Development and Application of an Eye Tracker Protocol for the Analysis of Prosodic Perception in Infants

Yasmin dos Anjos de Deus Cardoso[1], Rodrigo A. C. Magalotti[1], Victor Hugo da Silva[1] Luisiana Passarini[1], Pedro A. S. O. Neto[2], Andrea F. de Azevedo Almeida[1], Leticia Caroline Pinheiro de Souza[1], Mariana Sola[1], Maria Teresa Carthery-Goulart[1], Katerina Lukasova[1], Patrícia Vanzella[1],

[1]Center for Mathematics, Computing and Cognition, Universidade Federal do ABC, Brazil, [2]Departament of Music, Arts and Culture Studies, University of Jyväskylä, Finland

INTRODUCTION

- ✔ Prosody is the aspect of spoken language that involves essentially musical parameters
- ✔ Children with autism spectrum disorder present deficits in prosodic perception.
- ✔ Biological markers may be useful in the clinical diagnosis of developmental disorders
- ✔ Eye-tracking is an efficient tool to identify alterations in social and communicative skills
- ✔ Musical involvement in childhood is associated with better performances in language tasks.

OBJECTIVE

To investigate prosodic perception through eye tracking in a sample of infants who participated in a program of musical playshops.

METHODS

37 toddlers (15.3±3.6 months old) who participated in music playshops

Audiovisual stimuli were presented on a computer screen. Stimuli consisted of spoken or sung dialogues in Brazillian-Portuguese between two children in the form of a cartoon.

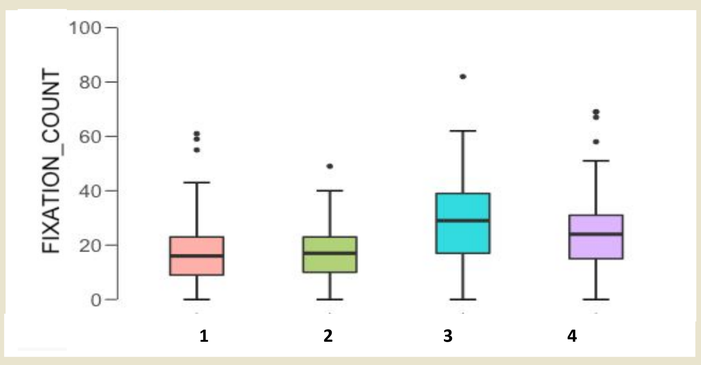
Sentences were either affirmative or interrogative and were organized in four conditions: (1) Speech with semantic content, (2) Speech with pseudowords, (3) Songs with semantic content, and (4) Songs with pseudowords.

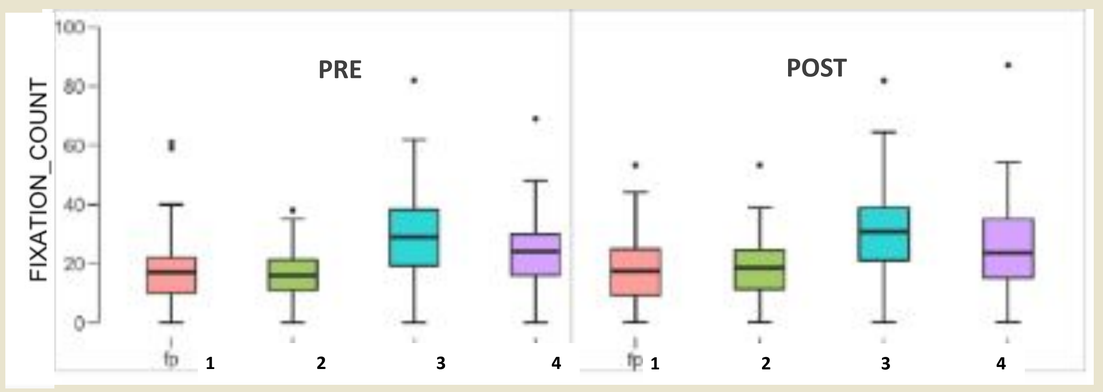
ANOVA analysis of variance compared saccade patterns and fixations, registered with an eye-tracker, in the four conditions

(1) (2) (3) (4)

RESULTS

- ✔ Longitudinal analyses revealed that the number of total fixations increased (F (1,405) = 11,656; p < 0,001) after participation in the playshops.
- ✔ A cross-sectional analysis indicated that the number of fixations was bigger (F (3,350) = 23,890; p < 0,001) in condition (3).





CONCLUSIONS

- ✔ We described toddlers' visual behavior in relation to prosodic features in speech and music.
- ✔ Future studies with control groups are necessary to elucidate the playshops' effects on expected language maturation during the music intervention period.

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