# Abdellah Fourtassi

Latest update: February, 2024

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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 2$^{nd}$ (/ 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.

## PEER-REVIEWED PUBLICATION ( [§] Student under my supervision)

### In progress

1. [§]Goumri, D.-E., Becerra, L., & **Fourtassi, A.** (under review). *Child-Caregiver Gaze Dynamics in Naturalistic Face-to-Face Conversations*.

2. [§]Agrawal, A., Favre, B., & **Fourtassi, A.** (under review). *Analysing Communicative Intent Coordination in Child-Caregiver Interactions*.

3. [§]Peirolo, M., [§] Xu, Z., & **Fourtassi, A.** (under review). *Development of Flexible Role-Taking in Conversations Across Preschool*.

4. [§]Agrawal, A., [§]Nikolaus, M., Favre, B., & **Fourtassi, A**. (under review). *Automatic Coding of Contingency in Child-Caregiver Conversations*.

5. [§]Nikolaus, M., [§]Agrawal, A., [§]Kaklamanis, P., Warstadt, A., & **Fourtassi, A.** (under review). *Automatic Annotation of Grammaticality in Child-Caregiver Conversations*.

6. [§]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*.

7. **Fourtassi, A**. (under review). *Understanding Children's Multimodal Conversation: Challenges and Opportunities*.

### Published

8. [§]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)*

9. [§]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.*

10. [§]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.*

11. [§]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.*

12. [§]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.*

13. 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.*

14. [§]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.*

15. [§]Wilson, K., Frank, M., C., & **Fourtassi, A.** (2023). Conceptual Hierarchy in Child-Directed Speech: Implicit Cues are More Reliable. *Journal of Cognition & Development.*

16. [§]Nikolaus, M. & **Fourtassi, A.** (2023). Communicative Feedback in Language Acquisition. *New Ideas in Psychology, 68, 100985.*

17. [§]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).*

18. [§]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).*

19. [§]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).*

20. [§]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).*

21. [§]Hallart**, C., [§]Peirolo**, 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).*

22. [§]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).*

23. [§]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.*

24. [§]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.*

25. **Fourtassi, A.,** [§]Regan, S., & Frank, M., C. (2021). Continuous Developmental Change Explains Discontinuities in Word Learning. *Developmental Science, 24(2).*

26. [§]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).*

27. [§]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).*

28. [§]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).

29. [§]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.*

30. [§]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).*

31. [§]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).**

32. [§]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.*

33. **Fourtassi, A.** & Frank, M. C. (2020) How Optimal is Word Identification Under Multimodal Uncertainty? *Cognition, 199.*

34. **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).*

35. [§]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).*

36. **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).*

37. **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.*

38. **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.*

39. **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).

40. **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.*

41. **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.*

42. **Fourtassi, A.** & Frank, M., C. (2017). Word Identification Under Multimodal Uncertainty. In *Proceedings of the 39th Annual Conference of the Cognitive Science Society.*

43. **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.*

44. **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)**

45. **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).*

46. **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.*

47. **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).*

48. **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)**

## INVITED TALKS (selection)

Cambridge University, Center for Family Research, March, 2024

International Social Contingency Consortium, December 2023

University College London, Division of Psychology and Language Sciences, May 2023

International Center for Language and Communicative Development (LuCiD), March 2023

University of Goettingen, Psychology of Language Department, February 2023

The Chinese University of Hong Kong, Department of Linguistics Seminar, November 2022

Dagstuhl Seminar on Developmental Machine Learning, October 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

OECD International Meeting on AI & the Productivity of Science, November 2021

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 – former, *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 Mazzocconi  – former, co-advised with Beatrice Priego-Valverde

## Ph.D. committee

Kaijia Tey – current, supervisor: Alejandrina Cristia,  Ecole Normale Supérieure
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 – fomer, 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 Peirolo – former, Master of Cognitive Science, Aix-Marseille

Eliot Maes – former, Master of Cognitive Science, Aix-Marseille

Thomas Misiek  – 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 – fomer, 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, M1),  2020 – 2023

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:** Reviewer for:

ACL Roling Review (ARR), 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)