

Abdellah Fourtassi

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Aix-Marseille University
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APPOINTMENT

Aix-Marseille University

Assistant Professor (with tenure) of Computer Science (2019 - present)
Founder & Coordinator, Computational Communicative Development team (2020 - present)
Research fellow, Institute of Language, Communication & the Brain (2019 - present)
Researcher, Natural Language Processing research group TALEP (2019 - present)
Co-Director, Master's program of Cognitive Science (2020 - 2021)

Institute for Research in Digital Science & Technology (INRIA, Paris)

Visiting Researcher “Délégation Recherche INRIA” (2021 - 2022)

Stanford University

Postdoctoral Research Fellow, Department of Psychology (2016 - 2019)

EDUCATION

Ecole Normale Supérieure, Paris

Ph.D. in cognitive science (2015), *summa cum laude*
Master's degree in cognitive science (2012)

Ecole Polytechnique, Paris

Science & Engineering diploma (2011)

Lycée Moulay Youssef, Rabat

Undergraduate studies in Mathematics & Physics, CPGE/MP (2005 - 2008)

HONORS, AWARDS, & GRANTS

ANR JCJC grant scheme, for “Mastering the Art of Conversation in Middle Childhood”
(MACoMiC), 2022 - 2025, €286,845 (PI)

Keynote speaker at the Dagstuhl Perspective Workshop on “Developmental Machine Learning,” 2022

Ranked 2nd (/ 30), CMCL shared task (2021) for Dary, Nasr, & Fourtassi, “Non-Linear Combination of Low and High-level Features for Predicting Eye-Tracking Data”

ILCB Seed Grant; to kick-start the Computational Communication & Development team (CoCoDev), 2020-2022, €40,000 (PI)

Marie Skłodowska-Curie European Fellowship, 2019-2021, \$217,000 (PI) — *declined to take a faculty position at Aix-Marseille University.*

Stanford Data Science Seed Grant Award (co-PI with Michale Frank), “Lexical networks in children’s early language.”, 2018 -2019, \$50,000

Fyssen Foundation's postdoctoral Study Grant, 2016 - 2018, €40,000

France-Stanford Center for Interdisciplinary Studies’ Collaborative Project Award (co-PI with Michael Frank & Emmanuel Dupoux), 2015 - 2016, \$15,000

Finalist, CoNLL Best Paper Award (2014) for Fourtassi & Dupoux, “Rudimentary Lexicon and Semantics Help Bootstrap Phoneme Acquisition”

IBM Best Student Paper Award at ACL (2013), for Fourtassi & Dupoux, “A Corpus-based Evaluation Method for Distributional Semantic Models”, \$1,000

AMX Fellowship for Ph.D. studies at Ecole Normale Supérieure, 3 years of full funding, 2012-2015

Eiffel Excellence Fellowship for undergraduate & master’s studies, 4 years of full funding, 2008-2012

Foundation Mohammed VI Fellowship for undergraduate studies, 3 years of full funding, 2005-2005.

In progress

1. §Agrawal, A., §Nikolaus, M., Favre, B., & **Fourtassi, A.** (under review). *Automatic Coding of Contingency in Child-Caregiver Conversations.*
2. §Nikolaus, M., §Agrawal, A., §Kaklamanis, P., Warstadt, A., & **Fourtassi, A.** (under review). *Automatic Annotation of Grammaticality in Child-Caregiver Conversations.*
3. §Goumri, D., §Agrawal, A., §Nikolaus, M., §VU, T., Bodur, K., §Semmar, E., §Armand, C., Mazzocconi, C., Gupta, S., Prévot, L., Favre, B., Becerra, L., & **Fourtassi, A.** (under review). *A Developmental Corpus of Child-Caregiver's Face-to-face vs. Computer-mediated Conversations in Middle Childhood.*
4. **Fourtassi, A.** (under review). *Understanding Children's Multimodal Conversation: Challenges and Opportunities.*

