Reference Resolution: Grammar or Pragmatics?

Commentary to Una Stojnic, Matthew Stone and Ernest Lepore, ‘Discourse and Logical Form’

Kasia M. Jaszczolt
University of Cambridge
http://people.pwf.cam.ac.uk/kmj21
Reference resolution for ‘demonstrative’ pronouns (‘he’) is governed by **linguistic rules**

(is ‘a function of linguistic context’, ‘grammaticised’)

✓ No pure indexical/demonstrative distinction, *pace* Kaplan
Grammaticized or pragmatic
‘[P]ronoun resolution is guided by interdependencies that structure the flow of information.’ SSL, p. 3

Attention-Coherence Approach

• Centering Theory (Grosz, Sidner)
• Coherence, e.g. Hobbs; Kehler; Asher & Lascarides (SDRT)
• Dynamic Semantics (Dekker)
‘[T]he referent of a demonstrative pronoun on an occasion of use is fully determined by rules of language.’ (SSL, p. 2)

(1) A man$_1$ walked in. He$_1$ sat down. Therefore, some man sat down.

(2) Phil$_1$ tickled Stanley, and Liz poked him$_{1/2}$.

(Result or Parallel)

[from Kertz et al. 2008>> Kehler et al. 2008?]
Context:

sequence of individuals ordered by relative prominence including the centre of attention; an assignment function cf. Dynamic Semantics
Meaning = updates, a relation between an input context and output context

$x_i$ discourse referent in the $i^{th}$ position of prominence (i=1 >> @, centre of attention)

$\langle \alpha \rangle = \text{update}$

$\langle \alpha \rangle ; [\text{man (@)}] ; [\text{walk.in (@)}] ; [\text{sit.down (@)}]$

Therefore

$\langle \alpha \rangle ; [\text{man (@)}] ; [\text{sit.down (@)}]$
‘he’ always denotes the *most prominent* candidate referent

Discourse context has a structure that dictates reference resolution
My main question:

• Has it been demonstrated that reference is a function of linguistic context?
  
  • Has it been demonstrated that attention-shifting mechanisms are linguistic/grammaticised?

• How are the choices between coherence relations built into the LF?
Example:

dectic reading of ‘he’ [pointing to Bill]

(1) A man₁ walked in. He₁ sat down.

<πb> act of pointing at Bill

√ Gestures are ‘integral to the linguistic utterance itself’
SSL, p. 6

? ‘Since this change of attention affects interpretation, it should be reflected in the LF.’ SSL, p. 5
gestures contribute to some level of conceptual representation (SSL: LF) but in what sense exactly are they governed by the knowledge of language?

‘[c]ontext interacts with gesture to determine the form of demonstration’ SSL, p. 7

In what sense is it grammaticised?
Observation:

We can try to make the change of attention be reflected in the LF but the interpretation of the pointing gesture has to involve a pragmatic process of intention recognition at some level or other.

cf. Sam Cumming, “The Attentional Foundations of Coherence” underlying cognitive principles; stimulus >> questions
‘...only if we restrict the theory’s use of beliefs, intentions and other ‘private’ features of the participants’ cognitive states – such as individual memory organisation or processing effort – will the theory be a linguistic theory with linguistic generalisations and explanations.’

Asher & Lascarides (2003: 76)
Kaplan’s (1989b, *Afterthoughts*): directing intention

>> Perry’s (2009) ‘forensic element’ in what is said (locutionary, intended content)
Context

- SSL: context as a sequence of individuals, an assignment function

- Kaplan: metaphysical context, index/parameters

- Stalnaker: epistemological context, things that have been said/sets of beliefs, two dimensions
an ellipsis account

Do fragmentary utterances have sentential syntactic structures?

‘A nice dress’ >> ‘It is a nice dress’,
‘With scissors’ >> ‘Do it with scissors’

otherwise non-propositional utterances

?A: ‘Facebook!’
‘A man$_1$ met Sam$_2$. He$_2$ greeted him$_1$’
‘The city council$_1$ denied demonstrators$_2$ a permit. They$_2$ advocated violence$_1$.‘

>>we need *Coherence*

*(Coherence can override 0,1,2 ranking)*

>>In what sense is it built into grammar?
Rhetorical structure rules to be represented in the LF:

- How many rules are there?
- What is their epistemic status?
- Can we propose a new rule for each new type of connection discovered?

