Introduction to Psycholinguistics
Learning Through the Experimental Process

LING 2XXX – Fall 2026

Course information

Time	TBD
Location	TBD
Instructor	Utku Turk
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Office hours	By appointment
Course site	Canvas

Prerequisites: Introduction to linguistics or permission. No prior experimental experience required.

1 Course description

How do we study language in the mind? How do psycholinguists design experiments to test linguistic theories? What does it take to go from a theoretical question to publishable experimental results?

This course teaches psycholinguistics **through the experimental process**. Rather than just reading about experiments, you'll learn by doing: formulating research questions, designing experiments, collecting data, analyzing results, and presenting findings. I'm excited to guide you through this hands-on approach—I think the best way to understand psycholinguistics is to actually do it.

You'll work through the complete research cycle multiple times, each time with a different linguistic domain: speech perception, lexical access, syntactic parsing, agreement processing, prediction, and semantic interpretation. By the end of the semester, you'll have hands-on experience with every stage of psycholinguistic research and a deep understanding of how experimental methods connect to linguistic theory.

No prior experimental experience required—we learn by doing, starting from scratch.

2 Learning objectives

Upon successful completion of this course, students will be able to:

1. Formulate testable research questions from linguistic theories
2. Design experiments using appropriate psycholinguistic methods
3. Understand and apply methods: self-paced reading, eye-tracking, acceptability judgments, priming
4. Collect experimental data using online platforms (PCIbex, Gorilla)
5. Analyze psycholinguistic data using R and mixed-effects models
6. Interpret experimental results in light of linguistic theory
7. Write research papers following APA/journal format
8. Present experimental findings to both specialist and general audiences
9. Critically evaluate published psycholinguistic research
10. Connect experimental findings to theoretical linguistics

3 Course structure

The course is organized around **six stages of the experimental process**. Each unit focuses on one stage and one linguistic phenomenon:

1. **Question Formation** (Weeks 1–3): Speech perception & phonological categories
2. **Literature Review** (Weeks 4–6): Lexical access & word recognition
3. **Experimental Design** (Weeks 7–9): Garden-path effects & parsing
4. **Data Collection** (Weeks 10–11): Language Production & Planning
5. **Data Analysis** (Weeks 12–13): Analyzing Production & Model Commitments
6. **Writing & Presentation** (Weeks 14–16): Final projects

Weekly rhythm

Component	What it looks like
Lecture	Linguistic phenomenon + experimental methods (Tue).
Lab	Hands-on work with that stage of the process (Thu).
QALMRI summaries	Critical reading of experimental papers (6 total).
HSP conference project	Attending talks, synthesizing research (special assignment).

Methods we use

- **Self-paced reading:** Measuring reading times word-by-word

- **Eye-tracking:** Recording eye movements during reading
- **Acceptability judgments:** Rating grammaticality and naturalness
- **Priming:** Testing facilitation effects
- **Online platforms:** PCIbex, Gorilla for data collection
- **Analysis:** R, lme4 for mixed-effects models

Your experiment building timeline

By the end of the semester, you will have built multiple mini-experiments:

- **Week 3**: Design your first experiment (speech perception)
- **Week 6**: Conduct a literature review with experimental predictions
- **Week 9**: Full experiment design with materials and analysis plan
- **Week 11**: Collect real data from participants
- **Week 13**: Analyze and visualize your own experimental data
- **Week 16**: Present a complete study from question to conclusion

Think of this course as an apprenticeship: you'll do what psycholinguists do, not just read about it.

4 Course requirements

4.1 Grading

Item	%	What counts
Participation	15	Active engagement in lectures and labs.
QALMRI summaries (6x)	30	Critical paper summaries (5% each).
Stage assignments (5x)	30	Hands-on work at each experimental stage (6% each).
HSP conference project	10	Attending talks; synthesis write-up.
Final project	15	Complete experimental study: design, data, analysis, paper.

4.2 QALMRI summaries

QALMRI (Question, Alternatives, Logic, Method, Results, Inferences) is a framework for critically reading experimental papers. You will write 6 QALMRI summaries over the semester, choosing from papers marked "QC" (QALMRI Candidate) in the schedule.

Each summary should be 1–2 pages and include:

- **Question:** What research question does the paper address?
- **Alternatives:** What alternative hypotheses or theories are being tested?

