Default Semantics
and Pragmatic Compositionality

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How much does pragmatics contribute to the semantic representation?

Can semantic representation be cognitively real and compositional at the same time?


Selected applications: (i) temporal reference; (ii) expressing the self
(1) ‘The city is asleep.’

\[ \exists x \ (\text{City} (x) \land \forall y \ (\text{City} (y) \rightarrow y = x) \land \text{Asleep}(x)) \]

→ ‘the city we are looking at’
resolving referential or attributive reading on the level of semantics, not pragmatics

Asleep (l)

l = London
resolving metaphors on the level of semantics:

\[ \text{Quiet (l)} \]

or:

\[ \forall x \ (\text{Inhabitant-of-}l (x) \rightarrow \text{Asleep}(x)) \]

or:

\[ \cdots \]
The traditional picture:

past uses >> abstraction >> linguistic meaning >> contextual modulation >> contextual sense
Radical contextualism:

past uses and context

>> abstraction/modulation

>> contextual sense

adapted from Recanati (2005:190)
abstraction/modulation (‘The city is asleep’)
(2) Tomorrow I go to London.

(3) f3on t1ok (Thai)

rain fall
Assumptions

• The output of syntactic processing often leaves the meaning underdetermined.

• The object of study of a theory of meaning is a pragmatically modified representation.

• There is no syntactic constraint on the object of study.
a rationale for a radical contextualist theory

(Default Semantics)
(4) A: Shall we meet tomorrow?

B: I’m in London.

(4a) B is in London at the time of speaking.

(4b) B will be in London the following day.

(4c) B can’t meet A the following day. √
Interlocutors frequently communicate their main intended content through a proposition which is not syntactically restricted.
Merger Representation

• Primary meanings are modelled as merger representations ($\Sigma$).

• Merger representations have the status of mental representations.

• They have a compositional structure.

• The outputs of sources of information about meaning merge and all the outputs are treated on an equal footing.
Frege and the principle of compositionality

Gottlob Frege, 1892, ‘Über Sinn und Bedeutung’
The meaning of a sentence (utterance/statement/thought) is the meaning of its parts and the structure in which they are involved.
Sources of information for Σ in DS

(i) world knowledge (WK)
(ii) word meaning and sentence structure (WS)
(iii) situation of discourse (SD)
(iv) properties of the human inferential system (IS)
(v) stereotypes and presumptions about society and culture (SC)
(iv) properties of the human inferential system IS

(5) The author of *Hamlet* was a genius.

→

(5a) William Shakespeare was a genius.
Fig. 1: Sources of information contributing to a merger representation $\Sigma$
sources of information <-> types of processes
## Mapping between sources and processes

<table>
<thead>
<tr>
<th>Source</th>
<th>Mapping to</th>
</tr>
</thead>
<tbody>
<tr>
<td>WK</td>
<td>SCWD or CPI</td>
</tr>
<tr>
<td>SC</td>
<td>SCWD or CPI</td>
</tr>
<tr>
<td>WS</td>
<td>WS (logical form)</td>
</tr>
<tr>
<td>SD</td>
<td>CPI</td>
</tr>
<tr>
<td>IS</td>
<td>CD</td>
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</tbody>
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DS makes use of the processing model and it indexes the components of $\Sigma$ with a subscript standing for the type of processing.
Primary meaning:

combination of word meaning and sentence structure (WS)

merger representation $\Sigma$

conscious pragmatic inference $\text{pm}$
(from situation of discourse, social and cultural assumptions, and world knowledge) ($\text{CPI}_{\text{pm}}$)

social, cultural and world-knowledge defaults $\text{pm}$ ($\text{SCWD}_{\text{pm}}$)

cognitive defaults (CD)

Fig. 2: Utterance interpretation according to the processing model of the revised version of Default Semantics
Compositionality of primary meanings
Two examples of applications
Example 1

Representing Time
Main questions

- Is the human concept of time a universal concept?
  Probably yes

- Is it primitive or composed of simpler concepts?
  Supervenient on properties of modality

- How do linguistic expressions of time reflect it?
  Representations in Default Semantics
Merger Representations for the Past

(6) **Lidia went to a concert yesterday.** *(regular past)*

(7) **This is what happened yesterday. Lidia goes to a concert, meets her school friend and tells her…** *(past of narration)*

(8) **Lidia would have gone to a concert (then).** *(epistemic necessity past)*

(9) **Lidia must have gone to a concert (yesterday).** *(epistemic necessity past)*

(10) **Lidia may have gone to a concert (yesterday).** *(epistemic possibility past)*

(11) **Lidia might have gone to a concert (yesterday).** *(epistemic possibility past)*
Fig. 3: Degree of epistemic commitment for selected expressions with past-time reference

\[ rp, \ pn \quad enp \quad epp \]

1 \quad 0
Supervenience

A set of properties $T$ supervenes on a set of properties $M$ iff no two things can differ with respect to $T$ properties without also differing with respect to $M$ properties.

