Version: 08.04.2019

Visual World Eye-Tracking in Psycholinguistic Research

Universität Potsdam, Summer 2019

Instructor: Dr. Laine Stranahan
stranahan@uni-potsdam.de

Time: Mondays 10:00-12:00
Location: Haus 14, Room 0.38
Campus II - Golm
Course Website: TBA
Office Hours: By appointment

Description

Since the mid-1990s, the visual world paradigm (VWP) has grown in popularity among language scientists as a way of indirectly observing the mental representations and processes underlying linguistic behavior. As eye-tracking equipment has become cheaper and more widespread, researchers have developed ever more sophisticated ways of testing linguistic hypotheses by recording listeners' eye movements within a constructed visual "world" as they hear and interpret linguistic utterances. VWP studies have yielded important results concerning every level of linguistic representation: phonological, morphological, lexical, syntactic, semantic, and pragmatic. By examining a series of seminal studies primarily in the domain of pragmatic processing, this course provides an overview of the visual world paradigm in psycholinguistics while introducing students to the methods and results of cognitive psycholinguistics.

Beginning with classic studies which mark the (re-)discovery of the visual world paradigm in 1995, the course examines VWP studies on such topics as syntactic parsing, prediction in language comprehension, pragmatic quantity inference processing (e.g., scalar implicature and contrastive inference), and perspective-taking (i.e., common ground vs. privileged ground). Through continuous direct engagement with original research articles, students will learn how to read and understand most types of VWP research and how to apply VWP methods to new research questions. Through exposure to a variety of key results in VWP research, students will end the course with an improved grasp of basic principles of behavioral research in cognitive psychology and an increased familiarity with the mechanics of human language comprehension.

Policies

This will be a research-article-based course with a focus on interpreting eye-tracking data from psycholinguistics. Meetings, which will begin 15 minutes after and end 15 minutes before the listed start- and end-times, will consist of two blocks of roughly 40 minutes each with a 10-minute break in between. All discussion and materials will be in English. Each week each student is required to submit a short response to the assigned article. Each student will also be required to make an in-class presentation once during the semester. At the end of the semester, students taking the course for a grade will be required to submit an experiment proposal based on one or more of the research questions addressed course.

Background/Prerequisites: This course is intended for students who have taken at least one course in linguistics and at least one course on behavioral methods in psychology or cognitive science. Knowledge of inferential statistics is helpful but not required. Students must be comfortable reading, listening, speaking, and presenting in English.

Evaluation:

This course may be taken pass/fail as an Übung, or for a grade as a Seminar. All students, regardless of their enrollment type, must submit weekly article summaries and make a one-time in-class presentation in order to pass. Students who choose to take the course as a Seminar must additionally write an experiment proposal at the end of the course, on which their grade will be based.

Since the articles are often complex, detail-oriented, and quantitative, the opportunity to ask questions and engage in open discussion of the readings is a critical aspect of this course. Students are encouraged to attend and participate actively in course meetings, to meet with the instructor outside of class, and to work in groups. (Weekly readings may be done in groups, but reading responses must be produced individually. Experiment proposals may not be done in groups.)

A 1-to-2-page reading response must be submitted via email by 17:00 the Friday before each course meeting (other than the first), with three exceptions. First, students may skip two reading responses at any point during the semester without penalization. Second, students are not required to submit a reading response before the course meeting at which they are presenting. Reading responses are short papers, written in a scientific register, providing a summary and expressing criticism of the reading, offering alternative interpretations of data presented, synthesizing the results of the reading with other materials encountered in or outside of class, or proposing new ways to answer (or refine answers to) the research questions raised in the reading. They can be brief, but must be concise and carefully written, and must demonstrate a good understanding of the experiment design, data, and implications for theory. Late submissions will not be accepted.

Every student must make a 20- to 30-minute presentation of one of the research papers on the Schedule. Presenters are required to meet with the instructor the week before their presentation in order to discuss the paper being presented and develop their presentation. Presentations must be performed alone, in English. Presentations must provide background for the paper, describe its methods, summarize the results, and provide one or two criticisms, or suggestions for future research development. Students will submit a ranked preference list of the date-paper pairs they would like to present, and every effort will be made to ensure each student gets one of their top three choices.

Seminar students must additionally submit an experiment proposal (10-15 pages, double-spaced) at the end of the semester including at least (1) a literature review covering the results of relevant studies from class (and any additional studies used in research), (2) a careful description of the experimental design and methodology, (3) a thorough explanation of predictions, and (4) a summary of possible outcomes and how they might be interpreted. Students are required to meet with the instructor at least once to discuss their proposal topic and develop their experimental design. It is suggested but not required that students submit a first draft of their proposal at least one week before the final due date (first drafts submitted later than this will not be accepted), to which the instructor will provide feedback for improving the quality of the final draft. In general, such a draft-feedback procedure results in a more successful experiment proposal. Proposals will be evaluated on the basis of the depth of their engagement with existing literature on the specific question addressed and with the larger theoretical context, their use of and demonstration of understanding of the visual world eye-tracking paradigm, their clarity and logical structure, and the thoroughness and quality of the ideas presented. Proposals submitted later than the due date will not be accepted.

