

COGNITIVE SCIENCE 300 – DISCOURSE AND DIALOGUE PROCESSING

Course Syllabus
Cognitive Science Program - Simon Fraser University – Spring Semester 2005

INSTRUCTOR: **DR. MAITE TABOADA**

Class: Tuesdays 10:30-12:20, AQ 5027; Thursdays 10:30-11:20, WMX 2523

Office: RCB 9202

Office hours: Tuesdays 2-3 pm and Thursdays 9-10 am
(or by appointment)

Phone: 604-291-5585

E-mail: mtaboada@sfu.ca

Course Web Page: <http://www.sfu.ca/~mtaboada/cogs300/cogs300.html>
(Check frequently for new material and announcements)

COURSE DESCRIPTION

This course provides an introduction to how discourse and dialogue are processed, both by humans and by machines. Discourse here is defined as the study of the organization of language above the sentence level, but also as any manifestation of language in context. Dialogue is defined as an instance of language that involves interaction between two or more people.

The course will provide an overview of the phenomena included in the study of discourse and dialogue, from linguistic, psycholinguistic and computational points of view. Students will read original and recent work in these areas, and will be encouraged to collect, analyze and process their own data.

PREREQUISITES

Lower division Cognitive Science requirements.

REQUIRED TEXT

Readings will be available at the beginning of the semester. Check also the course web page for on-line readings.

COURSE EXPECTATIONS

1. Students are expected to attend all classes and to arrive on time so that classes may begin promptly. Announcements will be made at the beginning and end of classes regarding the assigned readings and the expectations for exams and assignments.
2. Students are expected to have read all assigned readings *before* class. Because many students will be learning about a new field of study in this class, some of the materials and concepts may seem fairly complex. In such cases, students should read assigned readings and go over the lecture notes multiple times.
3. Students will be responsible for all materials covered in the assigned readings and lectures.
4. Students will be respectful of other students and the instructor. In particular, students will not talk while the instructor or another student is talking.
5. Academic dishonesty in all forms violates the basic principles of integrity and thus impedes learning. More specifically, academic dishonesty is a form of misconduct that is subject to disciplinary action and includes the following: cheating, fabrication, fraud, facilitating academic dishonesty, and plagiarism. For more information on academic honesty and student conduct, please visit the following websites:

<http://www.reg.sfu.ca/calendar/General%20Regs.html#897900>

<http://www.sfu.ca/policies/teaching/index.htm>

If a student is found guilty of plagiarism or other form of academic dishonesty on a class paper, an assignment, or an exam, an academic dishonesty report will be written for that student. This report is filed in the department. The student receives a grade of zero for the paper, assignment, or exam. If more than one academic dishonesty report has been filed for a student, the case can be presented to the University Board on Student Discipline.

6. Please note that students requiring accommodations as a result of a disability must contact the Center for Students with Disabilities (604-291-3112 or csdo@sfu.ca).

E-MAIL POLICY

You are welcome to submit questions and comments via e-mail. Please keep the following in mind when sending your message.

1. I cannot always respond to messages late in the evening or on weekends. If you send a message late on Friday or during the weekend, I might not reply until the following week.
2. I can only respond to questions that can be answered in a sentence or two. Questions requiring longer replies should be asked in class or during office hours.
3. Please proof-read your e-mail message to make sure that your question is clear. In addition, I would appreciate questions that are expressed in an appropriately polite manner.
4. Please always sign your name and the course number. Make sure the Subject line contains the name of the course ("Cogs 300"). Anonymous messages will not be answered. Further, if your message does not clearly address the content of the course, or the Subject line is simply "hi", there is a good chance that it will be classified as spam, and discarded automatically.
5. Because of the large number of e-mail messages that I receive, it may be several days before I am able to reply to your message.

COURSE GRADE

The final grade will be calculated according to the percentages below. The final grade will take into account class attendance and participation (especially for students who are close to the next letter grade). Students will also be asked to send in questions about the readings by 9 am on the day the readings will be discussed, which will be part of the participation grade.

There will be 3 or 4 assignments, a presentation in class and a final paper. More detail on each of these will be provided throughout the semester.

