

DAVID JOHN BAKER

Postdoctoral Research Associate
Music Cognition Group
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University of Amsterdam
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CAREER

Postdoctoral Research Associate
Institute of Logic, Language and Computation
University of Amsterdam

February 2022 – *present*

Postdoctoral Research Associate
Department of Psychology
Goldsmiths, University of London

May 2021 – January 2022

Senior Research Associate
Department of Computing
Goldsmiths, University of London

July 2020 – June 2021

Lead Instructor, Data Science
Flatiron School
We Work

September 2019 – June 2020

EDUCATION

Doctor of Philosophy
Music Theory, Minor in Cognitive and Brain Sciences
Louisiana State University, Baton Rouge, Louisiana, USA

August, 2019

MSc., Music, Mind and Brain
Goldsmiths, London, University of London, England

September, 2014

B.M., Instrumental Performance (Trumpet)
Baldwin Wallace University, Conservatory of Music, Berea, Ohio, USA

May, 2012

PUBLICATIONS

Articles

Burgoyne, J.A., **Baker, D.**, & Spikre, J. (*accepted*) Measuring the Eurovision Song Contest: A Living Dataset for Real-World MIR. International Society for Music Information Retrieval 2023 Proceedings

Eagle, M., Mendoza, J.K., Wolf, J.E., **Baker, D.**, & Vuvan, D.T. (2023) Anti-Racism and Equity Panel: How Can Music Science Be More Socially Just? [[10.1080/25742442.2023.2236540](https://doi.org/10.1080/25742442.2023.2236540)] [[Pre-Print](#)]

Ma, Y., **Baker, D.**, Vukovics, K., Davis, C.J., & Elliott, E. (2023). Lyrics and melodies: Do both affect emotions equally? A replication and extension of Ali and Peynirciolu (2006). *Musicae Scientiae*.

[\[10.1177/10298649221149109\]](#).

Baker, D. (2021). The *MeloSol* Corpus. *Empirical Musicology Review* [\[10.18061/emr.v16i1.7645\]](#)

Brown, J., Tan, D., & **Baker, D.** (2021) The perceptual attraction of pre-dominant chords. *Music Perception*. [\[10.1525/mp.2021.39.1.21\]](#)

Vuvan, D. T., Simon, E., **Baker, D.**, Monzingo, E., & Elliott, E. M. (2020). Musical Training Mediates the Relation Between Working Memory Capacity and Preference for Musical Complexity. *Memory and Cognition*. [\[10.3758/s13421-020-01031-7\]](#)

Baker, D., Ventura, J., Calamia, M., Shanahan, D., Elliott, E. (2018). Examining Musical Sophistication: A replication and theoretical commenatry on the Goldsmiths Musical Sophistication Index. *Musicae Scientiae*. Vol. 24(4) 411 – 429. [\[10.1177/1029864918811879\]](#)

Akkermans, J., Schapiro, R., Müllensiefen, D., Jakubowski, K., Shanahan, D., **Baker, D.**, Busch, V., Lothwesen, K., Elvers, K., Fischinger, T., Schlemmer, K. & Frieler, K. (2018). Decoding emotions in expressive music performances: A multi-lab replication and extension study. *Cognition and Emotion*. 33(6). [\[10.1080/02699931.2018.1541312\]](#)

Baker, D. and Müllensiefen D. (2017). Perception of Leitmoitves in Richard Wagner's *Der Ring des Nibelungen*. *Frontiers in Psychology: Cognition*, Special Issue on Bridging Music Informatics with Music Cognition. [\[10.3389/fpsyg.2017.00662\]](#)

Book Chapters

Shanahan, D. & **Baker, D.** (*forthcoming*). The Corpus as Proxy for Perception and Cognition of Music. In Shanahan, Quinn, Burgoyne (Eds.), *The Oxford Handbook of Musical Corpus Studies*. Oxford University Press.

Baker, D. (2021). Understanding Melodic Dictation via Experimental Methods. In P. Fleet & K. Cleland (Eds.), *Routledge Companion to Aural Training in Music Education* (pp. 414-423). Milton Park, Abingdon, Oxon: Routledge.

Baker, D. and Shanahan, D. (2018). Examining Fixed and Relative Measurements of Similarity through Jazz Melodies. In *Scholarly Approaches to Mathematical Music Theory: Algebra and Combinatorics, Geometry, Topology, and Graph Theory, Discrete Fourier Transform and Distance Measures for Music*.

