

Psychology of Language (PSY 357), Fall 2017

Syllabus and Lab Manual

9-9:50 AM, MWF, 174 LOH

Instructor: Jennifer Gross, Ph.D.

Office: Rm. 2319 Au Sable Hall (ASH)

Office Hours: 1:00-2:00 PM on Mondays and Fridays; 10-10:30 PM on Wednesdays, and by appointment. Students with appointments have priority over walk-ins.

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Course Description:

Language plays a central role in our lives. We chat with friends, read novels, enjoy the lyrics of music, convey our feelings, teach our children, and transmit scientific discoveries to future generations via language. Your ability to read these words is just one example of language in action. Most of us, however, don't stop to ponder our linguistic prowess. In this course, we shall scientifically investigate our linguistic feats and foibles by exploring these topics and more:

- What distinguishes language from mere communication?
- How are gestural (sign) languages similar to, and different from, spoken languages?
- How did the human mind develop the capacity for language?
- Is language uniquely human, or do non-human animals or insects have language?
- How do children learn to speak and read their mother tongue?
- Why do children say funny things like 'she giggled me' and 'I broke the toy'?
- Where does language reside in the brain, and is there such a thing as 'being right-brained or left-brained'?
- Are there sex differences in mental aptitude?
- What interventions might help the 21 percent of U.S. adults (per the U.S. Dept. of Education) who read below a 5th grade level?
- What do *tips* of the *slongue* (oops—slips of the tongue) reveal about the mind?
- Can leading questions compromise the accuracy of eyewitness testimony?
- Can subliminal communication influence buying preferences?
- Although equipped with voice activation, why can't our cell phones reliably converse with us?
- Are there risks associated with simultaneously driving and talking on a cell phone?
- Is 'WUG' an entry in your mental dictionary? What about 'WAG'? How can you make these decisions within fractions of seconds considering the vast number of words you know?
- Why do we hear discrete words, even though speakers do not pause between words when speaking (a phenomenon best observed by listening to someone who speaks a language foreign to the listener)?
- Do Eskimos really have several hundred words to describe snow? Do skiers?
- Can we think independently of language, or does language constrain our reality?
- Can language be 'loaded'? For example, should words like 'chairman' and 'freshman' be replaced respectively with gender-free terms such as 'chairperson' and 'freshperson'? What is a 'freshperson' anyway?

Indeed, such fascinating questions deserve compelling, scientific explanations—the highest standard of evidence available. Although we may take our language-savvy minds for granted, we shall explore how language dominates our social and cognitive processes. Simply stated, language may be the essence of humanity.

Prerequisite: PSY 101

Course homepage on Blackboard (mybb.gvsu.edu):

Class information (e.g., syllabus, announcements, laboratory assignments, required readings, lecture slides, and grades) will be posted on Blackboard.

Required book:

Trevor A. Harley (2010). *Talking the Talk: Language, Psychology, and Science (Second Edition)*. New York, NY: Psychology Press (ISBN 978-1138800458)

Required Software License:

Francis, G. & Neath, I. (2015). *CogLab (5th Edition)*, Instant Access (for one semester; ISBN 9781285461137). **Purchase new license only.**

Available at GVSU bookstore or online <https://coglab.cengage.com/info/purchase.shtml>

Required readings: Available electronically (see Blackboard).

Suggested readings: These readings are *really* optional, and have been provided should you seek additional details about the topics presented in lecture.

Weekly laboratory participation via:

- 1) CogLab 5 <https://coglab.cengage.com/>
- 2) APA Online Psychology Lab (<http://opl.apa.org/>)
- 3) Project Implicit (<https://implicit.harvard.edu/implicit/>)

Course Grade Formula:

Course grades will be based on scores from the following, weighted activities:

Exam #1	25%
Exam #2	25%
Exam #3	25%
Weekly laboratory participation	25%

Letter Grades will be calculated according to the following scale:

A	93-100%	C	73-76%
A-	90-92%	C-	70-72%
B+	87-89%	D+	67-69%
B	83-86%	D	60-66%
B-	80-82%	F	Below 60
C+	77-79%		

Course Attendance:

Although role is not taken, you are expected to attend class. Students who do well in the class attend regularly. By attending class, you benefit by hearing content presented exclusively in lecture.

