Neurobiology of Bilingual Language Acquisition



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**Day 1: Neurobiology of Bilingual Language Acquisition**

Morning Instruction: Theories of child language acquisition & the bilingual evidence.

*Reading*: Kovelman (2018). Chapter 7. Language Acquisition. (L. Obler L, E. Higby, K. Gjerlow, I. Kovelman, Eds). To appear with Cambridge University Press.

Morning Discussion: Bilingual language acquisition: on time, delayed, in between?

*Readings*:

1. Hoff, E., Core, C., Place, S., Rumiche, R., Señor, M., & Parra, M. (2012). Dual language exposure and early bilingual development. *Journal of Child Language*, 39(1), 1–27. <http://doi.org/10.1017/S0305000910000759>
2. Peña, E. D., Bedore, L. M. and Kester, E. S. (2016). Assessment of language impairment in bilingual children using semantic tasks: two languages classify better than one. *International Journal of Language & Communication Disorders*, 51: 192–202. doi:10.1111/1460-6984.12199

Afternoon Instruction: Neuroimaging methods of child language acquisition.

*Reading*: Kovelman, I. (2012). Neuroimaging methods. (E. Hoff, Ed.). *Research methods in child language: A practical guide.* New York: Blackwell Wiley.

doi: 10.1002/9781444344035.ch4

Afternoon Discussion: Develop research proposals examining how the developing brain makes bilingual language & reading acquisition possible.

**Day 2: Neurobiology of Bilingual Reading Acquisition**

Morning Instruction: Theories of child reading acquisition & the bilingual evidence.

*Reading*: Kovelman (2018). Chapter 9. Reading & Writing. Brain & Language. (L. Obler L, E. Higby, K. Gjerlow, I. Kovelman, Eds). To appear with Cambridge University Press.

Morning Discussion: Cross-linguistic literacy skill transfer: only between similar languages?

*Readings*:

1. Ip, K., Hsu, S., Arredondo, M. M., Tardif T., & Kovelman, I. (2016). Brain bases of morphological processing in Chinese-English bilingual children. *Developmental Science.*

doi: 10.1111/desc.12449

1. Bialystok, E., G. Luk, and E. Kwan. 2005. Bilingualism, biliteracy, and learning to read: interactions among languages and writing systems. *Scientific Studies of Reading* 9: 43–61. doi:10.1207/s1532799xssr0901\_4.

Afternoon Instruction: Bilingual literacy instruction contexts.

*Reading*: Kovelman, I. (2012). Neuroimaging methods. (E. Hoff, Ed.). *Research methods in child language: A practical guide.* New York: Blackwell Wiley.

doi: 10.1002/9781444344035.ch4

Afternoon Discussion: Continue to develop research proposals examining how the developing brain makes bilingual language & reading acquisition possible.

**Day 3: Neurobiology of Bilingual Language & Reading Impairements**

Morning Instruction: Theories of language-based learning impairments and bilingual evidence.

*Reading*: Crago & Paradis (2003). Chapter 3. Two of a kind? The importance of commonalities and variation across languages and learners (Y. Levy, J. Schaeffer, Eds). Laurence Erlbaum Associates.

Morning Discussion: Bilingual view on the universal versus language-specific basis of language, literacy, and dyslexia.

*Readings*:

1. Siok, W.T., Niu, Z., Jin, Z., Perfetti, C.A., & Tan, L.H. (2008). A structural–functional basis for dyslexia in the cortex of Chinese readers. Proceedings of the National Academy of Sciences, USA, 105 (14), 5561–5566. doi: 10.1073/pnas.0801750105
2. Wang X, Yang J, Yang J, Mencl WE, Shu H, et al. (2015) Language Differences in the Brain Network for Reading in Naturalistic Story Reading and Lexical Decision. PLOS ONE 10(5): e0124388. https://doi.org/10.1371/journal.pone.0124388

Afternoon Discussion: Presentation and discussion of student research proposals.

Credits: 5 ECTS

Total hours of instruction: 18

Participants aiming at earning full credits for the course are expected to complete the assigned reading, actively participate in the discussion periods as well as and present a proposal to examine language acquisition dilemmas through the bilingual prism (day 3).

**READING ASSIGNMENTS**

**All readings are required**. *Morning discussion* readings are especially critical. To ensure that students have completed the morning discussion readings, please e-mail 5 questions for each of the assigned readings by 7 pm on the day before the class. For example, questions on Hoff (2012) and Peña (2016) readings are due by 6pm on May 22nd, the day before Day 1 classes. Please e-mail your questions to Kovelman@umich.edu . Title your e-mail “Bilingual Brain Class”

The questions must include the following topics:

1. Theoretical premise of the paper
2. Goal of the study
3. Methodological approach
4. Data analyses
5. Author’s conclusions about the findings.

**RESEARCH PROPOSAL ASSIGNMENT**

The students are expected to design (Days 1-2) and present (Day 3) a proposal for a study that addresses a core question in language and/or reading acquisition. The topics for the proposal may included but are not limited to questions of age of bilingual acquisition, quantity/quality of bilingual language input, type of bilingual literacy instruction, whether it is possible to have dyslexia in one language and not another (universal and cross-linguistic in literacy), whether bilingual exposure has a negative impact on children with learning impairements. We will work on the proposals together, in small groups, during the afternoons of Day 1 and Day 2. Presentations will take place on Day 3.

All proposals must include.

1. Theoretical premise & hypothesis under investigation
2. Experimental approach that includes neuroimaging (to discuss on day 1)
3. How the findings may inform our understanding of the neurobiology of language and/or literacy.