- **Logic:** How does the experimental design test these alternatives?
- **Method:** What methods were used? (participants, materials, procedure)
- **Results:** What were the main findings?
- **Inferences:** What do the authors conclude? Do you agree?

Choose papers relevant to your final project. QALMRI summaries form an annotated bibliography for your research.

4.3 Stage assignments

At each stage of the experimental process, you will complete a hands-on assignment:

1. **Question formation:** Develop a research question from a linguistic theory
2. **Literature review:** Write a mini literature review (3–4 pages)
3. **Experimental design (Replication-and-Extension):** Choose a classic psycholinguistics finding, identify a confound or alternative explanation, and design a minimal follow-up experiment that would adjudicate between competing accounts
4. **Data collection:** Collect pilot data using online platform
5. **Data analysis:** Analyze data and create visualizations

4.4 HSP conference project

The Human Sentence Processing (HSP) conference is the premier venue for psycholinguistic research. You will:

1. **Before conference:** Identify 3 talks/posters relevant to your interests
2. **During conference:** Attend these presentations (virtual or in-person)
3. **After conference:** Write a synthesis (1 paragraph per presentation):
   - Main takeaway from the presentation
   - One question you were left with
   - How it connects to your final project or interests

If you cannot attend the conference, you will complete an alternative assignment analyzing recent HSP proceedings.

4.5 Final project

Design and execute a complete psycholinguistic experiment. This includes:

- Research question grounded in linguistic theory
- Literature review (5–6 pages)
- Experimental design with full materials
- Data collection (pilot data)

- Statistical analysis using mixed-effects models
- Results section with visualizations
- Discussion connecting findings to theory

Format: 12–15 page paper in APA style + 10-minute presentation.

Example topics: testing garden-path effects in relative clauses, investigating agreement attraction, measuring prediction effects in verb phrases, or examining phonological priming.

5 Course schedule (16-week semester)

Schedule subject to change. Canvas is the live version.

Wk	Topic	Readings	Lab / due
STAGE 1: Question Formation (Speech Perception)			
1	Introduction; what is psycholinguistics?	**Read:** Chomsky (1965) Ch. 1; Lewis & Phillips (2015) "Deriving distributional facts". **Optional:** Ferreira & Lowder (2016) "Prediction, information structure, and good-enough language processing".	Intro to experimental methods
2	Speech perception: categorical perception	**Read:** Pisoni & Tash (1974) "Reaction times to comparisons within and across phonetic categories" [QC]; Liberman et al. (1957) "The discrimination of speech sounds". **Optional:** Näätänen et al. (1997) "Language-specific phoneme representations".	Formulating research questions
3	Phonological categories & abstract representations	**Read:** Kazanina et al. (2006) "The influence of meaning on the perception of speech sounds" [QC]; Bowers et al. (2016) "Discriminating phonological representations". **Optional:** Samuels (2020) "Phonetics vs. phonology".	Developing hypotheses **Due:** Stage 1 assignment
STAGE 2: Literature Review (Lexical Access)			
4	Lexical access: activation & selection	**Read:** Dahan (2010) "The time course of interpretation in speech comprehension"; Allopenna et al. (1998) "Tracking the time course of spoken word recognition" [QC]. **Optional:** Marslen-Wilson (1987) "Functional parallelism in spoken word-recognition".	Literature search strategies
5	Visual world paradigm; eye-tracking	**Read:** Tanenhaus et al. (1995) "Integration of visual and linguistic information"; Huettig et al. (2011) "Using the visual world paradigm to study language processing" [QC]. **Optional:** Altmann & Kamide (1999) "Incremental interpretation at verbs".	Writing literature reviews
6	Prediction in lexical access	**Read:** Staub (2015) "The effect of lexical predictability on distributions of eye fixation durations" [QC]; Staub et al. (2015) "The effect of predictability on eye movements in reading". **Optional:** Dikker et al. (2009) "Predicting upcoming words in discourse".	Synthesizing research **Due:** Stage 2 assignment
STAGE 3: Experimental Design (Syntactic Parsing)			
7	Garden-path effects; parsing strategies	**Read:** van Gompel (2013) "Sentence processing: An introduction"; Frazier & Rayner (1982) "Making and correcting errors during sentence comprehension" [QC]. **Optional:** Ferreira & Henderson (1991) "Recovery from misanalyses of garden-path sentences".	Designing experiments
8	Working memory & dependency formation	**Read:** Lewis & Vasishth (2005) "An activation-based model of sentence processing"; Gibson (2000) "The dependency locality theory" [QC]. **Optional:** Wagers et al. (2009) "Agreement attraction in comprehension".	Creating experimental materials
9	Self-paced reading; acceptability judgments	**Read:** Just et al. (1982) "A theory of reading: From eye fixations to comprehension"; Sprouse & Almeida (2012) "Assessing the reliability of textbook data" [QC]. **Optional:** Schütze & Sprouse (2013) "Judgment data".	Building experiments in PCIbex **Due:** Stage 3 assignment
STAGE 4: Data Collection (Language Production)			
10	Agreement Attraction in Production	**Read:** Bock & Miller (1991) "Broken agreement"; Eberhard et al. (2005) "Making syntax of sense: Number agreement in sentence production". **Optional:** Ferreira & Swets (2002) "How incremental is language production?".	Piloting production (naming) experiments

