

PSYCHOLOGY OF LANGUAGE (830:351:01/615:371) Fall 2013

(Syllabus will be updated during the semester – Please check periodically)

Last Updated: August 26, 2013

WARNING: IF YOU CANNOT ATTEND CLASS REGULARLY, DO NOT TAKE THIS COURSE!This is a hard class, and the exams stress the material that I present in class, some of which is not in the books.

INSTRUCTOR: Prof. Karin Stromswold
E-mail: psychlang@gmail.com
Office hours: Thursdays, 8:45– 9:45 AM,
 Busch Psych Building, Room 233
Skype office hours: by arrangement

TEACHING ASSISTANT: Shuqi Yang
E-mail: TA.psychlang@gmail.com
Office hours: TBA
 Location: TBA

Course: Mondays & Thursdays 10:20 -11:40 am, Pharmacology Building Room 115**Sakai site:** Psych of Language: Fall 2013

Learning objective: Psychology of Language explores the cognitive and neural bases of human language. The underlying question that this course seeks to address is: *What makes human language special?* How does human language differ from other systems of communication systems? What is the relationship between language and thought? Why are people able to speak, understand, and learn the sounds, words, and sentences of language with ease, despite the daunting computational problems associated with doing so?

READINGS (Do the readings in the order indicated in the Lecture Schedule)

REQUIRED TEXTBOOK: Traxler, M. 2011. *Introduction to Psycholinguistics: Understanding Language Science*, 1st edition. Wiley-Blackwell.

- Print: ISBN-10 1405198621, ISBN-13 9781405198622.
 - In early July 2013, there were a lot of new copies available through Amazon affiliates from \$45 (+ \$4 shipping). Used copies from \$40 (+ \$4 shipping)
 - In late August, the official Amazon price is \$100, but there are still new copies available through Amazon affiliates for < \$50.
- eText: ISBN-10 1118296885, ISBN-13 9781118296882
 - Kindle version: available for \$69.
 - Course-smart rental (iPad, Mac or PC): 360 day rental for \$75

Recommended book [Some Pinker chapters are required. A copy of the book is on reserve at LSM.]

Pinker, S. 2000/1994. *The Language Instinct: How the Mind Creates Language*. Harper Perennial Modern Classics. Any edition is fine

- Print: ISBN-10: 0060958332; ISBN-13: 978-0060958336. Available new through Amazon for \$5-\$10. Lots of used copies around
- eText: ASIN: B0049B1VOU. Kindle: \$11
- Audio (MP3, CD, Audible Audio): ISBN-10: 1455839701; ISBN-13: 978-1455839704: \$15-\$17

Required articles & chapters (available in “READINGS” resource on sakai site)

Bergman, A., Hall K.C., Ross, S.M., 2007. Speech perception language file (9.4). *Language Files: Materials for an Introduction to Language and Linguistics, 10th edition*. Ohio State University Press. Columbus, Ohio.

Crystal, D. 1991. Language & other communication systems, pp. 396-398. In *The Encyclopedia of Language*.

Fernandez, EM. & Cairns, HS, 2010. *Fundamental of psycholinguistics*, John Wiley & Sons, pp 25-44

Hauser, M., Chomsky, N., & Fitch, T. 2002. The Faculty of Language: What is it?, Who has it? And how did it evolve? *Science* 298, 1569-1579.

Reeves, LM. Hirsh-Pasek, K. & Golinkoff, R. 1998. Words and meanings: From primitives to complex organization, pp 181 – 202. In JB Gleason & NB Ratner, eds. *Psycholinguistics, 2nd edition*. Harcourt-Brace.

Stromswold, K. 2010. Genetics and the evolution of language: What genetic studies reveal about the evolution of language, pp. 176-190. In RV Larson, V. Deprez, and H. Yamakido (eds.), *The Evolution of Human Language: Bilingual Perspectives*. Cambridge University Press.

Additional required and recommended readings may be assigned throughout the semester.

