DAVID JOHN BAKER

Current Employment	**Contact Information**
Senior Research Associate	david.baker@gold.ac.uk
Department of Computing	+44 7525 097 861
Goldsmiths, University of London	davidjohnbaker.rbind.io
Last Updated: June 16, 2021	Dual Citizen: USA and UK

1. EDUCATION

Ph.D, Music Theory, Minor in Cognitive and Brain Sciences   August, 2019
Louisiana State University, Baton Rouge, Louisiana, USA
Dissertation: *Modeling Melodic Dictation*

MSc., Music, Mind and Brain   September, 2014
Goldsmiths, University of London, England

B.M., Instrumental Performance   May, 2012
Baldwin Wallace University, Conservatory of Music, Berea, Ohio, USA

2. CAREER

Postdoctoral Research Associate   May 2021 – April 2022
Department of Psychology
Goldsmiths, University of London

Senior Research Associate   September 2020 – July 2021
Department of Computing
Goldsmiths, University of London

Lead Instructor of Data Science   September 2019 – June 2020
Flatiron School
WeWork

Graduate Student   August 2015 – May 2019
The Graduate School   2018
Department of Psychology   2017
School of Music and Dramatic Arts   2015
Louisiana State University

Research Assistant   2014
Transforming Musicology
Goldsmiths, University of London

3. PUBLICATIONS

Articles

Brown, J., Tan, D., **Baker, D.** (*accepted*) The perceptual attraction of pre-dominant chords. *Music Perception.*

Baker, D. (*accepted*). The *MeloSol* Corpus. *Empirical Musicology Review* [Preprint via PsyArXiv]

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.* https://doi.org/10.31234/osf.io/9fe8n

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 https://doi.org/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). doi: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. [Article]

Book Chapters

Shanahan, D. & **Baker, D.** (*forthcoming* 2021). Cognition and Corpus Studies. 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.*

Müllensiefen, D., **Baker, D**. (2015) Music in Advertising: Testing What Works (2015) Audio

Branding Academy Yearbook 2015.

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. https://doi.org/10.1525/mp.2020.38.2.103 [Editorial]

Baker, D. (2018) "Coughing and Clapping", in *Empirical Musicology Review* , Vol 13, No. (3-4), pp. 164-165. [Book Review]

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

Weigl, D., Goebl, W., **Baker, D.**, Crawford, T., Zubani, F., Gkiokas, A., Paez, N., Porter, A. and Santos P. (2021) Notes on the Music: A social data infrastructure for music annotation. Digital Libraries for Musicology.

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. Norrkping, Sweden. [Conference Proceedings Paper]

Baker, D., Rindfleisch, C., Müllensiefen, D. (2015) Parsifal and the effect of narrative on unconscious arousal. *Proceedings of 2015 European Soceity of Cognitive Sciences of Music*

Müllensiefen, D., **Baker, D**., Lewis, R., Rhodes, C., Fields, B., and Crawford, T. (2014) Multimodal 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 in Submission

Revise and Resubmit

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

Submitted/In Preparation

Baker, D. (October, 2020) Frequently Occurring Musical Patterns are Easier to Recall. *Submitted.* https://osf.io/3rjzu/

Ma, Y., **Baker, D.**, Vukovics. K., Davis, C.J, Elliott, E., (December, 2020). I Feel Differently this Time: Generalizing the Effect of Lyrics on Emotion Ratings

Krause, A., **Baker, D.**, Groarke, J.(December, 2020). Replicating Macro Effects of Season on Playlist Curation.

4. TEACHING

Professional Teaching

Issues in Music and Science Winter 2020
Humboldt-Universität zu Berlin, Germany
Delivered 16 lecture course for undergraduates
Introduction to study of Music and Science
Instructor of Record, Online

Lead Instructor of Data Science September 2019 – June 2020
Flatiron School x WeWork, London
Delivered daily lectures, advised projects, developed curricula
Vocational Coding Bootcamp
Lead Instructor, In Person and Online

Multivariate Statistics Spring, 2018
Louisiana State University
Assisted with weekly lectures
Advanced Statistics for Graduate Students in Psychology
Graduate Teaching Assistant, In Person