‘There cannot be a $T$-difference without an $M$-difference.’

adapted from McLaughlin & Bennett 2005
supervenience of the concept of time on the concept of epistemic detachment

(= temporal properties on modal properties in semantics)
$\text{Acc} \vdash \varphi$ \quad ‘it is acceptable that it is the case that $\varphi$’

Grice (2001)
ACC$_\Delta \vdash \Sigma$

‘it is acceptable to the degree $\Delta$ that $\Sigma$ is true’
amended and extended language of DRSs

(Kamp and Reyle 1993)
Past-time reference in Thai (pragmatic)

(12) m₃ae:r₃iːː kh₂i’an n₃i’y₃aiː:

Mary write novel
Fig. 4: $\Sigma$ for example (12) ‘Mary wrote a novel’ (regular past)

\[
\begin{align*}
\Sigma & \quad \text{[m$_3$ae:r$_3$i:]$_{CD}$ (x)} \\
\Sigma' & \quad \text{[n$_3$iy$_3$ai:]$_{CD}$ (y)} \\
\Sigma' & \quad \text{[x kh$_2$ian y]$_{WS}$} \\
[ACC$_\Delta^{rp}$} & \quad \vdash \Sigma'_WS, \text{CPIpm}
\end{align*}
\]
qualitative differences between P, N, F

quantitative modal differences ($\Delta$ in $\text{ACC}_\Delta$)
quantitative concept ($\text{ACC}_\Delta$) \leftrightarrow qualitative concepts ($P, N, F$)

(i) correlation (Modal-Contextualist view)

or

(ii) $P, N, F$ as quantitative concepts (Direct-Quantitative view)
Example 2

Expressing the Self
Expressing the Self: Cultural Diversity and Cognitive Universals,
The Leverhulme Trust Project, University of Cambridge

Kasia M. Jaszczolt
Minyao Huang
Rodanthi Christofaki

http://www.mml.cam.ac.uk/dtal/expressing-the-self/
Argument from the lack of a principled distinction between indexical and non-indexical expressions

- Which expressions count as indexicals?

- What criteria ought to be adopted for delimiting the class membership?

- Pragmaticising indexicality

Example: first-person reference (I)
Indexical

‘a linguistic expression whose reference can shift from context to context’

Braun (2015: 1)

I, you, here, now
I, you, here, now, today, she, there, then, yesterday, tomorrow, actual, present

tall, ready, local, come, go, left, know

tense, modals, quantifiers
Indexicals are devices of direct reference (Kaplan 1989)

(13a) I am the speaker.

(13b) Kasia Jaszczolt is the speaker.

$\lambda x \ [\text{speaker}(x)] \ (\text{kasia jaszczolt})$

Referent exhausts the semantic role.
Kaplan: Indexicals are rigid designators

They designate the same referent in all possible worlds.

Character: I >> context of the current speech act >> reference assignment (KJ) >> content (fixed for all possible worlds)

Kaplan’s (1989) two-dimensional semantics
Indexicals are not expressions but at most functions of expressions:

common nouns used with an indexical role/pronouns used with a non-indexical role
(14) Sammy wants a biscuit.

(15) Mummy will be with you in a moment.

(16) A screen fell over and muggins here went to fix it.

(17) Everyone left and yours truly had to pay the bill.
The first-person marker has the characteristics of both a pronoun and a noun.

Pronouns and nouns are not morphologically different: like nouns, pronouns do not form a closed class; like nouns, they form the plural by adding a plural morpheme;

e.g. Japanese, Thai, Burmese, Javanese, Khmer, Korean, Malay, or Vietnamese

Typically: ‘slave’, ‘servant’, royal slave’, ‘lord’s servant’, ‘Buddha’s servant’ are used for self-reference with self-denigration;

- Thai: 27 forms for first person (cf. ‘mouse’) (Siewierska 2004: 228; Heine and Song (2011);
- Japanese: up to 116 (Christofaki in progress).
First-person markers are not indexicals.

Honorification is a compulsory social aspect of their meaning.
• Spatial deixis employed for self-reference (e.g. Thai  XCTAssertTrue("phōm₁ nii₂"); 'one male this'; Japanese kotira, Korean yeogi, and Vietnamese hây, 'here').

• Reflexives (Chinese ziji, Japanese zibun/jibun, Vietnamese mình).

• Acoma (New Mexico), Wari’ (Brazil): no personal pronouns (Heine and Song 2011).
The indexical/non-indexical dichotomy does not stand up to scrutiny in the case of any natural language in that admixtures of other aspects of meaning that take the deictic term beyond the bounds of pure, direct reference can always be attested.
Kratzer (2009): pronouns can be ambiguous between a referential and a bound-variable interpretation

(18) I’m the only one around here who can take care of my children.

(19) Only I admitted what I did wrong.
(20) Stop that John! ‘Nobody likes me’. ‘I am miserable’. Don’t you think you exaggerate a bit? (Recanati 2000: 182)
Stop that John! “Nobody likes me”. “I am miserable”. Don’t you think you exaggerate a bit?