Three Forms of Evaluation:

I. Exams: To formally assess your understanding of course material, there will be three exams, including a noncumulative final exam. Questions on the exam will be based on the material covered: 1) in lecture, 2) assigned readings, and 3) the laboratory assignments. See *Weekly Schedule* for exam dates. **Make-up exams** will be given for the following circumstances: Official university activities (e.g., participating in sporting

events), illnesses, and extenuating circumstances. Please email the professor as soon as possible to explain the situation and request permission for an alternate exam date.

2. Laboratory Assignments: The primary goal of the laboratory component is to foster your understanding of the scientific process in Psychology. Outside of class time, you will participate in web-based, experimental investigations of classic experiments in Cognitive Science via **CogLab 5** (license fee), the **Online Psychology Lab** (free), and **Project Implicit** (free). You may complete these weekly experiments by using the GVSU computer labs or your own computer.

Take the time to read the background material for each lab at the host sites. For all assigned experiments, you are expected to understand the theoretical underpinnings motivating the investigation; the procedures and methods of investigation, including the independent and dependent variables; the predicted experimental outcome (i.e., hypothesis); the results of the experiment expressed in statistics and graphs; potential limitations of the investigation; and how each experiment is related to material covered in class and the assigned readings.

Submit your “Laboratory Assignment” to Blackboard by midnight on the due date to earn full credit. Late labs receive ½ credit. No email submissions will be accepted. You are encouraged to submit proof of completion up to two weeks early.

Please note: Participation in all assigned labs is expected. Thus, failure to complete any lab results in a corresponding grade deduction (as shown in the *Laboratory Assignment Grade*). You are encouraged to keep a copy of the laboratory assignment for your personal records (backup proof of completion; helpful when preparing for exams).

Laboratory Assignment:

1. Date of Completion
2. Summary Data
 - a. CogLab automatically provides your summary data upon completion of the experiment.
 - b. At the Online Psychology Lab site, use your UserID to look up your summary data. Never report “Trial-by-trial data.”
 - c. Project implicit provides, at minimum, a summary statement such as “your data suggest...”

Laboratory Assignment Grade will be awarded, according to the following schedule:

21 (of 21) labs by due date	100%
20	95%
19	90%
18	86%
17	81%
16	76%
15	71%
14	67%
13	62%
12 or less	50%

Instructions for getting started with, and obtaining proof of completion from, CogLab 5:

1. Open your Web browser and go to <http://coglab.cengage.com/help/register.shtml>
2. Towards the bottom of the page is a form that asks for three pieces of information. If you do not see the form, your Web browser probably has JavaScript disabled. Please enable JavaScript and re-load the page to continue.
3. Enter the requested information:
 - In the Group Name text field, enter the Group ID: **PsyLangF17**
 - In the Group Password text field, enter: **noamchomsky**
 - In the Registration Code text field, enter your **registration code**. The registration code could be in one of several formats. It may be on a sticker on the inside front cover of your CogLab Student Manual. It may have been bundled with your textbook on a postcard. Or, you may have purchased a registration code electronically (sometimes this is also called an e-Pin). There are two types of codes:
 - A CogLab2 code: This is made up of 11 letters and numbers, and will look something like this: yij2d9v6fu0
 - A CogLab5 code: This is made up of 16 letters and numbers, and will look something like this: sjkq8b632dvhd4u0

Both are valid on this website. However, do not purchase used CogLab registration codes! If the registration code has already been used, it will not work for you. Each valid registration code can be used only once.

4. After filling in all the text fields, click or tap on the Start Registration button.
5. Your Web browser will connect with the CogLab server to verify your information. If the information is correct, a new window will appear. The first line, highlighted in yellow, is your User ID. You should write this down because you will need to access CogLab.
6. The second line is your registration code.
7. The next two lines ask for your first name and your last (family) name.
8. Next, enter a password. You'll use this when you login. The password must be at least 8 characters long. It is best not to enter a password you use on other web sites. The next line asks you to re-enter the password.
9. The next two lines ask for your email address and then confirmation of this address. This email address will be used if you forget your password.
10. Next, enter a security question and answer. Make sure to use an question that only you can answer correctly. Also, remember whether you use uppercase or lowercase letters in your answer: you'll need to enter your answer exactly the same if you forget your password.
11. If necessary, select your keyboard layout (for keyboard help, see <http://coglab.cengage.com/info/keyboards.shtml>).
12. Finally, decide if you want CogLab to remember you so that you don't need to login each time. If not, uncheck the box next to Remember Me.
13. After filling in all the text fields, click or tap on the Complete Registration button. Done!

