



## Anne Fernald

Josephine Knotts Knowles Professor of Human Biology, Emerita  
Psychology

### CONTACT INFORMATION

- **Alternate Contact**

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### Bio

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#### ACADEMIC APPOINTMENTS

- Emeritus Faculty, Acad Council, Psychology
- Member, Maternal & Child Health Research Institute (MCHRI)

#### PROGRAM AFFILIATIONS

- Symbolic Systems Program

#### PROFESSIONAL EDUCATION

- Ph.D., University of Oregon, Psychology (1982)

#### LINKS

- Language Learning Lab: <https://web.stanford.edu/group/langlearninglab/cgi-bin/>

### Research & Scholarship

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#### CURRENT RESEARCH AND SCHOLARLY INTERESTS

Working with English- and Spanish-learning children from diverse socioeconomic and cultural backgrounds, our research examines the importance of early language experience in supporting language development. We are deeply involved in community-based research in San Jose, designing an innovative parent-engagement program for low-resource Latino families with young children. We are also conducting field studies of beliefs about child development and caregiver-child interaction in rural villages in Senegal. A central goal of this translational research is to help parents understand their vital role in facilitating children's language and cognitive growth.

### Publications

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#### PUBLICATIONS

- **Spanish-speaking caregivers' use of referential labels with toddlers is a better predictor of later vocabulary than their use of referential gestures.** *Developmental science*  
Bang, J. Y., Bohn, M., Ramírez, J., Marchman, V. A., Fernald, A.

2022: e13354

- **Associations between early efficiency in language processing and language and cognitive outcomes in children born full term and preterm: similarities and differences.** *Child neuropsychology : a journal on normal and abnormal development in childhood and adolescence*  
Marchman, V. A., Ashland, M. D., Loi, E. C., Munevar, M., Shannon, K. A., Fernald, A., Feldman, H. M.  
2022: 1-20
- **Accuracy of the Language Environment Analyses (LENATM) system for estimating child and adult speech in laboratory settings.** *Journal of child language*  
Marchman, V. A., Weisleder, A., Hurtado, N., Fernald, A.  
2020: 1–16
- **Children Flexibly Seek Visual Information to Support Signed and Spoken Language Comprehension** *JOURNAL OF EXPERIMENTAL PSYCHOLOGY-GENERAL*  
MacDonald, K., Marchman, V. A., Fernald, A., Frank, M. C.  
2020; 149 (6): 1078–96
- **Off to a good start: Early Spanish-language processing efficiency supports Spanish- and English-language outcomes at 4 years in sequential bilinguals.** *Developmental science*  
Marchman, V. A., Bermudez, V. N., Bang, J. Y., Fernald, A.  
2020: e12973
- **Predictors of early vocabulary growth in children born preterm and full term: A study of processing speed and medical complications** *CHILD NEUROPSYCHOLOGY*  
Marchman, V. A., Ashland, M. D., Loi, E. C., Adams, K. A., Fernald, A., Feldman, H. M.  
2019; 25 (7): 943–63
- **Predictors of early vocabulary growth in children born preterm and full term: A study of processing speed and medical complications.** *Child neuropsychology : a journal on normal and abnormal development in childhood and adolescence*  
Marchman, V. A., Ashland, M. D., Loi, E. C., Adams, K. A., Fernald, A., Feldman, H. M.  
2019: 1–21
- **Nonword Repetition and Language Outcomes in Young Children Born Preterm** *JOURNAL OF SPEECH LANGUAGE AND HEARING RESEARCH*  
Gresch, L. D., Marchman, V. A., Loi, E. C., Fernald, A., Feldman, H. M.  
2018; 61 (5): 1203–15
- **Real-time lexical comprehension in young children learning American Sign Language.** *Developmental science*  
MacDonald, K., LaMarr, T., Corina, D., Marchman, V. A., Fernald, A.  
2018: e12672
- **Speed of Language Comprehension at 18 Months Old Predicts School-Relevant Outcomes at 54 Months Old in Children Born Preterm** *JOURNAL OF DEVELOPMENTAL AND BEHAVIORAL PEDIATRICS*  
Marchman, V. A., Loi, E. C., Adams, K. A., Ashland, M., Fernald, A., Feldman, H. M.  
2018; 39 (3): 246–53
- **Validity of caregiver-report measures of language skill for Wolof-learning infants and toddlers living in rural African villages.** *Journal of child language*  
Weber, A. M., Marchman, V. A., Diop, Y., Fernald, A.  
2018: 1–20
- **Quality of caregiver-child play interactions with toddlers born preterm and full term: Antecedents and language outcome** *EARLY HUMAN DEVELOPMENT*  
Loi, E. C., Vaca, K. C., Ashland, M. D., Marchman, V. A., Fernald, A., Feldman, H. M.  
2017; 115: 110–17
- **When Cultural Norms Discourage Talking to Babies: Effectiveness of a Parenting Program in Rural Senegal** *CHILD DEVELOPMENT*  
Weber, A., Fernald, A., Diop, Y.  
2017; 88 (5): 1513–26
- **Caregiver Talk and Medical Risk as Predictors of Language Outcomes in Full Term and Preterm Toddlers.** *Child development*  
Adams, K. A., Marchman, V. A., Loi, E. C., Ashland, M. D., Fernald, A., Feldman, H. M.  
2017