Müllensiefen, D., **Baker, D.**, Rhodes, C., Crawford, T., Dreyfus, L. (2016). Recognition of leitmotives in Richard Wagner's music: chroma distance and listener expertise. In Springer (Ed.) *Analysis of Large and Complex Data*. [\[Chapter\]](#)

Müllensiefen, D., **Baker, D.** (2015) Music in Advertising: Testing What Works (2015) Audio Branding Academy Yearbook 2015. [\[10.5771/9783845260815-31\]](#)

Reviews and Editorials

Baker, D., Belfi, A., Creel, S., Grahn, J., Hannon, E., Loui, P., Margulis, E., Schachner, A., Schutz, M., Shanahan, D., Vuvan, D. (2020). Embracing Anti-Racist Practices in the Music Perception and Cognition Community. *Music Perception*. 38(2). pp. 103-105. [\[10.1525/mp.2020.38.2.103\]](#)

Baker, D. (2018) "Coughing and Clapping", in *Empirical Musicology Review* , Vol 13, No. (3-4), pp.

- Baker, D.** (2015) "Unlocking the Mysteries of Your Brain, Dr. Daniel Levitin Public Lecture", in *Psychomusicology: Music, Mind, and Brain*, Vol 25, No.4, pp. 455-456. [Public Lecture Review]

Select Conference Proceedings

- Jiaxin, L., **Baker, D.**, Burgoyne, J.A., & Honing, H. (*forthcoming*) Is Pitch Information Indispensable for Music Recognition? A Pilot Study Based on a Musical Matching-Pairs Game. Paper to be presented at the 17th International Conference on Music Perception and Cognition (ICMPC).
- Krause, A. E., **Baker, D. J.**, Groarke, J., Pereira, A. I., Liew, K., Anglada-Tort, M., & Steffens, J. (2021). A crosscultural investigation of music listening practices: The influence of country latitude and seasons on music preference. Paper presented at the 16th International Conference on Music Perception and Cognition (ICMPC)/ 11th triennial conference of the European Society for the Cognitive Sciences of Music (ESCOM).
- Weigl, D., Goebel, W., **Baker, D.**, Crawford, T., Zubani, F., Gkiokas, A., Paez, N., Porter, A. and Santos P. (July, 2021) Notes on the Music: A social data infrastructure for music annotation. Digital Libraries for Musicology. ACM (Association for Computing Machinery). [[10.1145/3469013.3469017](https://doi.org/10.1145/3469013.3469017)]
- Baker, D.**, Elliott, E., Shanahan, D., Ventura, J., Monzingo, E., Ritter, B., & Young, C. (2018) Explaining Objective and Subjective Aspects of Musical Sophistication: Insights from General Fluid Intelligence and Working Memory. *Proceedings of 2018 International Conference on Music Perception and Cognition*.
- Shanahan, D., Elliott, E., **Baker, D.**, Ventura, J., Monzingo, E., Holt, H., & Keller, H. (2018) Dissecting the Effects of Working Memory, General Fluid Intelligence, and Socio-Economic Status on Musical Sophistication. *Proceedings of 2018 International Conference on Music Perception and Cognition*.
- Baker, D.**, Monzingo, E., & Shanahan, D. (2018) Modeling Aural Skills Dictation. *Proceedings of 2018 International Conference on Music Perception and Cognition*.
- Baker, D.**, Trahan, T., Müllensiefen, D. (2016) Measuring Music To Brand Personality: A Semantic Differential Tool for Measuring Emotional Space. *Proceedings of 2016 International Conference on Music Perception and Cognition*.
- Baker, D.**, Rosado, A., Shanahan, E., Shanahan, D. (2016) The Interaction of Schema-Driven Gestures and Instrumental Affordances in Bebop Improvisations. *Proceedings of 2016 International Conference on Music Perception and Cognition*.
- Berhdal, E., Blandino, M., **Baker, D.**, Shanahan, D. (2016). An Approach for Using Information Theory to Investigate Continuous Control of Analog Sensors by Humans. Audio Mostly. Norrköping, Sweden. [Conference Proceedings Paper]
- Baker, D.**, Rindfleisch, C., Müllensiefen, D. (2015) Parsifal and the effect of narrative on unconscious arousal. *Proceedings of 2015 European Society of Cognitive Sciences of Music*
- Müllensiefen, D., **Baker, D.**, Lewis, R., Rhodes, C., Fields, B., and Crawford, T. (2014) Multi-modal Musical Performance Capture. In: *Digital Music Research Network (DRM+9)*. London, United Kingdom. [Conference/Workshop Item]

