Types, judgements and lexical meaning

Robin Cooper
University of Gothenburg
Outline

A judgement-based view of lexical meaning

Meaning in flux

A matter of taste

Judgement and truth

Type acts

Shared meaning
Outline

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Shared meaning
A classical (model-theoretic) view of lexical meaning

- natural languages are like formal languages
- fixed interpretation
- truth is central to the notion of meaning
Judgement-based lexical meaning – in flux

- natural languages are toolboxes for constructing (formal) languages (Cooper and Ranta, 2008)
- interpretation in flux (Larsson and Cooper, 2009; Cooper, 2012)
- type theoretical judgement (leading to truth) is central to the notion of meaning – rich type theory
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Meaning in flux

**rise**

- Cooper (2012) on *rise*
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The temperature is rising (location/path constant)

China rises (China’s influence, economic and political power is increasing)

dog hairs rise (upstairs, as an argument that dogs should be allowed upstairs, Breitholtz and Cooper, 2011)
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- The temperature is rising (location/path constant)
- The price of tomatoes is rising (location and commodity constant)
Types, judgements and lexical meaning

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Acquisition of *gloves*

Naomi: mittens
Father: **gloves**
Naomi: gloves
Father: when they have fingers in them they are called gloves and when the fingers are all put together they are called mittens.

(CHILDES; Naomi (2;7.16)), cited by Clark (2007)

- analysis in Cooper and Larsson (2009)
- Naomi learns the word *gloves*
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- analysis in Cooper and Larsson (2009)
- Naomi learns the word *gloves*
- Her meaning of *gloves* is based on her meaning for *mittens*
- Her meaning of *mittens* must be revised
Conceptual Pacts

- Garrod and Anderson (1987) on the maze game
- Brennan and Clark (1996) on conceptual pacts
- Healey (1997) on task oriented sub-languages
Quotation

- Quotation can involve importing bits of other languages into the one you are speaking – *a certain “je ne sais quoi”*, He said, “*je ne regrette rien*”, *There’s a certain “je ne regrette rien” about his attitude which I’m not sure I like*

- fits with the idea of using linguistic resources to construct a local language
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- borrowing somebody else’s meaning/judgement: These “experts” can’t tell the difference between a serious project and a boondoggle
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- A not quite quotation version: *These so-called experts …*
Pragmatic haloes

- Lasersohn (1999) introduces the notion of pragmatic halo
- *Mary arrived at three o’clock*
- can it be true if Mary arrived one minute after three?
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Pragmatic haloes

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- *Mary arrived at three o’clock*
- can it be true if Mary arrived one minute after three?
- Lasersohn would say “no”, but close enough in certain circumstances
- I might want to say that *three o’clock* can have more or less precise meanings
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Judgement and truth

Type acts

Shared meaning
A disagreement?

A: This soup is delicious
B: No, it’s disgusting
A disagreement?

A: This soup is delicious
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Are A and B disagreeing?
A disagreement?

A: This soup is delicious
B: No, it’s disgusting

► Are A and B disagreeing?
► If so, what are A and B disagreeing about?
A disagreement?

A: This soup is delicious
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- Are A and B disagreeing?
- If so, what are A and B disagreeing about?
- Do A and B have the same meanings for delicious, disgusting?
A disagreement?

A: This soup is delicious
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- Are A and B disagreeing?
- If so, what are A and B disagreeing about?
- Do A and B have the same meanings for delicious, disgusting?
- Large literature addressing in large part the first two questions (including Björnsson and Almér (2011); Crespo and Fernández (2011); Stojanovic (2007))
**Are A and B disagreeing?**

- They don’t seem to be agreeing:
  - A: This soup is delicious
  - B: #No, I agree, it’s disgusting
  - A: This soup is delicious
  - B: #You’re right, it’s disgusting
Are $A$ and $B$ disagreeing?

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  - A: This soup is delicious
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- Judging superficially, they seem to be disagreeing:
  - A: This soup is delicious
  - B: No, I disagree, it’s disgusting
  - A: This soup is delicious
  - B: ?You’re wrong, it’s disgusting

“Faultless disagreement” – in contrast to:

- A: The temperature of this soup is exactly 40
  - B: No, you’re wrong, it’s exactly 43
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A matter of taste

Are $A$ and $B$ disagreeing?

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- “Faultless disagreement” – in contrast to:
  - A: The temperature of this soup is exactly 40°C
  - B: No, you’re wrong, it’s exactly 43°C
So what are people disagreeing about?