Intermediate Statistics Fall, 2017
Louisiana State University
Assisted with weekly lectures
Intermediate Statistics for Students in Psychology
Graduate Teaching Assistant, In Person

Foundations of Music Study Fall, 2016
Louisiana State University
Prepared and delivered 15 Week Course
Remedial Music Theory Course for Undergraduates
Instructor of Record, In Person

Aural Skills IV Spring 2016, 2017
Louisiana State University
Prepared and delivered 15 Week Lab
Chromatic and Post Tonal Aural Skills for Undergraduates
Instructor of Record, In Person

Aural Skills III Autumn 2015, 2016
Louisiana State University
Prepared and delivered 15 Week Lab
Chromatic Aural Skills for Undergraduates
Instructor of Record, In Person

Supervisory Teaching

Faculty of Music   Autumn 2021
University of Cambridge
Supervised undergraduate students on courses:
Introduction to Music and Science
Music and Psychology in Practice
Supervisor, In Person

Flatiron School   Autumn 2019 – June 2020
Flatiron School Data Science Bootcamp
Supervised final data science portfolio projects
Lead Instructor, In Person, Online

Areas of Teaching Competence

Science

- Music Psychology
- Computational Musicology
- Statistics and Experimental Design (Undergraduate to PhD)
- R Programming for Psychologists

Music

- Music Theory and Aural Skills Undergraduate Rotation
- Jazz and Popular Music Analysis
- History of Music Theory
- Advanced Analytical Technique
- Counterpoint and Schenkerian Analysis
- Music Theory Pedagogy

5. SERVICE

Academic

Trainee Member, Executive Board   2019 – 2020
Society for Music Perception and Cognition
– Organized trainee events at conference including Faculty-Student lunch, Applying to Graduate School Panel, Early Career Session Panel, and Student Meet-and-Greet
– Duties to assist and advise the President, Secretary, Treasurer, and President Elect in their deliberations and their duties, and in general shall see to the welfare of SMPC
– Represented the views of student members of SMPC
– Served on Election Committees and Anti-Racism Committee

Ad Hoc Peer Reviewer   2018 – *present*
– *Music Perception*
– *Music and Science*
– *Musicae Scientiae*
– *Psychology of Music*
– *SysMus* Conference Series

Non Academic

Research and Evaluation Resident   June 2018 – March 2019
Toynbee Hall, London, England
– Used a Participatory Action Research research with East London communities
– Topics researched included financial savings, mental health support for advice users, private renting, poverty premium, and support for young people
– Organized Datathon partnering community organizations and data scientists for #DataForGood event

6. 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
The Graduate Faculty
Louisiana State University
Campus Wide Competition

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

Research

Visiting PhD Student, Queen Mary, University of London, July 2016	£500
Visiting PhD Student, Transforming Musicology, June 2016	£2,000
Research and Administrative Assistant at Transforming Musicology, Fall 2015	£5,000

Travel

SEMPRE Travel Award, April 2018	€130
LSU Graduate Student Association Travel Award, South Carolina, March 2018	$200
LSU School of Music Award Travel Award, South Carolina, February 2018	$250
LSU School of Music Travel Award, San Diego, July 2017	$750
SMPC Student Travel Award, San Diego, July 2017	$500
LSU School of Music Travel Award, Missouri, November 2016	$500
Travel Bursary from Deutsche Gesellschaft für Musikpsychologie, August 2015	€100

Education and Scholarships

LSU Summer Institute on Future of Graduate Studies, May 2018	$3,500
LSU Department of Psychology Graduate Assistantship (1 Year), Autumn 2017 – Spring 2018 $13,000	
LSU School of Music Graduate Assistantship (3 Years), Autumn 2015 – Spring 2017	$33,000
Goldsmiths International Postgraduate Scholarship, September 2014–September 2015	£5,000
Baldwin Wallace University Presidents Scholarship	$48,000
Baldwin Wallace University Directors Scholarship	$4,000
Baldwin Wallace Griffiths Scholarship	$1,000
Baldwin Wallace University Gloria B. Ewing Scholarship	$1,500

7. PRESENTATIONS

Invited Talks

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

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]