<u>COMPONENT</u>	<u>WEIGHT</u>
Assignments	40%
Class presentation	20%
Final paper	40%

Percentage scores on assignments and exams will be based on objective criteria. Final letter course grades will be computed from percentage scores on all the course components. The following table provides a rough estimate of grade breakdowns for the final grade. Due attention will be given to the verbal descriptions listed below. There is no university-wide standard scale. An instructor adopts a grade scale appropriate to the level and content of the course.

96-100%	A+	Extraordinary performance	66-70%	C+	Satisfactory performance
91-95%	A	Excellent performance	61-65%	C	
86-90%	A-		Good performance	56-60%	C-
81-85%	B+	50-55%		D	
76-80%	B	Un satisfactory performance (fail)		< 50%	F
71-75%	B-				

GRADE APPEALS

If a student wishes to contest the marking of an exam, assignment or paper, the instructor can agree to remark his/her entire exam at the instructor's convenience and not in front of the student. A grade reconsideration may raise the grade, lower the grade, or leave the grade unchanged, as stated in Policy T20.01, clause IV.2.

The only reason a grade change will be made is if there is an arithmetic error or if it has been determined that the exam, assignment or paper deserves a lower grade or a higher grade after it has been remarked.

The following are NOT reasons for reconsideration of a grade:

- The student is on probation
- The student wants to get into Business or any other program
- The student worked hard and thinks this should be a factor
- The student does not like the grade scale
- The student's score is x% below the next grade and would like the instructor to ignore the difference

TOPICS AND READINGS

The following list is subject to change, depending on students' interests. These are suggestions, and students are encouraged to consult other readings, especially when preparing for a presentation. Note also that readings may be added; you should always consult the web version of the syllabus and schedule.

Materials listed under "Readings" will be discussed in class. Materials listed under "Applications" will be the basis of student presentations.

1. INTRODUCTION

Discourse and dialogue; Applications of discourse processing.

- Readings**
- Zwaan, Rolf A., & Singer, Murray. (2003). Text comprehension. In A. C. Graesser, M. A. Gernsbacher & S. R. Goldman (Eds.), *Handbook of Discourse Processes* (pp. 83-121). Mahwah, NJ: Lawrence Erlbaum.
 - Jurafsky, Daniel, & Martin, James H. (2000). *Speech and Language Processing: An Introduction to Natural Language Processing, Computational Linguistics, and Speech Recognition*. Upper Saddle River, NJ: Prentice Hall. – Chapter 19, Dialogue and Conversational Agents.

2. DISCOURSE DATA

How to collect, transcribe and annotate data.

- Readings**
- Du Bois, J., S. Schuetze-Coburn, S. Cumming and D. Paolino (1993) Outline of discourse transcription. In J. Edwards and M. Lampert (eds.) *Talking data: Transcription and coding in discourse research*. Hillsdale, NJ: Lawrence Erlbaum. 45-89.
 - Hatch, Evelyn, & Lazaraton, Anne. (1991). *Design and Statistics for Applied Linguistics*. Boston: Heinle and Heinle. – Chapter 5. Coding and displaying frequency data. 129-158.
 - Mosegaard Hanse, Maj-Britt. (1998). *The Function of Discourse Particles: A Study with Special Reference to Spoken Standard French*. Amsterdam and Philadelphia: John Benjamins. – Chapter 6. Discourse units. 113-128.
- Applications**
- Miltakaki, Eleni, Prasad, Rashmi, Joshi, Aravind K, & Webber, Bonnie. (2004). Annotating discourse connectives and their arguments, *Proceedings of the HLT/NAACL Workshop on Frontiers in Corpus Annotation*. Boston, MA.
 - Also, consult the section on corpora, linguistic resources, and tools for corpus annotation.