Wk	Topic	Readings	Lab / due
11	Cross-linguistic Production Patterns	**Read:** Vigliocco & Nicol (1998) "Separating hierarchical relations and word order in language production"; Hartsuiker et al. (2003) "The costs of parallel processing: Evidence from agreement errors". **Optional:** Dell (1986) "A spreading-activation theory of retrieval".	Collecting production data **Due:** Stage 4 assignment

STAGE 5: Data Analysis (Production & Hidden Commitments)

Wk	Topic	Readings	Lab / due
12	Coding & Analyzing Production Data	**Read:** Jaeger (2010) "Redundancy and reduction: Speakers manage syntactic information density"; Analysis tutorial: Analyzing response latencies and errors.	Data wrangling: Coding speech errors
13	Statistical Models & Theoretical Commitments	**Read:** Barr et al. (2013) "Random effects structure"; **Discussion:** "Hidden Commitments of Statistical Models" – How our choice of model (ANOVA vs. LMER vs. Bayesian) implies a theory of the mind.	Fitting models; interpreting parameters **Due:** Stage 5 assignment

STAGE 6: Writing & Presentation

Wk	Topic	Readings	Lab / due
14	Writing experimental papers; APA format	**Read:** APA Publication Manual (selections); Bem (2003) "Writing the empirical journal article". **Optional:** Sword (2012) *Stylish Academic Writing*.	Writing results sections
15	Final project presentations I	–	10-minute presentations; peer feedback
16	Final project presentations II	–	10-minute presentations; peer feedback
Finals	–	–	**Due:** Final project paper

6 Policies

6.1 What you might struggle with (and how to succeed)

This course involves learning experimental methods, statistics, and programming simultaneously. Here's what students typically struggle with and evidence-based advice:

Time management:

- Expect 8–10 hours/week outside class: 3–4 hours reading papers, 4–5 hours on assignments, 1 hour reviewing notes
- Start assignments early: Experiments take longer to design than you think
- Don't cram: Distributed practice works better (Dunlosky et al., 2013)

Reading experimental papers:

- Don't read linearly: Abstract → figures → results → method → introduction
- Take notes by hand: Handwriting improves retention (Mueller & Oppenheimer, 2014)
- Use QALMRI framework: Forces you to think critically about design and interpretation
- Focus on logic: Why did they design the experiment this way? What alternatives were ruled out?

Designing experiments:

- Start simple: Test one thing at a time
- Think about controls: What alternative explanations need to be ruled out?
- Pilot everything: Materials that seem clear to you may confuse participants
- Get feedback: Show your design to classmates before collecting data

Note-taking:

- Take notes by hand during lectures: Forces active processing (Mueller & Oppenheimer, 2014)
- After class: Transfer key insights to digital notes for organization
- Annotate papers: Write questions and critiques in margins

Learning statistics:

- Focus on concepts: Understand what a model does, not just how to run it
- Visualize everything: Plots help you understand patterns in data
- Ask "why?": Why this analysis? Why these predictors? Why this interpretation?