- At least on one understanding of this dialogue, A and B are not disagreeing about the meaning of the word *delicious* but about the *soup*

- A dialogue about the meaning of *delicious*:
  A: This soup is delicious
  B: Yes, it’s very good. I wouldn’t say it’s delicious.
  A: Yeah, “very good”, “delicious” – same thing

- If the original dialogue is a disagreement about the soup and not about the meaning then A and B must have (something like) the same meaning for *delicious*, or at least think they have
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Type acts

Shared meaning
Truth at the centre of semantics?

- traditional notions of proposition are based on truth
- e.g. truth in possible worlds, propositions as sets of worlds where the proposition is true
- in general, the approach to dealing with taste has been to refine this truth-theoretic approach by adding additional parameters (making truth relative or contextually determined)
- but ultimately there is some fact of the matter (*true*, *false* or perhaps undefined, e.g. a truth-value gap)
Judgements at the centre of type theory

- type theory gives us a slightly different spin on this
- a central notion is that of a *judgement* that an object $a$ is of a type $T$, $a : T$
- I have been trying to push the idea that this can be seen as an abstract theory of perception and cognition (Cooper, 2012)
Truth parasitic on judgement

- Judgement: situation $s$ is of type $T$
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True just in case $s : T$
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- Type: $T$
  “True” just in case there is something of type $T$ (Russellian proposition)
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- Types have existence independent of their extensions
- We may know a type but be unsure of its extension
- We may disagree about whether something belongs to a type or not
  
  A: It’s a tree
  B: No, it’s a bush
The idea

- rather than taking truth as basic and trying to finagle judgement
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- we take judgement as basic and say that in many cases, not all, there is, in addition, a fact of the matter
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- a Montagovian strategy: make the apparently more complex case basic and add to it for what you think of as being the ordinary case (cf. intensional verbs)
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- we only think of taste predicates as being difficult because we are starting from truth-based semantics rather than judgement-based semantics
The idea

- rather than taking truth as basic and trying to finagle judgement
- we take judgement as basic and say that in many cases, not all, there is, in addition, a fact of the matter
- a Montagovian strategy: make the apparently more complex case basic and add to it for what you think of as being the ordinary case (*cf.* intensional verbs)
- we only think of taste predicates as being difficult because we are starting from truth-based semantics rather than judgement-based semantics
- truth, or knowing the conditions under which something is of a type, is still very important
delicious types

- What type might *soup-is-delicious* be?
- Ignoring problems with demonstratives, *this soup is delicious* might correspond to
  \[
  \begin{align*}
  x &= \text{soup}_1 : \text{Ind} \\
  c_{\text{soup}} &= \text{soup}(x) \\
  e &= \text{delicious}(x)
  \end{align*}
  \]
  or, assuming some kind of backgrounding or presupposition
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```

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```
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```

- the property corresponding to the word *delicious*

```
λr : [x : Ind]( [ e : delicious(r.x) ] )
```
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- the property corresponding to the word *delicious*
  \[
  \lambda r : [x: \text{Ind}]([ e : \text{delicious}(r.x) ])
  \]
- So what might it mean for *A* and *B* to have the same meaning for *delicious*?
Relating lexical content to types

- Suppose the word *delicious* is associated in a lexicon with the content $\lambda r : [x:Ind]( e : \text{delicious}(r.x))$
- For ease of discussion we can say that *delicious* is associated with the type
  
  $$
  \begin{array}{c}
  x : \text{Ind} \\
  e : \text{delicious}(x)
  \end{array}
  $$

Relating lexical content to types

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  $\begin{bmatrix}
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- this is a *fixed point type* for the content
Relating lexical content to types

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- \( T \) is a fixed point type for a dependent type \( \mathcal{T} \) iff for any \( a \),

  \[
  a : T \rightarrow a : T(a)
  \]
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- this is a *fixed point type* for the content
- $T$ is a fixed point type for a dependent type $\mathcal{T}$ iff for any $a$, $a : T \rightarrow a : \mathcal{T}(a)$
- This allows us to talk about sameness of meaning in terms of type judgements.
- $w \rightsquigarrow A \ T$ “word $w$ is associated with type $T$ in agent $A$’s lexicon”
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Type acts

Shared meaning
Judgements

standard type theory

- $o : T$ “$o$ is of type $T$”
- $T$ true “there is something of type $T$”
Judgements

standard type theory

- $o : T$ “$o$ is of type $T$”
- $T \ true$ “there is something of type $T$”

including agents

- $o :_A T$ “agent $A$ judges that $o$ is of type $T$”
- $: _A T$ “agent $A$ judges that there is some object of type $T$”
Type act theory

- articulating and extending the notion of judgement in type theory
- cf speech act theory
- “Doing things with types”