To **start doing labs**, just click or tap on the Labs menu and select the lab.

Instructions for getting started with Online Psychology Lab (<http://opl.apa.org/>):

1. Working from a GVSU computer lab, look for and open the ‘Application Folder’ on the desktop.
2. Next, open the ‘Psychology Folder’.
3. Launch the Online Psychology Lab (OPL; <http://opl.apa.org/>). If working from your own computer, be sure to download Adobe Flash plugin (available at host site) and permit pop-ups before launching a lab.
4. Select ‘Students Begin Here’ and then select assigned experiment.

5. Enter Lab ID: 11123

6. Enter requested demographic (e.g., age; handedness) information to proceed with experiment.
7. Upon completion of the experiment, write down the UserId (e.g., 47981) furnished with a big red check mark upon completion.

To retrieve data from the Online Psychology Lab (<http://opl.apa.org/>):

1. Select the ‘Data’ tab on the homepage:
2. Select ‘data format’ by scrolling down to ‘Microsoft Excel’.
3. Select the assigned experiment by scrolling through options.
4. Select our class **‘Grand Valley State University- F17, PSY 101 & 357)’** from the list.
5. Select ‘Download Data’ option. An Excel data file will open in a separate tab.
3. By using the **UserId**, look up your summary data in the Excel data file. Copy and paste your summary data to be submitted with your proof of completion. Never report trial-by-trial data.

Instructions for getting started with, and obtaining proof of completion from, Project Implicit:

1. Open your Web browser and go to <https://implicit.harvard.edu/implicit/>
2. You have the option of [registering for research at Project Implicit](#) “to gain access to dozens of studies and tests on a wide variety of topics.” If you prefer, you can participate as a guest in a limited array of demonstration studies on social attitudes.
3. Proof of completion is a summary statement provided upon completion of an experiment.

Weekly Schedule:

Week 1 The nature of language and metacognition.

Lab #1: Memory Judgment (due no later than Wednesday, 9/6)

Required readings:

Harley, Chapter 1, Language, pp. 1-26

Ramus, F., Hauser, M. D., Miller, C., Morris, D., Mehler, J. (2000). Language discrimination by human newborns and by cotton-top Tamarin Monkeys. *Science*, 288, 349-351.

Suggested readings:

Bergelson, E., & Swingle, D. (2012). At 6–9 months, human infants know the meanings of many common nouns. *PNAS Proceedings of the National Academy of Sciences of the United States of America*, 109(9), 3253-3258.

Carey, S. (1998). Knowledge of number: Its evolution and ontogeny. *Science*, 282, 641-642.

Denison, S. & Xu, F. (2010). Integrating physical constraints in statistical inference by 11-month-old infants. *Cognitive Science*, 34, 885-908.

Deutsch, D. (2002). The puzzle of absolute pitch. *Current Directions in Psychological Science*, 11(6), 200-204.

Hay, J. F., Pelucchi, B., Estes, K. G. & Saffran, J. R. (2011). Linking sounds to meanings: Infant statistical learning in a natural language. *Cognitive Psychology*, 63, 93-106.

Levitin, D. J., & Rogers, S. E. (2005). Absolute pitch: Perception, coding, and controversies. *Trends in Cognitive Sciences*, 9(1), 26-33.

Liu, Y., Wang, M., Perfetti, C. A., Brubaker, B., Wu, S., & MacWhinney, B. (2011). Learning a tonal language by attending to the tone: An in vivo experiment. *Language Learning*, 61(4), 1119-1141.

Provine, R. R. (2004). Laughing, tickling, and the evolution of speech and self. *Current Directions in Psychological Science*, 13(6), 215-218.

Labor Day Recess, Sept. 3-5

Week 2 Is language innate?

Lab #2: Statistical Learning (due Friday, 9/8)

Required readings:

Aslin, R. N., & Newport, E. L. (2012). Statistical learning: From acquiring specific items to forming general rules. *Current Directions in Psychological Science*, 21(3), 170-176.

Goldin-Meadow, S. & Mylander, C. (1998). Spontaneous sign systems created by deaf children in two cultures. *Nature*, 391, 279-281.

Petitto, L. A., Holowka, S., Sergio, L. E., & Ostry, D. (2001). Language rhythms in baby hand movements. *Nature*, 413(6851), 35-36.

