RODRIGO DAL BEN DE SOUZA

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Department of Psychology
Concordia University
Montreal, QC
Canada

RESEARCH INTERESTS

Learning and development, speech perception, word learning, neuroscience, psycholinguistics, contingencies of reinforcement, quantitative methods, open science.

EDUCATION AND RESEARCH TRAINING

Postdoctoral Fellow   2020 - present
Concordia University, Montreal, Canada, Psychology
Project: Open Science Practices in Infant Research
Supervisor: Krista Byers-Heinlein

Professional Certificate   2020 - present
Harvard University, edX, Data Science
Topics: R, visualization, probability, inference, modeling,
version control, data wrangling, machine learning

Research Internship   2018 - 2019
University of Tennessee, Knoxville, Psychology
Topics: developmental research, eye-tracking, online research,
natural speech analysis, data analysis
Supervisor: Jessica F. Hay

Ph.D. Universidade Federal de São Carlos, Brazil, Psychology   2016 - 2020
Dissertation: Speech Segmentation and Word Learning in Parallel
Emphasis: Developmental Psychology
Advisor: Débora de Hollanda Souza;
Co-advisor: Jessica F. Hay

M.A. Universidade Federal de São Carlos, Brazil, Psychology   2014 - 2016
Thesis: Effects of Vocal Model and Planned Consequences on
Children's Descriptions
Emphasis: Behavior Analysis
Advisor: Antônio Celso de Noronha Goyos

B.A. Centro Universitário Filadélfia, Brazil, Psychology   2009 - 2013
Honours: Publication Trends in the Analysis of Verbal Behavior

Emphasis: Behavior Analysis
Advisor: Marcos Roberto Garcia

JOURNAL ARTICLES

Visser, I., … **Dal Ben, R.** and 26+ others (accepted). Improving the generalizability of infant psychological research: The ManyBabies model. *Behavioral and Brain Sciences*. PsyArXiv: https://psyarxiv.com/8vwbf/

Dal Ben, R., Souza, D. H., & Hay, J. (2021). When statistics collide: The use of transitional and phonotactic probability cues to word boundaries by Brazilian-Portuguese adults. *Memory & Cognition*. https://doi.org/10.3758/s13421-021-01163-4. Material and data available at: https://osf.io/s9thk/

Dal Ben, R., & Goyos, C. (2019). Further evidence of automatic reinforcement effects on verbal form. *The Analysis of Verbal Behavior, 35*(1), 74–84. https://doi.org/10.1007/s40616-018-0104-3. Material and data available at: https://osf.io/pv7xa/

Dal Ben, R., & Goyos, C. (2017). Authorship Trends in The Analysis of Verbal Behavior: 1982–2016. *The Analysis of Verbal Behavior, 33*(1), 117–138. https://doi.org/10.1007/s40616-017-0076-8

Dal Ben, R., Calixto, F. C., & Ferreira, A. L. (2017). Are Brazilian Behavior Analysts Publishing Outside the Box? A Survey of General Science Media. *Behavior Analysis in Practice, 10*(3), 270–278. https://doi.org/10.1007/s40617-016-0152-x

Silva, F. S. e, Panosso, M. G., **Dal Ben, R.**, & Gallano, T. P. (2017). Métodos de avaliação de itens de preferência para a identificação de reforçadores. *Revista Brasileira de Terapia Comportamental Cognitiva, XIX*(2), 89–107. [Title translation: Preference Assessment for Identifying Reinforcers]

Dal Ben, R. (2017). O que nos motiva: uma resenha crítica do livro Payoff. *Perspectivas Em Análise Do Comportamento, 08*(02), 180–185. https://doi.org/10.18761/PAC.2017.001 [Title translation: Book Review: Payoff – what motivates us]

Dal Ben, R., Camargo, J., Melo, C. M. de, & Figueiras, G. B. (2016). Análise do Comportamento e Sustentabilidade: Revisão dos artigos publicados no Behavior and Social Issues de 2005 a 2016. *Revista Brasileira de Análise Do Comportamento, 12*(2), 86–94. [Title translation: Behavior Analysis and Sustainability: Review of the articles published in Behavior and Social Issues from 2005 to 2016]

Dal Ben, R., & Juliani, J. (2013). Psicologia e autismo: aspectos teóricos e práticos. *Terra e Cultura, 56*(1), 139–152.
[Title translation: Psychology and Autism: Theoretical and practical aspects]