Conference Presentations

Baker, D. (August, 2019). Modeling the Limits of Musical Memory. CogMir19. New York, New York. [Video]

Baker, D. (August, 2019). What is happening in a students mind when they perform melodic dictation?. Society for Music Perception and Cognition. New York, New York. [Talk]

Baker, D. (May, 2019). The Frequency Facilitation Hypothesis. Society for Music Perception and Cognition. New York, New York. [Poster]

Ma, Y., Elliott, E., **Baker, D**., Davis, C., Vukovics, K. (May, 2019). Lyrics and Emotion in Songs: A Conceptual Replication Study of Ali and Peynircioglu, 2006. Society for Music Perception and Cognition. New York, New York. [Poster]

Vukovics, K., Elliott E., Ma, Y., **Baker, D.** (May, 2019). Does Musical Training Protect Against Auditory Distractions?. Society for Music Perception and Cognition. New York, New York. [Poster]

Simon, E., **Baker D.**, Monzingo, M., Elliott, E., Vuvan, D. (May, 2019). Musical Training Mediates the Relation Between Auditory Working Memory and Preference for Musical Complexity. Society for Music Perception and Cognition. New York, New York. [Poster]

Baker, D. (May, 2019). What is going on in someones head when they do melodic dictation?. Pedagogy into Practice. Santa Barbara, California. [Read Paper]

Baker, D.(May, 2019). What is going on in someones head when they do melodic dictation?. Music Theory Midwest, Cincinnati, Ohio. [Read Paper]

Baker, D.(April, 2019). The Frequency Facilitation Hypothesis. Again & Again Musical Repetition in Aesthetics, Analysis and Experience. London, England [Read Paper]

Baker, D.(March, 2019). What is going on in someones head when they do melodic dictation? SEMPRE Graduate Conference. Cambridge, England. [Lightening Talk]

Baker, D., Elliott, E., Shanahan, D., Ventura, J. Monzingo, E., Ritter, B., & Young, C. (July, 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. [Short Talk]

Baker, D., Monzingo, E., & Shanahan, D. (July, 2018). Modeling Aural Skills Dictation. Proceedings of 2016 International Conference on Music Perception and Cognition. [Conference Poster]

Gran, J., **Baker, D.** (March, 2018). Root Interval Schemas in Rock Music. Music Theory South Central, University of Southern Mississippi. [Read Paper, Slides]

Baker, D. (March, 2018). Who counts as a Musician?, Music and Public Discourse, Columbia, South Carolina. [Video]

Baker, D, Ventura, J., Shanahan, D., & Elliott, E. (November, 2017). Modeling Performance on Aural Skills Examinations, Music Informatics Group, Society for Music Theory. Arlington, VA Poster

Baker, D, Ventura, J., Shanahan, D., & Elliott, E. (August, 2017). Modeling Performance on Aural Skills Examinations, This is Your Brain on Art. Valencia, Spain Poster

Baker, D. and Shanahan, D. (August, 2017). The Modeling and Perception of Melodic Similarity in Jazz Improvisation, Society for Music Perception and Cognition. San Diego, California [Poster]

Gran, J. and **Baker, D**. (August, 2017). A Relational Network Approach to Rock Music Syntax,

Society for Music Perception and Cognition. San Diego, California [Poster]

Baker, D, Ventura, J., Shanahan, D., & Elliott, E. (August, 2017). Validating the Goldsmiths Musical Sophistication Index in a Sample of American Participants, Society for Music Perception and Cognition. San Diego, California [Poster]

Ventura, J., **Baker, D.**, Elliott, E., & Shanahan, D. (August, 2017). Cognitive Abilities in Non-Musicians and Musicians: Does Musicality Matter? 125th Annual Convention of the American Psychological Association in Washington, D.C. Poster

Baker, D. and Müllensiefen, D. (November, 2016). Wagner, Leitmotives, and Music Informatics. Society of Music Theory, Music Informatics Special Interest Group. Vancouver, Canada [Short Talk]

Ventura, J., Elliott, E., **Baker, D.**, & Shanahan, D. (November, 2016). Investigating the Relationship between Musical Working Memory and Musical Sophistication in Non-Musicians. Poster to be presented at the 57th Annual Meeting of the Psychonomic Society in Boston, MA.[Poster Presentation]

