Seminar in Psycholinguistics:
How Words Are Built
Experimental Approaches to Morphological Planning

LING XXXXX – Fall 2026

Course information

Time	Wednesday 10:30am–1:20pm
Location	TBD
Instructor	Utku Turk
Email	utkuturk@umd.edu
Office hours	By appointment
Course site	ELMS/Canvas

Methods spine (recurring): *Experimentology* (open access) `https://experimentology.io`

1 Course description

When do we plan inflectional morphology? This seminar connects theory about production and morphological encoding to experiments that can test it. You will evaluate core claims, design studies with explicit predictions, and build practical skills in implementation, analysis, and modeling. Think of us as colleagues working on the same project together—my goal is to help you develop the best possible project, not just evaluate it at the end. The semester ends with an original proposal or pilot, written in article format.

2 Learning objectives

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

1. Evaluate competing accounts of morphological planning in production
2. Turn theoretical claims into concrete predictions and falsifiable tests
3. Design experiments with appropriate controls, counterbalancing, and exclusions
4. Implement web-based production tasks in PCIbex (including timing + audio)
5. Analyze timing/error data in R (frequentist + Bayesian mixed models)
6. Design cross-linguistic experiments that test morphological planning
7. Conduct power analyses and interpret model comparison metrics
8. Present and defend an experimental design to a scholarly audience
9. Write preregistered analysis plans with reproducible workflows

3 Prerequisites

Background in linguistics (syntax/morphology) or cognitive science. Statistics is helpful but not required. No programming experience assumed—we build skills from scratch through weekly hands-on sessions.

4 Course structure (weekly rhythm)

Component	What it looks like
Readings	Short **required** core + **recommended** breadth + a **depth pick** (choose one to read fully).
Mini-lecture	Claim, design logic, and what pattern would change minds. (30 min)
Studio/Lab	45–60 minutes: PCIbex builds, R analysis, or modeling/simulation.
Peer Workshop	30 minutes: Share work-in-progress, get feedback, troubleshoot together.
Problem sets	Three deliverables that scaffold the final project.
Project	Idea → design → analysis → write-up.

The Studio Model

This seminar runs like an **art studio** or **maker space**—not a lecture hall. Half our time is spent building: writing code, designing experiments, debugging analyses. I'll circulate and work with you individually or in small groups.

Expect to:

- Show unfinished work and get feedback (that's how we learn!)
- Help each other debug code and brainstorm designs
- Present work-in-progress multiple times, not just at the end
- Iterate based on peer and instructor feedback

Studio Sessions Include:

- **Week 3**: PCIbex build-athon—bring your laptop, build a minimal naming experiment
- **Week 6**: Analysis clinic—bring your messiest data, we'll wrangle it together
- **Week 9**: Design workshop—pitch your final project idea, get feedback
- **Week 12**: Cross-linguistic design exchange—pair up and critique each other's designs

Reading strategy (realistic)

1. **Required:** read closely (question, design logic, key figures, conclusion).
2. **Recommended:** skim for what was manipulated/measured and the result pattern.
3. **Depth pick:** choose one per week to read fully; be ready to explain one figure or design decision.

A collaborative approach to your project

Think of us as colleagues working on the same project together. Your final project develops collaboratively throughout the semester. Reach out anytime with: questions about your design, requests for feedback on materials, coding problems, statistical questions, draft analyses, or anything you would discuss with a colleague. I'm here to help you develop the best possible project, not just to evaluate it at the end. Use office hours and email liberally—the more we communicate, the stronger your final product will be.

5 Course requirements

5.1 Grading

Item	%	What counts
Participation + reading questions	20	One substantive question/week (due Tue 11:59pm) + active discussion and feedback.
Problem set 1 (PCIbex)	10	Minimal PWI build with timing/randomization/logging + brief design justification.
Problem set 2 (R analysis)	10	Cleaning + visualization + mixed models (freq + Bayes) + model checks + interpretation memo.
Problem set 3 (modeling)	10	Cross-linguistic design + analysis plan: design experiment for morphologically rich language + planned comparisons.
Final project	50	Proposal (5) + presentation (10) + final paper (35).