BOOK CHAPTERS

Cannistraci, R. A., **Dal Ben, R.**, Karaman, F., Esfahani, S. P., & Hay, J. F. (2019). Statistical Learning Approaches to Studying Language Development. In J. S. Horst & J. von Koss Torkildsen (Eds.), *International Handbook of Language Acquisition* (pp. 51-75). New York, NY: Routledge, [2019] | Series: Routledge: Routledge. https://doi.org/10.4324/9781315110622

Dal Ben, R., & Calheiros, T. C. (2018). Leituras essenciais em análise do comportamento: um levantamento com editores brasileiros. In N. Kienen, S. R. S. A. Gil, J. C. Luzia, & J. Gamba (Eds.), *Análise do comportamento: Conceitos e aplicações a processos educativos, clínicos e organizacionais* (pp. 85-94). Londrina: UEL.
[Title translation: Essential Readings in Behavior Analysis: A survey with Brazilian editors]

Juliani, J., & **Dal Ben, R.** (2014). Relato de Experiência: Acompanhante Terapêutico com Adulto Autista. In: M. C. Marquezine, A. L. O. Coneglian, & J. J. F. Almeida. (Eds.), *Formação de Professores e atuação de pais na educação de alunos com necessidades educacionais especiais* (pp. 131-154). São Carlos: ABPEE.
[Title translation: Case Study: Caregiver of an autistic adult]

Rosa, N. M. F., & **Dal Ben, R.** (2013). Comportamento Supersticioso: Aspectos Conceituais e Experimentais. In: C. E. Costa, C. R. X. Cançado, D. R. Zamignani, & S. R. S. Arrabal-Gil. (Eds.), *Comportamento em Foco 2* (pp. 69-76). São Paulo: ABPMC.
[Title translation: Superstitious Behavior: Conceptual and experimental aspects]

PUBLICATIONS UNDER REVIEW AND IN PREPARATION

Pour Iliaei, S., Killam, H., **Dal Ben, R.**, & Byers-Heinlein, K. (under review). Bilingualism affects infant cognition: Insights from new and open data. *Infant Behavior and Development.* PsyArXiv: https://doi.org/10.31234/osf.io/ex76a

ManyBabies Consortium, with **Dal Ben, R.** and 20+ others. (Registered Report under stage 1 review). Infants' Social Evaluation of Helpers and Hinderers: A Large-Scale, Multi-Lab, Coordinated Replication Study. *Developmental Science*. PsyArXiv: https://psyarxiv.com/qhxkm/

Gonzalez, A. M., **Dal Ben, R.**, Killam, H., & Byers-Heinlein, K. (under review). Word learning in the lab is hard! Data from 14-month-old monolingual and bilingual infants. *Language Development Research*. PsyArXiv: https://psyarxiv.com/5dvx8/

Dal Ben, R. (under review). SHINE_color: controlling low-level properties of colorful images. *Journal of Open Source Software*. PsyArXiv: https://psyarxiv.com/fec6x/

Dal Ben, R., Souza, D. H., & Hay, J. (under review). Combining statistics: The effects of phonotactics on cross-situational word learning. *Frontiers in Psychology*. PsyArXiv: https://psyarxiv.com/3x6uk/

Dal Ben, R., Brouillard, M, Gonzalez-Barrero, A. M., Killam, H., Kremin, L. V., Quirk, E., Sander-Montant, A., Schott, E., Tsui, R. K., & Byers-Heinlein, K. (in preparation). *How open science can benefit bilingualism research: A lesson in six tales*.

Dal Ben, R., Prequero, I. T., Souza, D. H., & Hay, J. (in preparation). *Speech segmentation and cross-situational word learning in parallel with Brazilian-Portuguese speakers*.