‘character-at-issue’

>> Dynamic incremental interpretation:

(‘Don’t you think you exaggerate a bit?’)

➔ ‘content-at-issue’ (John’s self-pity)
(21) One can hear the wolves from the veranda.

(22) It is scary PRO to hear the wolves from the veranda.

- **Generic one and arbitrary PRO:**

  Generic *one* and arbitrary (non-controlled) PRO express ‘generalizing detached self-reference.’ (Moltmann 2010: 440)
My brother refused to eat with me.

(from Leslau 1995: 778)
Character: I >> context of the current speech act >> reference assignment (KJ) >> content (fixed for all possible worlds)
My brother refused to eat with me.

(from Leslau 1995: 778)
*albälamm* enters into the report as one concept – a thought from the first-person perspective, ‘I refuse to eat’.

The problem: *käne gar* (‘with me’) – seemingly a first-person object juxtaposed with the first-person subject.
(23a) wändemmə kānə gar albālamm alā

my-brother with-me “I-will-not-eat”, he said
Inanimate subject

(24) mäskotu aləkkäffät alä
the-window "I-will-not-be opened" it-said

‘The window wouldn’t open’

(from Leslau 1995: 782)
The analysis:

Lexicon/grammar/pragmatics trade-offs

Amharic:

(i) the subject *imposes*, so to speak, the first-person perspective that is inseparable from the relevant verb (‘window’ and ‘open’, ‘brother’ and ‘eat’, etc.); (Mengistu, p.c.);

(ii) the verb *alä* seems to be used to reflect the conceptual rather than (or, in addition to) the speech-act content.

Grammar directly reflects conceptualisation.
What is encoded in the grammar of Amharic, English externalises by a conceptual shift to the context of the current speech act (pragmatic process), opting for the speaker’s perspective rather than the perspective that belongs to the subject of the activity or state in question.
Roberts (2014) this variation in the choice of perspective suggests the so-called *doxastic centers*:

A doxastic center is ‘an ordered pair consisting of a doxastic agent $a$ and a time $t$: $<a,t>$’ (p. 32).
‘An indexical is an expression whose interpretation conventionally presupposes a relation to the doxastic point of view of a contextually available discourse center, its anchor.’
Roberts (2014: 7)

These ‘centers’ can shift as discourse progresses, so a character of an indexical term is not allocated a content once and for all: it can shift. This is captured by the proposed ‘perspective shifting function’.
Perspective-shifting applies equally to various categories of expressions.

- ‘indexicals’ – indexical and nonindexical uses
- Common nouns – indexical and nonindexical uses
- Grammaticalisation? (‘I will not open’)
- Boundary problem (honorifics)
More complicated concepts than ‘tracking discourse referents’

Amharic: the-window “I-will-not-be opened” it-said

(25) Minyao thought I might be Deirdre.’

(cf. Stalnaker 2014: 121)

The “I” picks out the description.

→ more than tracking the referents; more than direct reference
Does the fact that indexicals are philosophers’ fiction pose a problem for the analysis of natural-language meaning?

It does not, but only when we adopt a contextualist stance in which unconstrained modifications of the logical form are regarded as a natural step in a truth-conditional analysis.

→ Default Semantics
But: no clear indexical/non-indexical distinction

All words are, in a sense, indexical: their meaning is at least potentially heavily context-dependent.

(26) John cut the grass/the cake.

(27) John dropped a pen/physics.
Natural language realisations of the concept ‘indexical expression’ are not slot-holders to be filled with a referent but convey a variety of meanings in addition to, or even instead of, referring.
“I once followed a trail of sugar on a supermarket floor, pushing my cart down the aisle on one side of a tall counter and back the aisle on the other, seeking the shopper with the torn sack to tell him he was making a mess. With each trip around the counter, the trail became thicker. But I seemed unable to catch up. Finally it dawned on me. I was the shopper I was trying to catch.”

Perry (1979: 3)
Fig. 5: $\Sigma$ for ‘I believed, in a sense, I was making a mess.’
(marked reading)
• Indexicals are philosophers’ fiction: they correspond at most to functions of natural language expressions;

• There is no clear boundary between expressions that can adopt an indexical role and those that cannot.
This suggests that formal semantics that relies on the rigid distinction between an indexical and non-indexical expression needs ‘pragmaticising’.

(Jaszczolt 2012b; 2013b,c; 2016)
Merger representations of Default Semantics allow us to represent lexicon/grammar/pragmatics trade-offs in expressing various concepts (e.g. temporal reference, self-reference) in discourse.

Compositionality is best understood as pragmatic compositionality, sought at the level of merger representations.

Radical contextualism seems to be the only framework that can account for the fact that words mix up indexical and non-indexical properties in one simple unit.
Thank You...
References

http://plato.stanford.edu/entries/indexicals


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