



# Visual Narrative Comprehension and Production in Down Syndrome: An Eye-movement Study.

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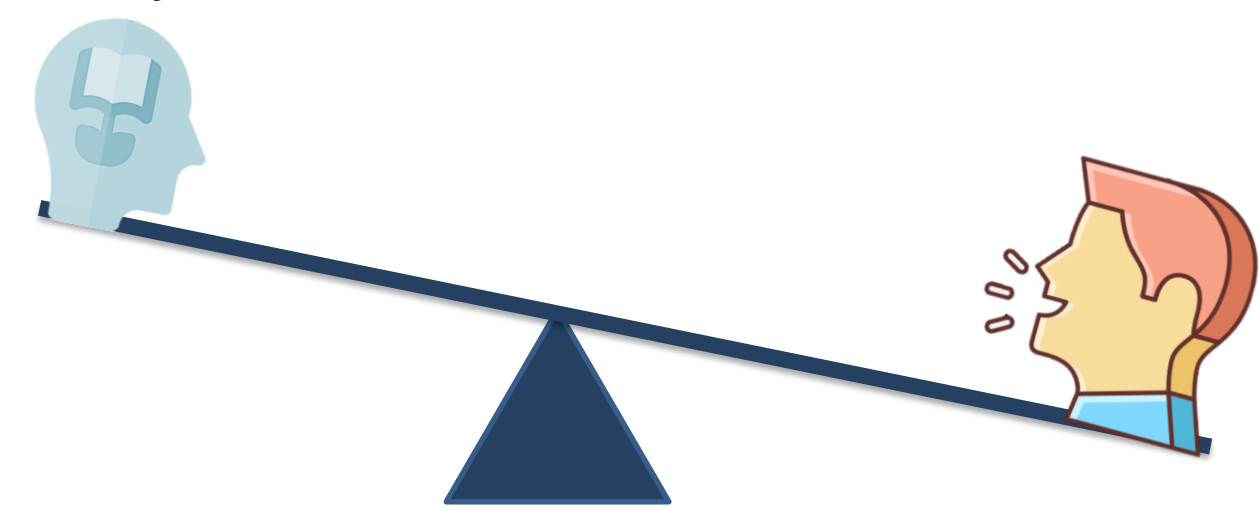
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## INTRODUCTION

Children's narrative skills are important for socialisation, sustaining pretend play, school achievement. Oral narrative skills are associated with reading comprehension.