3. WRITTEN AND SPOKEN LANGUAGE; GENRES

- Readings**
- Chafe, Wallace, & Tannen, Deborah. (1987). The relation between written and spoken language. *Annual Review of Anthropology*, 16, 383-407.
 - Grimshaw, Allen D. (2003). Genres, registers, and contexts of discourse. In A. C. Graesser, M. A. Gernsbacher & S. R. Goldman (Eds.), *Handbook of Discourse Processes* (pp. 25-82). Mahwah, NJ: Lawrence Erlbaum.
 - Eggins, Suzanne, & Martin, James R. (1997). Genres and registers of discourse. In T. A. v. Dijk (Ed.), *Discourse as Structure and Process. Discourse Studies: A Multidisciplinary Introduction* (pp. 230-256). London: Sage.
- Applications**
- Kessler, Brett, Nunberg, Geoffrey, & Schütze, Hinrich. (1997). Automatic detection of text genre, *Proceedings of the 35th Annual Meeting of the Association for Computational Linguistics* (pp. 32-38). Madrid, Spain.
 - Zwaan, Rolf A. (1994). Effect of genre expectations on text comprehension. *Journal of Experimental Psychology: Learning, Memory and Cognition*, 20(4), 920-933.
 - O'Connell, Daniel C., & Kowal, Sabine. (2004). The history of research on the filled pause as evidence of *The Written Language Bias in Linguistics* (Linell, 1982). *Journal of Psycholinguistic Research*, 33(6), 459-474.

4. ROLE OF CONTEXT IN INTERPRETATION OF DISCOURSE; SPEECH ACTS

- Readings**
- Sadock, Jerrold. (2004). Speech acts. In L. R. Horn & G. Ward (Eds.), *The Handbook of Pragmatics* (pp. 53-73). Malden, MA: Blackwell.
 - Mey, Jacob L. (2001). *Pragmatics: An Introduction* (2nd edition ed.). Malden, Mass: Blackwell. – Chapter 3. Context, implicature and reference. 39-66.
 - Grice, H. P. (1975) Logic and conversation. In P. Cole and J. Morgan (eds.) *Syntax and Semantics. Vol. 3*. New York: Academic Press. 41-58.
- Applications**
- Jurafsky, Daniel. (2004). Pragmatics and computational linguistics. In L. R. Horn & G. Ward (Eds.), *Handbook of Pragmatics* (pp. 578-604). Malden, MA: Blackwell.
 - Lin, Jimmy, Quan, Dennis, Sinha, Vineet, Bakshi, Karun, Huynh, David, Katz, Boris, et al. (2003). The role of context in question answering systems, *Proceedings of the 2003 Conference on Human Factors in Computing Systems*. Fort Lauderdale, Fl.
 - Creswell, Cassandre, & Kaiser, Elsi. (2004). The importance of discourse context for statistical Natural Language Generation, *Proceedings of the 5th SIGdial Workshop on Discourse and Dialogue at HLT-NAACL 2004*. Boston, Mass.
 - Ryckebusch, Céline, & Marcos, Haydée. (2004). Speech acts, social context and parent-toddler play between the ages of 1;5 and 2;3. *Journal of Pragmatics*, 36(5), 883-897.

5. CONVERSATIONAL ORGANIZATION

- Readings**
- Sacks, Harvey, Schegloff, Emmanuel, & Jefferson, Gail. (1974). A simplest systematics for the organization of turn-taking in conversation. *Language*, 50, 696-735.
 - Tsui, Amy B. M. (1989). Beyond the "adjacency pair". *Language in Society*, 18(4), 545-564.
 - Brown, Penelope and Levinson, Stephen C. (1999 [1987]) Politeness: Some universals in language usage. In A. Jaworski and N. Coupland (eds.) *The Discourse Reader*. London: Routledge. 321-335.
- Applications**
- Graesser, Arthur G., Kurt VanLehn, Carolyn P. Rose, Pamela W. Jordan, and Derek Harter (2001). Intelligent tutoring systems with conversational dialogue. *AI Magazine* 22(4): 39-52.
 - Tim Bickmore, Justine Cassell (2004) Social Dialogue with Embodied Conversational Agents In J. van Kuppevelt, L. Dybkjaer, and N. Bernsen (eds.), *Natural, Intelligent and Effective Interaction with Multimodal Dialogue Systems*. New York: Kluwer Academic.
 - Jovanovic, Natasa, & op den Akker, Rieks. (2004). Towards automatic addressee identification in multi-party dialogues, *Proceedings of the 5th SIGdial Workshop on Discourse and Dialogue at HLT-NAACL 2004*. Boston, Mass.

