

Formulário Relatório de Progresso - Componente Científica

Relatório de Progresso nº 3

Período a que o relatório diz respeito:

Data de início: 01-10-2020

Data de fim: 31-07-2021

1. Identificação do Projecto

Referência do Projecto: PTDC/LLT-LIN/29338/2017

Investigador Responsável: Sónia Marise de Campos Frota

Instituição Proponente: Faculdade de Letras da Universidade de Lisboa (FL/ULisboa)

Data de Início: 14-06-2018 **Data de Fim:** 13-06-2022

Financiamento Concedido: € 227.473,02

2. Resumo dos Trabalhos Desenvolvidos e Desvios à Proposta aprovada

Resumo dos trabalhos

The activities developed between October 2020 and July 2021 comprised all the 6 tasks of the project, with a focus on Tasks 2 to 6. Despite the pandemic, the research team put extreme efforts into data collection in the lab and many of the experimental studies included in tasks 3 and 4 have advanced significantly. The pandemic mostly affected the recruitment of at-risk babies, given that the partner institutions from the health sector have been overwhelmed with the public health situation. Nevertheless, a virtual meeting was held with the team from Centro de Estudos do Bebê e da Criança (CEBC) of Hospital D. Estefânia (Lisbon's pediatric hospital), and regular contact through email maintained.

Advanced training has been a key endeavor within PLOs, and the research team promoted the first vTEM -Virtual Training in Experimental Methods, that joined XX registered participants from X different countries (<http://labfon.letras.ulisboa.pt/virtualschool/en/program.html>). Importantly, the PLOs team is the major organizer of the Speech Prosody 2022 conference (the chair and co-chair are the project's PI and Co-PI, respectively), devoted to the theme Getting the prosody right: Acquisition, Impairment, Interventions, and Beyond. The theme was chosen to promote clinical research into language acquisition and development in the international scene.

Beyond the organization of scientific meetings and advanced training activities, and the project website (<http://labfon.letras.ulisboa.pt/babylab/PLOS/>), dissemination and outreach were also achieved through the social media (Lisbon Baby Lab Facebook, Instagram and Twitter). Given the one-year extension of the project, approved by FCT, the project workshop will be held in 2022.

Despite the implications of the pandemic situation, which required new adjustments in the development of the scientific activities of the project and respective milestones, the following deliverables were produced during the second year of the Project: one article published, 5 talks/posters presented at international meetings and 1 at a national meeting, and the EP-CDI SFs app. One paper was published in the scientific domains of RIS3 (in Brain Sciences), and a special issue on prosody covering atypical populations has been promoted and started to be published.

A summary of the activities developed by task follows.

Task 1.

Recruitment continued during the year 3 of the project. The new lock-down early in 2021 due to COVID-19 has made recruitment a continued effort in year 3 and beyond. Crucially, the data collection for the CSBS-DP norming study was concluded. In the project overall, almost 300 children have been registered, together with 108 participants from the PLOs-EBELa sample. Screening with the CSBS DP and the CDI is progressing (CSBS: 478 forms for the TD and 206 for the at-risk babies collected; CDI: 265 forms for the TD and 153 for the at-risk).

Task 2.

The development of the EP-CDI app was concluded, and after a test phase (helped by the demo made available) the app was released. The app includes advanced facilities for clinicians and professionals from the health sector. The CSBS DP automatic scoring will be achieved via an application that is already in progress.

Task 3.

Data collection is proceeding in good pace, although further adjustments have been required due to the pandemic. 227 children have been tested, 99 (of which 54 are at-risk) in the eye-tracking experiments, and 128 (of which 64 are at-risk) in the traditional looking experiments (please note that the numbers previously provided for the eye-tracking experiments are incorrect). Data collection was finished for the word learning experiment, both for typically developing (TD) and at-risk children (AR), and a paper is in progress. The results from this experiment have been presented at two international conferences. Data collection was also concluded for the processing of prosodic boundaries experiment for TD, and is nearly concluded for AR. One paper has been published on early visual attention abilities and audiovisual speech processing, focusing on typically and atypically developing infants. Early eye-gaze patterns and their relation to later outcomes have also been explored and a presentation was made at an international conference. To understand the potential effects of mask use (see also task 5), as well as of other factors related to the pandemic, new audio and audiovisual experiments are being implemented, and a special journal issue on this topic has been promoted.