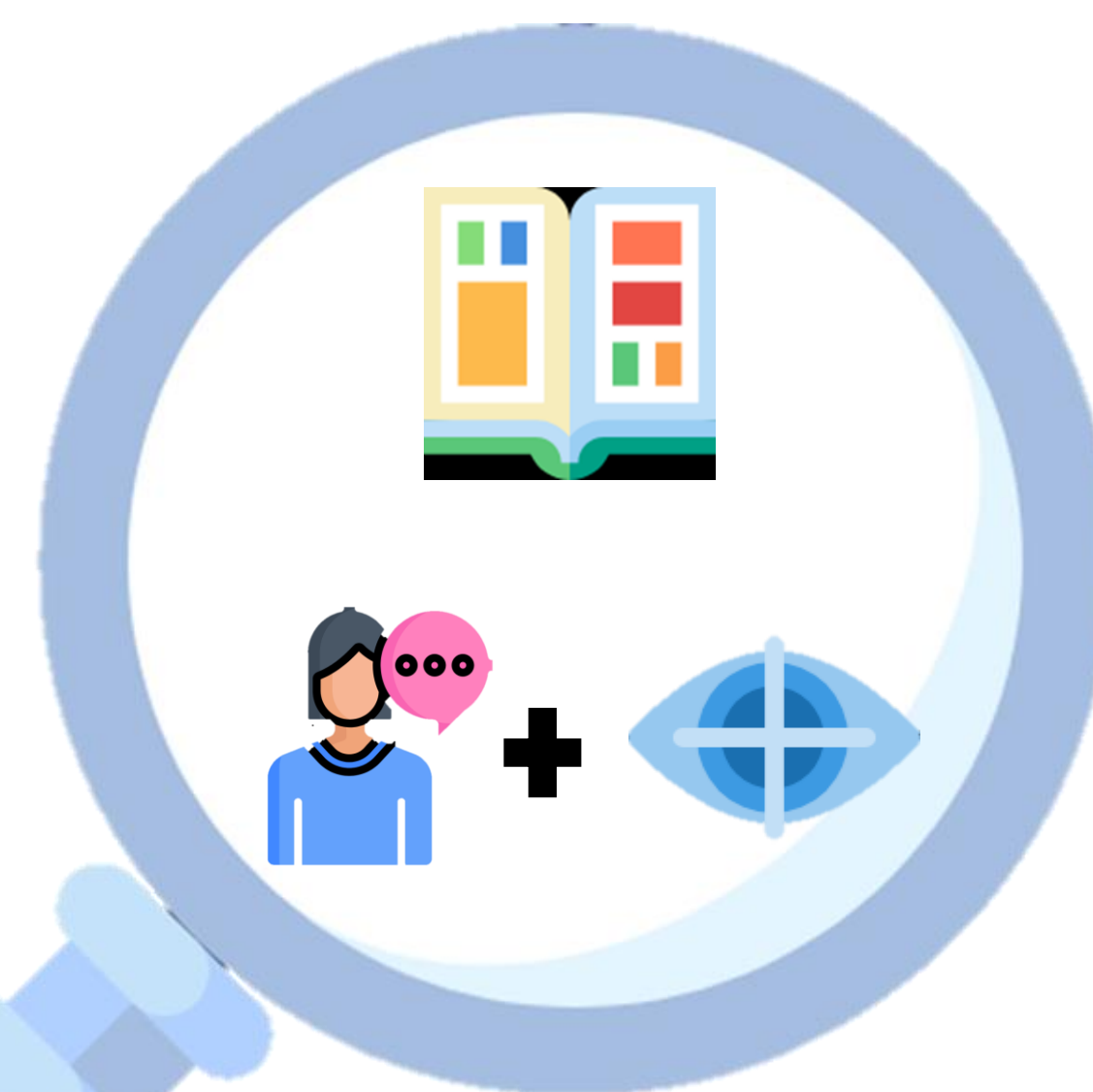
Narrative abilities of people with Down Syndrome (DS) are delayed (for a review, see Segal & Pesco, 2015)

Oral comprehension abilities far surpass the oral production in DS (e.g., Fabbretti, Pizzuto, Vicari, & Volterra, 1997) BUT evidence focus the assessment on the analysis of the transcribed narratives.



## THIS STUDY

Explores the narrative abilities of students with DS in comparison to TD students.



## Research Questions

1. Is there a discrepancy between the production and comprehension abilities of students with DS?
2. Do students with DS exhibit lower production abilities than their TD peers?
3. If that's the case, what might characterise their failure?
  - (a) They fail to focus at the relevant elements involved in the story.
  - (b) They focus similarly on story elements as their TD peers, suggesting that their production abilities may be hindering their performance.



## METHOD

### Participants:

15 Students with Down Syndrome (DS)  
Aged between 10 -17  
( $M=13.47$ ;  $SD=1.90$ )  
Reading Level (1st – 2nd grade)

15 Typically Developing Students (TD)

Aged between 5.11 -6.10  
( $M=6.4$ ;  $SD=0.42$ )  
Reading Level (1st grade)

### Instruments:

#### Background reading measurements.

- Word and Non-Word reading.

- Text comprehension [only DS group].

#### Narrative skills:

- Visual Narrative Comprehension task (ERRNI; Bishop, 2004)

- Visual Narrative Production task (Bus Story; Renfrew, 1997) [+ EM monitoring]



1) Telling

2) Retelling



\* Areas of interest were created for each element that was significant/appeared in the story.

## RESULTS

### COMPREHENSION Is there a discrepancy between the production and comprehension abilities of students with DS?

	Control	$p$	DS
Ideas during production (Visual Narrative Production task)		$p .003$	Ideas during production (Visual Narrative Production task)
Comprehension accuracy (Visual Narrative Comprehension task)		$p .267$	Comprehension accuracy (Visual Narrative Comprehension task)