Resources:

- How to Read a Paper (Keshav, 2007): `https://web.stanford.edu/class/ee384m/Handouts/HowtoReadPaper.pdf`
- QALMRI framework: `http://www.psy.jhu.edu/~spring200_206/qalmri.pdf`
- PCIbex documentation: `https://www.pcibex.net/`
- Learning How to Learn (free Coursera course): `https://www.coursera.org/learn/learning-how-to-learn`

6.2 Attendance

Attendance is expected. Labs are hands-on and difficult to replicate remotely. If you must miss class, notify me in advance and complete the lab exercises on your own.

6.3 Academic integrity

Do your own work; cite sources. You may collaborate on assignments, but submitted work must be your own. Copying experimental designs or analyses without attribution is plagiarism.

6.4 Use of ChatGPT and LLMs

LLMs may be used for **support** (brainstorming ideas, debugging code, improving writing) but not to generate experimental designs or interpret results. Any use must be documented.

Why this matters: You need to understand the logic of experimental design yourself. LLMs don't understand linguistic theory or experimental confounds.

6.5 Accessibility & wellness

If you need accommodations, please contact the relevant campus office and talk to me as early as possible in the semester. I'm committed to ensuring all students can succeed in this course.

If you're struggling—whether with the material, experimental design, coding, or anything else—please reach out. I really appreciate when students communicate with me, and I'm happy to work with you to make a plan together. Your wellbeing matters more than any assignment.

7 Resources

Textbooks & key readings

- Harley (2014). *The Psychology of Language: From Data to Theory* (4th ed.). (library access)
- Traxler (2012). *Introduction to Psycholinguistics: Understanding Language Science.* (library access)
- Fernández & Cairns (2017). *The Handbook of Psycholinguistics.* (library access)
- Lewis & Phillips (2015). "Deriving distributional facts from a formal theory of grammar." (Canvas)

Technical resources

Category	Links
Experiment platforms	PCIbex `https://www.pcibex.net/`; Gorilla `https://gorilla.sc/`
Data collection	Prolific `https://www.prolific.co/`; MTurk `https://www.mturk.com/`
Analysis	R for Data Science `https://r4ds.had.co.nz/`; Winter (2020) *Statistics for Linguists*
Writing	APA Style `https://apastyle.apa.org/`; Purdue OWL `https://owl.purdue.edu/owl/research_and_citation/apa_style/apa_style_introduction.html`
HSP conference	`https://www.cuny-hsp.org/` (annual conference website)

This syllabus is a living document and may be updated during the semester. Last updated: January 3, 2026

Appendix: Quarter-system (10 weeks)

Wk	Topic & Stage	Readings	Lab / due
1	Intro; Question Formation (Speech perception)	**Req:** Chomsky (1965) Ch. 1; Pisoni & Tash (1974) [QC]; Kazanina et al. (2006) [QC].	Formulating research questions
2	Literature Review (Lexical access)	**Req:** Dahan (2010); Allopenna et al. (1998) [QC]; Staub (2015) [QC].	Writing literature reviews **Due:** Stage 1
3	Experimental Design I (Garden-path effects)	**Req:** van Gompel (2013); Frazier & Rayner (1982) [QC]; Gibson (2000) [QC].	Designing experiments
4	Experimental Design II (Self-paced reading)	**Req:** Just et al. (1982); Sprouse & Almeida (2012) [QC].	Building experiments in PCIbex **Due:** Stage 2
5	Data Collection (Agreement processing)	**Req:** Wagers et al. (2009); Dillon et al. (2013) [QC]; Parker & Phillips (2016) [QC].	Collecting pilot data **Due:** Stage 3
6	Data Analysis I (Prediction)	**Req:** Hale (2001); Levy et al. (2013) [QC].	Data wrangling in R
7	Data Analysis II (Mixed-effects models)	**Req:** Barr et al. (2013); Vasishth et al. (2013) [QC].	Fitting models; visualizations **Due:** Stage 4
8	Writing & Presentation	**Req:** APA Manual (selections); Bem (2003).	Writing results sections **Due:** Stage 5
9	Final project presentations I	–	10-min presentations
10	Final project presentations II	–	10-min presentations **Due:** Final project

Quarter grading:

Item	%	What counts
Participation	15	Active engagement.
QALMRI summaries (6x)	30	Critical paper summaries (5% each).
Stage assignments (5x)	30	Experimental process stages (6% each).
HSP conference project	10	Synthesis write-up.
Final project	15	Complete experimental study + paper.