6. TOPIC; INFORMATION STRUCTURE

- Readings**
- Gundel, Jeanette K., & Fretheim, Thorstein. (2004). Topic and focus. In L. Horn & G. Ward (Eds.), *The Handbook of Pragmatics* (pp. 175-196). Malden, Mass: Blackwell.
 - Ward, Gregory, & Birner, Betty. (2001). Discourse and information structure. In D. Schiffrin, D. Tannen & H. E. Hamilton (Eds.), *The Handbook of Discourse Analysis* (pp. 119-137). Malden, Mass: Blackwell.
 - Vallduví, Enric, & Engdahl, Elisabet. (1996). The linguistic realization of information packaging. *Linguistics*, 34, 459-519.
- Applications**
- Echihabi, Abdessamad, Ulf Hermjakob, Eduard Hovy, Daniel Marcu, Eric Melz, Deepak Ravichandran (to appear). How to select an answer string? In Tomek Strzalkowski and Sanda Harabagiu (eds.) *Advances in Textual Question Answering*, Dordrecht: Kluwer.
 - Barzilay, Regina, Noemie Elhadad, Kathleen R. McKeown (2002) Inferring Strategies for Sentence Ordering in Multidocument News Summarization. *Journal of Artificial Intelligence Research* 17. 35-55.
 - Smith, Caroline L. (2004). Topic transitions and durational prosody in reading aloud: production and modeling. *Speech Communication*, 42(3-4), 324-336.

7. REFERENCE

- Readings**
- Martin, James R. (2001). Cohesion and texture. In D. Schiffrin, D. Tannen & H. E. Hamilton (Eds.), *The Handbook of Discourse Analysis* (pp. 35-53). Malden, Mass: Blackwell.
 - Grosz, Barbara J., Joshi, Aravind K., & Weinstein, Scott. (1995). Centering: A framework for modelling the local coherence of discourse. *Computational Linguistics*, 21(2), 203-225.
 - Gernsbacher, Morton Ann. (1989). Mechanisms that improve referential access. *Cognition*, 32, 99-156.
- Applications**
- Mitkov, Ruslan. (1999). Multilingual anaphora resolution. *Machine Translation*, 14(3-4), 281-299.
 - Streb, Judith, Hennighausen, Erwin, & Rösler, Frank. (2004). Different anaphoric expressions are investigated by event-related brain potentials. *Journal of Psycholinguistic Research*, 33(3), 175-201.

8. COHERENCE

- Readings**
- Grosz, Barbara J., & Sidner, Candace L. (1986). Attention, intentions, and the structure of discourse. *Computational Linguistics*, 12(3), 175-204.
 - Mann, William C., & Thompson, Sandra A. (1988). Rhetorical Structure Theory: Toward a functional theory of text organization. *Text*, 8(3), 243-281.
 - Knott, Alistair, & Dale, Robert. (1994). Using linguistic phenomena to motivate a set of coherence relations. *Discourse Processes*, 18(1), 35-62.

- Applications**
- Higgins, D., Burstein, J., Marcu, D., & Gentile, C. (2004). Evaluating multiple aspects of coherence in student essays. In *Proceedings of the Annual Meeting of HLT/NAACL*, Boston, MA, May 2004.
 - Miltsakaki, Eleni, & Kukich, Karen. (2004). Evaluation of text coherence for electronic essay scoring systems. *Natural Language Engineering*, 10(1), 25-55.
 - Teufel, Simone, & Moens, Marc. (2000). What's yours and what's mine: Determining intellectual attribution in scientific text, *Proceedings of the Joint SIGDAT Conference on Empirical Methods in Natural Language Processing and Very Large Corpora*. Hong Kong.