TENTATIVE LECTURE SCHEDULE

Unit 1: Language, Communication & Thought		
Thur 9/5	NO CLASS (Rosh Hashanah)	
Mon 9/9	Introduction to Psycholinguistics	Fernandez & Cairns, pp 25 – 29 (Recommended: Pinker, chap. 1 – 2)
Thur 9/12	Language & Communication	Traxler chap. 1, pp 1 – 18 Crystal (only pp. 396 – 398) Hauser, Chomsky & Fitch
Mon 9/16	Language & Thought	Traxler chap. 1, pp 18 – 30 Pinker, chap. 3
Unit 2: Sounds: Phonetics, Speech Production & Speech Perception		
Thur 9/19	Phonetics & Phonology	Fernandez & Cairns, pp 29 – 44 (Recommended: Pinker, chap. 6)
Mon 9/23	Speech Production	Traxler, chap. 2, pp 51 – 54 (skim 37 – 43)
Thur 9/26	Speech Perception	Language File 9.4
Mon 9/30	Speech Perception	Traxler, chap. 2, pp 54 – 72
Thur 10/3	Speech Perception: Acquisition	Traxler, chap. 9, pp 325 – 343
Unit 3: Meaning: Words, Lexical Access & Morphology		
Mon 10/7	Words & meaning	Reeves, Hirsh-Pasek & Golinkoff, pp 181 – 202
Thur 10/10	Words & meaning	Traxler, chap. 3, pp 79 – 97; chap. 9, 344 – 350
Mon 10/14	Words & meaning	Traxler, chap. 3, pp 79 – 97; chap. 9, 344 – 350
Thur 10/17	Lexical Access	Traxler, chap. 2, pp 37 – 51
Mon 10/21	Lexical Access	Traxler, chap. 3, pp 97 – 119
Thur 10/24	Morphology & lexical access	Re-read Traxler chap. 3, pp. 101-104 Recommend: Fernandez & Cairns 44-47, 62-67
Unit 4: Sentences: Syntax, Parsing & Production		
Mon 10/28	MIDTERM (in regular classroom)	
Thur 10/31	Sentences & Syntax	Pinker chap. 4
Mon 11/4	Sentences & Syntax	Fernandez & Cairns, pp 47 – 62
Thur 11/7	Sentence Processing	Traxler, chap. 4, pp 141 - 183 Pinker chap. 7 – 8
Mon 11/11	Sentence Processing	Traxler, chap. 4, pp 141 - 183 Pinker chap. 7 – 8
Thur 11/14	Sentence Production	Re-read Traxler chapter 2 on sentence production (Recomm: Fromkin & Ratner, pp. 309 – 338)
Unit 5: Biological Bases of Language		
Mon 11/18	Language Acquisition	Traxler, chap. 9, pp 351 – 360
Thur 11/21	Language Acquisition	Pinker chap. 9
Mon 11/25	Language Disorders & Neurolinguistics	Traxler chapter 13 (Recommended: Pinker, chap. 10)
Tues 11/26	Language Disorders & Neurolinguistics	Traxler chapter 14
Thur 11/29	No Class (Thanksgiving)	
Mon 12/2	Genetics & Evolution of Language	Stromswold Pinker, chap. 11
Thur 12/5	Sign Language	Traxler chapter 12
Mon 12/9	Wrap up & review. Bring questions	
Mon 12/23 8-11 AM	Cumulative Final Exam	In regular classroom

GRADING

Final grades will be determined by the total number of points earned in the class. Grades will be scaled so that the top-scoring student receives 100 points for the course. For example, if the top scoring student earns 95 points during the course, all students will have an additional 5 points added to their final grade. Course grades will be assigned as follows:

A (90-100 points); B+ (85-89 points); B (80-84 points); C+ (75-79 points); C (70-74 points); D (60-69 points); F (<60)

Unit quizzes: Worth between 10 – 15% of grade

Midterm exam: Worth between 30 – 40% of grade

Final exam: Worth between 50 – 60% of grade. Approximately one third of the questions on the final will cover material from the first 1/2 of the course and two-thirds of the questions will cover material from the second half of the course.

Extra credit: Students may earn up to 5 extra credit points

- 1 point for doing the “dry run/practice” online sakai quiz on Thursday 9/12
- 1 point for each 2 page extra credit paper (maximum number: 4). See “Extra Credit” below for more info.

A note from a doctor, dean or other appropriate person will be required for makeup quizzes and exams and late extra credit assignments.

Students with accommodations for disabilities: If you are given classroom or exam accommodations (e.g., note-takers, extra time on exams), talk to me during the first 2 weeks of the course. In order to receive exam accommodations, you must provide me written documentation regarding the accommodations no later than 7 days before an exam. At this point, we will make specific arrangements about when and where you will take the exam.