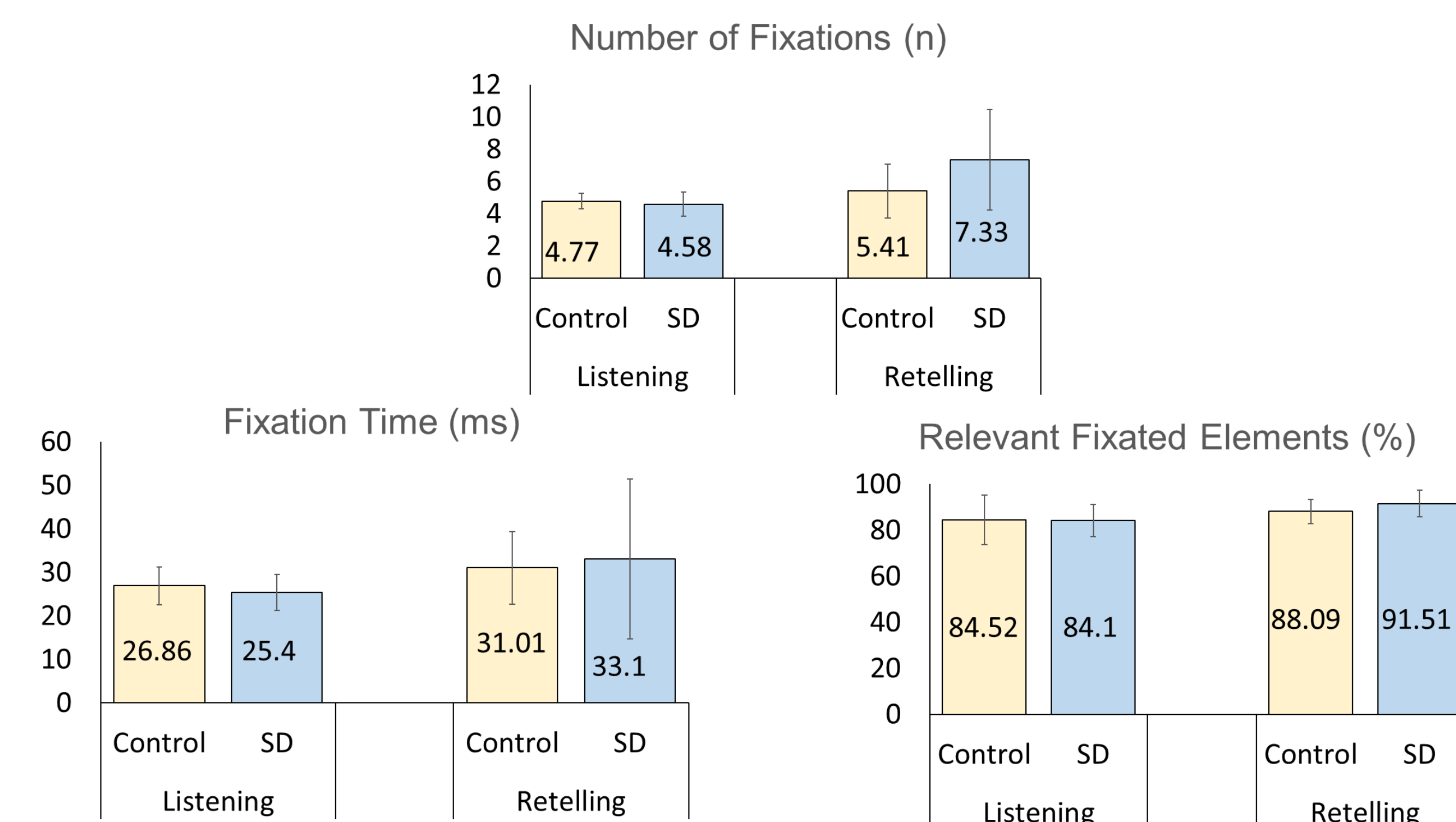
### PRODUCTION Do students with DS exhibit lower production abilities than their TD peers?

	N	Control	DS	p
		Mean (SD)	Mean (SD)	
Sentence Length (Mean Word count)	15	9.6 (2.29)	6.59 (2.90)	.001
Subordinates (n)	15	1.87 (1.25)	0.73 (1.03)	.011

## EYE MOVEMENTS MEASUREMENTS.

### If that's the case, what might characterise their failure?

Both groups obtain similar patterns, BUT data is still not valid for statistical analyses.



## CONCLUSION

1. There is a discrepancy between the production and comprehension abilities of students with DS.
2. Students with DS exhibit lower production and comprehension abilities than their TD peers.
3. It seems that linguistic limitations rather than differences on the focus during the narration hinders their performance, BUT to confirm that, we need more participants with valid data to conduct further analyses.

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## References