- **Using Eye Movements to Assess Language Comprehension in Toddlers Born Preterm and Full Term** *JOURNAL OF PEDIATRICS*  
Loi, E. C., Marchman, V. A., Fernald, A., Feldman, H. M.  
2017; 180: 124-129
- **Cultivating American- and Japanese-Style Relatedness Through Mother-Child Conversation** *DISCOURSE PROCESSES*  
Crane, L. S., Fernald, A.  
2017; 54 (4): 317-337
- **Caregiver talk to young Spanish-English bilinguals: comparing direct observation and parent-report measures of dual-language exposure** *DEVELOPMENTAL SCIENCE*  
Marchman, V. A., Martinez, L. Z., Hurtado, N., Grueter, T., Fernald, A.  
2017; 20 (1)
- **Using Eye Movements to Assess Language Comprehension in Toddlers Born Preterm and Full Term.** *journal of pediatrics*  
Loi, E. C., Marchman, V. A., Fernald, A., Feldman, H. M.  
2016
- **Caregiver talk to young Spanish-English bilinguals: comparing direct observation and parent-report measures of dual-language exposure.** *Developmental science*  
Marchman, V. A., Martínez, L. Z., Hurtado, N., Grüter, T., Fernald, A.  
2016
- **Early language processing efficiency predicts later receptive vocabulary outcomes in children born preterm.** *Child neuropsychology*  
Marchman, V. A., Adams, K. A., Loi, E. C., Fernald, A., Feldman, H. M.  
2016; 22 (6): 649-665
- **Real-time interpretation of novel events across childhood** *JOURNAL OF MEMORY AND LANGUAGE*  
Borovsky, A., Sweeney, K., Elman, J. L., Fernald, A.  
2014; 73: 1-14
- **Real-time interpretation of novel events across childhood.** *Journal of memory and language*  
Borovsky, A., Sweeney, K., Elman, J. L., Fernald, A.  
2014; 73: 1-14
- **Relative language exposure, processing efficiency and vocabulary in Spanish- English bilingual toddlers\*** *BILINGUALISM-LANGUAGE AND COGNITION*  
Hurtado, N., Grueter, T., Marchman, V. A., Fernald, A.  
2014; 17 (1): 189-202
- **Relative language exposure, processing efficiency and vocabulary in Spanish-English bilingual toddlers.** *Bilingualism (Cambridge, England)*  
Hurtado, N., Grüter, T., Marchman, V. A., Fernald, A.  
2014; 17 (1): 189-202
- **Talking to Children Matters: Early Language Experience Strengthens Processing and Builds Vocabulary** *PSYCHOLOGICAL SCIENCE*  
Weisleder, A., Fernald, A.  
2013; 24 (11): 2143-2152
- **SES differences in language processing skill and vocabulary are evident at 18months** *DEVELOPMENTAL SCIENCE*  
Fernald, A., Marchman, V. A., Weisleder, A.  
2013; 16 (2): 234-248
- **Fast mapping, slow learning: Disambiguation of novel word-object mappings in relation to vocabulary learning at 18, 24, and 30 months** *COGNITION*  
Bion, R. A., Borovsky, A., Fernald, A.  
2013; 126 (1): 39-53
- **Knowing a lot for one's age: Vocabulary skill and not age is associated with anticipatory incremental sentence interpretation in children and adults** *JOURNAL OF EXPERIMENTAL CHILD PSYCHOLOGY*  
Borovsky, A., Elmana, J. L., Fernald, A.  
2012; 112 (4): 417-436
- **Grammatical gender in L2: A production or a real-time processing problem?** *Second language research*