ONLINE UNIT QUIZZES

Content. At the end of each of the 5 units, we will have an online quiz on that unit’s material. The tests will be

- Non-cumulative: covers material in that unit’s lectures and reading assignments
- Test basic understanding of material you need to know to understand subsequent material

Format:

- Between 5 – 10 questions (multiple choice, true/false, matching etc.)
- Untimed (but only available for a 48 hour window ... See below)
- Open book & notes
- **All work must be done independently!**
 - No copying, photographing or recording the questions
 - No collaborations or consultations with anyone else
 - No posting or discussing questions/answers with anyone else
 - **Anyone caught GIVING or RECEIVING help on a quiz will get a zero for all quiz grades**

Mechanics

- Quizzes will be online on Sakai’s tests/quizzes section
- Quizzes will be available the day after the last lecture in a unit.
 - For example, if the last lecture of a unit is on Monday Sept 16th, the quiz will go “live” on Tuesday Sept 17th @ 12:00 am
- Quizzes will be available for 48 hours (e.g., from Tues Sept 17th @ 12:00 am – Wed Sept 18th @ 11:59 pm)
- Quizzes must be taken during the 2-day window that the quiz is “live”
- Location: You may take the quizzes wherever you want. Just make sure you have a GOOD internet connection and are able to see images and hear files.
- Number of quizzes: 5

Benefits:

- Can monitor progress/understanding of material
- The material in this course builds on itself, just like in a math class, so it is important to keep up
 - Unit quizzes reduce the temptation to procrastinate until right before the midterm or final
- Spaced learning is more effective than cramming

On Thursday 9/12, we will have a “dry run” of the sakai quiz:

- Time: Thur 9/12 @ 12:00 am – Fri 9/12 @ 12:59 pm
- Value: worth 1 extra credit point
- Material covered: mechanics of the course & quizzes (e.g., exam dates, listening to files, viewing pictures)
- Goals
 - Successfully access the system, take the quiz & save the results
 - Learn what the interface is like
 - Learn if you have technical problems (software/hardware incompatibility, internet issues, etc.)

TENTATIVE SCHEDULE OF UNIT QUIZZES

(Times will be adjusted depending on when units are completed)

Dates Quiz Available (Approximate)	Topic
Thursday 9/12 – Friday 9/13	Extra Credit: Dry run quiz
Tuesday 9/17 – Wednesday 9/18	Language, Communication & Thought
Friday 10/4 – Saturday 10/5	Sound
Friday 10/25 – Saturday 10/26	Meaning
Friday 11/15 – Saturday 11/16	Sentences
Friday 12/6 – Saturday 12/7	Biological Bases of Language

EXTRA CREDIT PAPERS

PURPOSE: Students may earn up to 4 extra credit points toward their final grade by writing two page papers on colloquia (talks), journal articles, or experiments that have to do with language. (See “THREE WAYS OF EARNING EXTRA CREDIT” below). The purpose of the extra credit assignments is to give students the experience of learning about language in the ways that a researcher/scientist learns about language.

HOW MANY: maximum of 4 papers, each of which is worth 1 point.

CONTENT OF EXTRA CREDIT PAPERS: You will receive one point toward your final grade for each two-page (double spaced) paper you write about an acceptable language colloquium, language experiment, or language development journal article. (See below for an explanation about what counts as “acceptable.”). The content of extra credit papers is very flexible. Some possibilities are 1) a summary of the talk or paper, 2) what you liked/disliked about the talk or paper, 3) how you would change the talk or paper, 4) what you did and did not understand about the talk or paper, 5) how the material covered in the talk relates to what you have learned in class. The key is that your extra credit paper be written in your own words and contain your own thoughts. I do not expect a professional-quality paper, but plagiarism will not be tolerated! (See below for a description of

plagiarism.)

TENTATIVE DEADLINES FOR EXTRA CREDIT ASSIGNMENTS.

Papers are due no later than 11:59 PM on:

- EC #1: Friday October 11th
- EC #2: Friday Nov 1st
- EC #3: Friday Nov 22nd
- EC #4: Monday Dec 2nd

(You may hand in extra credit papers early, but late papers will not be accepted.)

HANDING IN EXTRA CREDIT PAPERS. Submit papers via the course Sakai site's Assignment 2 function. On the top of your paper, give your name, RUID and email address. Depending on the type of extra credit paper, on the top of the paper, give the following info

- **Experiment:** date you did the experiment, and experimenter's name and phone or email)
- **Talk:** The date, speaker, & title of the talk.
- **Paper:** Full citation for the article (the authors of the paper, year of publication, the title of the paper, name of the journal, journal volume, page numbers).