Published

5. §Goumri, D., Janssoone, T., Becerra, L., & **Fourtassi, A.** (2023). Automatic Detection of Gaze and Smile in Children's Video Calls. *Proceedings of the International Conference on Multimodal Interaction (ICMI'23 Companion)*
6. §Cabiddu, F., §Nikolaus, M., & **Fourtassi, A.** (2023). Modeling Children's Word Sense Disambiguation with Large Language Models: Insights and Challenges. *In Proceedings of the 45th Annual Meeting of the Cognitive Science Society.*
7. §Nikolaus, M., Prévot, L., & **Fourtassi, A.** (2023). Communicative Feedback Signals in Response to Children's Grammatical Errors. *In Proceedings of the 45th Annual Meeting of the Cognitive Science Society.*
8. §Mazzocconi, C., O'Brien, B., El Haddad, K., §Bodur, K., **Fourtassi, A.** (2023). Differences between Mimicking and Non-Mimicking Laughter in Child-Caregiver Conversation: A Distributional and Acoustic Analysis. *In Proceedings of the 45th Annual Meeting of the Cognitive Science Society.*
9. §Agrawal, A., §Liu, J., §Bodur, K., Favre, B., & **Fourtassi, A.** (2023). Development of Multimodal Turn Coordination in Conversations: Evidence for Adult-like Behavior in Middle

Childhood. In *Proceedings of the 45th Annual Meeting of the Cognitive Science Society*.

10. Tiran, T., Meewis, F., & **Fourtassi, A.**, & Dautriche I. (2023). Typology of Topological Relations Using Machine Translation. In *Proceedings of the 45th Annual Meeting of the Cognitive Science Society*.
11. §Bodur, K., §Nikolaus, N., Prévot, L., & **Fourtassi, A.** (2023). Using video calls to study children's conversational development: The case of backchannel signaling. *Frontiers in Computer Science*, 5.
12. §Wilson, K., Frank, M., C., & **Fourtassi, A.** (2023). Conceptual Hierarchy in Child-Directed Speech: Implicit Cues are More Reliable. *Journal of Cognition & Development*.
13. §Nikolaus, M. & **Fourtassi, A.** (2023). Communicative Feedback in Language Acquisition. *New Ideas in Psychology*, 68, 100985.
14. §Nikolaus, M., §Maes, E., Auguste, J., Prévot, L., & **Fourtassi, A.** (2022). Large-scale Study of Speech Acts' Development in Early Childhood. *Language Development Research*, 2(1).
15. §Nikolaus, M., Salin, E., Ayache, S., **Fourtassi, A.**, & Favre, B. (2022). Do Vision-and-Language Transformers Learn Predicate-Noun Dependencies? In *Proceedings of the 2022 Conference on Empirical Methods in Natural Language Processing (EMNLP)*.
16. §Liu, J., §Nikolaus, M., §Bodur, K., & **Fourtassi, A.** (2022). Predicting Backchannel Signaling in Multimodal Child-Caregiver Conversation. *Proceedings of the International Conference on Multimodal Interaction (ICMI'22 Companion)*.
17. §Misiek, T. & **Fourtassi, A.** (2022). Caregivers Exaggerate Their Lexical Alignment to Young Children Across Several Cultures. In *Proceedings of the 26th Workshop on the Semantics and Pragmatics of Dialogue (SemDial)*.
18. §Hallart*, C., §Peirollo*, M., §Xu, Z., & **Fourtassi, A.** (2022). Development of Dialog Contingency in Child-Caregiver Early Interaction (* shared first authorship). In *Proceedings of the 26th Workshop on the Semantics and Pragmatics of Dialogue (SemDial)*.
19. §Jiang, H., Frank, M., C., Kulkarni, V., & **Fourtassi, A.** (2022). Exploring Patterns of Stability and Change in Caregivers' Word Usage Across Early Childhood. *Cognitive Science*, 46 (7).
20. §Bodur, K., §Nikolaus, M., Prévot, L., & **Fourtassi, A.** (2022). Backchannel Behavior in Child-Caregiver Video Calls. In *Proceedings of the 44th Annual Meeting of the Cognitive Science*

Society.