Senghas, A., Kita, S., Ozyurek, A. (2004). Children creating core properties of language: Evidence from an emerging sign language in Nicaragua. *Science*, 305, 1779-1782.

Suggested readings:

Plantinga, J., & Trainor, L. J. (2005). Memory for melody: infants use a relative pitch code, *Cognition*, 98(1), 1-11.

- Saffran, J. R. (2003). Statistical language learning: Mechanisms and constraints. *Current Directions in Psychological Science*, 12(4), 110-114.
- Saffran, J. R., Aslin, R. N. & Newport, E. L. (1996). Statistical learning by 8-month-old infants. *Science*, 274, 1926-1928.
- Soproni, K., Miklósi, Á, Topál, J., & Csányi, V. (2001). Comprehension of human communicative signs in pet dogs (*canis familiaris*). *Journal of Comparative Psychology*, 115(2), 122-126.
- Werker, J. F., & Vouloumanos, A. (2000). Who's got rhythm? *Science*, 288(5464), 280-1.

Week 3 Smart, albeit alingual animals and insects.

Lab #3: Monty Hall (due Friday, 9/15)

Required readings:

Harley, Chapter 2, Animals, pp. 26-42

Herbranson, W. T. (2012). Pigeons, humans, and the Monty Hall dilemma. *Current Directions in Psychological Science*, 21(5), 297-301.

Ladewig, J. (2007). Clever Hans is still whinnying with us. *Behavioural Processes*, 76(1), 20-21

Pepperberg, I. M. (2002). Cognitive and communicative abilities of grey parrots. *Current Directions in Psychological Science*, 11(3), 83-87.

Riley, J. R., Greggers, U., Smith, A. D., Reynolds, D. R., & Menzel, R. (2005). The flight paths of honeybees recruited by the waggle dance. *Nature*, 435(7039), 205-207.

To watch a live “bee dance,” check out the following link compliments of NOVA and PBS:
<http://www.pbs.org/wgbh/nova/bees/dances.html>

Wynne, C. D. L. (2007). What the ape said. *Ethology*, 113(4), 411-413.

Suggested readings:

- Mazur, J. E., & Kahlbaugh, P. E. (2012). Choice behavior of pigeons (*columba livia*), college students, and preschool children (*homo sapiens*) in the monty hall dilemma. *Journal of Comparative Psychology*, 126(4), 407-420.
- Povinelli, D. J., & Bering, J. M. (2002). The mentality of apes revisited. *Current Directions in Psychological Science*, 11(4), 115-118.
- Toro, J. M., Trobalon, J. B., & Sebastián-gallés, N. (2003). The use of prosodic cues in language discrimination tasks by rats. *Animal Cognition*, 6(2), 131-6.
- von Frisch, K. (1974). Decoding the language of the bee. *Science*, 185, 663-668.
- Werker, J. F., & Vouloumanos, A. (2000). Who's got rhythm? *Science*, 288(5464), 280-1.

Week 4 No formal instruction necessary in early language acquisition

Lab #4: Categorical Perception – Identification (Requires headphones/earbuds; due Friday, 9/22)

Lab #5: Categorical Perception – Discrimination (Requires headphones/earbuds; due Friday, 9/22)

Required readings:

Harley, Chapter 3, Children, pp. 42-79

Kuhl, P. K. (2004). Early language acquisition: Cracking the speech code. *Nature Neuroscience*, 5, 831-843.

Suggested readings:

- Baker, S., Idsardi, W., Golinkoff, R., & Petitto, I. (2005). The perception of handshapes in American sign language. *Memory & Cognition*, 33, 887-904.
- Caramazza, A., Chialant, D., Capasso, R., & Micell, G. (2000). Separable processing of consonants and vowels. *Nature*, 403, 428-430.
- Serniclaes, W., Ventura, P., Morais, J., & Kolinsky, R. (2005). Categorical perception of speech sounds in illiterate adults. *Cognition*, 98, B35-B44.
- Shi, R. & Werker, J. F. (2001). Six-month-old infants' preference for lexical words. *Psychological Science*, 12(1), 70-75.
- Tincoff, R., & Jusczyk, P. (2003). Do Six-Month-Olds Link Sound Patterns of Common Nouns To New Exemplars? In D. Houston, A. Seidl, G. Hollich, E. Johnson, & A. Jusczyk (Eds.) *Jusczyk Lab Final Report*. <http://hincapie.psych.purdue.edu/Jusczyk>.