THREE WAYS OF EARNING EXTRA CREDIT POINTS:

1) COLLOQUIUM TALKS. Attend a colloquium that concerns language and write a 2-page double-spaced paper that summarizes the talk and what you have learned by attending the talk. Throughout the course, I will announce various colloquia/talks that definitely count towards extra credit. Here is the list of talks that I currently know about:

Colloquia that definitely count

(in Busch Psych 101, unless indicated):

- Sep 10** [Dr. Michael Walsh Dickey](#) (*University of Pittsburgh, School of Health and Rehabilitation Sciences*)
[Verb-argument representations and world knowledge in language comprehension](#)
- Oct 15** [Dr. Janet Fodor](#) (*City University of New York, Graduate Center, Linguistics*)
[Multiple Center-embedding: What's Pronounceable is Comprehensible](#)
- Dec 10** [Dr. Dirk B. den Ouden](#) (*University of South Carolina, Department of Communication Sciences and Disorders*)
TBA

2) LANGUAGE EXPERIMENTS. Participate in a language experiment and write a 2-page double-spaced paper that summarizes what you did in the experiment and what you think the experiment was investigating. If you are interested in doing an extra credit paper based on participating in a language experiment, the following researchers may have suitable experiments for which they need adult subjects.

Language Acquisition & Processing Lab

Gaurav Kharkwal gaurav.kharkwal@gmail.com

Nora Isacoff nisacoff@gmail.com

Linguistics: <http://rutgerslinguistics.sona-systems.com/Default.aspx?ReturnUrl=%2f>

Caveats about writing papers on language experiments:

- You may not be eligible to participate in some experiments (e.g., because of your language background)
- The researchers may not need participants
- It is possible (though very unlikely) that experiments conducted by the above researchers are not language-y enough. If in doubt, ask me before you do the experiment!

There may be other Rutgers researchers conducting language experiments on adults. Check with me before you do an experiment with someone not on this list so I can determine whether the experiment counts. When you

speak with me, you will have to provide a printout that gives the name of the experiment, the experimenter or lab that is conducting the experiment, and the affiliation of the experimenter (e.g., Rutgers Psychology Department). When you hand in your paper, please append this print out.

3) JOURNAL ARTICLES. Read a peer-reviewed, published journal article on psycholinguistics and write a 2-page paper about what you learned by reading the paper. In order to get credit, your paper must give the full citation for the article (the authors of the paper, year of publication, the title of the paper, name of the journal, journal volume, page numbers), and you must append the abstract for the article.

Articles must have been published in the last 5 years (i.e., 2006-) and must appear in the following journals

Applied Psycholinguistics

Brain & Language

Journal of Child Language

Journal of Psycholinguistic Research

Journal of Neurolinguistics

Language and Cognition

Language and Cognitive Processes

Memory & Language,

[If you really want to read an article that appears in some other journal, please speak to me before you read the journal paper so I can determine whether the journal article will count for extra credit. When you speak to me, you must bring a print out that has the name of the journal, the authors of the paper, the title of the paper, and the abstract. When you hand in your paper, please append a copy of the journal article. Book chapters, articles that appear in the popular press (e.g., New York Times, Scientific American, Time Magazine, etc.), and on-line articles (e.g., Wikipedia entries, NIH summaries, articles directed at parents, etc.) do not count.

How to find journal articles

1. Go to the following URL:
<http://www.libraries.rutgers.edu/rul/indexes/findarticles.shtml>
2. [You can get an overview on how to find an article at RU, by going to the following URL]
http://www.libraries.rutgers.edu/rul/how_do_i/find_an_article.shtml
3. Go to the link that says "Indexes and Databases"
<http://www.libraries.rutgers.edu/rul/indexes/indexes.shtml>
This lists all of the indexes and databases that RU subscribes to in alphabetic order and by subject.
4. For most of you, the most relevant databases will be:
PsycInfo:
http://www.libraries.rutgers.edu/rul/indexes/search_guides/psycinfo.shtml
Medline: http://www.libraries.rutgers.edu/rul/indexes/search_guides/medline.shtml
It is also not a bad idea to check the "by subject" to see if there are any additional or more specialized databases you should search.
5. Once you choose your database, login in by hitting the CONNECT button. You will be prompted to provide keywords or phrases.
6. The default search is a Keyword search. If "Map terms onto subject headings" is "clicked", your terms will be used to find matching subject headings, a strategy that sometimes is useful when you are just beginning
7. If you want to search for a particular author, click the author icon, and then provide the last name of the author and the author's first initial.
8. If you "unclick" "map term to subject heading", the system will yield matches where that word appears in the journal title, author, journal title or abstract.
9. If you get too many hits, you can use the "LIMIT" function to limit your search to particular years, articles with abstracts, review articles, age groups, population groups (e.g., animals vs. humans), publication type etc. For example, if you merely search for "autism" on PsycInfo, you will get 16155 hits ... far too many to even read the abstracts of. But let's say I am interested in animal models of autism, and only want articles written in English, with an abstract. By limiting my search to English, abstract and animal, I get a semi-manageable 205 hits.