21. §Nikolaus, M., Prévot, L., & **Fourtassi, A.** (2022). Communicative Feedback as a Mechanism Supporting the Production of Intelligible Speech in Early Childhood. In *Proceedings of the 44th Annual Meeting of the Cognitive Science Society*.
22. **Fourtassi, A.**, §Regan, S., & Frank, M., C. (2021). Continuous Developmental Change Explains Discontinuities in Word Learning. *Developmental Science*, 24(2).
23. §Nikolaus, M., & **Fourtassi, A.** (2021). Modeling the Interaction between Perception-based Learning and Production-based Learning in Children's Early Acquisition of Semantic Knowledge. In *Proceedings of the 2021 Conference on Computational Natural Language Learning (CoNLL)*.
24. §Bodur, K., §Nikolaus, M., §Kassim, F., Prévot, L., & **Fourtassi, A.** (2021). ChiCo: A Multimodal Corpus for the Study of Child Conversation. In *Proceedings of the International Conference on Multimodal Interaction (ICMI'21 Companion)*.
25. §Nikolaus*, M., §Maes*, E., Auguste, J., Prévot, L., & **Fourtassi, A.** (2021). Large-scale Study of Speech Acts' Development Using Automatic Labeling. In *Proceedings of the 43rd Annual Conference of the Cognitive Science Society* (* Shared first authorship).
26. §Nikolaus, M., §Maes E., & **Fourtassi, A.** (2021). Modeling Speech Act Development in Early Childhood: The Role of Frequency and Linguistic Cues. In *Proceedings of the 43rd Annual Conference of the Cognitive Science Society*.
27. §Nikolaus, M. & **Fourtassi, A.** (2021). Evaluating the Acquisition of Semantic Knowledge from Cross-situational Learning in Artificial Neural Networks. In *Proceedings of the 11th Workshop on Cognitive Modeling and Computational Linguistics (CMCL)*.
28. §Dary, F., Nasr, A., & **Fourtassi., A.** (2021). TALEP at CMCL 2021 Shared Task: Non-Linear Combination of Low and High-level Features for Predicting Eye-Tracking Data. In *Proceedings of the 11th Workshop on Cognitive Modeling and Computational Linguistics (CMCL)*. **(Ranked 2nd out of 30 submissions in the shared task).**
29. §Dary, F., **Fourtassi., A.**, & Nasr, A., (2021). On the Role of Low-level Linguistic Tasks for Reading Time Prediction. In *Proceedings of the 43rd Annual Conference of the Cognitive Science Society*.
30. **Fourtassi, A.** & Frank, M. C. (2020) How Optimal is Word Identification Under Multimodal Uncertainty? *Cognition*, 199.

31. **Fourtassi, A., §Bian, Y. & Frank, M. C** (2020). The Growth of Children's Semantic and Phonological Networks: Insight from 10 Languages. *Cognitive Science*, 44 (7).
32. **§Misiek, T., Favre, B., & Fourtassi, A.** (2020). Development of Multi-level Linguistic Alignment in Child-Adult Conversations. In *Proceedings of the 10th Workshop on Cognitive Modeling and Computational Linguistics (CMCL)*.
33. **Fourtassi, A.** (2020). Word Co-occurrence in Child-directed Speech Predicts Children's Free Word Associations. In *Proceedings of the 10th Workshop on Cognitive Modeling and Computational Linguistics (CMCL)*.
34. **Fourtassi, A., §Wilson, K., & Frank, M., C.** (2020). Discovering Conceptual Hierarchy Through Explicit and Implicit Cues in Child-Directed Speech. In *Proceedings of the 42nd Annual Conference of the Cognitive Science Society*.
35. **Fourtassi, A., §Regan, S. & Frank, M. C.** (2019). The Role of Continuous Developmental Change in Explaining Discontinuities in Word Learning. In *Proceedings of the 41st Annual Conference of the Cognitive Science Society*.
36. **Fourtassi, A.*, §Scheinfeld, I.*, & Frank, M. C.**(2019) The Development of Abstract Concepts in the Children's Early Lexical Networks. In *Proceedings of the 9th Workshop on Cognitive Modeling and Computational Linguistics (CMCL)* (* Shared first authorship).
37. **Fourtassi, A., & Dupoux, E.** (2019) Phoneme Learning is Influenced by the Taxonomic Similarity of the Semantic Referents. In *Proceedings of the 41st Annual Conference of the Cognitive Science Society*.
38. **Fourtassi, A., §Bian, Y., & Frank, M., C.** (2018). Word Learning as Network Growth: A Cross-Linguistic Analysis. In *Proceedings of the 40th Annual Conference of the Cognitive Science Society*.
39. **Fourtassi, A. & Frank, M., C.** (2017). Word Identification Under Multimodal Uncertainty. In *Proceedings of the 39th Annual Conference of the Cognitive Science Society*.
40. **Fourtassi, A. & Dupoux, E.** (2016). The role of word-word co-occurrence in word meaning learning. In *Proceedings of the 38th Annual Conference of the Cognitive Science Society*.
41. **Fourtassi, A. & Dupoux, E.** (2014). Rudimentary Lexicon and Semantics Help Bootstrap Phoneme Acquisition. In *Proceedings of the 18th Conference on Computational Natural Language Learning (CoNLL)*. **(Best paper award finalist)**
42. **Fourtassi, A., Schatz, T., Varadarajan, B. & Dupoux, E.** (2014). Exploring the Relative Role of Bottom-Up and Top-Down Information in Phoneme Learning. In *Proceedings of the 52nd Annual*

Meeting of the Association for Computational Linguistics (ACL).

