# Axelle Calcus, PhD

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## Current position

- January 2019-December 2020: Research fellow Marie Sklodovska-Curie Action funding (EU), integration within the Laboratoire des Systèmes Perceptifs (dir. Prof. C. Lorenzi), Ecole Normale Supérieure (Paris, France)

## Education

- **October 2011-September 2015**: Research fellow at "Fonds de la Recherche Scientifique - FNRS", integration within the Unité de Recherche en Neurosciences Cognitives (UNESCOG, dir. Prof. R. Kolinsky), Centre for Research in Cognition and Neurosciences (CRCN), Université Libre de Bruxelles (Brussels, Belgium)
  **Thesis**: Contribution and interaction of central and peripheral processes to the speech perception in noise deficit in dyslexic children

- **2005 - 2010:** Master in Psychological Sciences, ULB, summa cum laude.
  Supervisors: Prof. Régine Kolinsky & Prof. Cécile Colin
  **Thesis**: Modulation of the 'ticktock' effect by the native language rhythm [Modulation de l'effet "tic-tac" par le rythme de la langue maternelle]

## Professional experience

*Research*

- **January-December 2018**: Post-doctoral research fellow at the Speech, Hearing and Phonetics Sciences Laboratory (dir. Dr. L. Halliday & Dr D. Vickers), University College London, UK.
- **August 2016-December 2017**: Post-doctoral researcher at the Speech, Hearing and Phonetics Sciences Laboratory (dir. Prof. L. Halliday & Prof. S. Rosen), University College London, UK. Funding: Marie Curie ITN fellowship.
- **October 2015-September 2016**: Post-doctoral researcher (Fulbright & ACN Erasmus Mundus Research Fellow) at Centre for Computational Neuroscience and Neural Technology (dir. Prof. B. Shinn-Cunningham), Boston University (Boston, USA)
- **September - December 2013**: Visiting PhD student, Department of Speech, Hearing & Phonetic Sciences (collaboration with Prof. S. Rosen) University College London (London, UK)
- **January - August 2011**: Predoctoral internship, Laboratoire de Psychologie de la Perception, (dir. Prof. C. Lorenzi), Ecole Normale Supérieure (Paris, France)
- **August - December 2009**: Research intern at BRAMS (dir. Prof. I. Peretz), International Laboratory for Brain, Music and Sound Research (Montreal, Canada)

*Ad hoc reviewer*

- **Journals**: The Journal of Experimental Psychology; Learning and Individual Differences; Hearing Research; International Journal of Language and Communication Disorders; Brain Sciences; Annals of Dyslexia; Ear & Hearing; Scientific Reports
- **Grants**: The Fulbright program, H2020 MSCA program

*Organized conferences*

- **Speech Science Forum** sept 2016 - dec 2017, Department of Speech, Hearing and Phonetics, University College London (London, UK)
  Co-organizer: Yue Zhang
- **Frequency-Following Response Workshop**, 19th & 20th May 2016, Boston University (Boston, USA)
  Co-organizers: Dr. Tim Schoof, Prof. B. Shinn-Cunningham
- **Frequency-Following Response Workshop**, 22nd & 23rd May 2014, University College London (London, UK)
  Co-organizers: Tim Schoof, Prof. C. Colin, Prof. S. Rosen

*Teaching*

- **February 2018 – March 2018:** Interim lecturer, "Anatomo-physiology of Hearing" (Université Libre de Bruxelles)
- **January 2018:** Four lectures on Developmental Language Disorders (Dr. L. Halliday), University College London
- **January – April 2018:** Visiting lecturer in Biological Psychology (Dr. D. Williams), Westminster University
- **November 2017 & November 2018**: "Perception and production of speech in normal and impaired hearing", two lectures given in a course on hearing impairment for the Master in Technology & Disability, Université Paris 8
- **October 2017 & October 2018**: "Using the ERP technique to explore phonological development", lecture given in a course on Development of Communication and Cognition (Dr. E. Wonnacott), University College London
- **December 2016 & November 2017**: "Aspects of perception and processing of speech in noise", one lecture given in a course on Current Issues in Production, Perception and Neural Processing of Speech (Prof. Y. Xu), University College London
- **September – December 2016**: Teaching assistant: Research Design and Experimental Methods (Prof. J. Tuomainen), University College London
- **2012-2013**: Teaching assistant for the Research Seminars in Cognitive Psychology and Psycholinguistics (Prof. A. Content), Université Libre de Bruxelles