10. Another strategy for when you get too many hits is to use the COMBINE function to combine the results of two or more searches. For example, on PsychInfo, combining the searches for “autism” with “genetics” yields a hefty 679 hits. Combining “autism”, “genetics” and “twin” will pick out the articles that have all 3 words, in this case a manageable 41 hits.
11. Once you have found a reference for something that appears in a journal, see if Rutgers has an electronic version of the journal by going to the following URL:
http://www.libraries.rutgers.edu/rul/rr_gateway/ejournals/ejournals.shtml
Most of the time you will be interested in electronic journals, not electronic government journals.
12. Even if the RU Library does not have the electronic version of the journal, they may have a hard copy version of the journal. You can check this by going to:
http://www.libraries.rutgers.edu/rul/how_do_i/subscribes.shtml

A good summary of databases available to Rutgers students can be found at the following URL and its links:
http://wire.rutgers.edu/research_finding_library.html

PLAGIARISM

DO NOT PLAGIARIZE. If you are caught plagiarizing any extra credit assignments, you will not receive for any of their extra credit assignments. Furthermore, depending on the egregiousness of the plagiarism, I reserve the right to lower your final grade and/or notify your dean about the plagiarism.

WHAT IS PLAGIARISM?

1. If you copy something that is in print ANYWHERE (books, journals, popular magazines, on-line. blogs, mailing lists etc.), you are plagiarizing.
2. Taking someone else’s words and substituting a word here or there is still plagiarism.
3. Paraphrasing someone else’s words but ‘borrowing’ their line of argument and reasoning is plagiarism.
4. Plagiarism is stealing. Better to hand in something that is yours but not polished, than to hand in something that is perfect but stolen.
5. For more guidelines on plagiarism, see http://wire.rutgers.edu/research_plagiarism.html

WARNING ABOUT USING COMMERCIAL SITES (e.g., StudyBlue etc.)

1. All of the materials on this course’s sakai site are copyrighted (e.g., syllabus, lecture notes, lecture slides, study guides, tests, readings, etc.)
 - o They are exclusively for students enrolled in the course
 - o You may download sakai resources and edit them as you wish for the purposes of preparing for this course.
 - o You may not give or sell the material to anyone who is not enrolled in the course
 - o Specifically, you may not publish or post any of the material on another non-commercial or commercial site (e.g., StudyBlue etc.). Doing so is illegal.
1. What appears on StudyBlue is often inaccurate, out-of-date etc.

LECTURE SLIDES

WARNING: The posted lecture slides are only meant to aid you in taking notes during class. They are not substitutes for attending class.

At the beginning of a topic, I will post the lecture slides for that topic. I recommend you look over the slides before lecture and bring a copy of them to class to take notes on. Three caveats about the slides

1. The lecture slides are only meant to aid you in taking notes during class, and to remind you of what was covered in class. They are not substitutes for attending class.
- 2) Because I post the slides BEFORE the lectures, they are subject to change. I recommend that you check the sakai site periodically to make sure you have the most up-to-date version.

3) Despite my best efforts, sometimes the slides will contain typos. If you think you have found a typo, send email to psychlang@gmail.com

UNGRADED EXERCISES

Periodically, I may give you exercises to do at home. These exercises are designed to help you learn the material and/or extend your knowledge. You will not be asked to do hand them in and they do not count towards your grade. Answers will not be posted. Rather, if you have trouble with an exercise, you should ask me to go over it in class or you can get help during my office hours or the TA's office hour.

In general, you should do exercises after the corresponding lecture. For example, you should do the Language & Communication exercise after the Language & Communication lecture. Sometimes, we will go over the exercises in the beginning of the next class. Sometimes we will do so because a number of students had trouble completing the exercise, and sometimes we will do so because the exercise involves students generating their own examples of phenomena.