Other Publications

Lin, X., **Baker D.**, Assefa, S., Tarkhnishvili, N. (2019) Beyond Age and Income: Encouraging saving behaviours. Toynbee Hall. [\[Research Report\]](#)

Manuscripts

Under Review

Baker, D. (*re-submitted*) A Computational Model of Melodic Dictation.

Under review at: Music and Science. [\[Pre-Print\]](#)

Silas, S., **Baker, D.** and Müllensiefen, D. (*re-submitted*) Changing the emotional-semantic perception of visual scenes with music: A large-scale investigation into the effects of sonic branding.

Under review at: Journal of Advertising Research

Baker, D., Elliott, E., Ventura, J., Shanahan, D. (July, 2019). The Prediction of Working Memory Capacity by Music Training and Aptitudes: The Importance of Non-Verbal Intelligence and Tonal Stimuli.

Under review at: The Journal for Experimental Psychology: Learning, Memory and Cognition.

In Preparation

Wesseldijk, L., Henechowicz, T., **Baker, D.**, Bignardi, G., & Fisher, S. (*in preparation*) Tapping Across Time: What Does Beethovens Genetic Predisposition for Tapping to a Beat Tell Us About Modern Day Genomics of Musicality? [\[Pre-registration\]](#)

Baker, D., Li, J., Burgoyne, J.A., & Honing, H. (*in preparation*) Characterize Musicality and Reveal its Phenotypical Variation between individuals and across societies using engaging games: A Case Study Using the Matching Pairs Paradigm. [\[Working Paper\]](#)

Burgoyne, J.A., **Baker, D.**, & Honing, H. (*in preparation*) What a Game Can Reveal About Music Perception: A Psychometric Analysis of the Matching Pairs Game.

Baker, D. (*in preparation*) Frequently Occurring Musical Patterns are Easier to Recall. [\[Pre-Print\]](#)

Silas, S., **Baker, D.**, Sachet, A., & Müllensiefen, D. (*in preparation*). Discovering emotional-semantic representations for sonic branding: a data-driven approach.

Jaffe, N., **Baker, D.**, & Burgoyne, J.A. (*in preparation*) Listener-Informed Source Separation: Lending Weight to the Source-to-Distortion Ratio.

TEACHING

Advising

Daily Supervisor

University of Amsterdam

Daily supervisor for PhD candidate Jiaxin Li

What is the importance of spectral information in music recognition?

February 2022 – *present*

Masters Cognitive and Brain Sciences

University of Amsterdam

Advised on dissertation for Marielle Baelemans

Literature Thesis on Memory and Timbre

Spring – Summer 2023

Masters Erasmus Placement Student

University of Amsterdam

Advised on Masters dissertation for Pablo Dumenil

Degrading audio for game stimuli

February – August 2023

Masters of Logic

University of Amsterdam

Advised Caroline Kellner on

Formalization of the Matching Pairs Game

Winter 2023

Undergraduate Dissertation Supervisor

University of Cambridge

Co-advised on dissertation for Kirsty Ryall

Music and Dyslexia: An investigation into strategies for musical memory

Spring 2022

Flatiron School

Flatiron School Data Science Bootcamp

Supervised 74 final data science portfolio projects

Lead Instructor, In Person, Online

Autumn 2019 – June 2020

Examinations

External Examiner

The Relationship between Musical Sophistication, Executive Functions and Autistic Traits

Zhong Jian Chee

University of Nottingham, Malaysia

October, 2022

The National Contests Behind International Success: A Musical Comparison of the Eurovision Song Contest, the Festival di Sanremo and the Melodifestivalen