Baker, D., Müllensiefen, D. (2016) Perception of Leitmotives in Richard Wagner's *Der Ring des Niebelungen*. Proceedings of 2016 International Conference on Music Perception and Cognition. [Short Format Talk]

Baker, D., Rosado, A, Shanahan, E., Shanahan, D. (2016) The Interaction of Schema-Driven Gestures and Instrumental Affordances in Bebop Improvisations. International Conference on Music Perception and Cognition, San Francisco, USA. [Long Format Talk]

Baker, D., Trahan, T., Müllensiefen, D. (2016) Measuring Music To Brand Personality: A Semantic Differential Tool for Measuring Emotional Space. International Conference on Music Perception and Cognition. [Poster Presentation]

Blust, A., **Baker, D.**, Richard, K., Shanahan, D. (2016) Music, Animacy, and Rubato: What makes music sound human? International Conference on Music Perception and Cognition. [Poster Presentation]

Baker, D., Müllensiefen, D. (2016) Hearing Wagner: Physiological Responses to Richard Wagners Der Ring des Nibelungen. Proceedings of 2016 International Conference on Music Perception and Cognition. [Poster Presentation]

Baker, D., Rindfleisch, C., Müllensiefen, D. (2015) Parsifal and the effect of narrative on unconscious arousal. Presentation given at Society of Music Perception and Cognition (SMPC) 2015, Nashville, TN, 4th of August. [Conference Talk]

Müllensiefen, D., **Baker, D.** (2015) Music in Advertising: Testing What Works. Presentation given at Audio Branding Academy 2015 (ABA) 2015, Berlin, Germany, 27th of May. [Industry Workshop]

Müllensiefen, D. **Baker, D.**. (2014) The Ring Cycle Experiment. Presentation given at 'Hearing

Wagner' event part of AHRC Being Human Festival, Birmingham, England, UK, 22nd of November. [Public Outreach Talk]

Baker, D. Psychology of Leitmotives in Wagner: Two Studies on Cue Abstraction. Presentation given at SysMus14, London, England, UK, 20th September. [Graduate Student Conference Talk]

Baker, D., Albrecht, H. (2014) The Psychology of Leitmotive Processing in Richard Wagner's Music: Evidence from Two Memory Experiments. Presentation give at Deutsch Gesellschaft fur Musikpsychologie, Fraunhofer, Germany, September 2014. [Conference Talk]

Müllensiefen, **Baker, D.**, D., Rhodes, C,. Crawford, T,. Dreyfus, L. (2014). Recognition of leitmotives in Richard Wagner's music: chroma distance and listener expertise. Presentation given at 2014 European Conference on Data Analysis (ECDA) 2014, Jacobs University, Germany, July 2014 [Conference Talk]

Baker, D. (2014) Salience and Memorability of Wagner's Leitmotives as a Function of Listener's Experience. Presentation give at OBERTO Graduate Student Conference, Oxford, England, UK, July 2014. [Graduate Student Conference Talk]

8. DATA SCIENCE AND SOFTWARE DEVELOPMENT

Software Development

Software Developer   May 2021 – April 2022
Department of Psychology
Max Planck Institute for Empirical Aesthetics

Consultancy Projects

Scientist   May 2021
London, England
Data Analysis
– Ongoing
Massive Music

Scientist   Winter 2020
London, England
Assisted in creation of audio identity for client
– Ongoing
Massive Music

Scientist   March 2018–April 2019
London, England
Developed music for modern traveler

Press Coverage in Forbes, easyJet Traveller, børsen (DK)
Soundscape Agency, Citizen M Hotels, Erased Tapes, Bose

Data Scientist   March 2018–April 2019
New York City, USA
Developed tool for detecting audio logo uniqueness
Advised on statistical implementations platform
Veritonic, Inc.

Project Consultant   March 2018–April 2019
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
Soundout

Presenter   March 2018–April 2019
Berlin, Germany
Co-lead half-day workshop on academic research in audio branding
Focused on brand-personality matching, q methodology, analyzing physiological data
Audio Branding Academy

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

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