Some hints for doing well in this class:

1. **Come to every class and take good notes.** If you do miss a class, get the notes from a classmate. I stress different topics in my lectures than those stressed in the readings. The material I stress in lecture tends to appear on exams.
2. Spend 10 minutes immediately after each lecture going over your lecture notes, reconstructing the lecture and making sure you understand the "key concepts" for the day.
3. Spend the 10 minutes before each lecture going over the lecture notes and "key concepts" from the previous class.
4. Try to at least skim the assigned readings before each class.
5. When you go back and reread the books, use the lecture notes to guide your reading.
6. If you are having trouble with one of the readings for a topic, try the other reading for the topic.
7. If you don't understand something said in the lectures or in the readings, let me know. Ask a question in class or come to my office hours. Chances are if you are confused, others are too.
8. Use the posted slides, your lecture notes and the "key concepts" to review for exams
9. Come to my office hours!
10. Use the chat room! Chances are if you have a question, someone can answer it.
11. Form a study group and quiz each other on key concepts. Study groups can be physical or virtual.
12. Create a group study document
13. The quizzes are designed to assess whether you have learned the material in a unit. Even though the quizzes are open book and untimed, you will get more out of them if you have done the readings and reviewed your notes and the slides **BEFORE** you take a quiz.
14. **Do not try to cram.** The material in this course builds on itself, just like in a math or physics course and the exams are cumulative. If you don't learn the material in the beginning of the course, you are going to be lost.

KEY CONCEPTS

(Please see the Key Concepts given on lecture slides)

Some Related Websites

UNIT 1: LANGUAGE, COMMUNICATION AND THOUGHT

General info

<http://www.yourdictionary.com/library/index.html#baldi>

Tongue in-cheek language essays

http://www.theonion.com/content/radio_news/rules_grammar_change?utm_source=slate_rss_1

More language humor

<http://www.geocities.com/CollegePark/3920/index.html>

An overview of the field and brief descriptions of its subdisciplines.

http://www.mc.maricopa.edu/academic/cult_sci/anthro/Language/what1.html

An introduction to the patterning of sounds, words, and phrases. Includes exercises and sound clips.

<http://www.zompist.com/langfaq.html>

Linguistics FAQ

Animal communication & non-linguistic human communication systems:

Bird Brains. Clues to the origins of human language are turning up in the brains of birds.

Ape Genius. Experts zero in on what separates humans from our closest living relatives

http://ruccs.rutgers.edu/~karin/Alex_obit.pdf

New York Times Animal communication article

<http://ruccs.rutgers.edu/~karin/DrDoolittleNYT2004.pdf>

Stephen Anderson & Dr. Doolittle's delusion.

<http://www.argyroneta.com/s4b/sem02.html>

A paper with explanations of various types of signs and their interpretations.

<http://www.yourdictionary.com/library/ling002.html>

Light hearted essay about animal communication

<http://www.angelfire.com/sc2/nhplanguage/>

The homepage for a project conducted by a seminar at the University of Leuven in Belgium. Includes a paper reviewing evidence for and against the existence of language in apes, with particular attention to Savage-Rumbaugh's work with Kanzi, the bonobo chimpanzee. Features a useful collection of links.

More Ape Language <http://www.slatev.com/player.html?id=1630417590>

KANZI THE BONOBO. [Launch interactive](#)

What would it be like to converse with a bonobo? According to primatologist Sue Savage-Rumbaugh, a lead scientist at the Great Ape Trust of Iowa, these apes cannot only understand language, but some of them can convey their thoughts and feelings to humans and to each other by pointing to any of hundreds of symbols on lexigram keyboards. In this audio slide show, meet Kanzi, the Trust's alpha male, who has demonstrated an extraordinary ability to communicate on our terms.

<http://www.brown.edu/Departments/Anthropology/apelang.html>

Includes links to general Web sites concerned with primate research and primate communication, books and texts, newsgroups, and bulletin boards.

http://www.pbs.org/newshour/bb/science/chimp_5-6.html

The transcript of a PBS segment looking at both sides of the issue of language use among apes. Focuses on the work of Rumbaugh and Savage-Rumbaugh with Kanzi, the bonobo chimpanzee.

<http://natzoo.si.edu/zooview/exhibits/thinktandlp/olp/olp.htm>

Describes a language training program for orangutans at the National Zoo in Washington, DC, in which orangutans use computers with touch screens.