Task 4.

Big efforts have been done to boost data collection, despite the pandemic situation. 68 children have been tested so far, 7 of which are at-risk children.

Task 5.

The language and communication abilities of the infants tested in the experimental tasks are measured at the moment the task is performed and at different subsequent points in time, following the waves defined in the flowcharts of the prospective longitudinal design. Besides the CSBS DP and CDI questionnaires, 262 DCQ forms have been collected so far, and 47 Griffiths administered. Given the pandemic situation and the potential impact of mask use on language development, a new questionnaire has been administered – the mask questionnaire, with 340 forms already collected. The database of measures of language development has been significantly increased.

Task 6.

Statistical analyses to explore correlations between measures of language development have started to be implemented. In a first round, the hypothesis under test included early development of gestures and prosodic development as potential predictors of later language development, in particular receptive and expressive vocabulary. This work has been developed within an ongoing MA thesis.

Desvios à Proposta Aprovada

A situação de pandemia devido à COVID-19 obrigou, de novo, a uma paragem de quase 3 meses em 2021 (entre Janeiro e Abril) nas atividades de recolha longitudinal de dados experimentais, com impactos diretos nas tarefas 3 e 4 e indiretos nas tarefas 1, 5 e 6. Esta paragem vem acrescer à paragem de 4 meses ocorrida em 2020. Estes desvios à execução científica do projeto terão de ser colmatados através de uma extensão do prazo de execução científica do mesmo, para além do ano referente à impossibilidade de contratação do doutorado (que apenas se efetivou em Maio de 2019), e da renovação/extensão de contrato e bolsas (com os bolseiros a entrarem em funções apenas em Dezembro de 2019 e Janeiro de 2020), situações já anteriormente reportadas à FCT. Foi solicitada à FCT e ao POR Lisboa uma extensão de 15 meses, submetida a apreciação a 21-10-2020. Estas entidades entenderam conceder uma prorrogação de apenas 12 meses, comunicada a 12-01-2021. Em início de 2022, será reavaliada a necessidade de solicitar uma extensão adicional.

Equipa de Investigação

Nome	Cargo Função	Tarefas	%Tempo	Dt Entrada	Dt Saída	Desistiu
Sónia Marise de Campos Frota	Inv. Responsável	Recruitment and early assessment of participants f(...) *** Tools for e- health: scoring programs and app for e(...) *** Looking while	40%			

		<p>listening experimental tasks: sounds(...) *** ERP tasks *** Longitudinal assessment of language abilities *** Prospective evidence for predictors of language ou(...)</p>				
Joseph Butler	Investigador	<p>Looking while listening experimental tasks: sounds(...) *** Prospective evidence for predictors of language ou(...)</p>	25%			
Kai Alter	Investigador	<p>ERP tasks *** Prospective evidence for predictors of language ou(...)</p>	25%			
Marisa Alexandra Sousa da Cruz	Investigador	<p>Looking while listening experimental tasks: sounds(...) *** Prospective evidence for predictors of language ou(...)</p>	25%			
Marisa Gomes Filipe	Investigador	<p>Recruitment and early assessment of participants f(...) *** Looking while listening experimental tasks: sounds(...) *** ERP tasks *** Longitudinal assessment of language abilities *** Prospective evidence for</p>	30%			