the types ‘explanation’, ‘elaboration’ and ‘comparison/contrasts’ adopted from Kehler (2002) or SDRT?
Rhetorical cooperativity vs. Gricean cooperativity

Asher and Lascarides 2013, ‘Strategic conversation’

‘an implicature is safe when it can be reliably treated as a matter of public record’ (p. 1)
Coherence relations necessitate representing shifts of attention and inference.

vs. building in post-Gricean heuristics (OT Pragmatics)
'Coherence relations are being represented in the logical form because, crucially, their effect is delivered by the grammar, constrained by linguistic rules, and interrelated with other aspects of meaning.' SSL, p. 15

Is this ‘going beyond the structure as the source of information restricted to filling in syntactic slots?' minimalism/indexicalism/radical contextualism
SSL: Prominence and scale of attention arguably have a stronger explanatory power than pragmatic inference.

• I can’t see how it helps with examples (3) & (4):

(3) ‘A man$_1$ met Sam$_2$. He$_2$ greeted him$_1$’
(4) ‘The city council$_1$ denied demonstrators$_2$ a permit. They$_2$ advocated violence$_1$.‘

lexical rules needed for assessing which rhetorical structure rules apply.
→ Is this really very different from post-Gricean heuristics?
• $e_o$ and $e_s$ (explanation via subject/object) simply translate a choice that is inherently pragmatic

• Do topic markers support the Attention-Coherence view? (overtly present in the grammar)
‘[G]rammar specifies a diverse set of resources for raising entities to prominence.’ SSL, p. 7 fn2

?? **Possible mechanism:** Demonstratives provide slots >> argument structure provides defaults? >> the lexicon directs towards the right rhetorical structure rule?
Compositionality

A Big Assumption:

Representing reference determination as a linguistic rule is to be preferred over a pragmatic account.

• Would compositionality be affected if we didn’t make this assumption?
SSL’s Linguistic rules vis-à-vis A&L’s logics of conversation

- Rhetorical structure rules rely on ‘modular architecture of discourse interpretation’ (Asher and Lascarides 2003: xvii)

- Different logics for different kinds of reasoning: constructing LF (information content) and inferences (information packaging)

  - Rhetorical relations (Narration, Explanation, Contrast, Parallel...) and the glue language, logic of information packaging (non-monotonic)
A neo-Gricean alternative:

Rethink content-character distinction allowing for characters that correspond to the inferential base of the length that is appropriate for the context at hand

(‘fluid characters’, Jaszczolt 2012, ‘Pragmaticizing Kaplan’)

Challenge for intention-based contextualist accounts: Endless flexibility of meaning?

Interactive compositionality

‘Meaning eventually stabilizes, making compositionality possible, because the (linguistic as well as extralinguistic) context, however big, is always finite’.

Recanati (2012: 190-1)
On the other hand...

SSL are correct in saying that pragmatic approaches have too little to say about the interaction of semantics and pragmatics.

But this is because pragmatic approaches assume ‘top-down’ modification of the LF (Recanati 2005) or even interactive building up of the representation (Jaszczolt 2005, 2010)
Q: Do post-Griceans resort to ‘brute coindexing’? (SSL, p.20)

A: No. Reference resolution intrudes in the semantic representation ‘top-down’. (Recanati)

Or: free merger of information, producing a representation that treats all the sources of information on an equal footing (Jaszczolt)
How is ambiguity avoided on SSL’s account?

√ Reference is a function of context.

But:

The structure of the context relies on rhetorical structure the recognition of which is a pragmatic process.

Rhetorical structure rules capture standard conceptual links between propositions (inferred in a pragmatic process or automatically assigned as defaults)
Is the flow of information accounted for ‘bottom-up’ or ‘top-down’?

‘he’: anaphoric/deictic

Top-down >> Gricean pragmatic
Definite/indefinite distinction

• Does $\alpha$; [man (@)] introduce a new d.r. For indefinites as well as definites?