<http://www.cages.org/research/pepperberg/index.html>

Describes Irene Pepperberg's work with African Grey Parrots. Her claims for language in parrots are reported in favorable terms here

<http://www.abc.net.au/oceans/whale/song.htm>

Whale songs

Sapir-Whorf Hypothesis

<http://venus.va.com.au/suggestion/sapir.html>

<http://www.linguistlist.org/topics/sapir-whorf/>

<http://www.ecst.csuchico.edu/~atman/Misc/eskimo-snow-words.html>

UNIT 2: SOUNDS: PHONOLOGY, ACOUSTICS & SPEECH PERCEPTION

<http://hctv.humnet.ucla.edu/departments/linguistics/VowelsandConsonants/vowels/contents.html>

Lots of video and audio clips of sounds around the world

<http://www2.arts.gla.ac.uk/IPA/ipa.html>

Includes the full IPA chart and audio files, as well as information on the organization.

<http://www.umanitoba.ca/linguistics/russell/138/notes.htm>

Notes from a phonetics course at the University of Manitoba, including phonetic transcriptions of English, vocal tract anatomy, properties of consonants and vowels, and acoustic phonetics, among other things.

<http://www.ling.yale.edu/Ling120/index.html>

The homepage for a course at Yale. Includes lecture materials and audio-video clips.

<http://www.phon.ucl.ac.uk/project/siphtra.htm>

These interactive tutorials from University College London are part of a project called System for Interactive Phonetics Training and Assessment. They include voicing, plosives (i.e., stops), and other topics.

UNIT 3: WORDS: MORPHOLOGY, SEMANTICS AND THE LEXICON

<http://thisisnotthat.com/humor/language.html#conundrum>

Linguistic conundrums

<http://www2.hawaii.edu/~bender/paradox.html>

Morphological paradoxes

<http://www.yourdictionary.com/library/ling005.html>

This short essay from Robert Beard's files illustrating what morphology is begins with "Jabberwocky," compares lexemes and morphemes, and makes a stop at Tagalog reduplication along the way.

<http://www.ruf.rice.edu/~kemmer/Words/morphemes.html>

A definition and illustration of the concept of a morpheme using examples from English.

<http://www.quinion.com/words/articles/unpaired.htm>

Unpaired words or why people aren't couth, kempt or ruly

<http://www.geocities.com/Heartland/Lane/7867/humor/humor10.html>

Humor piece using unpaired words "How I met my wife" by Jack Winter (from the July 25th 1994 *New Yorker*)

http://www.libraries.rutgers.edu/rul/indexes/search_guides/oed.shtml

The Oxford English Dictionary. Probably the world's best dictionary for English. Entries include detailed etymologies for most words. (Requires Rutgers account to access this website).

<http://pages.zoom.co.uk/leveridge/dictionary.html>

An English neologism on-line dictionary (UK-leaning)

<http://www.rdues.liv.ac.uk/newwords.shtml>

This site contains 'new' English words culled from the *Independent* newspaper from 1997 to 1999.

<http://thisisnotthat.com/humor/language.html#office>

Office slang

<http://www.csupomona.edu/~jasanders/slang/>

College slang project homepage

<http://www.csupomona.edu/~jasanders/slang/top20.html>

Top 20 college slang words for 2002

UNIT 4: SENTENCES: SYNTAX, PARSING & PRODUCTION

<http://www.yourdictionary.com/library/ling004.html>

A lighthearted introduction to syntax from Robert Beard's files.

<http://www.yourdictionary.com/library/ling003.html>

A lighthearted introduction to syntax from Robert Beard's files.

<http://babelfish.altavista.com/translate.dyn>

This engine translates entire paragraphs back and forth between English, French, German, Italian, Portuguese, and Spanish.

Speech errors:

<http://www.departments.bucknell.edu/linguistics/lectures/05lect16.html>

<http://www.lsadc.org/Fromkin.html>

What I meant to say was: Ambiguous sentences, headlines, signs etc.

<http://thisisnotthat.com/humor/language.html#bulletins>

<http://thisisnotthat.com/humor/language.html#signs>

<http://monster-island.org/tinashumor/humor/headline.html>

<http://www.departments.bucknell.edu/linguistics/synhead.html>

What I thought you said was: AKA mondegreens (misunderstood song lyrics)

<http://www.rulefortytwo.com/mondegreens.htm>

<http://www.rulefortytwo.com/mondegreenhall.htm>

<http://www.punkhart.com/dylan/lyrics/mondegreens.html>

<http://strangeways.tripod.com/mondegreens.html>

UNIT 5: THE BIOLOGICAL BASES OF LANGUAGE

Language acquisition

<http://www.yourdictionary.com/library/ling001.html>

Humorous piece on language acquisition

<http://childes.psy.cmu.edu>

CHILDES: Child Language Data Exchange System. Tools for studying children's language acquisition through the study of conversational interactions. The site features a database of transcripts, programs for analysis, and methods of coding data, among other things.

