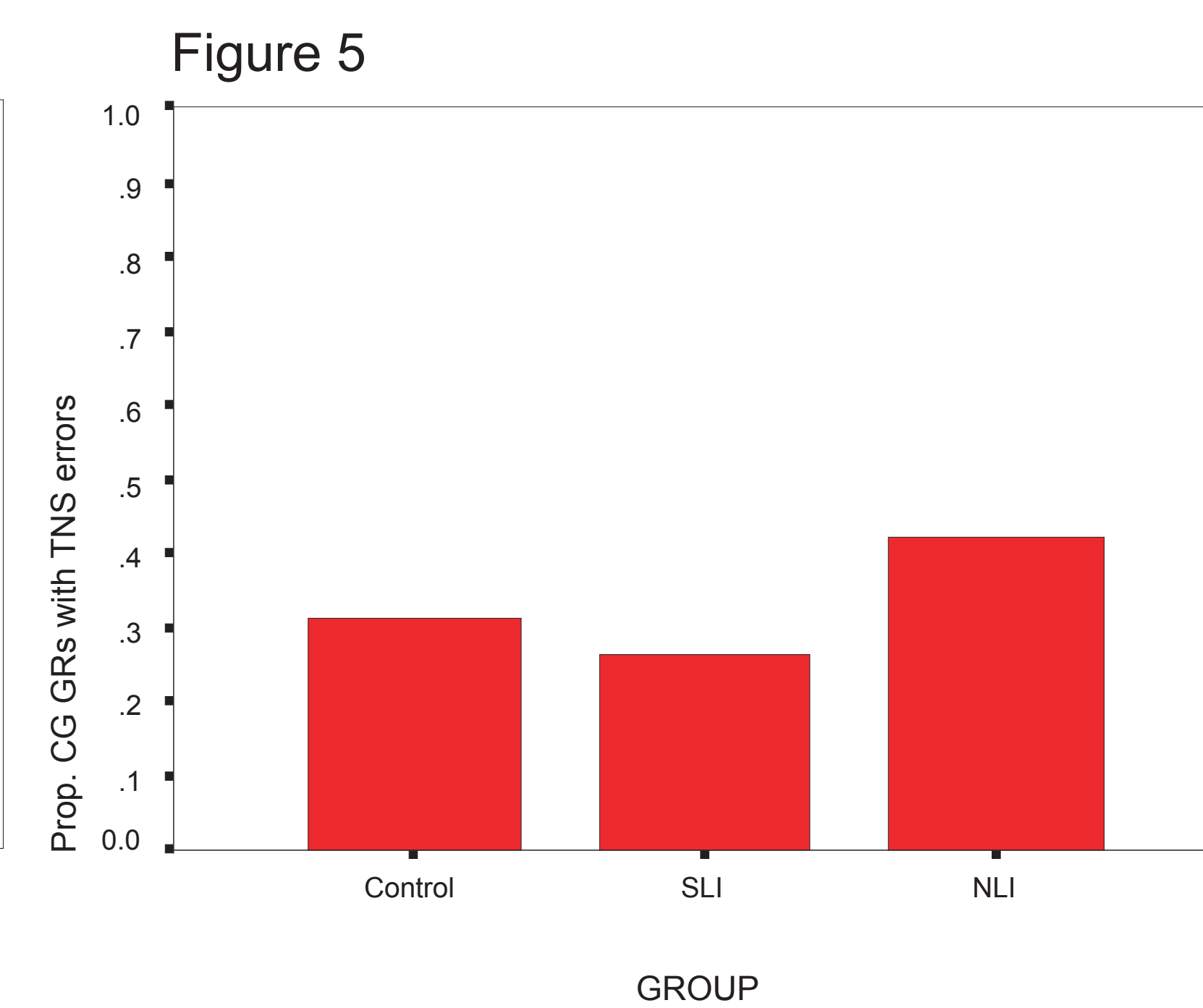
- Question 4: Proportion of GRs that are consistent with an adult grammar (AG) (AG = acceptable within adult grammatical criteria)

Outcome: NLI = SLI = Controls (No significant group differences)



- Question 5: Proportion of GRs that are consistent with a child grammar (CG) and contain child grammar TNS errors (CG = the complement of AG (out of GRs, AG + CG = 100), defined as responses allowable within an immature child grammar, e.g., missing TNS, overregularizations)

Outcome: NLI=SLI=Controls (No significant group differences)



- Supplemental Correlational Data: For affected children, TNS probe performance is significantly correlated with performance on SI # correct; proportion of GRs; and proportion of GRs with at least one child grammar TNS error: Correlations average .30 collapsed across all variables.

## Summary

- Both TNS probe and SI performance differentiate affected from control children of kindergarten age.
- On SI tasks, approximately 50-60% of the noncredit responses are grammatical reconstructions, with a statistical advantage for the control group.
- Predominately, the grammatical reconstructions are consistent with the adult grammar, i.e., they are not badly formed clauses, although not a verbatim recall of the target. This is true of affected as well as control children.
- About 20% of the reconstructions are consistent with a child grammar, and the groups do not differ.
- Of the child grammatical reconstructions, roughly 1/3 of the responses involved at least one child grammar tense error. This variable also revealed no group differences.
- Children's tense performance is associated with performance on the SI task especially for affected children

## Implications

- Grammatical reconstructions are an important part of the story for poor performance on sentence imitation tasks.
- This pattern holds for children with language impairments as well as the control children.
- Caution is required in strong interpretations of SI performance as solely attributable to the processing and memory requirements of the task.

## References

- Newcomer, P.L., & Hammill, D. (1991). *Test of Language Development-Primary 2<sup>nd</sup> Edition*. Austin, TX: Pro-Ed.
- Rice, M. & Tomblin, J. B. (1999, June). *Clinical indices of language impairment: Grammatical tense compared to conventional testing*. Paper presented at the Symposium for Research on Child Language Disorders, Madison, WI.
- Tomblin, J.B., Records, N. L., Buckwalter, P., Zhang, X., Smith, E., & O'Brien, M. (1997). Prevalence of specific language impairment in kindergarten children. *Journal of Speech, Language, and Hearing Research*, 40, 1245-1260.