**judgements**

\[ o :_A T \text{ “agent } A \text{ judges object } o \text{ to be of type } T” \]

\[ :_A T \text{ “agent } A \text{ judges that there is some object of type } T” \]
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{o :_A_ T} “agent A judges object o to be of type T”

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**queries**

{o :_A_ T} “agent A wonders whether object o is of type T”

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**judgements**

\[ o : A \ T \] “agent A judges object \( o \) to be of type \( T \)”

\[ : A \ T \] “agent A judges that there is some object of type \( T \)”

**queries**

\[ o : A \ T ? \] “agent A wonders whether object \( o \) is of type \( T \)”

\[ : A \ T ? \] “agent A wonders whether there is some object of type \( T \)”

**creations**

\[ : A \ T ! \] “agent A creates something of type \( T \)” (useful if \( T \) is a type of situation)
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Sameness of meaning

Alternative characterizations of “A has the same meaning as B for word w” (“A has the same meaning for word $w_1$ as B has for word $w_2$”):
Sameness of meaning

Alternative characterizations of “A has the same meaning as B for word \( w \)” (“A has the same meaning for word \( w_1 \) as B has for word \( w_2 \) ”):

- same type \( w \sim_A T \) and \( w \sim_B T \)
- same type and extension in addition, for any \( o, o :_A T \) iff \( o :_B T \)
Types, judgements and lexical meaning

Shared meaning

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- **same type** \( w \sim_A T \) and \( w \sim_B T \)
- **same type and extension** in addition, for any \( o \), \( o : A T \) iff \( o : B T \)
- **same extension** \( w \sim_A T_1 \), \( w \sim_B T_2 \)
  and for any \( o \), \( o : A T_1 \) iff \( o : B T_2 \)
Sameness of meaning

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- same type \( w \sim_A T \) and \( w \sim_B T \)
- same type and extension in addition, for any \( o \), \( o : A \ T \) iff \( o : B \ T \)
- same extension \( w \sim_A T_1, w \sim_B T_2 \) and for any \( o \), \( o : A \ T_1 \) iff \( o : B \ T_2 \)
- same extension, different words \( w_1 \sim_A T_1, w_2 \sim_B T_2 \) and for any \( o \), \( o : A \ T_1 \) iff \( o : B \ T_2 \)
Sameness of meaning for personal taste predicates

- A: This soup is delicious
- B: No, it’s disgusting

- only “same type” allows A and B to have the same meaning for delicious but have different judgements
- Suppose that everything A judges to be delicious B judges to be disgusting and vice versa. “same extension, different words” would predict that they have the same meaning for delicious/disgusting
The meaning of “same meaning”

- perhaps we individuate meaning differently on different occasions
- possibly all these characterizations have a use
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- it seems that “same type” (possibly different judgements) plays an important role a lot of the time
The meaning of “same meaning”

- perhaps we individuate meaning differently on different occasions
- possibly all these characterizations have a use
- it seems that “same type” (possibly different judgements) plays an important role a lot of the time
- this means we should think carefully about how we individuate types
Type individuation

- technically in TTR record types are structured complex objects, sets of fields (essentially label-type pairs)
- identified by standard set theory
Type individuation

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- types may correspond to classifiers (Larsson, 2011; Dobnik et al., 2011)
- delicious may correspond to a mapping from sensor input (tastebuds) to a very pleasant taste sensation
- the output of this mapping may be the same (or similar) for different agents even though different objects give rise to the taste sensation
Type individuation

▶ technically in TTR record types are structured complex objects, sets of fields (essentially label-type pairs)
▶ identified by standard set theory
▶ types may correspond to classifiers (Larsson, 2011; Dobnik et al., 2011)
▶ delicious may correspond to a mapping from sensor input (tastebuds) to a very pleasant taste sensation
▶ the output of this mapping may be the same (or similar) for different agents even though different objects give rise to the taste sensation
▶ similarly you may have two different classifiers (e.g. pleasant vs unpleasant taste) which are excited by the same objects (everything I think is delicious, you think is disgusting and vice versa)
Is meaning shared?

- Relating meaning to perceptual classifiers . . .
- . . . can quickly lead to a view that meanings are individual ideas (a Humean/Lockean view?, Ott, 2006)
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- where to draw the line between individual ideas/experiences/perception/encyclopaedic knowledge and (shared) lexical meaning?
Is meaning shared?