Week 5 My teacher 'holded' the rabbits.**Exam 1, Friday, September 29****Lab #6: Memory Span (due Friday, 9/29)****Lab #7: Mental Rotation (due Friday, 9/29)****Required readings:**

- Jusczyk, P. W. (1997). Finding and remembering words: Some beginnings by English-learning infants. *Current Directions in Psychological Science*, 6(6), 170-174.
- Marcus, G. F. (1996). Why do children say "brokeed?" *Current Directions in Psychological Science*, 5(3), 81-85.

Week 6 Role of working memory in language.**Lab #8: Word Length Effect (due Friday, 10/6)****Lab #9: Phonological Similarity Effect (due Friday, 10/6)****Required readings:**

- Baddeley, A. (2003). Working memory and language: An overview. *Journal of Communication Disorders*, 36(3), 189-208.
- Boutla, M., Supalla, T., Newport, E. L., & Bavelier, D. (2004). Short-term memory span: Insights from sign language. *Nature Neuroscience*, 7(9), 997-1002.

Suggested readings:

- Miller, G. A. (1994). The magical number seven, plus or minus two: Some limits on our capacity for processing information. *Psychological Review*, 101(2), 343-352.

Week 7 The 'bottleneck' of information processing.**Lab #10: Modality Effect (due Friday, 10/13)**

Required readings:

Harley, Chapter 6, Words, pp. 129-164

Treiman, R. (2000). The foundations of literacy. *Current Directions in Psychological Science*, 9(3), 89-92.

Anthony, J. L., & Francis, D. J. (2005). Development of phonological awareness. *Current Directions in Psychological Science*, 14(5), 255-259.

Suggested readings:

Emmorey, K., & Wilson, M. (2004). The puzzle of working memory for sign language. *TRENDS in Cognitive Science*, 8(12), 521-523.

Hedden, T., Park, D. C., Nisbett, R., Ji, L.-J., Qicheng, J., & Shulan, Jia (2002). Cultural variations in verbal versus spatial neuropsychological function across the life span. *Neuropsychology*, 16(1), 65-73.

Rönnberg, J. (2003). Working Memory, Neuroscience, and Language: Evidence from Deaf and Hard-of-Hearing Individuals (pp. 478-489). In *Oxford Handbook of Deaf Studies, Language, and Education*. New York: Oxford University Press.

Week 8 The science of reading.

Lab #11: Stroop (due Friday, 10/20)

Lab #12: Word Superiority Effect (due Friday, 10/20)

Fall Breather on October 21 and 22—No academic homework for the entire weekend. Practice the three “R”s: Relax. Restore. Reinvigorate.

Required readings:

Grainger, J., Bouttevin, S., Truc, C., Bastien, M., & Ziegler, J. (2003). Word superiority, pseudoword superiority, and learning to read: A comparison of dyslexic and normal readers. *Brain and Language*, 87, 432-440.

Grainger, J. & Whitney, C. (2004). Does the human mind read words as a whole? *TRENDS in Cognitive Sciences*, 8(2), 58-59.

Suggested readings:

Bradley, L. & Bryant, P. E. (1983). Categorizing sounds and learning to read—a causal connection. *Nature*, 301(3), 419-421.

Caravolas, M., Lervåg, A., Defior, S., Málková, G. S., & Hulme, C. (2013). Different patterns, but equivalent predictors, of growth in reading in consistent and inconsistent orthographies. *Psychological Science*, 24(8), 1398-1407.

Ferreria, V. S., & Griffin, Z. M. (2003). Phonological influences on lexical (mis)selection. *Psychological Science*, 14(1), 86-90.

Grainger, J., Rey, A., & Dufau, S. (2008). Letter perception: From pixels to pandemonium. *Trends in Cognitive Sciences*, 12(10), 381-387.

Hulme, C., & Snowling, M. J. (2011). Children's reading comprehension difficulties: Nature, causes, and treatments. *Current Directions in Psychological Science*, 20(3), 139-142.

Harm, M. W., McCandliss, B. D., & Seidenberg, M. S. (2003). Modeling the successes and failures of interventions for disabled readers. *Scientific Studies of Reading*, 7(2), 155-182.

Norris, D. (2013). Models of visual word recognition. *Trends in Cognitive Sciences*, 17(10), 517-524.