		predictors of language ou(...)				
Nuno Miguel Ribeiro Paulino	Investigador	Recruitment and early assessment of participants f(...) *** Longitudinal assessment of language abilities	25%			
Pedro Filipe Jesus Rosa Silva	Bolseiro	Tools for e-health: scoring programs and app for e(...) *** Prospective evidence for predictors of language ou(...)	100%	01-01-2020	31-12-2021	
Ricardo Miguel Costa Sousa	Bolseiro	Recruitment and early assessment of participants f(...) *** ERP tasks	100%	01-12-2019	31-12-2021	
Marina C P V Afonso Vigário	Co-investigador Responsável	Recruitment and early assessment of participants f(...) *** Tools for e-health: scoring programs and app for e(...) *** Looking while listening experimental tasks: sounds(...) *** ERP tasks *** Longitudinal assessment of language abilities *** Prospective evidence for predictors of language ou(...)	40%			
Claudia Rute de Barros Viana Macarico bandeira de lima	Técnico	Recruitment and early assessment of participants f(...) *** Longitudinal assessment of language abilities	25%			

Sofia Lopes Clérigo	Técnico	Recruitment and early assessment of participants f(...) *** Longitudinal assessment of language abilities	20%			
Cátia Sofia Severino	DL 57/2016 - Regime de dedicação exclusiva	Recruitment and early assessment of participants f(...) *** Tools for e-health: scoring programs and app for e(...) *** Looking while listening experimental tasks: sounds(...) *** ERP tasks *** Longitudinal assessment of language abilities *** Prospective evidence for predictors of language ou(...)	100%	01-05-2019		

3. Publicações

Outputs of the project available at

<http://labfon.letras.ulisboa.pt/babylab/PLOS/publicacoes.html>

A – Publications

Journal editions

Accepted – Frota, S., Esteve-Gibert, N., Molnar, M., & Vigário, M. (Accepted). Article collection on the Research Topic “Language Development Behind the Mask”, section “Language Sciences”. *Frontiers in Psychology*. Accepted in March 2021. <https://www.frontiersin.org/research-topics/19821/language-development-behind-the-mask>

Published - Lowit, A., Frota, S., & Vigário, M. (Eds.) (2021). Special Issue "Motor Speech Disorders and Prosody". *Brain Sciences* (ISSN 2076-3425), section Sensory and Motor Neuroscience. https://www.mdpi.com/journal/brainsci/special_issues/Motor_Speech_Disorders

Papers in international journals

Published - Pejovic, J., Cruz, M., Severino, C., & Frota, S. (2021). Early Visual Attention Abilities and Audiovisual Speech Processing in 5–7 Month-Old Down Syndrome and Typically Developing Infants. *Brain Sciences* 11(7), 939, Special Issue Down Syndrome: Neuropsychological Phenotype across the Lifespan). <https://doi.org/10.3390/brainsci11070939>

B – Talks and posters

Talks in international meetings

Presented - Alter, K. (2021). The sense of sounds: Brain responses to phonotactic frequency, phonological grammar and lexical meaning. Talk presented at the Seminar on Phonetics and Phonology, March 2, 2021, University of Cambridge, UK.

Presented - Frota, S. (2021). Early Perception of Prosody is Language Specific. Invited talk presented at the Third Experimental Portuguese Linguistics Workshop (online), April 24, 2021.

Presented – Frota, S., Pejovic, J., Severino, C., & Vigário, M. (2021). How phonological knowledge shapes early word learning in (a)typical development: An eye-tracking study. Talk presented at PaPE 2021 – Phonetics and Phonology in Europe (online), June 21-23, 2021.

Presented - Pejovic J., Severino, C., Vigário, M., & Frota, S. (2021). The role of sound patterns on early word learning in typical and atypical infants. An eye-tracking study. Talk presented at ISP XV – XV International Symposium of Psycholinguistics (online), June 22-25, 2021.

Talks in national meetings

Presented - Frota, S., Cruz, M., Silva, P., & Vigário, M. (2020). E-health: Screening language and communication development in early infancy. Demo video presented at Encontro Ciência'20. Online event, November 3-4. Available at <https://www.youtube.com/watch?v=zEF2BTNesJg>

Posters in international meetings

Presented - Cruz, M., Pejovic, J., Severino, C., & Frota, S. (2020). Eye-gaze patterns in early infancy and later language and communication outcomes. Poster presented at the 45th Boston University Conference on Language Development (BUCLD) (online), November 5-8, 2020. <https://www.youtube.com/watch?v=WJvoWVplEHQ>

C – Reports

Relatório de Progresso 3 do Projeto PLOs (PTDC/LLT-LIN/29338/2017).