- Grüter, T., Lew-Williams, C., Fernald, A.  
2012; 28 (2): 191-215
- **Grammatical gender in L2: A production or a real-time processing problem?** *SECOND LANGUAGE RESEARCH*  
Grueter, T., Lew-Williams, C., Fernald, A.  
2012; 28 (2): 191-215
  - **Individual Differences in Lexical Processing at 18 Months Predict Vocabulary Growth in Typically Developing and Late-Talking Toddlers** *CHILD DEVELOPMENT*  
Fernald, A., Marchman, V. A.  
2012; 83 (1): 203-222
  - **Grammatical Gender in L2: Where Is the Problem?** *35th Annual Boston University Conference on Language Development*  
Grueter, T., Lew-Williams, C., Fernald, A.  
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  - **Real-time processing of gender-marked articles by native and non-native Spanish speakers** *JOURNAL OF MEMORY AND LANGUAGE*  
Lew-Williams, C., Fernald, A.  
2010; 63 (4): 447-464
  - **Real-time processing of gender-marked articles by native and non-native Spanish speakers.** *Journal of memory and language*  
Lew-Williams, C., Fernald, A.  
2010; 63 (4): 447-464
  - **How vocabulary size in two languages relates to efficiency in spoken word recognition by young Spanish-English bilinguals** *JOURNAL OF CHILD LANGUAGE*  
Marchman, V. A., Fernald, A., Hurtado, N.  
2010; 37 (4): 817-840
  - **Getting beyond the "convenience sample" in research on early cognitive development.** *The Behavioral and brain sciences*  
Fernald, A.  
2010; 33 (2-3): 91-2
  - **Blue car, red car: Developing efficiency in online interpretation of adjective-noun phrases** *COGNITIVE PSYCHOLOGY*  
Fernald, A., Thorpe, K., Marchman, V. A.  
2010; 60 (3): 190-217
  - **Fluency in Using Morphosyntactic Cues to Establish Reference: How Do Native and Non-Native Speakers Differ?** *33rd Annual Boston-University Conference on Language Development*  
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  - **Real-time Processing of Postnominal Adjectives by Latino Children Learning Spanish as a First Language** *33rd Annual Boston-University Conference on Language Development*  
Weisleder, A., Fernald, A.  
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  - **Does input influence uptake? Links between maternal talk, processing speed and vocabulary size in Spanish-learning children** *DEVELOPMENTAL SCIENCE*  
Hurtado, N., Marchman, V. A., Fernald, A.  
2008; 11 (6): F31-F39
  - **Speed of word recognition and vocabulary knowledge in infancy predict cognitive and language outcomes in later childhood** *DEVELOPMENTAL SCIENCE*  
Marchman, V. A., Fernald, A.  
2008; 11 (3): F9-F16
  - **Input Affects Uptake: How Early Language Experience Influences Processing Efficiency and Vocabulary Learning** *7th IEEE International Conference on Development and Learning*  
Fernald, A., Marchman, V. A., Hurtado, N.  
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- **Increasing Flexibility in Children's Online Processing of Grammatical and Nonce Determiners in Fluent Speech.** *Language learning and development : the official journal of the Society for Language Development*  
Zangl, R., Fernald, A.  
2007; 3 (3): 199-231
- **Spoken word recognition by Latino children learning Spanish as their first language** *JOURNAL OF CHILD LANGUAGE*  
Hurtado, N., Marchman, V. A., Fernald, A.  
2007; 34 (2): 227-249
- **Young children learning Spanish make rapid use of grammatical gender in spoken word recognition** *PSYCHOLOGICAL SCIENCE*  
Lew-Williams, C., Fernald, A.  
2007; 18 (3): 193-198
- **How first and second language learners use predictive cues in online sentence interpretation in Spanish and English** *31th Annual Boston-University Conference on Language Development*  
Lew-Williams, C., Fernald, A.  
CASCADILLA PRESS.2007: 382–393
- **Knowing what a novel word is not: Two-year-olds 'listen through' ambiguous adjectives in fluent speech** *COGNITION*  
Thorpe, K., Fernald, A.  
2006; 100 (3): 389-433
- **Names in frames: infants interpret words in sentence frames faster than words in isolation** *DEVELOPMENTAL SCIENCE*  