5.2 Deliverables and key dates

Due	Week	Deliverable
Week 6	Oct 1	Problem Set 1 (PCIbex experiment + 2pp design memo)
Week 8	Oct 15	1-page project proposal (completion credit)
Week 9	Oct 22	Problem Set 2 (R analysis pipeline + 3pp interpretation)
Week 12	Nov 12	Problem Set 3 (cross-ling design + 3pp analysis plan)
Week 15	Dec 3	5-minute project presentation (completion credit)
Finals week	–	Final paper (10–15pp article-format proposal with pilot data or comprehensive preregistered analysis plan)

5.3 Reading questions

Post one substantive question to Canvas by **Tuesday 11:59pm**. Good questions:

- Challenge a design choice: "Why X instead of Y? Wouldn't Y control better for Z?"
- Propose extensions: "How would this account explain phenomenon X in language Y?"
- Connect to theory: "The authors claim A, but couldn't their data also support B?"
- Identify confounds: "Could the result be due to C rather than their proposed mechanism?"

Clarification questions are fine for class discussion but don't count as your weekly question.

6 Course schedule

Schedule subject to change. Canvas is the live version.

Wk	Date	Topic	Readings	Studio / due
1	Aug 27	Production architecture; what "planning" means	**Req:** Levelt, Roelofs, & Meyer (1999) [§1–4]; Slevc (2023) [planning/encoding]. **Rec:** Ferreira & Slevc (2007); Bock & Ferreira (2014).	Studio: claim → manipulation → measure
2	Sep 3	Chronometric methods; planning scope	**Req:** Meyer (1996); *Experimentology* (Measurement + Design). **Rec:** Sternberg et al. (1978) [RT decomposition]; Wagner et al. (2010) [flexibility].	R Bootcamp I: tidy data; RT distributions; outlier detection
3	Sep 10	Picture-word interference (PWI) I	**Req:** Schriefers, Meyer, & Levelt (1990); *Experimentology* (design logic). **Rec:** Damian & Martin (1999); Roelofs (1992) [§1–3]; Jescheniak & Schriefers (2001).	PCIbex build I: minimal PWI scaffold + SOA control
4	Sep 17	PWI II; functional material; determiners/gender	**Req:** Schriefers et al. (2002); Schiller & Caramazza (2003). **Rec:** Schriefers (1993); Jescheniak et al. (2014) [free vs. bound]; Alario & Caramazza (2002).	R Bootcamp II: mixed models intuition + random effects structure
5	Sep 24	Structural constraints on planning	**Req:** Momma, Slevc, & Phillips (2016); Momma & Ferreira (2019). **Rec:** Griffin & Bock (2000); Hwang & Kaiser (2014); Momma & Yoshida (2023).	Studio: stimulus design + counterbalancing clinic + Latin squares
6	Oct 1	PCIbex lab day (timing + audio + logging)	**Req:** PCIbex docs (trial structure/controllers/logging). **Rec:** *Experimentology* (web experiments).	Lab: audio recording + QC flags + templates + deployment **Due:** PS1
7	Oct 8	Speech errors as evidence	**Req:** Garrett (1975) [§1–3]; Dell (1986) [§1–2]. **Rec:** Fromkin (1980) [intro]; Stemberger (1985); Goldrick & Rapp (2007).	Studio: error coding rubric + inter-rater reliability
8	Oct 15	Auxiliaries; lemma vs. form; dissociations	**Req:** Miozzo & Caramazza (1997a); Badecker et al. (1995). **Rec:** Vigliocco et al. (1997); Miozzo & Caramazza (1997b).	Studio: dissociation design logic + prediction matrices **Due:** proposal (1p)
9	Oct 22	Agreement attraction in production (analysis focus)	**Req:** Bock & Miller (1991); Eberhard et al. (2005). **Rec:** Bock & Eberhard (1993); Vigliocco et al. (1995); Franck et al. (2006); Veenstra et al. (2014).	Analysis Lab I: error models + contrasts + model comparison **Due:** PS2
10	Oct 29	Quantitative workflow for production data	**Req:** Vasishth et al. (2018); *Experimentology* (analysis flexibility/prereg). **Rec:** Barr et al. (2013) [random effects]; Nicenboim et al. (2023) [§1–3].	Analysis Lab II: Bayesian workflow + prior predictive checks + posterior predictive checks
11	Nov 5	Derivational morphology & compounds	**Req:** Janssen & Caramazza (2011); Bien et al. (2005). **Rec:** Koester & Schiller (2008); Roelofs (1996); Levelt et al. (1999) [§6.4].	Studio: derivation vs. inflection timing predictions + stimulus design
12	Nov 12	Cross-linguistic morphological planning	**Req:** Janssen et al. (2008); Pechmann & Zerbst (2002). **Rec:** Uysal & Gürel (2017); Schiller et al. (2006); Costa et al. (2003).	Studio: design clinic for morphologically rich languages **Due:** PS3
13	Nov 19	Morphological architecture → testable predictions	**Req:** Embick (2015) [Ch. 1]; Bobaljik (2017). **Rec:** Svenonius (2012) [§1–3]; Taraldsen (2010); Ziegler et al. (2019); Xiang et al. (2019).	Studio: linking morphosyntactic structure to production predictions + prereg skeleton
14	Nov 26	THANKSGIVING — No class	–	–
15	Dec 3	Project presentations	**Req:** Nosek et al. (2018); *Experimentology* (open science). **Rec:** Klein et al. (2018); Brysbaert & Stevens (2018) [power].	5-minute talks (completion credit)
16	Dec 10	Synthesis; future directions; publishable projects	**Req:** Pickering & Garrod (2013) [forward models]. **Rec:** Chang et al. (2006); Tooley & Traxler (2010); Jaeger & Snider (2013).	Final-paper clinic (figures, model checks, limitations, next steps)