Readings: Texts for this course will be made available in digital form on the course Moodle site.

Office Hours: This course will not have regular office hours, but individual or group appointments with the instructor may be scheduled in-person or by email. Such meetings provide an occasion for students to ask clarification questions, follow up on in-class discussions, seek feedback on past writing assignments, or receive guidance while preparing a future assignment. Students are required to schedule an individual meeting with the instructor during the week prior to their in-class presentation.

Communication: Outside of course meetings, the instructor can be reached by email. With the exception of

holidays, emails sent Monday through Friday will generally be responded to within 24 hours; emails sent after 17:00 on Friday will be responded to by the following Monday.

Schedule

#	Date	Pre-Class Reading	Assignment Due	Topic
1	April 8	—	—	Introduction & Overview
2	April 15	Tanenhaus, Spivey-Knowlton, Eberhard, & Sedivy (1995)	Reading Response 1	Syntactic Parsing
-	**April 22**	**No meeting (Easter Monday)**	—	—
3	April 29	Snedeker & Trueswell (2004)	Reading Response 2	Syntactic Parsing
4	May 6	Altmann & Kamide (1999)	Reading Response 3	Prediction
5	May 13	Sedivy, Tanenhaus, Chambers, & Carlson (1999)	Reading Response 4	Contrastive Inference
6	May 20	Grodner & Sedivy (2011)	Reading Response 5	Contrastive Inference
7	May 27	Huang & Snedeker (2009)	Reading Response 6	Scalar Implicature
8	June 3	Degen & Tanenhaus (2016)	Reading Response 7	Scalar Implicature
-	**June 10**	**No meeting (Pentecost Monday)**	—	—
9	June 17	Hanna, Tanenhaus, & Trueswell (2003)	Reading Response 8	Common Ground
10	June 24	Keysar, Barr, Balin, & Brauner (2000)	Reading Response 9	Common Ground
11	July 1	Yee & Sedivy (2006)	Reading Response 10	Phono-Semantic Priming
12	July 8	Rohde & Horton (2014)	Reading Response 11	Discourse Relations
13	July 15	Spivey, Grosjean, & Knoblich (2005)	Reading Response 12	Mouse-Tracking

Bibliography

Altmann, G. T., & Kamide, Y. (1999). Incremental interpretation at verbs: Restricting the domain of subsequent reference. Cognition, 73(3), 247-264.

Degen, J., & Tanenhaus, M. K. (2016). Availability of alternatives and the processing of scalar implicatures: A visual world eye-tracking study. Cognitive science, 40(1), 172-201.

Grodner, D., & Sedivy, J. C. (2011). 10 The Effect of Speaker-Specific Information on Pragmatic Inferences. The processing and acquisition of reference, 239.

Hanna, J. E., Tanenhaus, M. K., & Trueswell, J. C. (2003). The effects of common ground and perspective on domains of referential interpretation. Journal of Memory and Language, 49(1), 43-61.

Huang, Y. T., & Snedeker, J. (2009). Online interpretation of scalar quantifiers: Insight into the semantics–pragmatics interface. Cognitive psychology, 58(3), 376-415.

Keysar, B., Barr, D. J., Balin, J. A., & Brauner, J. S. (2000). Taking perspective in conversation: The role of mutual knowledge in comprehension. Psychological Science, 11(1), 32-38.

Rohde, H., & Horton, W. S. (2014). Anticipatory looks reveal expectations about discourse relations. Cognition, 133(3), 667-691.

Sedivy, J. C., Tanenhaus, M. K., Chambers, C. G., & Carlson, G. N. (1999). Achieving incremental semantic interpretation through contextual representation. Cognition, 71(2), 109-147.

Snedeker, J., & Trueswell, J. C. (2004). The developing constraints on parsing decisions: The role of lexical-biases and referential scenes in child and adult sentence processing. Cognitive psychology, 49(3), 238-299.

Spivey, M. J., Grosjean, M., & Knoblich, G. (2005). Continuous attraction toward phonological competitors. Proceedings of the National Academy of Sciences, 102(29), 10393-10398.

Tanenhaus, M. K., Spivey-Knowlton, M. J., Eberhard, K. M., & Sedivy, J. C. (1995). Integration of visual and linguistic information in spoken language comprehension. Science, 268(5217), 1632-1634.

Yee, E., & Sedivy, J. C. (2006). Eye movements to pictures reveal transient semantic activation during spoken word recognition. Journal of Experimental Psychology: Learning, Memory, and Cognition, 32(1), 1.