

Referência do projeto

Project reference
PTDC/MHC-LIN/3901/2014 (**Lacrado a 29-01-2015 às 03:07**)

1. Identificação do projeto

1. Project description –

Domínio Científico

Scientific Domain

Ciências Sociais e Humanidades

Área científica principal

Main Area

A Mente Humana e a sua Complexidade - Linguística

Área científica Secundária

Secondary area

(Vazio)

(Void)

Acrónimo

Acronym

H21

Título do projeto (em português)

Project title (in portuguese)

Horizonte21: Desenvolvimento da linguagem em bebés com Síndrome de Down

Título do projeto (em inglês)

Project title (in english)

Horizon21: Early language development in Down Syndrome

Unidade de Investigação

Research Unit

Centro de Linguística da Universidade de Lisboa (CL/FUL/UL)

Avenida Professor Gama Pinto - 2

1649-003Lisboa

Instituição de Acolhimento

Host Institution

Faculdade de Letras da Universidade de Lisboa (FL/UL)

Alameda da Universidade

1600-214Lisboa

3.1. Sumário 3.1 Abstract

There has been growing interest in research on early language development, which highlights the role that early markers may play as predictors of later language outcomes, particularly in the case of language impairments. Both behavioral and brain measures of early speech processing may signal future language (dis)abilities [1]. These studies not only contribute to our understanding of the underpinnings of language acquisition, but also have a potential impact on society with social, familial and individual benefits towards a more inclusive society. Crucially, speech perception abilities in the 1st year of life seem to play a decisive role in speech segmentation (discrimination of phonetic units, syllables, words, phrases, and their sequencing), which in turn trigger word learning and syntax processing. Impaired discrimination abilities for any of these speech contrasts may thus lead to language deficits. Language deficits occur in a variety of neurodevelopmental disorders, such as Autism Spectrum Disorders (ASD), Specific Language Impairment (SLI), or intellectual disabilities. Among the latter, Down Syndrome (DS) is by far the most common genetic cause of mental retardation, with a relatively high prevalence rate [2, 3]. However, surprisingly, language impairments in DS are among the least studied, with a substantial increase only in the last decade and mostly only focused on vocal quality and speech production abnormalities [4]. So far, and unlike for ASD or SLI [5, 6], the research focus has not included early language, and especially infant speech perception abilities, and thus early markers of language development in DS are largely unknown. This project aims to contribute to this field of research by focusing on DS infant and toddlers speech

processing abilities in different linguistic domains, using a multi-methodology approach (traditional looking paradigms, eye-tracking measures and ERP measures) to a set of potential early markers in a prospective study where infants tested from 5-6 months will be followed until 30 months of age. Specifically, their performance on a set of perception tasks targeting speech sounds, stress, intonation, or prosodic phrasing early discrimination abilities will be related to measures of later language outcomes (vocabulary, morphology, syntax, prosody).

The Horizon21 project has three main goals, which embody the innovative nature of the proposed research program.

(1) As previous research focused on typically developing (TD), ASD or SLI, and also on infants/toddlers at risk for ASD or SLI [7], new data on DS infants/toddlers speech perception, in matched experimental conditions, may provide crucial insights for the understanding of language impairments and how they relate to cognitive abilities, and also for theories of language acquisition.

(2) A prospective study examining language development in DS in different linguistic domains and in methodologically comparable ways to studies on other developmental disorders will attempt to determine whether early markers of language impairments have a broad general nature, or domain-specific markers can be found (i.e., segmental perception; perception of prosodic features based on different types of auditory cues, like stress and intonation; prosodic features that involve sequencing and integration of information), depending on the etiology of the disorder, the type of language impairment (e.g., vocabulary, morphology, syntax), or other factors (such as non-verbal abilities). This investigation will thus increase understanding of similarities and differences across early markers with potential clinical implications.

(3) Finally, new and detailed knowledge of early language development in DS will identify relative strengths and weaknesses across the linguistic domains observed that may not only distinguish DS from other disorders, but also distinguish between individuals with DS, providing critical information for designing interventions to support language acquisition.

The project brings together a multidisciplinary team of linguistics, psycholinguists, psychologists, and speech therapists from 4 institutions (Lisbon Baby Lab - Center of Linguistics, Lisbon University; Center of Psychology, Oporto University; LAPSO-ISCTE; and Diferenças-Centro de Desenvolvimento Infantil), exploring available technical resources and combining scientific and clinical expertise through the collaboration of research units with 'Diferenças', the center for neurodevelopmental disorders in Portugal connected to the Portuguese Down Syndrome Association (APPT21), a non-profit organization.