

The Biology of Language Reading Group

Group convenor: Matthias Lalis (matthias.lalis@gmail.com)

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Location

Baltimore Free School
Red Emma's Bookstore and Cafe
30 W. North Avenue
Baltimore, MD 21201

Time

Every **Thursday, 6:30PM**

Course Website

http://pages.jh.edu/~mlaliss1/bioling_course_site.html

1 Introduction

Language, claim many researchers, is an ability unique to human beings. The meaning of “language” in this context is to be understood as different from the more general term “systems of communication”, which includes human language, as well as many other systems. We will consider whether language is uniquely human, i.e. whether there are any “special properties” of language not shared by any other communication system found in the natural world. To do this, we will look at research claiming to show that some animal communication systems have the supposedly unique properties. We will also ask what scientific, biological, ethical, and more generally philosophical consequences follow from a commitment to either view. We will consider debates about the evolution of language, and examine proposals for how the human language system could be physically realized in biological systems, most particularly brain systems.

The course does not presuppose any particular background, though some of the readings will require comfort with reading scientific articles. The format will be mostly open discussion.

2 Comments on course structure

Our main purpose for the course is to get a handle on basic debates about the nature of human language, figure out the stakes of current theoretical and scientific debate, and deciding what we think about the issues they raise. I use the word “course” loosely. The aim of the reading group is to allow members to explore the topic in a structured way, but there will be a lot of room making insertions or deletions to the reading list. Some of the readings will depend on member interests. If you find or hear about a book, article, study, news article, etc. that seems relevant to the topic, forward it to the group for consideration.

If you haven't had time to do the readings—no sweat. We'll start each session with a brief review of what they said.

3 Readings by topic

3.1 Intro: Is grammar universal?

- **Week 0**

Dewa Dabrowska. What exactly is universal grammar, and has anyone seen it? *Frontiers in Psychology*, 6, June 2015. doi: 10.3389/fpsyg.2015.00852. URL <http://journal.frontiersin.org/article/10.3389/fpsyg.2015.00852/full>

3.2 Species-uniqueness of language

- **Week 1**

Marc D. Hauser, Noam Chomsky, and W. Tecumseh Fitch. The faculty of language: What is it, who has it, and how did it evolve? *Science*, 298:1569–1579, November 2002. URL <http://www.jstor.org/stable/3832837>

- **Week 2**

Steven Pinker and Ray Jackendoff. The faculty of language: what's special about it? *Cognition*, 95:201–236, 2005. doi: 10.1016/j.cognition.2004.08.004. URL <https://ase.tufts.edu/cogstud/jackendoff/papers/FacultyofLanguage.pdf>

- **Week 3**

Matthew J. Traxler, Megan Boudewyn, and Jessica Loudermilk. What's special about human language? the contents of the "narrow language faculty" revisited. *Language and Linguistic Compass*, 6:611–621, 2012. doi: 10.1002/lnc3.355. URL <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3478773/pdf/nihms379505.pdf>

- **Week 4**

K. Abe and D. Watanabe. Songbirds possess the spontaneous ability to discriminate syntactic rules. *Nature neuroscience*, 14(8):1067–1074, 2011. URL <http://groups.lis.illinois.edu/amag/langev/paper/abe2011songbirdsgsc.html>

- **Week 5**

Ryuji Suzuki, John R. Buck, and Peter L. Tyack. Information entropy of humpback whale songs. *Journal of the Acoustical Society of America*, 113, 2006. URL <http://www.informatics.indiana.edu/jbollen/I501F11/readings/week6/HumpbackEntropySuzukiBuckTyackJASA2006.pdf>

3.3 Evolution of language

- **Week 6**

Martin A Nowak. Evolutionary biology of language. *Philosophical Transactions of the Royal Society of London*, 355:1616–1622, 2000. URL <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1692897/pdf/11127907.pdf>

- **Week 7**

Anna R. Parker. Evolving the narrow language faculty: was recursion the pivotal step? In *Proceedings of the 6th International Conference on the Evolution of Language*, pages 239–246, 2006. URL <http://groups.lis.illinois.edu/amag/langev/paper/parker06recursion.html>

- **Week 8**

Selections from Robert C. Berwick and Noam Chomsky. *Why only us: Language and evolution*. MIT Press, 2015. ISBN 9780262034241

3.4 Neural circuitry of language computation

- **Week 9**

Mark Liberman. Introduction to linguistics: Lecture 18 (brain and language), 2001. URL http://www.ling.upenn.edu/courses/Fall_2001/ling001/neurology.html

- **Week 10**

John H. Byrne. Introduction to neurons and neuronal networks, 1997-2016. URL <http://neuroscience.uth.tmc.edu/s1/introduction.html>

- **Week 11**

Tom M. Mitchell, Svetlana V. Shinkareva, Andrew Carlson, and Kai-Min Chang. Predicting human brain activity associated with the meanings of nouns. *Science*, 320:1191–1195, 2008. URL <http://www.jstor.org/stable/20054835>

- **Week 12**

Chris Neufeld, Stephanie E. Kramer, Natalia N. Lapinskaya, Christopher C. Heffner, Anton Malko, and Ellen F. Lau. The electrophysiology of phrase building. *Submitted*, 2016. URL http://ling.umd.edu/~ellenlau/papers/PhraseBuilding_Neufeld_figures.pdf

3.5 Language acquisition and learnability

- **Week 13**

Kent Johnson. Gold’s theorem and cognitive science. *Philosophy of Science*, 71:571–592, 2004. URL <http://www.lps.uci.edu/~johnsonk/Publications/Johnson.GoldsTheorem.pdf>

E. Mark Gold. Language identification in the limit. *Information and Control*, 10:447–474, 1967. URL <http://web.mit.edu/6.863/www/spring2010/readings/gold67limit.pdf>