9. DISCOURSE STRUCTURE

- Readings**
- Grosz, Barbara J., & Sidner, Candace L. (1986). Attention, intentions, and the structure of discourse. *Computational Linguistics*, 12(3), 175-204. (Review from previous topic)
 - Livia Polanyi (1988) A formal model of the structure of discourse. *Journal of Pragmatics*, 12:601-638, 1988.
 - Wolf, Florian, & Gibson, Edward. (2004). Representing discourse coherence: A corpus-based analysis, *Proceedings of the 20th International Conference on Computational Linguistics (COLING)*. Geneva, Switzerland.
 - Chafe, Wallace. (1996). Beyond beads on a string and branches on a tree. In A. E. Goldberg (Ed.), *Conceptual Structure, Discourse and Language* (pp. 49-65). Stanford, CA: CSLI.
- Applications**
- Marcu, Daniel. (1999). Discourse trees are good indicators of importance in texts. In I. Mani & M. Maybury (Eds.), *Advances in Automatic Text Summarization* (pp. 123-136): The MIT Press.
 - Jill Burstein, Daniel Marcu, and Kevin Knight (2003) Finding the WRITE stuff: automatic identification of discourse structure in student essays. *IEEE Intelligent Systems*, pp. 32-39, Jan/Feb, 2003.
 - Marco Carbone, Gal, Ya'akov, Shieber, Stuart, Grosz, Barbara (2004) Unifying annotated discourse hierarchies to create a gold standard. *Proceedings of the 4th SIGdial Workshop on Discourse and Dialogue*. Cambridge, MA.

10. DISCOURSE MARKERS

- Readings**
- Fraser, B. (1999) What are discourse markers? *Journal of Pragmatics* 31. 931-52.
 - Schiffrin, D. (2001) Discourse markers: Language, meaning and context. In D. Schiffrin, D. Tannen and H. Hamilton (eds.) *The Handbook of Discourse Analysis*. Malden, Mass: Blackwell. 54-75.
- Applications**
- Arnold, Jennifer E., Fagnano, Maria, & Tannenhaus, Michael K. (2003). Disfluencies signal thee, um, new information. *Journal of Psycholinguistic Research*, 32(1), 25-36.
 - Janet Cahn (1992) An investigation into the correlation of cue phrases, unfilled pauses and the structuring of spoken discourse. In *Workshop on Prosody in Natural Speech*, pages 19--31, 1992

11. OTHER APPLICATIONS (subject to students' interests)

Forensic linguistics

Shuy, R. (2001) Discourse analysis in the legal context. In D. Schiffrin, D. Tannen and H. Hamilton (eds.) *The Handbook of Discourse Analysis*. Malden, Mass: Blackwell. 437-452.

Discourse in educational settings

Temple Adger, C. (2001) Discourse in educational settings. In D. Schiffrin, D. Tannen and H. Hamilton (eds.) *The Handbook of Discourse Analysis*. Malden, Mass: Blackwell. 503-517.

Discourse across culture

Blum-Kulka, S., J. House and G. Kasper (1989) Investigating cross-cultural pragmatics: An introductory overview. In *Cross-Cultural Pragmatics: Requests and Apologies*. Norwood, NJ: Ablex. 1-34.

Discourse and aging

Hamilton, Heidi E. (2001) Discourse and aging. In D. Schiffrin, D. Tannen & H. E. Hamilton (Eds.), *The Handbook of Discourse Analysis* (pp. 568-589). Malden, Mass: Blackwell.

Discourse and gender

Kendall, Shari and Tannen, Deborah (2001) Discourse and gender. In D. Schiffrin, D. Tannen & H. E. Hamilton (Eds.), *The Handbook of Discourse Analysis* (pp. 548-567). Malden, Mass: Blackwell.

Social psychology

Harré, Rom (2001) The discursive turn in social psychology. In D. Schiffrin, D. Tannen & H. E. Hamilton (Eds.), *The Handbook of Discourse Analysis* (pp. 688-706). Malden, Mass: Blackwell.

Discourse and conflict

Kakavá, Christina (2001) Discourse and conflict. In D. Schiffrin, D. Tannen & H. E. Hamilton (Eds.), *The Handbook of Discourse Analysis* (pp. 650-670). Malden, Mass: Blackwell.