7 Policies

7.1 Attendance

Attendance is expected. If you must miss class, email me in advance and submit your reading question as usual. You are responsible for catching up on studio/lab content—materials will be posted, but hands-on learning cannot be replicated remotely.

7.2 Late work

- **Reading questions:** due Tue 11:59pm (late not accepted—these drive class discussion).
- **Problem sets:** 10% per day late (up to 3 days); after 3 days, max 50% without prior arrangement.
- **Project components:** proposal/presentation deadlines are firm (completion credit). Final paper extensions by arrangement.

7.3 Collaboration policy

- **Studio/lab sessions:** collaboration encouraged! Work together, learn together.
- **Problem sets:** discuss approaches, but write your own code and analysis.
- **Project:** individual work, but you may use shared resources (stimulus databases, published materials, etc.).

When using code from online sources (Stack Overflow, tutorials, GitHub), cite the source with a comment in your code and demonstrate understanding by explaining what it does.

7.4 Academic integrity

Do your own work; cite sources. Plagiarism or misrepresentation will result in failure of the assignment and possible course failure. This includes:

- Copying code without attribution
- Submitting others' writing as your own
- Fabricating or manipulating data
- Using prohibited tools (see LLM policy below)

7.5 Use of large language models (LLMs)

LLMs (ChatGPT, Claude, Copilot, etc.) are allowed for **support**, not **generation**.

Permitted: Editing your draft, debugging code, learning syntax, explaining error messages, brainstorming designs.

Prohibited: Summarizing assigned readings, writing your assignments, producing code you cannot explain, answering conceptual questions you should work through yourself.

Required documentation: If you used an LLM, include: (i) how you used it, (ii) chat log/link, (iii) what parts were influenced.

Why this matters: LLMs generate text from existing patterns—they're not your original work. Overreliance can affect learning (`https://www.media.mit.edu/publications/your-brain-on-chatgpt/`). LLMs make mistakes. You must understand anything you submit.

Undocumented or prohibited use counts as academic dishonesty.