<http://www.sci.sdsu.edu/cdi>

The MacArthur Communicative Development Inventories. These are parent report forms to assess the development of language and communication in children. Included are lexical norms for English vocabulary acquisition showing when particular words and expressions are acquired.

<http://www.pbs.org/saf/1205/video/watchonline.htm>

Growing up different.

<http://www.pbs.org/wgbh/nova/transcripts/2112gchild.html>

Nova #2112G: Secret of the Wild Child. The broadcast transcript of a *Nova* program on Genie. Includes interview material with Susan Curtiss and others involved in caring for Genie and studying her development.

Deafness :

<http://www.pbs.org/wnet/soundandfury/>

<http://www.bbc.co.uk/science/horizon/silenttran.shtml>

Down Syndrome: <http://www.nas.com/downsyn/>

Williams Syndrome: <http://www.williams-syndrome.org/facts.htm>

Autism: <http://www.autism-society.org/>

Neurolinguistics

Author: Keith Johnson & J. Alex Becker

Institution: Harvard Medical School

The Whole Brain Atlas: Images, scans, movies etc. of normal & disordered brains

<http://www.med.harvard.edu/AANLIB/home.html>

Author: John W. Sundsten

Institution: University of Washington, Seattle.

2-D and 3-D views of the brain from cadaver sections, MRI scans, and computer reconstructions.

<http://www9.biostr.washington.edu/cgi-bin/DA/PageMaster?atlas:Neuroanatomy+ffpathIndex:Splash^Page+2>

Sundsten & Mulligan's interactive neuroanatomy syllabus:

[http://www9.biostr.washington.edu/cgi-](http://www9.biostr.washington.edu/cgi-bin/DA/PageMaster?atlas:NeuroSyllabus+ffpathIndex:Splash^Page^Syllabus+2)

[bin/DA/PageMaster?atlas:NeuroSyllabus+ffpathIndex:Splash^Page^Syllabus+2](http://www9.biostr.washington.edu/cgi-bin/DA/PageMaster?atlas:NeuroSyllabus+ffpathIndex:Splash^Page^Syllabus+2)

Talking Brains

<http://www.talkingbrains.org/>

National Institute of Deafness and Other Communication Disorders

<http://www.nidcd.nih.gov/Pages/default.aspx>

National Institute of Neurological Disorders and Stroke

<http://www.ninds.nih.gov/>

Video of how ischemic strokes happen

http://www.nytimes.com/packages/khtml/2007/05/25/health/20070528_STROKEB_FEATURE.html

<http://www.biology.about.com/science/biology/library/organs/brain/blbrain.htm>

Anatomy of the Brain. An outline with illustrations for students. Includes concise sections on Broca's area and Wernicke's area

<http://www.stroke.cwc.net/niweb/faq.htm#14> different parts of the brain do

What Do Different Parts of the Brain Do? Question 12 in a series of frequently asked questions written for stroke victims and their families features a clear, color-coded, numbered diagram of the left hemisphere, with an explanation. Scroll down to read question 13 concerning speech problems.

Aphasia

http://www.asha.org/speech/disabilities/Aphasia_info.cfm

<http://fuzzy.iau.dtu.dk/aphasia.nsf>

<http://www.asha.org/speech/disabilities/index.cfm>

<http://www.med.harvard.edu/AANLIB/home.html>

Genetics of language:

<http://www.nature.com/nsu/011004/011004-16.html>

<http://ruccs.rutgers.edu/~karin/GeneDec2002.ppt>

<http://ruccs.rutgers.edu/~karin/stromswoldLANG.pdf>

Epigenetics (July 2007) Our lifestyles and environment can change the way our genes are expressed, leading even identical twins to become distinct as they age. [Watch now](#) (13 mins.)

Evolution of language:

<http://arti.vub.ac.be/~jelle/classics/>

<http://www.isrl.uiuc.edu/amag/langev/>

http://www.nature.com/cgi-taf/DynaPage.taf?file=/nature/journal/vaop/ncurrent/full/nature01025_fs.html