Quotations: triply multidimensional

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Outline

- Quotation: phenomena and dimensions
- Kaplan on indexicals and quotation
- Potts on quotation
- Is multidimensionality necessary?

Quotation: Reported Speech

- Who is the speaker?
  context of utterance needed to compute indexical reference

  (1) I am a fool

- **New dimension**: adding context of utterance as a new index in interpretation [Kaplan, 1989]
- Important parameter to track, not just in dialogue
  Reported speech: different speakers
  - direct reported speech

    (2) Otto: "I am a fool"

    (3) Otto said "I am a fool"

  - indirect reported speech

    (4) Otto said that I am a fool $\neq$ Otto said that he is a fool

Pure Quotation and Metalinguistic Reference

- Pure quotation

  (5) 'I am a fool' is four words long.

- Wide range of linguistic expressions, strings of letters, sounds...

  (6) Ali's favorite word is *salmagundi*.

  (7) 'eckullectic' is not an English word.

  (8) *[æ]pricot* begins with a low-front vowel.

- **New dimension**: extending domain of reference with linguistic objects [Potts, 2007]

Metalinguistic Reference in Reported Speech
Mixed Quotation

- Opacity of direct reported speech: original indexicals are kept as well as linguistic errors

  (9) Bush: "I've, I've got a eckullectic reading list."

  (10) Bush said that he has an eclectic/*eckullectic reading list.

- Direct reported speech refers to linguistic expressions uttered, indirect reported speech refers to propositional content
- Mixed (direct and indirect) reported speech

  (11) The president said he has an "ecelectic" reading list.

Use and Mention

- Mentioning someone else's words vs.
  using someone else's words in one's proposition
- Mixed *and* direct quotations do both at once → double contribution [Davidson, 1979, Potts, 2007, Maier, 2007]

(12) The president said he has an "ecelectic" reading list.

a. Bush said that he has an eclectic reading list.
b. Bush uttered *ecelectic*.

(13) Otto said "I am a fool"

a. Otto uttered *I am a fool*
b. Otto said that he is a fool

(14) "My girlfriend bought me this tie," said John, but I don't think she did [Partee 1973]

- **New dimension**: more than one semantic contribution for one utterance [Davidson, 1979, Potts, 2005, Potts, 2007]

Kaplan on indexicals [Kaplan, 1989]

(Pure) indexicals: *I*, *here*, *now*, *yesterday*

Two principles

- Dependent on context of utterance: different interpretations according to who utters the sentence

  (15) I am here now

- Directly referential, i.e., fixed reference for all possible circumstances (worlds): interpretation doesn't vary with embedding in intensional contexts

  (16) I wish I were not speaking now

Kaplan's character

- Meaning: distinction of Content and Character
- Interpretation is a function dependent on two parameters (indexes)
  - Content of an utterance = "what is said", a proposition
    content of any expression = its intension
    Content + *circumstance* (*world*) → *extension*
  - Character of an expression = what "determines the content in varying contexts"
    Character + *context* → *content*
- For other expressions than indexicals, character = content

Semantics

- Structure: $\langle \mathcal{C}, \mathcal{W}, \mathcal{D}, [\![]\!] \rangle$ [omitting times and locations]
  - $\mathcal{C}$: set of contexts, $\mathcal{W}$: set of worlds
  - $\mathcal{D}$: domain, including (speaking) agents (Kaplan's $\mathcal{U}$)
  - $\mathcal{C} \subset \mathcal{D} \times \mathcal{W}$: a context c fixes the speaker s_c and the actual world w_c, $c = \langle s_c, w_c \rangle$
- Semantics in three steps (here for a NP)
  - character $[\![\alpha]\!] : \mathcal{C} \to (\mathcal{W} \to \mathcal{D})$
  - content $[\![\alpha]\!]^c = [\![\alpha]\!](c) : \mathcal{W} \to \mathcal{D}$
  - extension $[\![\alpha]\!]^c_w = [\![\alpha]\!]^c(w) \in \mathcal{D}$
- Utterance of sentence ϕ in context c expresses a proposition $[\![\phi]\!]^c$, true iff $[\![\phi]\!]^c_{w_c} = 1$
- $[\![I]\!]^c_w = s_c$, speaker of context c
- $[\![\textit{the speaker}]\!]^c_w$: set by world w

Kaplan on quotations

Proposed but not fully worked-out in [Kaplan, 1989]

- $[\![\textit{I am a fool}]\!]^c_{w_c} = 1$ iff $s_c(= \textbf{laure}) \in [\![\textit{fool}]\!]^c_{w_c}$
- $[\![\textit{Otto said "I am a fool"}]\!]^c_{w_c} = 1$ iff
  $\exists w$ s.t. $\texttt{say}(\texttt{otto}, [\![\textit{I am a fool}]\!], w)$ $\texttt{say}$: primitive relation
- Reduction of indirect reported speech to direct
  SAY defined operator