*Clinical experience*

- **October - December 2010**: Assistant in electrophysiology, Laboratoire des Potentiels Evoqués, Service de Revalidation Neurologique (dir. Prof. P. Deltenre), C.H.U. Brugmann (Brussels, Belgium)
- **February - May 2009**: Clinical intern at Centre for Functional Rehabilitation "L'Etoile Polaire" (Brussels, Belgium)

## Publications

***Peer-reviewed articles***

Calcus A.*, Schoof T.*, Rosen, S., Shinn-Cunningham, B., & Souza, P. (under revision). Switching streams across ears to evaluate informational masking of speech-on-speech. *Ear & Hearing*.

Calcus A., Colin C., Deltenre P., Kolinsky R. (2018). Peripheral and central contribution to the difficulty of speech in noise perception in dyslexic children. *Developmental Science, 51*(6).

Calcus A., Lorenzi C., Collet G., Collin C., Kolinsky R. (2016). Is there a relationship between speech intelligibility and categorical perception in dyslexic children ? *Journal of Speech, Language and Hearing Research,* 59, 835-852.

Calcus A., Colin C., Deltenre P., Kolinsky R. (2015) Informational masking of speech in dyslexic children. *J. Acoust. Soc. America Express Letters*, 137(6), EL496-EL502.

Calcus A., Deltenre P., Hoonhorst I., Collet G., Markessis E., Colin C. (2015). MMN and P300 are both modulated by the featured/featureless nature of deviant stimuli. *Clinical Neurophysiology 126*, 1727-734.

Calcus A., Colin C., Deltenre P., Kolinsky R. (2015) Informational masking of complex tones in dyslexic children. *Neuroscience Letters, 584*, 71-76.

Calcus A., Agus T., Kolinsky R., Colin C., Deltenre P. (2015). Isolating informational masking in both pure and complex tone sequences. *Ear & Hearing*, *36*(3), 330-337.

Ives D. T., Calcus A., Kalluri S., Strelcyk O., Sheft S., & Lorenzi C. (2013). Effects of noise reduction on AM and FM perception. *Journal of the Association for Research in Otolaryngology*, *14*(1), 149-157.

***Book Chapters***

Calcus A., Hoonhorst, I., Colin C., Deltenre, P., & Kolinsky R. (2018). The "Rowdy Classroom Problem" in Children with Dyslexia: A review. In *Reading and Dyslexia, Literacy Studies*. T. Lachmann & T. Weis (eds).

***Oral presentations***

Calcus A. Developmental effects of mild to moderate sensorineural hearing loss on the neural processing of sounds. CONNEX seminar, CRCN, Université Libre de Bruxelles, Belgium (March 2018).

Calcus A. Peripheral and central influence on speech perception in noise difficulties in dyslexic children. Invited speaker, Department of Functional Neuroimaging, Erasme Hospital, Brussels, Belgium (March 2018)

Calcus A. What measure(s) most consistently indicate(s) an association between speech perception and reading? Invited speaker, IPSY seminar, Louvain-la-Neuve, Belgium (February 2018).

Calcus A. The Auditory Temporal Coding. Part I: Psychoacoustical and Clinical Aspects. The Annual Meeting of the Royal Belgian Society for ENT, Louvain-la-Neuve, Belgium, (November 2017)

Calcus A. Developmental effects of mild to moderate sensorineural hearing loss on the mismatch negativity. Annual conference of the British Society of Audiology, Nottingham, UK, (September 2017)

Calcus A. Contribution et interaction des processus centraux et périphériques impliqués dans les difficultés de perception de la parole dans le bruit chez les enfants dyslexiques. Institut Libre Marie Haps, Bruxelles, Belgium (March 2017).

Calcus A. La Frequency Following Response (FFR) : ce qu'elle (ne) reflète (pas) de la physiologie auditive. Invited speaker, Explorations fonctionelles en oto-rhino-laryngologie, Cliniques Universitaires Saint-Luc, Louvain, Belgium (December 2016)

Calcus A. The Rowdy Classroom problem in children with dyslexia : contribution of peripheral and central interference to speech perception in noise. Invited speaker, Haskins Laboratory Yale University, USA (April 2016).