RESEARCH SCHOLARSHIP AND AWARDS

Open Science practice in infant research
PI: Krista Byers-Heinlein
Agency: Concordia University
Program: Horizon Postdoctoral Fellowships
Total direct costs: $76,000 CAD
Duration: 2020 – 2022 (2 years)

International Research Internship
PI: Rodrigo Dal Ben de Souza
Co-PI: Débora de Hollanda Souza
Agency: São Paulo Research Foundation
Funding: U$ 25,830.00
Duration: 2018 – 2019 (1 year)

Ph.D. Speech Segmentation and Word Learning in Parallel
PI: Rodrigo Dal Ben de Souza
Co-PI: Débora de Hollanda Souza
Agency: São Paulo Research Foundation
Funding: R$ 131,552.72 (~ U$ 24,452.17)
Duration: 2016 – 2020 (4 years)

M.A. Effects of Vocal Model and Planned Consequences on Children's Descriptions
PI: Rodrigo Dal Ben de Souza
Co-PI: Antônio Celso de Noronha Goyos
Agency: São Paulo Research Foundation
Funding: R$ 46,258.98 (~ U$ 8,598.32)
Duration: 2014 – 2016 (2 years)

Travel Grant. 2nd Lancaster International Conference on Infant and Early Child Development, The Leverhulme Trust, 2017

Senior Student Presenter Grant. 41st Annual Convention of the Association for Behavior Analysis International, Society for the Advancement of Behavior Analysis, 2015

Research Award Prof. Reynaldo Camargo Neves. Best undergraduate research project in Psychology, Centro Universitário Filadélfia, 2014

SOFTWARE & WEB DEVELOPMENT

Dal Ben, R. (2020). ManyBabies website major update.
Details: The ManyBabies website serves as the first stop for new and returning collaborators and offers many resources for researchers interested in infant research. The website is open source (hosted on GitHub pages), written using markdown, yaml, and html (.css) languages, and can be accessed here.

Dal Ben, R. (2020). ManyBabies collaborators Shiny map.
Details: Interactive map of ManyBabies 247 collaborators from 36 countries, and working in 13 projects. The map was created in R & Shiny Apps and is publicly available here.

Dal Ben, R. (2019). *Lum_fun: A set of tools to control luminance of colored images* (Version 0.2). [Computer program]. doi: 10.17605/OSF.IO/AUZJY, retrieved from https://osf.io/auzjy/
Details: An open source MATLAB toolbox especially useful for controlling low-level properties of colored images (static or not) to be used in pupillometry studies with infants.

Estivalet, G., & **Dal Ben, R.** (in-progress). *Open phonotactic calculator*.
Details: The calculator take as input any corpus (phonetic or orthographic) and calculate the phonotatic/ortographic probabilities for n-grams (mono, bi, tri …) on that corpus. The calculator will be publicly distributed as an R package.

CONFERENCE POSTERS AND PRESENTATIONS

(Last 5 years)
Prequero, I. T., **Dal Ben, R.**, Souza, D. H. (2020, October). O uso de medidas eletrofisiológicas na pesquisa sobre aprendizagem estatística na aquisição de linguagem: uma revisão sistemática. Poster presented at the 50th Reunião Anual da Sociedade Brasileira de Psicologia, Online event, Brazil.

[Title translation: Electrophysiological measures and statistical language learning: systematic review]

Prequero, I. T., **Dal Ben, R.**, Souza, D. H. (2019, October). Efeitos da probabilidade transicional e fonotática na extração de palavras e mapeamento simultâneo com estímulos visuais ao longo de tentativas ambíguas. Poster presented at the 49th Reunião Anual da Sociedade Brasileira de Psicologia, Joao Pessoa, Brazil.
[Title translation: Effects of transitional and phonotactic probabilities on parallel speech segmentation and cross-situational word learning]

Dal Ben, R., & Souza, D. H. (2019, September). *Looking Out the Window and Back Inside: A Behavioral Explanation of Early Speech Perception*. Talk given at the 10th International Conference of the Association for Behavior Analysis International, Stockholm, Sweden.

Dal Ben, R., Souza, D. H., & Hay, J. F. (2019, September). *The Effects of Subtle Pre-Experimental History on Speech Perception*. Poster presented at the 10th International Conference of the Association for Behavior Analysis International, Stockholm, Sweden.

Dal Ben, R., Souza, D. H., & Hay, J. F. (2019, June). *Subtle Differences in Phonotactic Probability Affect Speech Processing in Brazilian-Portuguese Adults*. Poster presented at the International Conference on Interdisciplinary Advances in Statistical Learning, Donostia-San Sebastian, Spain.

Dal Ben, R., Souza, D. H., & Hay, J. F. (2019, June). *Cross-situational word learning: a decade of research*. Poster presented at the International Conference on Interdisciplinary Advances in Statistical Learning, Donostia-San Sebastian, Spain.