• How is a cataphoric introduction of a referent to be handled?
• The promised discussion of the parallel account of ‘I’ and ‘he’ that would contrast it with Kaplan proceeds without a discussion of the indexical (‘I’)

While
The properties of ‘I’ as an indexical should not be taken for granted.
‘he’ is like ‘I’ (grammar-driven)

or

‘I’ is like ‘he’ (pragmatic-inference-driven)
Chierchia (1989: 28): The cognitive access to oneself is ‘systematically excluded from the interpretation of (non-pronominal) referential expressions. It is systematically present in the interpretation of overt pronouns. It is systematically and unambiguously associated with the interpretation of PRO the null subject of infinitives and gerunds. It is associated with the interpretation of long-distance reflexives (at least in some languages)’.
Grammar produces the self-referring function

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An argument from non-pronominal expressions (but not the one you expect)

\[\text{X} \]

*Pace* Chierchia, cognitive access to oneself is not so ‘systematically’ excluded from the interpretation of non-pronominal expressions:

‘Sammy wants a biscuit.’
‘Mummy will be with you in a moment.’
Honorifics:

- Japanese and Thai: 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;

- Also e.g. 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 of first person (cf. ‘mouse’)
  Siewierska (2004) and Heine and Song (2011)
Conflation of the nominal with the pronominal:

- Acoma (New Mexico), Wari’ (Brazil): no personal pronouns;

- Generic *one* and arbitrary *PRO*:

  ‘One can hear the wolves from the veranda.’
  ‘It is scary PRO to hear the wolves from the veranda.’

Generic *one* and arbitrary (non-controlled) PRO express ‘generalizing detached self-reference.’ Moltmann (2010: 440)
Spatial deixis:

- Thai \( \text{phŏm}_1 \text{ nii}_2 \) (‘one male this’);
- Japanese \textit{kotira}, Korean \textit{yeogi}, and Vietnamese \textit{hây} (‘here’) used for self-reference;
Ambiguity of the 1st person pronoun?

Kratzer (2009): pronouns can be ambiguous between a referential and a bound-variable interpretation

‘I’m the only one around here who can take care of my children.’
‘Only I admitted what I did wrong.’
‘Only you can eat what you cook.’
Cross-linguistic differences: bound-variable uses are rare, restricted, and differ from language to language.

Tylko ja jeden przyznałem się do błędu.
only 1Sg soleSgMNom admit1SgPastM Refl to mistakeSgMGen

Tylko ja jedna tutaj potrafię zajmować się
Only 1Sg soleSgFNom here can1SgPres careInf Refl

swoimi dziecimi.
ReflPronPl Instr childPl Instr
Kratzer:

- bound variable pronouns are underlyingly referential pronouns whose meaning can be accounted for through context-shifting.

or:

- they are unspecified and obtain the meaning through feature transmission from their binders in functional heads.
Ambiguity and underlying ‘I’ reference

‘Alice wants what Lidia wants.’
underlying ‘I’-reference (self-attribution of property)

But:

‘Lidia’s mother wants what Lidia wants and that’s why she is buying her lots of scientific books.’
no underlying ‘I’-reference (propositionalism)
Argument from first-person pronoun: A summary

- Self-referring that involves cognitive access to oneself defies any attempt to fit it squarely into the mould of a single, systematic morphosyntactic device.
Self-referring that involves cognitive access to oneself defies any attempt to fit it squarely into the mould of a single, systematic morphosyntactic device.

Instead, the device standardly used for this purpose in English, the first-person singular pronoun, can have other uses as well, and devices that specialise for other uses, such as common nouns and proper names, can adopt the function of reference *de se*. 
Argument from first-person pronoun: A summary

- This suggests that formal semantics that relies on the rigid distinction between an indexical and non-indexical expression (Kaplan 1989) needs ‘pragmaticising’. (Jaszczolt 2012a, b; 2013a, b)
To conclude

• I agree that ‘it is not the pronoun that should be disambiguated, but rather the particular mechanisms that affect its interpretation’ SSL, p. 19

But:

It has not been demonstrated that these mechanisms are linguistic (cf. the selection of a coherence relation; ‘two kinds of logic’).
• Post-Gricean accounts of reference resolution are slightly misrepresented: they do not postulate ambiguity of demonstratives (cf. Modified Occam’s Razor, pragmatic enrichment of the propositional content)

‘[C]ontext is not as powerful as the traditional model seems to presume’ SSL, p. 20

? What is ‘the traditional model’?
• The promised discussion of the parallel account of ‘I’ and ‘he’ that would contrast it with Kaplan proceeds without a discussion of the indexical (‘I’).
Open questions:

• At what level of representation should compositionality be sought? (cf. interactive composition)

• What happens to a pronoun in a dialogue?

• Is building in pragmatic rules into the LF compatible with indexicalism on a large scale?

• How do we extend the attention-coherence view to other domains (quantifier domain restriction, lexical meaning, ...)?

• Perhaps there is a need for corpus data in order to obtain an exhaustive account of rhetorical relations.
Select References