Calcus A. The FFR as a tool to investigate top-down modulation of subcortical encoding of speech in noise. Invited speaker, Manchester University, UK (June 2015).

Calcus A. Audition in noise & Dyslexia [Compréhension dans le bruit & dyslexie]. Invited speaker, Belgian Society for Audiophonology [Societé Belge d'Audiophonologie], Brussels, Belgium (Feb 2014)

Calcus A. Speech perception in dyslexia : data from children and perspective in adulthood [La perception de la parole chez le dyslexique : données chez l'enfant et mise en perspective chez l'adulte]. Invited speaker, Scientific Day : Dyslexia at University [Journée Scientifique : la Dyslexie à l'Université]. Louvain-la-Neuve, Belgium (Dec 2013)

Calcus A. Central and peripheral processes involved in speech intelligbility in noise in dyslexic children. Speech Science Forum, University College London, London, UK (Oct 2013)

Calcus A., Vigner E., Colin C., Kolinsky R. Informational masking using complex sounds in dyslexic children. Belgian Association for Psychological Sciences (BAPS) meeting, Louvain-la-Neuve, Belgium (May 2013)

Calcus A. (2013). Speech intelligibility in noise in dyslexic children [Intelligibilité de la parole dans le bruit chez l'enfant dyslexique]. Invited speaker, Institut Libre Marie Haps, Brussels, Belgium (Feb 2013)

Calcus A., Colin C., Deltenre P. An original paradigm allowing pure informational masking using complex sounds. B-Audio session at the ORL congres, Anvers, Belgium (Nov 2012)

Deltenre, P., Ducene, C., Colin, C., Calcus, A. The Frequency Following Response (FFR): an ancient tool refined to explore the role of the brainstem in auditory perception. International workshop on the brainstem [Workshop international "Le tronc cérébral dans tous ses états"], Clermont-Ferrand, France (April 2012)

Collet G., Huyse O., Calcus A. Speech perception : strength and weakness of the auditory system [La perception de la parole : Forces et faiblesses de l'appareil auditif]. La semaine du son, Brussels, Belgium (Jan 2012)

***Poster presentations***

Calcus, A., Tuomainen, O., Rosen, S., Wang, X., Halliday, L. Event-related potential correlates of auditory discrimination in children with mild to moderate sensorineural hearing impairment. ARO mid-winter meeting, Baltimore, USA (February 2017)

Calcus, A., Varghese, L., & Shinn-Cunningham, B. Subcortical and cortical EEG measures of informational masking. ARO mid-winter meeting, Baltimore, USA (February 2017)

Calcus A., Schoof, T., Rosen, S., Shinn-Cunningham, B., Souza, P. Isolating the informational component of speech-on-speech masking. Speech in Noise (SpIN) meeting, Oldenburg, Germany (January 2017)

Calcus, A., Colin, C., Deltenre, P., & Kolinsky, R. Speech intelligibility deficit in energetic, modulation and informational masking in dyslexic children. ARO mid-winter meeting, Baltimore, USA (February 2015)

Calcus A., Chiarotti S., Maréchal A., Colin C., Kolinsky R. Context-dependent perception of speech in noise in dyslexic children. BAPS meeting, Leuven, Belgium (May 2014)

Calcus A., Colin C., Kolinsky R. Context-dependent perception of speech in noisy backgrounds. ESCoP Conference, Budapest, Hungary (Sept 2013)

Calcus A., Agus R.T., Colin C., Kolinsky R., Deltenre P. An original paradigm to investigate pure informational maksing of complex tones. ASA-ICA joined meeting, Montreal, Canada (June 2013)

Calcus A., Colin C., Deltenre P. The effect of spatial separation on informational masking : Presentation of an original dichotic paradigm. BAPS-SEPEX joined meeting, Liège, Belgium (May 2012)

Calcus A., Froment M., Colin C., Lorenzi, C., Kolinsky R. Speech intelligibility in noise for children. BAPS-SEPEX joined meeting, Liège, Belgium (May 2012)

Ives T.D., Calcus A., Kalluri S., Strelcyk O., Sheft S., Lorenzi C. Effect of noise reduction on AM and FM reception. Annual conference of the British Society of Audiology, Nottingham, UK (Sept 2011)

Calcus A., Colin C., Lidji P., Kolinsky R. Influence of native language on the "ticktock effect". BAPS Meeting, Brussels, Belgium (May 2010)