  $[\![\textit{Otto said that I am a fool}]\!]^c_{w_c} = 1$ iff $\exists w$ s.t.
  $[\![\textit{SAY}_{\texttt{otto}}(\textit{I am a fool})]\!]^c_w = 1$ iff $\exists C$ s.t.
  $\texttt{say}(\texttt{otto}, C, w)$ and $C(\langle \texttt{otto}, w \rangle) = [\![\textit{I am a fool}]\!]^c$

  $C \approx [\![\textit{Laure is a fool}]\!]$
- No monsters

  Fixity of indexicals: no operator M in language s.t.
  $[\![M\phi]\!]^c_w = 1$ iff $\exists c'\ [\![\phi]\!]^{c'}_w = 1$
  $\rightarrow$ Quotation in direct reported speech is not a linguistic operator

Limitations

- Direct reported speech in Kaplan based on characters, i.e., meanings, not linguistic expressions
  - No account of pure quotations
  - No account of linguistic errors
  - Too transparent (except for indexicals)
- No distinction between use and mention in direct reported speech
- Computation of indexical reference in argument of `say` left to semantics of primitive `say`

Potts on quotation [Potts, 2007]

- Grammar handling triples of phonological + syntactic + semantic representation: $\langle \Pi\,;\,\Sigma\,;\,\alpha : \tau \rangle$
- Linguistic objects in the domain
  - new type u of entities in the grammar, names of linguistic objects
  - constructor $\ulcorner\urcorner$ producing entities of type u from any linguistic expression of the grammar
- Double contribution for direct and mixed quotations: use and mention

Grammar

- Base lexicon
  - $\langle$[hoʊmər] ; NP ; `homer` : $e\rangle$
  - $\langle$[bɔld] ; $S/_L NP$; `bald` : $\langle e, t\rangle\rangle$
- Composition in the grammar: Concatenation, Directional application, Functional application
- $\langle$[hoʊmər ɪz bɔld] ; S ; `bald(homer)` : $t\rangle$
- Linguistic objects
  - if $\langle \Pi ; \Sigma ; \alpha : \tau\rangle$ is well-formed, $\langle \Pi ; \Sigma ; \ulcorner\langle \Pi ; \Sigma ; \alpha : \tau\rangle\urcorner : u\rangle$ is well-formed
  - $\ulcorner\langle$[hoʊmər ɪz bɔld] ; S ; `bald(homer)` : $t\rangle\urcorner$ noted for short $\ulcorner$ Homer is bald $\urcorner$

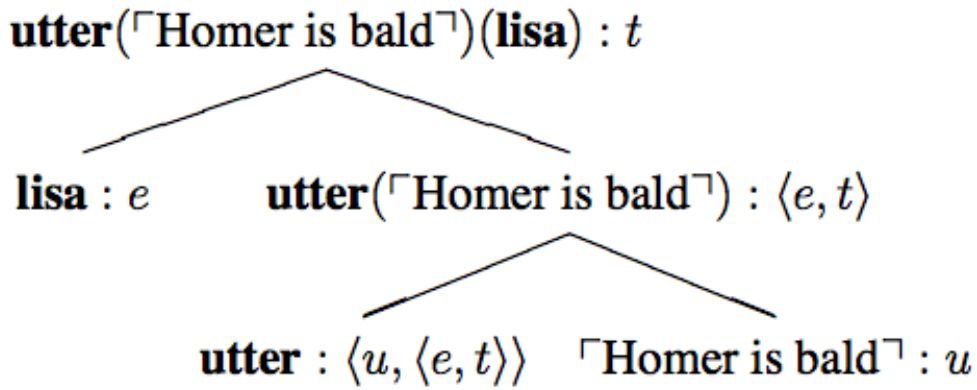
Semantics

- Two domains of individual entities
  - D_e domain for type e, non-linguistic, entities
  - D_u domain for type u, linguistic, entities
  - $D_e \cap D_u = \emptyset$
- W, set of worlds, to interpret entities of type t (propositions): $D_t = \mathcal{P}(W)$
- Entities of type $\langle \sigma, \tau \rangle$ are interpreted in $D_{\langle \sigma, \tau \rangle}$, the set of functions from D_σ to D_τ
- $[\![\ulcorner \langle [\text{hoʊmər ɪz bɔld}] ; S ; \texttt{bald(homer)} : t \rangle \urcorner]\!] =$
  $\langle [\text{hoʊmər ɪz bɔld}] ; S ; \texttt{bald(homer)} : t \rangle$

Pure quotation

(17) Lisa uttered (the sentence) *Homer is bald*.

- $\texttt{utter}(\ulcorner\text{Homer is bald}\urcorner)(\texttt{lisa})$
- $\texttt{utter} : \langle u, \langle e, t\rangle\rangle$
- $[\![\texttt{utter}(\ulcorner\text{Homer is bald}\urcorner)(\texttt{lisa})]\!] =$
  $[\![\texttt{utter}]\!](\langle[\text{hoʊmər ɪz bɔld}]; S; \texttt{bald(homer)} : t\rangle)([\![\texttt{lisa}]\!]) =$
  the set of worlds in which $[\![\texttt{lisa}]\!]$ utters $[\![\ulcorner\text{Homer is bald}\urcorner]\!]$



Indirect reported speech

(18) Lisa said that Homer is bald.