Fernald, A., Hurtado, N.  
2006; 9 (3): F33-F40
- **Picking up speed in understanding: Speech processing efficiency and vocabulary growth across the 2nd year** *DEVELOPMENTAL PSYCHOLOGY*  
Fernald, A., Perfors, A., Marchman, V. A.  
2006; 42 (1): 98-116
- **Children's developing ability to interpret adjective-noun combinations** *30th Annual Boston-University Conference on Language Development*  
Thorpe, K., Baumgartner, H., Fernald, A.  
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- **Dynamics of Word Comprehension in Infancy: Developments in Timing, Accuracy, and Resistance to Acoustic Degradation** *JOURNAL OF COGNITION AND DEVELOPMENT*  
Zangl, R., Klarman, L., Thal, D., Fernald, A., Bates, E.  
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- **The infant as onlooker: Learning from emotional reactions observed in a television scenario** *CHILD DEVELOPMENT*  
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2003; 74 (1): 221-237
- **Recognition of words referring to present and absent objects by 24-month-olds** *JOURNAL OF MEMORY AND LANGUAGE*  
Swingle, D., Fernald, A.  
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- **Understanding understanding: Historical origins of current questions about the early development of receptive language competence** *32nd Minnesota Symposium on Child Psychology*  
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- **Speech to infants as hyperspeech: Knowledge-driven processes in early word recognition** *PHONETICA*  
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- **Getting the point across: Content and dynamics in Japanese and American mothers' storytelling to preschool children** *24th Annual Boston-University Conference on Language Development*  
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- **Continuous processing in word recognition at 24 months** *COGNITION*  
Swingley, D., Pinto, J. P., Fernald, A.  
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- **Rapid gains in speed of verbal processing by infants in the 2nd year** *PSYCHOLOGICAL SCIENCE*  
Fernald, A., Pinto, J. P., Swingley, D., Weinberg, A., McRoberts, G. W.  
1998; 9 (3): 228-231
- **Infants' responses to facial and vocal emotional signals in a social referencing paradigm** *Biennial Meeting of the Society-for-Research-in-Child-Development*  
Mumme, D. L., Fernald, A., Herrera, C.  
WILEY-BLACKWELL PUBLISHING, INC.1996: 3219-37
- **Prosody, functors, and word recognition in young children** *20th Annual Boston-University Conference on Language Development*  
Swingley, D., Fernald, A., McRoberts, G. W., Pinto, J. P.  
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- **Prosodic bootstrapping: A critical analysis of the argument and the evidence** *Conference on Signal to Syntax - Bootstrapping from Speech to Grammar in Early Acquisition*  
Fernald, A., McRoberts, G.  
LAWRENCE ERLBAUM ASSOC PUBL.1996: 365-388
- **COMMON THEMES AND CULTURAL VARIATIONS IN JAPANESE AND AMERICAN MOTHERS SPEECH TO INFANTS** *CHILD DEVELOPMENT*  
Fernald, A., Morikawa, H.  
1993; 64 (3): 637-656
- **APPROVAL AND DISAPPROVAL - INFANT RESPONSIVENESS TO VOCAL AFFECT IN FAMILIAR AND UNFAMILIAR LANGUAGES** *CHILD DEVELOPMENT*  
Fernald, A.  
1993; 64 (3): 657-674
- **PROSODY AND FOCUS IN SPEECH TO INFANTS AND ADULTS** *DEVELOPMENTAL PSYCHOLOGY*  
Fernald, A., MAZZIE, C.  
1991; 27 (2): 209-221
- **INTONATION AND COMMUNICATIVE INTENT IN MOTHERS SPEECH TO INFANTS - IS THE MELODY THE MESSAGE** *CHILD DEVELOPMENT*  
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- **A CROSS-LANGUAGE STUDY OF PROSODIC MODIFICATIONS IN MOTHERS AND FATHERS SPEECH TO PREVERBAL INFANTS** *JOURNAL OF CHILD LANGUAGE*  
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1989; 16 (3): 477-501
- **ACOUSTIC DETERMINANTS OF INFANT PREFERENCE FOR MOTHERESE SPEECH** *INFANT BEHAVIOR & DEVELOPMENT*  
Fernald, A., Kuhl, P.  
1987; 10 (3): 279-293