Jasmijn van Harskamp

University of Amsterdam

June, 2022

Classroom Teaching

Computational Musicology

University of Amsterdam

Teaching Assistant

Spring 2023, 2022

Perception of Timbre

Goldsmiths, University of London

Guest Lecturer, Music Mind and Brain MSc Course

Winter, 2022

Computational Models of Music Perception and Cognition

Hochschule für Musik and Theatre

Guest Lecturer

Winter, 2022

Music and Emotion

University of Cambridge

Guest Lecturer

Spring, 2022

Issues in Music and Science

Humboldt-Universität zu Berlin, Germany

Instructor of Record, Online

Winter, 2020

Lead Instructor, Data Science

Flatiron School x WeWork, London

Lead Instructor, In Person and Online

2019 – 2020

Multivariate Statistics

Louisiana State University

Graduate Teaching Assistant, In Person

Spring, 2018

Intermediate Statistics

Louisiana State University

Graduate Teaching Assistant, In Person

Fall, 2017

Foundations of Music Study

Louisiana State University

Instructor of Record, In Person

Fall, 2016

Aural Skills IV

Louisiana State University

Instructor of Record, In Person

Spring 2016, 2017

Aural Skills III

Louisiana State University

Instructor of Record, In Person

Autumn 2015, 2016

SERVICE

Academic

Chair, Anti-Racism and Equity Committee Society for Music Perception and Cognition	2022
Consortium on Musicality and Genomics, Steering Committee	June 2020 – Current
Digital Libraries for Musicology, 2022 Proceedings Chair	January 2020 – July 2022
Member, Anti-Racism and Equity Committee Society for Music Perception and Cognition	2020 – present
Mentor, WiMIR Mentoring Program International Society for Music Information Retrieval	2020 – 2021
Trainee Member, Executive Board Society for Music Perception and Cognition	2019 – 2020
Peer Reviewer <ul style="list-style-type: none">– <i>Music Perception</i>– <i>Cognition</i>– <i>Annals of the New York Academy of Sciences</i>– <i>Music and Science</i>– <i>Musicae Scientiae</i>– <i>Psychology of Music</i>– <i>SysMus</i> Conference Series	2018 – <i>present</i>

Non Academic

Research and Evaluation Resident Toynbee Hall, London, England	June 2018 – March 2019
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AWARDS AND FUNDING

Notable Honors

Honorable Mention

April, 2020

Josephine A. Roberts LSU Alumni Association

2019 Distinguished Dissertation Award in Arts, Humanities, and Social Sciences

Louisiana State University

LSU Dissertation Year Fellowship

2018 – 2019

The Graduate School

\$18,000

Louisiana State University

Annually Awarded to Single Dissertation in Arts, Humanities, and Social Sciences

National Science Foundation

Fall, 2017

National Science Foundation

\$2,000

Valencia, Spain

Travel Grant from NSF to attend *This Is Your Brain On Art* Conference

PRESENTATIONS

Invited Talks

Baker, D. (November, 2022). If you listen to music what are you listening for? What do you remember? And what does that say about our mental representation of music? *Musicology Colloquium*. University of Amsterdam.

Baker, D. (May, 2022). Considering Plan D: Data Science after Academia. *AMPlify Your Research Career Series*. Australian Music and Psychology Society.

Baker, D. (October, 2021). Frequently Occurring Melodic Patterns are Easier to Recall. *Computational Audition and Perception Group*. Max Planck Institute for Empirical Aesthetics.

Baker, D. (February, 2021) Career Talk for Introduction to Music and Science. *Faculty of Music*. University of Cambridge.

Baker, D. (January, 2021) Turning Your Values in to Value: Getting a Job in Industry. *Psychology Department*. Goldsmiths, University of London, Online Workshop for Graduate Students and Post-Docs.

Baker, D. (February, 2020) Memory for Melodies. Music Cognition, Quinnipiac University. New Haven, Connecticut. *Skype Lecture*

Baker, D. (March, 2019) Music Cognition and Music Theory. Analytic Techniques in Music Theory, Louisiana State University. Baton Rouge, Louisiana. *Skype Lecture*

Baker, D. (November, 2018) Modeling Melodic Dictation. Research Seminar: Computing & Communications Department, The Open University. Milton Keynes, England.