7.6 Accessibility

If you need accommodations, register with ADS (`https://www.counseling.umd.edu/ads/`) and share your letter early. I am happy to discuss implementation anytime.

7.7 Mental health & wellness

Graduate school is challenging. If you are struggling (academically or personally), reach out. We can plan next steps together. Resources:

- UMD Counseling Center: 301-314-7651
- Graduate program director
- Dean of Students: 301-314-8430

Your health and well-being are more important than any assignment.

8 Technical resources

Category	Links
Experiment design	*Experimentology* `https://experimentology.io`
Implementation	PCIbex docs `https://doc.pcibex.net/`; Farm `https://farm.pcibex.net/`; Ibex `https://github.com/addrummond/ibex`
Analysis	R4DS `https://r4ds.had.co.nz/`; brms `https://paul-buerkner.github.io/brms/`; lme4 `https://github.com/lme4/lme4`; Stan `https://mc-stan.org/`
Bayesian workflow	Nicenboim et al. (2023) `https://vasishth.github.io/bayescogsci/`; Statistical Rethinking `https://xcelab.net/rm/statistical-rethinking/`
Open science	OSF `https://osf.io/`; PsyArXiv `https://psyarxiv.com/`; LingBuzz `https://ling.auf.net/lingbuzz`
Reference mgmt	Zotero `https://www.zotero.org/` (recommended); Mendeley `https://www.mendeley.com/`

9 Recommended background reading

Not required, but useful for filling in gaps or going deeper.

Production models & architecture

- Levelt, W. J. M. (1989). *Speaking: From Intention to Articulation.* MIT Press. [Classic comprehensive model]
- Dell, G. S. (1986). A spreading-activation theory of retrieval in sentence production. *Psychological Review*, 93, 283–321.
- Pickering, M. J., & Garrod, S. (2013). An integrated theory of language production and comprehension. *BBS*, 36, 329–347.
- Bock, K., & Levelt, W. J. M. (1994). Language production: Grammatical encoding. In M. A. Gernsbacher (Ed.), *Handbook of Psycholinguistics* (pp. 945–984). Academic Press.

Experimental methods

- Ferreira, F., & Schotter, E. R. (2013). Do verb bias effects on sentence production reflect sensitivity to comprehension or production factors? *QJEP*, 66, 1548–1571.
- Baayen, R. H., & Milin, P. (2010). Analyzing reaction times. *International Journal of Psychological Research*, 3(2), 12–28.
- Barr, D. J., Levy, R., Scheepers, C., & Tily, H. J. (2013). Random effects structure for confirmatory hypothesis testing. *JML*, 68, 255–278.

Morphological theory

- Halle, M., & Marantz, A. (1993). Distributed morphology and the pieces of inflection. In K. Hale & S. J. Keyser (Eds.), *The View from Building 20* (pp. 111–176). MIT Press.
- Bobaljik, J. D. (2015). *Universals in Comparative Morphology*. MIT Press. [Ch. 1–2]
- Embick, D., & Noyer, R. (2007). Distributed morphology and the syntax/morphology interface. In G. Ramchand & C. Reiss (Eds.), *The Oxford Handbook of Linguistic Interfaces* (pp. 289–324). Oxford.

Agreement & number

- Bock, K., & Eberhard, K. M. (1993). Meaning, sound and syntax in English number agreement. *Language and Cognitive Processes*, 8, 57–99.
- Vigliocco, G., & Nicol, J. (1998). Separating hierarchical relations and word order in language production. *Cognition*, 68, B13–B29.
- Wagers, M. W., Lau, E. F., & Phillips, C. (2009). Agreement attraction in comprehension: Representations and processes. *JML*, 61, 206–237. [Comprehension perspective]
- Franck, J., Lassi, G., Frauenfelder, U. H., & Rizzi, L. (2006). Agreement and movement: A syntactic analysis of attraction. *Cognition*, 101, 173–216.