D – Organization of seminars, courses, conferences, workshops...

Speech Prosody 2022. Theme: Getting the prosody right: Acquisition, Impairment, Interventions, and Beyond. To be held in May 23-26, 2022, Lisbon, Portugal. Organizing committee (members of PLOs project): S. Frota (Chair), M. Vigário (Co-Chair), C. Severino, M. Cruz, M. Filipe, N. Paulino, R. Sousa. <http://labfon.lettras.ulisboa.pt/sp2022/index.html>

E - Formação avançada/Advanced Training

Teses de Doutoramento/PhD Theses

In progress – Paulino, N. (In progress). Effects of prosodic systems in bilingual acquisition of sandhi. PhD Thesis, Universidade de Lisboa (started February, 2019) [FCT: SFRH/BD/138535/2018]. Supervisor: Sónia Frota; Co-supervisors: Tjerk Hagemeyer and Laura Bosch.

Teses de Mestrado/Ma Theses

In progress - Antypenko, V. (In progress). Contributo para a caracterização da fala dirigida à criança: estudo longitudinal. Universidade de Lisboa, MA Thesis. Supervisor: M. Vigário.

In progress - Sousa, R. (In progress). Preditores Precoces no Processo de Aquisição e Desenvolvimento da Linguagem: Prosódia e Gestos. Universidade de Lisboa. Supervisor: Sónia Frota; Co-Supervisor: Susana Silva.

J – Produtos

In progress - Frota, S., Cruz, M., Silva, P. & Filipe, M. (In progress). CSBS-DP App: Aplicação online para cotação automática da CSBS DP Infant-Toddler Checklist – Adaptação para o Português Europeu (Questionário do bebé das Escalas de Desenvolvimento da Comunicação e Comportamento Simbólico).

Published - Frota, S., Cruz, M., Silva, P. & Vigário, M. (2020). CDI-PE App: Aplicação online para avaliação de competências de linguagem e seu desenvolvimento baseada no MacArthur-Bates CDI para o Português Europeu Formas Reduzidas. ISBN 978-989-54771-1-1. <https://cdi-pe-app.lettras.ulisboa.pt/>

N – Integração do conhecimento em atividades de formação superior/Integration of acquired knowledge in advanced training activities

vTEM -Virtual Training in Experimental Methods, University of Lisbon, Portugal, online, March 15-April 16, 2021. Scientific coordination: M. Cruz & M. Vigário. Organizing

committee (members of PLOs project): S. Frota, C. Severino, N. Paulino, R. Sousa.
<http://labfon.letras.ulisboa.pt/virtualschool/en/program.html>

4. Indicadores de Realização Física

Indicadores	Quantidade realizada
A - Publicações científicas	
51 - Publicações científicas em domínios científicos enquadráveis na RIS3	1
Livros ou capítulos de livros	0
Artigos em revistas internacionais	2
Artigos em revistas nacionais	0
B - Comunicações	
Comunicações em encontros científicos internacionais	5
Comunicações em encontros científicos nacionais	1
C - Relatórios	1
D - Organização de seminários e conferências	1
E - Formação avançada	
52 - Pedidos de patentes europeias (EPO)	0
Teses de doutoramento	0
Teses de mestrado	0
Outras	0
F - Modelos	0
G - Aplicações computacionais	0
H - Instalações piloto	0
I - Protótipos	0
J - Produtos	1
K - Produções/criações artísticas	0
L - Processos inovadores	0
M - Bases de dados curadas	0

N - Integração do conhecimento em atividades de formação superior	1
O - Patentes	
Patentes EPO	0
Outras patentes	0