43. **Fourtassi, A.**, Dunbar, E., & Dupoux, E. (2014). Self Consistency as an Inductive Bias in Early Language Acquisition. In *Proceedings of the 36th Annual Conference of the Cognitive Science Society*.
44. **Fourtassi, A.**, Borschinger, B., Johnson, M. & Dupoux, E. (2013). Why is English so easy to segment? In *Proceedings of the 4th Workshop on Cognitive Modeling and Computational Linguistics (CMCL)*.
45. **Fourtassi, A.** & Dupoux, E. (2013). A Corpus-based Evaluation Method for Distributional Semantic Models. In the *51st annual meeting of the Association for Computational Linguistics, Proceedings of the student research workshop*. **(IBM Best Student paper)**

Peer-reviewed abstract proceedings (selection)

46. El Haddad, K., §Meunier, G., Mazzocchi, C., & **Fourtassi, A.** (2021). Investigating Automatic Audio Laughter Detection in a Mother-Child Interaction. In *Proceedings of the 3rd International Workshop on Vocal Interactivity in-and-between Humans, Animals and Robots (VIHAR)*

INVITED TALKS (selection)

Université Bourgogne Franche-Comté, Department of Automation and Robotics, July 2023
 University College London, Division of Psychology and Language Sciences, May 2023
 INRIA Lille, Machine Learning in Information Network (MAGNET) Seminar, April 2023
 International Center for Language and Communicative Development (LuCiD), March 2023
 University of Goettingen, Psychology of Language Department, February 2023
 University of Grenoble, Speech & Cognition Seminar, December 2022
 The Chinese University of Hong Kong, Department of Linguistics Seminar, November 2022
 Dagstuhl Seminar on Developmental Machine Learning, October 2022
 Orange Labs, July 2022
 University of Radboud, Multimodal Language and Cognition Seminar, June 2022
 University of Aarhus, Interacting Minds Center Seminar, June 2022
 University of Amsterdam, Computational Linguistics Seminar (CSL), May 2022
 Pr[AI]rie institute Colloquium, February 2022
 University of Windsor, School of Computer Science Colloquium, November 2021
 OECD International Meeting on AI & the Productivity of Science, November 2021
 Keynote talk at the Meeting of the French Association of NLP, December 2020
 Stanford University, Center for the Study of Language & Information (CSLI), June 2018

MENTORSHIP

Ph.D. researchers

Abhishek Agrawal – current, *primary* advisor, co-advised with Benoit Favre
 Dhia Elhak Goumri – current, *primary* advisor, co-advised with Leonor Becerra
 Mitja Nikolaus – current, *primary* advisor, co-advised with Laurent Prévot
 Franck Dary – former, *secondary* advisor, co-advised with Alexis Nasr

Visiting Ph.D. researchers

Judith Kalinowski – former, University of Göttingen, *primary* advisor
 Francesco Cabiddu – former, Cardiff University, *primary* advisor

Postdoc researcher

Chiara Mazzocchi – current, co-advised with Beatrice Priego-Valverde

Ph.D. committee

Rozic Gal – current, supervisor: Gabriella Vigliocco, University College London
 Rudradeep Guha – current, supervisor: JJ Aucouturier, Université de Bourgogne
 Leonardo Pinto Arata – current, supervisor: Carlos Ramisch and Arnaud Rey, Aix-Marseille
 Auriane Boudin – current, supervisor: Philippe Blache and Magalie Ochs, Aix-Marseille
 Alafate Abulimiti – former, supervisor: Justine Cassell, INRIA Paris
 Léo Jacqmin – former, supervisor: Benoit Favre, Aix-Marseille
 Salma Ferjani – former, supervisors: Séverine Dubuisson & Djamal Merad, Aix-Marseille

Master's interns

Nina Gregorio – former, Master of Cognitive Science (Cogmaster), ENS
 Jing Liu – former, Master in Linguistics & Communication, Radboud University
 Maryam Taiaa – former, Master of Data Science, Aix-Marseille University
 Laudine LÊ – former, International Master of Biometrics, Paris-Est University
 Inès Ben Haj Kacem – former, Master of Cognitive Science (Cogmaster), ENS
 Sarah Said – former, Master of Data Science, Paris-Dauphine University
 Fatima Kassim – former, Master of Cognitive Science, Aix-Marseille
 Kubra Bodur – former, Master of Cognitive Science, Aix-Marseille
 Gabriel Meunier – former, Master of Artificial Intelligence, Aix-Marseille
 Maureen Astier – former, Master of Cognitive Science, Aix-Marseille
 Charlie Hallart – former, Master of Cognitive Science, Aix-Marseille
 Morgane Peirola – former, Master of Cognitive Science, Aix-Marseille

Eliot Maes – former, Master of Cognitive Science, Aix-Marseille
 Thomas Misiak – former, Master of Cognitive Science, Aix-Marseille
 Pelayo Mencos – former, Master of Cognitive Science, Aix-Marseille
 Hang Jiang – former, Master’s of Symbolic Systems, Stanford University

Other interns (Part-time, Summer interns, etc.)