Perfetti, C. A., & Tan, L. (2013). Write to read: The brain's universal reading and writing network. *Trends in Cognitive Sciences*, 17(2), 56-57.

Peynircioglu, Z., Durgunoglu, A. Y., Oney-Kusefoglu, B. (2002). Phonological awareness and musical aptitude. *Journal of Research in Reading*, 25(1), 68-80.

Rayner, K., Foorman, B. R., Perfetti, C. A., Pesetsky, D., & Seidenberg, M. S., (2001). How psychological science informs the teaching of reading. *Psychological Science in the Public Interest*, 2(2), 31-74.

- Seidenberg, M. S. (2013). The science of reading and its educational implications. *Language Learning and Development*, 9(4), 331-360.
- Sperling, A. J., Lu, Z., Manis, F. R., & Seidenberg, M. S. (2006). Motion-perception deficits and reading impairment: It's the noise, not the motion. *Psychological Science*, 17(12), 1047-1053.

Week 9 Meaning in network theories.

Drop Deadline - grade W, October 27

Lab #13: Lexical Decision (due Friday, 10/27)

Lab #14: Lexical Decision Making via the Online Psychology Lab (due Friday, 10/27)

Your Lexical Decision Making Data, Part 1:

Related Accuracy: Words= ____%; Nonwords= ____%

Related Reaction Time: Words= ____ sec; Nonwords= ____ sec

Unrelated Accuracy: Words= ____%; Nonwords= ____%

Unrelated Reaction Time: Words= ____ sec; Nonwords= ____ sec

Your Lexical Decision Making Data, Part 2:

Did both Lexical Decision Labs reveal spreading activation? If not, with your Sherlock Holmes' hat on, figure out the mystery of why one lab flopped. The two labs see remarkably similar. What methodological strengths vs. weaknesses may explain why one version of the lab yielded the predicted findings, and the other version of the lab did not.

Required readings:

Harley, Chapter 5, Meaning, pp. 103-129

Landauer, T. K. (1998). Learning and representing verbal meaning: The Latent Semantic Analysis Theory. *Current Directions in Psychological Science*, 7(5), 161-164.

Suggested readings:

Campbell, R. S. & Pennebaker, J. W. (2003). The secret life of pronouns: Flexibility in writing style and physical health. *Psychological Science*, 14(1), 60-65.-

Elman, J. L. (2004). An alternative view of the mental lexicon. *TRENDS in Cognitive Sciences*, 8(7), 301-306.

Tanenhaus, M. K., & Hare, M. (2007). Phonological typicality and sentence processing. *Trends in Cognitive Sciences*, 11(3), 93-95.

Week 10 Connotation, denotation, and false memory.

Exam 2, Friday, November 3

Lab #15: False Memory (due Friday, 11/3)

Lab #16: Facial Recognition at the Online Psychology Lab. Participate on two days separated by 24 hours (due Friday, 11/3)

Your Facial Recognition Data:

Condition: ____ [Control / Experimental]

Day 1: Hits: ____ Misses: ____ False alarms: ____ Correct rejections: ____ Discrimination index (DI): ____

Day 2: Hits: ____ Misses: ____ False alarms: ____ Correct rejections: ____ Discrimination index (DI): ____

Required readings:

Harley, Chapter 7, Understanding, pp. 164-193

Zaragoza, M. S., Payment, K. E., Ackil, J. K., Drivdahl, S. B., & Beck, M. (2001). Interviewing witnesses: Forced confabulation and confirmatory feedback increases false memories. *Psychological Science*, 12(6), 473-477.

Suggested readings:

Dodson, C. S., Koutstaal, W., & Schacter, D. L. (2000). Escape from illusion: Reducing false memories. *TRENDS in Cognitive Sciences*, 4(10), 391-397.

Hasel, L. E., & Wells, G. L. (2007). Catching the bad guy: Morphing composite faces helps. *Law and Human Behavior*, Vol. 31(2), 193-207.

Hekkanen, S. T., & McEvoy, C. (2005). Source monitoring in eyewitness memory: Implicit associations, suggestions, and episodic traces. *Memory & Cognition (Pre-2011)*, 33(5), 759-69.

Loftus, E. (1997). Creating false memories. *Scientific American*, 277(3), 21-25.

