

CS/ENGRI 172, Fall 2002

11/11/02: Lecture Thirty-One Handout

Topics: The Grosz and Sidner theory of discourse structure.

Announcements: Reminder: the final is scheduled for December 20th, 9-11:30am, Olin 165.

The Grosz and Sidner theory

This theory, proposed by Barbara Grosz and Candace Sidner in “Attention, Intentions, and the Structure of Discourse” (*Computational Linguistics* 1986), posits three components of discourse structure:

1. *Linguistic*: groupings of the utterances into *discourse segments*. Each discourse segment corresponds to a *discourse segment purpose* (DSP), the intention that the speaker *wants the other conversational participant(s) to recognize*.
2. *Intentional*: relations between DSPs:
 - *domination*: satisfaction of one DSP furthers another DSP;
 - *sat-precedence*: satisfaction of one DSP must precede the satisfaction of another DSP.

The intentional structure defined by these two relations can be represented by a partially-ordered tree. *Cue phrases* aid the recognition of this structure.

3. *Attentional*: groupings of discourse entities into *focus spaces*, indicating a *salience ordering*. The focus spaces for active discourse segments are maintained on the *focus stack*.

(OVER)

Excerpt from commentary on match 1, game 2 of Kasparov vs. Deep Blue, which can be found at <http://park.org/Cdrom/Pavillions/IBW/DeepBlue/commgm2.html>.

Welcome to the LIVE commentary of the Kasparov - Deep Blue Challenge. What you're reading is exactly what Maurice [Ashley] and Yasser [Seirawan] are saying at the match - thanks to the fine work of the stenographers at the scene. Please forgive them a typo or two and enjoy the match!!

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1 MR. ASHLEY: Welcome to the ACM chess
 2 challenge. I'm Maurice Ashley. My partner is
 3 Yasser Seirwan. Garry Kasparov is playing
 4 against IBM's Deep Blue, and as most everybody
 5 here knows, he is down 1 nothing already. So
 6 Kasparov needing to play well in order to come
 7 back. A big question for him is whether or not
 8 he can handle the psychological pressure of
 9 being down against the computer that, first of
 10 all, everybody thought he was going to beat,
 11 including himself and, second of all, he simply
 12 has no idea how strong it is because this
 13 version that they're using has never been
 14 tested and is clearly playing some excellent
 15 chess.
 16 Yasser, yesterday's game was a model of
 17 computer cold-bloodedness.
 18 MR. SEIRAWAN: Precision.
 19 MR. ASHLEY: It just did not care about
 20 Kasparov's attack and just ripped him off the
 21 board. It was unbelievable.
 22 MR. SEIRAWAN: It's terrible. I'm still
 23 recovering.
 24 (Laughter.)
 25 MR. SEIRAWAN: Actually, prior to the match I
 26 had said, okay, it's great. This is wonderful.
 27 There's a lot of hype, the best computer the
 28 world versus the best human player in the
 29 world. Well, it's no contest. Garry is going to
 30 just win. And I would be shocked, shocked if
 31 the computer won any game. So naturally --
 32 MR. ASHLEY: So you're in shock.
 33 MR. SEIRAWAN: I'm in shock.
 34 So naturally Deep Blue won the first, and just
 35 as you were saying, Maurice, I can't fault any
 36 single move that the computer made.
 37 We had dinner last night together with a group
 38 of ourselves, and we just kept going through
 39 the game at various stages, and we said, this
 40 is a very, very serious opponent for Garry.
 41 This is a very legitimate match, and of course
 42 now that Garry is down a point, he's got to
 43 prove himself. Yesterday I had spoken about the
 44 fact that in tennis -- and again I'm probably
 45 misattributing the quote. It was of Rod Laver,
 46 when he was going to sum up his opposition, he

47 said, I only need to see 3 shots. I need to see
 48 the forehead, backhand and the serve, and then
 49 I will tell you how long or how many sets the
 50 match is going to last before I win.
 51 And Garry said the same thing on Friday at the
 52 press conference. He said basically I need to
 53 see the computer on offense, on defense, and
 54 then the match is going to be mine. So he
 55 basically saw the first 2 games as just being
 56 his ability to sum up his opponent and then
 57 vanquish him in the latter half of the match.
 58 Well, that may still work, but he's got his
 59 work cut out for him. He's made it more
 60 difficult for himself.
 61 MR. ASHLEY: What about the psychological
 62 pressure on him? From what I've seen, I've seen
 63 Kasparov down in matches before. He was down
 64 against Anand in game 9. He was down against
 65 Kramnik in the Paris leg of the Gran Prix
 66 tournament and came back and won. In each case
 67 Kasparov seems to bounce back from matches. He
 68 is not just the kind of guy who goes down in
 69 chess games and falls apart.