Derivational morphology & compounds

- Levelt, W. J. M., Schriefers, H., Vorberg, D., Meyer, A. S., Pechmann, T., & Havinga, J. (1991). The time course of lexical access in speech production: A study of picture naming. *Psychological Review*, 98, 122–142.
- Dohmes, P., Zwitserlood, P., & Bölte, J. (2004). The impact of semantic transparency of morphologically complex words on picture naming. *Brain and Language*, 90, 203–212.
- Roelofs, A. (1996). Morphology in word production. In T. Dijkstra & K. de Smedt (Eds.), *Computational Psycholinguistics* (pp. 174–199). Taylor & Francis.
- Sandra, D. (1990). On the representation and processing of compound words: Automatic access to constituent morphemes does not occur. *QJEP*, 42, 529–567.

Cross-linguistic morphology

- Costa, A., Caramazza, A., & Sebastian-Galles, N. (2000). The cognate facilitation effect: Implications for models of lexical access. *JEP: LMC*, 26, 1283–1296.
- Levelt, W. J. M., & Wheeldon, L. (1994). Do speakers have access to a mental syllabary? *Cognition*, 50, 239–269.
- Spalek, K., Damian, M. F., & Bölte, J. (2013). Is lexical selection in spoken word production competitive? Introduction to the special issue on lexical competition in language production. *Language and Cognitive Processes*, 28, 597–614.
- Janssen, N., Bi, Y., & Caramazza, A. (2008). A tale of two frequencies: Determining the speed of lexical access in Mandarin Chinese and English compounds. *Language and Cognitive Processes*, 23, 1191–1223.

This syllabus is a living document and may be updated during the semester. Major changes will be announced in class and on Canvas. Last updated: January 3, 2026

Appendix: UChicago quarter system (10 weeks)

Wk	Topic	Readings	Studio / due
1	Production architecture; planning scope	**Req:** Levelt et al. (1999) [§1–4]; Meyer (1996). **Rec:** Slevc (2023); Ferreira & Slevc (2007).	Studio: claim → measure; R bootcamp I
2	PWI paradigm; functional elements	**Req:** Schriefers et al. (1990); Schriefers et al. (2002). **Rec:** Schiller & Caramazza (2003); Roelofs (1992).	PCIbex build I + II: PWI scaffold + timing
3	Structural planning constraints	**Req:** Momma et al. (2016); Momma & Ferreira (2019). **Rec:** Griffin & Bock (2000); Hwang & Kaiser (2014).	Counterbalancing + logging QC
4	Speech errors + dissociations	**Req:** Garrett (1975) [§1–3]; Miozzo & Caramazza (1997a). **Rec:** Dell (1986); Badecker et al. (1995).	Error coding + reliability **Due:** PCIbex build (15%)
5	Agreement attraction	**Req:** Bock & Miller (1991); Eberhard et al. (2005). **Rec:** Franck et al. (2006); Veenstra et al. (2014).	R bootcamp II: mixed models + contrasts
6	Bayesian workflow for production	**Req:** Vasishth et al. (2018); Nicenboim et al. (2023) [§1–3]. **Rec:** Barr et al. (2013).	Analysis pipeline: cleaning + plots + models **Due:** Analysis memo (20%)
7	Derivational morphology & compounds	**Req:** Janssen & Caramazza (2011); Bien et al. (2005). **Rec:** Koester & Schiller (2008); Roelofs (1996).	Studio: derivation vs. inflection predictions
8	Cross-linguistic morphological planning	**Req:** Janssen et al. (2008); Pechmann & Zerbst (2002). **Rec:** Uysal & Gürel (2017); Schiller et al. (2006).	Design clinic for rich morphology **Due:** Design memo (15%)
9	Morphological theory → predictions	**Req:** Embick (2015) [Ch. 1]; Bobaljik (2017). **Rec:** Ziegler et al. (2019); Xiang et al. (2019).	Project workshop: peer feedback on designs
10	Project presentations + synthesis	**Req:** Nosek et al. (2018); Pickering & Garrod (2013). **Rec:** Klein et al. (2018).	5-min presentations; final paper clinic **Due:** Final paper (30%, finals week)