Loftus, E. (1997). Memory for a past that never was. *Current Directions in Psychological Science*, 6(3), 61-65.

Seamon, J. G., Luo, C. R., Gallo, D. A. (1998). Creating false memories of words with or without recognition of list items: Evidence for nonconscious processes. *Psychological Science*, 9(1), 20-26.

Slotnick, S. D. & Schacter, D. L. (2004). A sensory signature that distinguishes true from false memories. *Nature Neuroscience*, 7(6), 664-672

Wells, G, Memon, A., & Penrod, S. D. (2006). Eyewitness evidence: Improving its probative value. *Psychological Science in the Public Interest*, 7(2), 45-75.

Week 11 The relationship between language and thought.

Lab #17: Implicit Association Test (IAT) of your choice at Project Implicit
(<https://implicit.harvard.edu/implicit/>; due Friday, 11/10).

Your IAT Summary Data: A one-sentence summary of your attitudes

Required readings:

Harley, Chapter 4, Thought, pp. 79-103

Davidoff, J, Davies, I, Roberson, D. (1999). Color categories in a stone-age tribe. *Nature*, 398, 203-204.

Thibodeau PH, Boroditsky L (2011). Metaphors We Think With: The Role of Metaphor in Reasoning. *PLoS ONE* 6(2), 1-11.

Suggested readings:

Banaji, M. R., & Hardin, C. D. (1996). Automatic stereotyping. *Psychological Science*, 7(3), 136-141.

Bloom, P. (2004). Children think before they speak. *Nature*, 430, 410-411.

Davidoff, J. (2001). Language and perceptual categorization. *TRENDS in Cognitive Science*, 5(9), 382-387.

Kawakami, K. et al. (2003). Effect of social category priming on personal attitudes. *Psychological Science*, 14, 315-319.

Majid, A., Bowerman, M., Kita, S., Haun, D. B. M., & Levinson, S. C. (in press). Can language restructure cognition? The case for space. *TRENDS in Cognitive Science*.

Meier, B. P., Robinson, M. D., Clore, G. L. (2004). Why good guys wear white: Automatic inferences about stimulus valence based on brightness. *Psychological Science*, 15(2), 82-87.

Olson, M. A. & Fazio, R. H. (2001). Implicit attitude formation through classical conditioning. *Psychological Science*, 12(5), 413-417.

Pullum, G. K. (1989). The great Eskimo vocabulary hoax. *Natural Language and Linguistic Theory*, 7, 275-281.

Whorf, B. L. (1956). Science and linguistics. In J. B. Carroll (Ed.), *Language, thought, and reality: Selected writings of Benjamin Lee Whorf* (pp. 207-219). Cambridge, MA: MIT Press.

Week 12 Speaking and inattention blindness.

Lab #18: Change Detection (due Friday, 11/17)

Lab #19: Operation Span (due Friday, 11/17)

Required readings:

Harley, Chapter 8, Speaking, pp. 191-221

Strayer, D. L., & Drews, F. A. (2007). Cell-phone-induced driver distraction. *Current Directions in Psychological Science*, 16(3), 128-131.

Suggested readings:

Garrod, S. & Pickering, M. J. (2004). Why is conversation so easy? *TRENDS in Cognitive Sciences*, 8(1), 8-11.

McCarley, J. S., Vais, M. J., Pringle, H., Kramer, A. F., Irwin, D. E., & Strayer, D. L. (2004). Conversation disrupts change detection in complex traffic scenes. *Human Factors*, 46(3), 424-436.

Strayer, D. L., Drews, F. A., & Crouch, D. J. (2006). A comparison of the cell phone driver and the drunk driver. *Human Factors*, 48(2), 381-391.

Strayer, D. L., & Johnston, W. A. (2001). Driven to distraction: Dual-task studies of simulated driving and conversing on a cellular telephone. *Psychological Science*, 12(6), 462-466.

Week 13 Language on the brain.

Thanksgiving Break, November 22 – 26.

Required readings:

Wagner, L. (2001). Acquiring languages—two for the price of one? *TRENDS in Cognitive Sciences*, 5(12), 509.

Marcus, G. F., Vouloumanos, A., & Sag, I. A. (2003). Does broca's play by the rules? *Nature Neuroscience*, 6(7), 651-2.

Suggested readings:

Anes, M. D., & Kruer, J. L. (2004). Investigating hemispheric specialization in a novel face-word stroop task. *Brain and Language*, 89 (1), 136-141.