Dal Ben, R., Souza, D. H., & Hay, J. F. (2019, May). *Subtle Differences in Phonotactic Probability Affect Speech Processing in Brazilian-Portuguese Adults*. Poster presented at the 31st Annual Conference of the Association for Psychological Science, Washington, USA.

Dal Ben, R., Souza, D. H., & Hay, J. F. (2017, August). *Speech Segmentation and Cross-Situational Word Learning in Parallel*. Poster presented at the 2nd Lancaster International Conference on Infant and Early Child Development, Lancaster, UK.

Dal Ben, R. & Calixto, F. C. (2016, May). *Quem somos nós na fila do pão: reflexões não tão profundas sobre a vida na academia*. Talk given at the 14th Jornada de Análise do Comportamento da UFSCar, São Carlos, Brazil.
[Title translation: Our place in the world: not so serious reflections about life in academia]

Dal Ben, R. & Goyos, A. C. N. (2015, July). *Efeitos de modelos vocais em voz passiva versus consequências contingentes à voz ativa sobre descrições de crianças pequenas*. Poster presented at 67ª Reunião Anual da Sociedade Brasileira para o Progresso da Ciência, São Carlos, Brazil.
[Title translation: Effects of vocal models in passive voice versus active voice contingent consequences on young children descriptions]

Dal Ben, R., Calixto, F. C., & Ferreira, A. L. (2015, July). *Subutilização de uma revista popular de divulgação científica por analistas do comportamento*. Poster presented at 67ª Reunião Anual da Sociedade Brasileira para o Progresso da Ciência, São Carlos, Brazil.

[Title translation: Suboptimal use of a popular scientific communication outlet by behavior analysts]

Dal Ben, R. & Benatti, L. (2015, May). *A importância da relação entre pesquisa e prestação de serviços em análise do comportamento*. Talk given at the 13rd Jornada de Análise do Comportamento da UFSCar, São Carlos, Brazil.
[Title translation: The importance of close connections between research and application in behavior analysis]

Dal Ben, R. & Goyos, A. C. N. (2015, May). *Usos do termo reforçamento automático nas propostas de Skinner sobre o comportamento verbal*. Poster presented at III Jornada de Análise do Comportamento da UEL, Londrina, Brazil.
[Title translation: Uses of automatic reinforcement in Skinner's explanations of verbal behavior]

Dal Ben, R. & Goyos, A. C. N. (2015, May). *Authorship trends in the analysis of verbal behavior: 1982-2013*. Poster presented at 41st Annual Convention of the Association for Behavior Analysis International, San Antonio, USA.

ONGOING PROJECTS

Dal Ben, R., Souza, D. H., & Hay, J. (in preparation). *Speech segmentation and cross-situational word learning in parallel with English speakers.*

Dal Ben, R., Souza, D. H., Hay, J. (in progress). *Meta-analysis on Cross-situational Word Learning (from 2007 to 2020)*. See [MetaLab](#), for partial results.

Dal Ben, R., Lany, J., & Hay, J. (in progress). *Pupillometry as a tool to measure statistical learning in infancy.*

Prequero, I. T., **Dal Ben, R.**, Souza, D. H., & Cunillera, T. (in progress). *Statistical Learning and Electrophysiology measures: Speech segmentation, cross-situational word learning, and event related potentials.*

TEACHING

Courses

Research Methods in Psychology and Special Education: Spring 2016 (Faculdades Integradas do Vale to Ivaí)
Details: Course taught at a graduate level, for students pursuing a specialization in Behavioral interventions for children with developmental disabilities. Students were introduced to research ethics, design (between- vs. within- vs. single-subject), intervention, experimental control, data visualization, and descriptive analyses. Students were mainly Psychologists, Speech Therapists, and Occupational Therapists working with children with developmental disabilities.

Basic Learning Processes: Fall 2015 (Universidade Federal de São Carlos)

Details: Course taught at the Psychology undergraduate level. Students were introduced to the principles of respondent (reflex) and operant learning; to the behavioral variation and selection framework (selection by consequences); the concept of repertoire; and to specific procedures such as stimulus pairing, simple and conditional discrimination, shaping, reinforcement, punishment, extinction, behavioral chaining, and stimulus equivalence.

Experimental Analysis of Behavior: Fall 2013 (Faculdade Pitágoras)
Details: Course taught at the Psychology undergraduate level. Students were introduced to the behavioral variation and selection framework and were taught the principles of operant learning during experimental laboratory sessions using non-human subjects and the "Skinner box". Some of the specific procedures taught were: simple and conditional discrimination, shaping, reinforcement, extinction, and behavioral chaining.