Workshops and Symposia

Attendee of *Decoding Musical Structure: Theory, Computation, and Neuroscience* workshop held at Mote Verita, Switzerland, Winter, 2023. [\[Workshop\]](#)

Attendee of *Representing Harmony* workshop held at EPFL, Summer 2022. [\[Workshop\]](#)

Co-organizer of Musicality and Genomics Consortium held in Trento, Italy, Summer, 2022. [\[Meeting\]](#)

Vuvan, D., Belfi, A., Shanahan D., **Baker, D.**, Loui, P. (March, 2021) Town hall on anti-racism in music cognition. Future Directions of Music Cognition. Online Town Hall. *Presented on History of Science, Racism, and Music.*

Baker, D. (September, 2020) Turning Your Values in to Value: Getting a Job in Industry. SysMus 2020. University of York, Online Workshop.

Baker, D., Kragness, H., Loui, P., Slevc, R., Upham, F., Vuvan, D. (May, 2019). Symposium on Open Science. Society for Music Perception and Cognition. New York, New York. [\[Symposium\]](#)

Public Outreach

Guest on Of Bones, Brains, and Pink Elephants. (June 2022). Podcast on Music and Cognition.
<https://open.spotify.com/episode/5JsMFncPFKqE0IWogvWAHz?si=fba098a1d9544296>

Guest on So Strangely Podcast (2020). Podcast on New Research in Music Cognition.
<https://sostrangely.com/332/>

DATA SCIENCE AND SOFTWARE DEVELOPMENT

Consultancy Projects

End Point Assessor London, England Acted as End Point Assessor for Masters in Data Science Project – Ongoing <i>Doran Scott Williams</i>	Autumn 2021
Scientific Spokesperson London, England Gave overview summary of science of audio for EU Panasonic re-branding <i>Panasonic via Popcorn PR</i>	Autumn 2023
Scientist London, England Assisted in testing of audio assets for international investment services company <i>Massive Music</i>	Autumn 2021
Scientist London, England Assisted in creation of audio identity for international pharmaceutical client – Ongoing <i>Massive Music</i>	Winter 2020
Scientist London, England Developed music for modern traveler Press Coverage in Forbes, easyJet Traveller, børsen (DK) <i>Soundscape Agency, Citizen M Hotels, Erased Tapes, Bose</i>	March 2018–April 2019
Data Scientist New York City, USA Developed tool for detecting audio logo uniqueness Advised on statistical implementations platform <i>Veritonic, Inc.</i>	March 2018–April 2019
Project Consultant London, England Created tool to match brand personality to perceived emotion Prototype published in 2016 ICMPC Proceedings Research served as prototype for Soundout's Brand Match Tool <i>Soundout</i>	March 2018–April 2019
Presenter Berlin, Germany Co-lead half-day workshop on academic research in audio branding Focused on brand-personality matching, q methodology, analyzing physiological data <i>Audio Branding Academy</i>	March 2018–April 2019

Teaching and Education

Baker, D. (May, 2020) Crash Course in Clustering Algorithms. Flatiron School. London, England. *Zoom Lecture* [Link to Talk Here](#)

Baker, D. (March, 2020) The Science of Netflix: How Recommendation Systems Work. Online Meet-Up. Flatiron School. London, England. *Zoom Lecture* [Link to Talk Here](#)

Baker, D. (2019) haRnessing The Open Source Community to Help Local Communities. EARL London Conference. September 10–12th [10 Minute #data4good Flash Talk]

Continuing Professional Development

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| – RStudio Certified tidyverse Instructor | Spring, 2020 |
| – Attended Frank Harrell’s Regression Modeling Strategies Short Course | Spring 2020 |

References

Current and former advisors, principal investigators, and colleagues
Direct contact information provided upon request

Dr. Daniel Shanahan
Northwestern University
PhD Dissertation Advisor: Music Theory

Prof. Dr. Emily Elliott
Louisiana State University
PhD Dissertation Advisor: Cognitive and Brain Sciences

Dr. Robert Peck
Louisiana State University
PhD Dissertation Advisor: Chair

Benjamin Miller
Flatiron School, WeWork
Line Manager

Prof. Dr. Tim Crawford
Goldsmiths, University of London (Computing)
Principal Investigator: TROMPA

Prof. Dr. Daniel Müllensiefen
Goldsmiths, University of London (Psychology)
Principal Investigator: Innovate UK

Prof. Dr. Henkjan Honing
University of Amsterdam
Principal Investigator: NWO-OC

Dr. John Ashley Burgoyne
University of Amsterdam
Colleague at University of Amsterdam

Dr. Peter Harrison
University of Cambridge
Director of Centre for Music and Science