Fodor, J. A. (1985). Précis of the modularity of the mind. *Behavioral and Brain Sciences*, 8, 1-5.

Houston, D. M., Pisoni, D. B., Kirk, K. I., Ying, E. A., & Miyamoto, R. T., (2003). Speech perception skills of deaf infants following cochlear implantation: A first report. *International Journal of Pediatric Otorhinolaryngology*, 67, 479-495.

Marslen-Wilson, W. D., & Tyler, L. K. (1997). Dissociating types of mental computation. *Nature*, 387, 592-594.

Nishimura, H., Hashikawa, K., Doi, K., Iwaki, T., Watanabe, Y., Kusuoka, H., Nishimura, T., & Kubo, T. (1997) Sign language “heard” in the auditory cortex. *Nature*, 397, 116.

Kisilevsky, B. S., Hains, S. M. J., Lee, K., Xie, X., Huang, H., Ye, H. H., Zhang, K., & Wang, Z. (2003). Effects of experience on fetal voice recognition. *Psychological Science*, 14(3), 220-224.

Paulesu, E. & Mehler, J. Right on in sign language. *Nature*, 392, 233-234.

Pennisi, E. (2004). The first language? Genetic and linguistic data indicate—but can’t prove—that our ancient ancestors spoke with strange clicking noises. *Science*, 303, 1319-1320.

Pinker, S., & Ullman, M. T. (2002). The past and future of the past tense. *Trends in Cognitive Sciences*, 6(11), 456-463.

Richardson, S. (1997). Brain: When memories lie. *Discover*.

Roser, M., & Gazzaniga, M. S., (2004). Automatic brains—interpretive minds. *Current Directions in Psychological Science*, 13(2), 56-59.

Ullman, M. T. (2001). A neurocognitive perspective on language: The declarative/procedural model. *Nature Neuroscience*, 2, 717-725.

Week 14 Asymmetry, plasticity and critical periods

Required readings:

Mayberry, R. I, Lock, E., & Kazmi, H. (2002). Linguistic ability and early language exposure. *Nature*, 417, 38.

Newman, A. J., Bavelier, D., Corina, D., Jezzard, P., & Neville, H. J. (2001). A critical period for right hemisphere recruitment in American Sign Language processing. *Nature Neuroscience*, 5(1), 76-80.

Nicholls, E. R., Searle, D. A., Bradshaw, J. L. (2004). Read my lips: Asymmetries in the visual expression and perception of speech revealed through the McGurk Effect. *Psychological Science*, 15(2), 138-141.

Lab #20: Brain Asymmetry (due Friday, 12/1)

Week 15 Assorted language facts and fallacies

Required readings:

Harley, Chapter 9, End, pp. 221-229

Halpern, D.F. (2004). A cognitive-process taxonomy for sex differences in cognitive abilities. *Current Directions in Psychological Science*, 13, 135–139.

Fenn, K. M., Nusbaum, H. C., & Margoliash, D. (2003). Consolidation during sleep of perceptual learning of spoken language. *Nature*, 425, 614-616.

Lab #21: Mirror Drawing at Online Psychology Lab (due Friday, 12/8)

Your Data: Hand Preference: ____ [Right/Left]; Time for Left: ____ sec; Time for Right: ____ sec

Suggested readings:

Besson, M., Magne, C., & Schön, D. (2002). Emotional prosody: Sex differences in sensitivity to speech melody. *TRENDS in Cognitive Sciences*, 6(10), 405-407.

Halpern et al. (2007). The science of sex differences in science and mathematics. *Psychological Science in the Public Interest*, 8, 1-51.

Pinker, S., Martin, A. N., & Lee, J. J. (2008). The logic of indirect speech. *Proceedings of the National Academy of Sciences of the United States of America*. 105(3), 833-838.

Pylyshyn, Z. (2003). Return of the mental image: Are there really pictures in the brain? *TRENDS in Cognitive Sciences*, 7(3), 113-118.

Tubau, E., & Alonso, D. (2003). Overcoming illusory inferences in a probabilistic counterintuitive problem: The role of explicit representations. *Memory & Cognition*, 31, 596-607.

Final Exam, Tuesday, December 12, 8:00-9:50 AM

“Talk is cheap, but understanding how and why is priceless.”

Brian Bartek, Psychology Major, Honors College, Grand Valley State University, ‘04