- say(bald(homer))(lisa)
- say : $\langle t, \langle e, t \rangle \rangle$
- Semantics of a propositional attitude verb (e.g., believe)
- $[\![\text{say(p)(lisa)}]\!] =$
  $[\![\text{say}]\!]([\![\text{p}]\!])([\![\text{lisa}]\!]) =$
  the set of worlds w in which every utterance world w' accessible for $[\![\text{lisa}]\!]$ in w is s.t. $w' \in [\![\text{p}]\!]$
- No reduction of indirect to direct
  No link between $[\![\text{say}]\!]$ and $[\![\text{utter}]\!]$?

Direct reported speech, clausal quotation

(19) Lisa said "Homer is bald".

- $\mathtt{say}_q(\ulcorner \text{Homer is bald} \urcorner)(\mathtt{lisa})$
- $\mathtt{say}_q : \langle u, \langle e, t \times t \rangle \rangle$ double contribution
- $[\![\mathtt{say}_q(\ulcorner \text{Homer is bald} \urcorner)(\mathtt{lisa})]\!] =$
  $[\![\mathtt{utter}(\ulcorner \text{Homer is bald} \urcorner)(\mathtt{lisa})]\!] \bullet [\![\mathtt{say}]\!]([\![\mathtt{p}]\!])([\![\mathtt{lisa}]\!])$
- How to get the right $\mathtt{p}$?

The *SEM* function

- Function to access to the semantic representation of an interpreted triple $\langle \Pi\,;\,\Sigma\,;\,\alpha : \tau \rangle$
- $\mathit{SEM}(\langle \Pi\,;\,\Sigma\,;\,\alpha : \tau \rangle) = \alpha$
- $\mathit{SEM}([\![\ulcorner \text{Homer is bald} \urcorner]\!]) = \texttt{bald}(\texttt{homer})$
- $[\![\mathit{SEM}([\![\ulcorner \text{Homer is bald} \urcorner]\!])]\!] =$
  $[\![\mathit{SEM}(\langle [\text{hoʊmər ɪz bɔld}]; S; \texttt{bald}(\texttt{homer}) : t \rangle)]\!] =$
  $[\![\texttt{bald}(\texttt{homer})]\!] =$ the set of worlds in which Homer is bald
- $[\![\texttt{say}_q(\ulcorner \text{S} \urcorner)(\text{b})]\!] =$
  $[\![\texttt{utter}(\ulcorner \text{S} \urcorner)(\text{b})]\!] \bullet [\![\texttt{say}]\!]([\![\mathit{SEM}([\![\ulcorner \text{S} \urcorner]\!])]\!])([\![\text{b}]\!])$

Type of say_q

- $\text{say}_q : \langle u, \langle e, t \times t \rangle \rangle$
- Quoting questions or imperatives instead of assertions
  No longer say_q, but ask_q, $command_q$
- Composing with pairs of propositions in the grammar
  Embedding say_q in intensional contexts: both propositions should be preserved

  (20) Bart believes that Lisa said "Homer is bald"

  Attitude verbs should take multidimensional content too $\rightarrow$ generalization of the approach, allowing many dimensions

Indexicals? [Maier, 2007]

- Indexicals in quotations not handled
- Extend the framework with Kaplan's contexts
- say_q a monster? Shifts the context in the argument of *SEM*

Mixed quotation (sub-clausal quotation)

(21) When in Amherst, Peter orders "[æ]pricots" at the local market.

- Lexicon: $\langle$[æprɛkɔts]; *NP*; $\texttt{apricots} : e\rangle$
- Cannot apply say_q: mention dimension still a proposition, but not the use one (many types σ possible, according to sub-clausal element used)
- Composition can't involve a proposition, main reading = use
- Use dimension composes locally, mention dimension projects up (cf. conventional implicature case)

Lexicon? [Maier, 2007]

- Extended lexicon
  - 'Reported' sounds: Phonology but no syntax and no semantics

    (22) John screamed "AAyyeee!"

  - Quoted linguistic errors:
    Mispronounced words require ad-hoc lexicon extension with possible semantics

    (23) The president said he has an "ecelectic" reading list.

- Binding between non-words and their meaning in use, e.g. "ecelectic" $\rightsquigarrow$ `eclectic` should be done in pragmatic context
  - "misunderestimated" $\rightsquigarrow$ `underestimated`
  - "misunderestimated" $\rightsquigarrow$ `misunderstood`

2D or 1D in dynamic account? [Geurts and Maier, 2005]

Critique of Potts' 2D analysis and new proposal

- 1D possible:
  - Mention handled as a presupposition
  - Meaning argument in Use, left underspecified
- Dynamic framework (DRT with presupposition [van der Sandt, 1992])
  - Exact meaning of Use specified in context
  - No arbitrary extended lexicon

Is discourse really 1D?

We'll see in next lecture a stronger discourse representation framework, SDRT. Multi-dimensional, in a different way.

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