Guest lectures

Open Science, Collaboration, Diversity, and Inclusion: Fall 2020 (Concordia University, Montreal)
Details: Lecture on how Open Science practices can promote collaboration, diversity, and inclusion in Psychological science. This lecture was part of a course on Open and Reproducible Research in Psychology offered to undergraduate and graduate students.

Psychological Theories on Learning and Development: Fall 2016 and 2017 (Universidade Federal de São Carlos)
Details: Lectures on behavioral approaches to learning and development. The lectures covered the classical theories by Pavlov, Watson (methodological behaviorism), and Skinner (radical behaviorism); and also contemporary theories such as Equivalence Relations by Murray Sidman and cols., and Relational Frames Theory by Barnes-Holmes and cols.

Language Development: Fall 2016 and 2017 (Universidade Federal de São Carlos)
Details: Lectures on Statistical Language Learning, covering perceptual attunement, speech segmentation, cross-situational word learning, and phonotactics.

Teaching Assistant

Human Development: Infancy – Fall 2016 (Universidade Federal de São Carlos)
Professor: Debora de Hollanda Souza
Details: The course covered infancy development (from 0 to 5 years). The course was taught at the Psychology undergraduate level.

Research and Quantitative Methods – Spring & Fall 2013 (Centro Universitário Filadélfia)
Professor: Patricia Vaz de Lessa
Details: Course taught at the Psychology undergraduate level. Students were introduced to research and quantitative methods and developed a supervised research project.

Workshop & Colloquium

Navigating career changes while working from home – Summer 2021 (Center for Research on Brain, Language, and Music & Concordia University, Montreal)
Details: The colloquium discussed the differences, advantages, and down-sides of changing careers while working remotely. Dr. Dal Ben opened the colloquium presenting his experience when transiting from grad school to a postdoc and from a postdoc to a faculty position.

Running experiments online during the COVID-19 pandemic – Spring 2021 (Universidade Federal de São Carlos, Brazil)
Details: The colloquium discussed research strategies and software that can be used to enable reliable online data collection. Dr. Dal Ben opened the colloquium presenting how he uses *Psychopy* and *Pavlovia* to run behavioral studies remotely and the strategies he uses to ensure participant attentiveness and compliance.

Pre-registering your study: Why, how, and what if? – Fall 2020 (Center for Research on Brain, Language, and Music & Concordia University, Montreal)
Details: The workshop covered the process of pre-registering a study, including the reasons and means for doing it, as well as how to deal with deviations from a pre-registration. Researchers at all levels attended the workshop, from undergraduate students to Associate professors.

SERVICE

Reviewer for journal (ad hoc)
Revista Brasileira de Terapia Comportamental e Cognitiva
[Brazilian Journal of Behavioral and Cognitive Therapy]
Trends in Psychology
Scientific Report
Preprint moderator
PsyArXiv

Community workshop
Teaching reading with comprehension to children from low-income families (Fall 2012, Centro Universitário Filadélfia)

Campus representative
Association for Psychological Science – 2018-2019
Graduate Program in Psychology, UFSCar – 2015-2016

Event organization
/L+/ international summer/winter school on language acquisition – 2021
https://www.dpss.unipd.it/summer-school-2021
III Symposium on Infant Development at UFSCar: Language development and acquisition – 2017

Statistics
Proficient in a wide variety of techniques for statistical analysis, such as linear regression, ANOVA, mixed-effects models (linear, logistic), generalized additive mixed-models (nonlinear relations), Bayesian mixed-models.

Programming
Designing Psychological experiments: Psychtoolbox (MATLAB), Psychopy (Python), Experiment Builder (SR Research)
Designing online experiments: Psychopy (Python) and Pavlovia (GitLab)
Statistical analysis, visualization, wrangling, modeling, reproducible reports: R, R markdown, and Shiny Apps
Version control: git, GitHub, GitLab
Image processing: MATLAB and Python.
Website design: markdown, yaml, html (& css)

Languages
Portuguese: Native Language
English: Advanced Listener, Advanced Speaker, Advanced Reading and Writing
Spanish: Intermediate Listener, Novice Speaker, Intermediate Reading and Writing
Italian: Intermediate Listener, Novice Speaker, Intermediate Reading and Writing