Petros Kaklamanis – current, University of Pennsylvania
 Jacques Zhu – former, Ecole Centrale Marseille
 Martin Padovani – former, Ecole Polytech' Marseille
 Yassine Laribi – former, Ecole Centrale Marseille
 Ayoub Rochdy – former, Ecole Centrale Marseille
 Zihan Xu – former, Jiao Tong University
 Kyra Wilson – former, CSLI summer fellowship, Stanford University
 Yifan Ma – former, Praxis fellowship, Stanford University
 Sophie Regan – former, SymSys summer fellowship, Stanford University
 Isaac Scheinfeld – former, SymSys summer fellowship, Stanford University
 Yuan Bian – former, CSLI summer fellowship, Stanford University
 Mohit Gupta – former, Charpak fellowship, École Normale Supérieure

TEACHING

Aix-Marseille University (2020 – present)

Computer Science Department

Introduction to Machine Learning (undergraduate, 3d year: L3), 2022, 2023
 Probability Theory for Computer Science (masters), 2022
 Introduction to Natural Language Processing (undergraduate, 3d year: L3), 2020 – 2021
 Introduction to Theories in Computer Science (undergraduate, 1st year: L1), 2020
 Computer programming: Python (undergraduate, 1st year: L1), 2020 – 2023

Cognitive Science Department

Introduction to Cognitive Science (masters), 2020 – 2022
 Computer Programming for Cognitive Science (masters), 2020 – 2023

Summer Schools

ILCB summer school, “Child language acquisition: State of the art ” (2021 – 2023)
 ETAL, National Summer School on NLP, “When NLP meets Cognitive Science” (2023)

SERVICE

Editorial & Reviewing service

Editor:

Area Chair, the Annual Meeting of the Association of Computational Linguistics (2023)
 Associate Editor for *Frontiers in Cognitive Neuroscience* (2023 - present)
 Co-editor, special issue on “Language Learning, Representation, and Processing in Humans and Machines.” *Computational Linguistics* (to appear in 2024)
 Co-editor, special issue on the “Neural and Behavioral Mechanisms of Social Learning.” *Frontiers in Cognitive Neuroscience* (to appear in 2024)

Funding agencies: Reviewer, National Science Foundation (NSF, USA), National Science Center (NSC, Poland), British Academy Wolfson Research Professorship

Books: Reviewer, Cambridge University Press, 2018

Journals: Ad hoc reviewer for (selection):

Psychological Review, Cognition, Cognitive Science, Cognitive Psychology,
 Journal of Experimental Psychology: General, Developmental Psychology,
 Developmental Cognitive Neuroscience, Child Development, Language Learning, Infant Behavior & Development, Language Learning & Development, Frontiers Human Neuroscience, Behavior Research Methods, Language & Cognition.

Conferences: Program committee member for::

Cognitive Science Society Conference (CogSci), International Conference on Multimodal Interaction (ICMI), Cognitive Development Society Conference (CDS), Conference on Computational Natural Language Learning (CoNLL), Annual Conference of the Asia-Pacific chapter of the ACL, Workshop on Cogn. Modeling and Computational Linguistics (CMCL), Workshop on Knowledge Extraction and Integration for Deep Learning (DeeLIO), Workshop on Smiling and Laughter Across Contexts and Life-span

Governance and University Service (selection)

Founder, Director, CoCoDev team (2020 - present)
 Executive Board member, Institute of Language Communication & Brain (ILCB) (2020 - present)
 Co-Director, Aix-Marseille’s Research Master in Cognitive Science (MaSCo) (2020 - 2021)
 Organizer, CoCoDev seminars (2020 - present)
 Co-Organizer, French National Summer School on NLP (ETAL 2023)
 Co-Organizer, GdR TAL French National meeting on “Bridging NLP and Cog. Sci.” (2020)

Large public

Fourtassi A., Nguyen N., Bertrand, R. (2022). “Les bébés apprennent l’art de la conversation avant même de savoir parler” in *The Conversation* ([link](#))