- Relating meaning to perceptual classifiers...
- ...can quickly lead to a view that meanings are individual ideas (a Humean/Lockean view?, Ott, 2006)
- where to draw the line between individual ideas/experiences/perception/encyclopaedic knowledge and (shared) lexical meaning?
- towards a view where there is enough similarity (but not necessarily identity) in meanings/ideas for given words to allow us to communicate
Conclusions

- word meaning in flux
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- judgement-based semantics, enhancing type theory with a theory of type acts
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- gives us a way of talking about dialogue participants having the *same (similar) meaning* but *different judgements*
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- both variation in meaning and variation in (type-theoretical) judgement
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- gives us a way of talking about dialogue participants having the *same (similar) meaning* but *different judgements*
- important for predicates of personal taste
- both variation in meaning and variation in (type-theoretical) judgement
- we need both
Bibliography I


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Disagreement about propositions

attitudes \( \text{this soup is delicious} \approx \text{I think this soup is delicious} \)
Disagreement about propositions

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A: This soup is delicious
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**indexical**  
\[ [ \text{This soup is delicious} ]_{\text{spA},...} \neq [ \text{This soup is delicious} ]_{\text{spB},...} \]
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**indexical**  
[[This soup is delicious]...\text{spA},... ≠  
[[This soup is delicious]...\text{spB},...

cf.  
[[I like this soup]...\text{spA},... ≠  
[[I like this soup]...\text{spB},...
Disagreement about propositions

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A: This soup is delicious  
B: ?#You’re entitled to your opinion, of course, but it’s disgusting

A: This soup is delicious  
B: You’re entitled to your opinion, of course, but I think it’s disgusting

**indexical**  
[[ This soup is delicious ]]\text{...},\text{spA},... \neq  
[[ This soup is delicious ]]\text{...},\text{spB},...

cf.  
[[ I like this soup ]]\text{...},\text{spA},... \neq  
[[ I like this soup ]]\text{...},\text{spB},...

A: I like this soup  
B: #No, I don’t /  
No, you don’t (you’re just saying that) / I don’t
A problem for speaker-relative assessment?

- Child: This medicine’s yucky
- Parent: Yes, I know (it’s yucky), but it will do you good
A problem for speaker-relative assessment?

- Child: This medicine’s yucky
- Parent: Yes, I know (it’s yucky), but it will do you good
- A: This soup tastes great
- B: Does it? (I’m glad / It’s horrible / I can’t tell what I think)
A problem for speaker-relative assessment?

- Child: This medicine’s yucky
  Parent: Yes, I know (it’s yucky), but it will do you good

- A: This soup tastes great
  B: Does it? (I’m glad / It’s horrible /
      I can’t tell what I think)

- Something more complex than straightforward indexical semantics is going on
A problem for speaker-relative assessment?

- Child: This medicine’s yucky
  Parent: Yes, I know (it’s yucky), but it will do you good
- A: This soup tastes great
  B: Does it? (I’m glad / It’s horrible / I can’t tell what I think)
- Something more complex than straightforward indexical semantics is going on
- A notion of perspective, similar to left and right
A problem for speaker-relative assessment?

- Child: This medicine’s yucky
- Parent: Yes, I know (it’s yucky), but it will do you good
- A: This soup tastes great
  - B: Does it? (I’m glad / It’s horrible /
          I can’t tell what I think)

Something more complex than straightforward indexical semantics is going on

- A notion of perspective, similar to left and right
- yet different in that, given a perspective, there is an objectively observable fact of the matter whether an object is to the left or right of another – and there is no neutral “fact” independent of perspective in the case of taste
Seeing a tree (a simulation view)
Seeing a tree (a simulation view)
Seeing a tree (a simulation view)
Seeing a tree (a simulation view)
Seeing a tree (a simulation view)

Gibson (1986); Barwise and Perry (1983)
Judgement

- (An agent judges that) object $a$ is of type $T$.
- $a : T$
Perception by different species
Seeing a hugging event

"The boy is hugging the dog."

Judgements at the centre
Subjective judgements and Austinian propositions

- agent $A$ judges object $a$ to be of type $T$, $a :_A T$

- subjective Austinian proposition:
  \[
  \begin{align*}
    \text{situation} & = s \\
    \text{type} & = T \\
    \text{agent} & = A
  \end{align*}
  \]
Subjective judgements and Austinian propositions

- agent $A$ judges object $a$ to be of type $T$, $a : A \ T$
- subjective Austinian proposition: $\begin{cases} \text{situation} = s \\ \text{type} = T \\ \text{agent} = A \end{cases}$
- true just in case $s : A \ T$
Subjective judgements and Austinian propositions

- agent $A$ judges object $a$ to be of type $T$, $a :_A T$
- subjective Austinian proposition:
  $\left[ \begin{array}{c} 
  \text{situation} = s \\
  \text{type} = T \\
  \text{agent} = A 
  \end{array} \right]$
- true just in case $s :_A T$
- Ultimately, we would probably also want to include at least the time at which the agent makes the judgement
Types of Austinian propositions

\[
\begin{align*}
\text{situation} & : \textit{Sit} \\
\text{type} & : \textit{Type}
\end{align*}
\]

Includes both objective (without agent) and subjective propositions (with agent)
Types of Austinian propositions

- [situation : \textit{Sit}]
  type : \textit{Type}

Includes both objective (without agent) and subjective propositions (with agent)

- [situation : \textit{Sit}]
  type : \textit{Type}
  agent : \textit{Ind}

Type of subjective propositions
Types of Austinian propositions

- \( [\text{situation} : \text{Sit}] \)
  type : Type
Includes both objective (without agent) and subjective propositions (with agent)

- \( [\text{situation} : \text{Sit}] \)
  type : Type
  agent : Ind
Type of subjective propositions

- \( [\text{situation}=\text{soup-is-delicious}] \)
  type : Type
  agent : Ind

a partially specified type of subjective propositions
Types as objects of dialogical negotiation

- types of objects as “underspecified representations of objects”
Types as objects of dialogical negotiation

- types of objects as “underspecified representations of objects”
- shared commitments (FACTS) as “underspecified representations of propositions”, i.e. types of propositions
Types as objects of dialogical negotiation

- types of objects as “underspecified representations of objects”
- shared commitments (FACTS) as “underspecified representations of propositions”, i.e., types of propositions
- saying *This soup is delicious* offers the type
  
  \[
  \begin{array}{c|c|c}
  \text{situation} & \text{Sit} \\
  \text{type= soup-is-delicious} & \text{Type} \\
  \text{agent} & \text{Ind} \\
  \end{array}
  \]
  
  or
  
  \[
  \begin{array}{c|c|c}
  \text{situation} & \text{Sit} \\
  \text{type= soup-is-delicious} & \text{Type} \\
  \end{array}
  \]
  
  and claims you can instantiate it with a true proposition
Types as objects of dialogical negotiation

- types of objects as “underspecified representations of objects”
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  \text{agent} & : \text{Ind}
  \end{aligned}
  \]

  or

  \[
  \begin{aligned}
  \text{situation} & : \text{Sit} \\
  \text{type} = \text{soup-is-delicious} & : \text{Type}
  \end{aligned}
  \]

  and claims you can instantiate it with a true proposition

- answering *yes* (agreeing) means you can also instantiate it with a true proposition
Types as objects of dialogical negotiation

- types of objects as “underspecified representations of objects”
- shared commitments (FACTS) as “underspecified representations of propositions”, i.e. types of propositions
- saying *This soup is delicious* offers the type
  
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  \begin{array}{ll}
  \text{situation} & : \text{Sit} \\
  \text{type} = \text{soup-is-delicious} & : \text{Type} \\
  \text{agent} & : \text{Ind} \\
  \end{array}
  \]

  or

  \[
  \begin{array}{ll}
  \text{situation} & : \text{Sit} \\
  \text{type} = \text{soup-is-delicious} & : \text{Type} \\
  \end{array}
  \]

  and claims you can instantiate it with a true proposition
- answering *yes* (agreeing) means you can also instantiate it with a true proposition
- answering *no* (disagreeing) means you can instantiate a type with an incompatible type-field (e.g. *soup-is-disgusting*) (*cf.* Cooper and Ginzburg, 2012, on negation)
de se type acts

- Let $\mathcal{T}$ be a function of type $(\text{Ind} \rightarrow \text{Type})$
- a kind of dependent type
- cf. Perry (1977); Lewis (1979); Ninan (2010); Schlenker (2011)

judgements $\circ :_A \mathcal{T}(A)$ “agent $A$ judges object $\circ$ to be of type $\mathcal{T}(A)$”
$:_A \mathcal{T}(A)$ “agent $A$ judges that there is some object of type $\mathcal{T}(A)$”

queries $\circ :_A \mathcal{T}(A)$? “agent $A$ wonders whether object $\circ$ is of type $\mathcal{T}(A)$”
$:_A \mathcal{T}(A)$? “agent $A$ wonders whether there is some object of type $\mathcal{T}(A)$”

creations $:_A \mathcal{T}(A)$! “agent $A$ creates something of type $\mathcal{T}(A)$”
(useful if $\mathcal{T}(A)$ is a type of situation)
Type acts are prelinguistic

- type acts (including *de se* type acts, Teller, 2011) do not supervene on language
- speech acts are supervenient on type acts
- a dog taking part in a game of fetch realizes that it, itself, must act in order to realize the type of the game
- cf SELF in object oriented programming