

## THE SYNTAX OF SPATIAL ANAPHORA

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### 1. INTRODUCTION: THE DATA

#### 1.1. *Perspective (Cantrall 1974)*

- (1) a. They placed their guns, as they looked at it, in front of themselves/\*them.  
b. They placed their guns, as I looked at it, in front of \*themselves/them.
- (2) *self*-form = subject perspective  
pronoun = speaker/observer perspective

#### 1.2. *The nature of the location (Kuno 1987)*

- (3) a. John hid the book behind himself. (=direct contact between John and book)  
b. John hid the book behind him. (=no physical contact required)
- (4) a. John put the blanket under himself. (=direct contact)  
b. John put the blanket under him. (=no physical contact required)
- (5) a. Mary kept her childhood dolls close to herself. (=concrete: against her body)  
b. Mary kept her childhood dolls close to her. (=more abstract: proximity/vicinity)

#### 1.3. *Quantifier-pronoun binding*

- (6) a. \*Nobody/\*?Everyone/?Every boy saw a snake near him.  
b. Nobody/Everyone/Every boy saw a snake near himself.  
c. Nobody/Everyone/Every boy saw a snake near them.

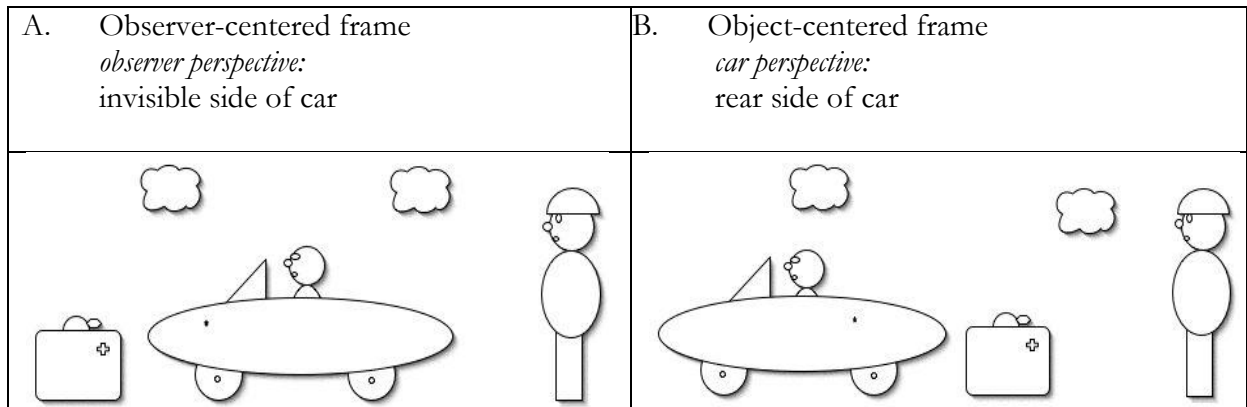


- certain spatial prepositions (*above, below, next to, in front of, behind, alongside, left of* and *right of*) pick out a region determined by extending the reference object's axial dimensions out into the surrounding space.

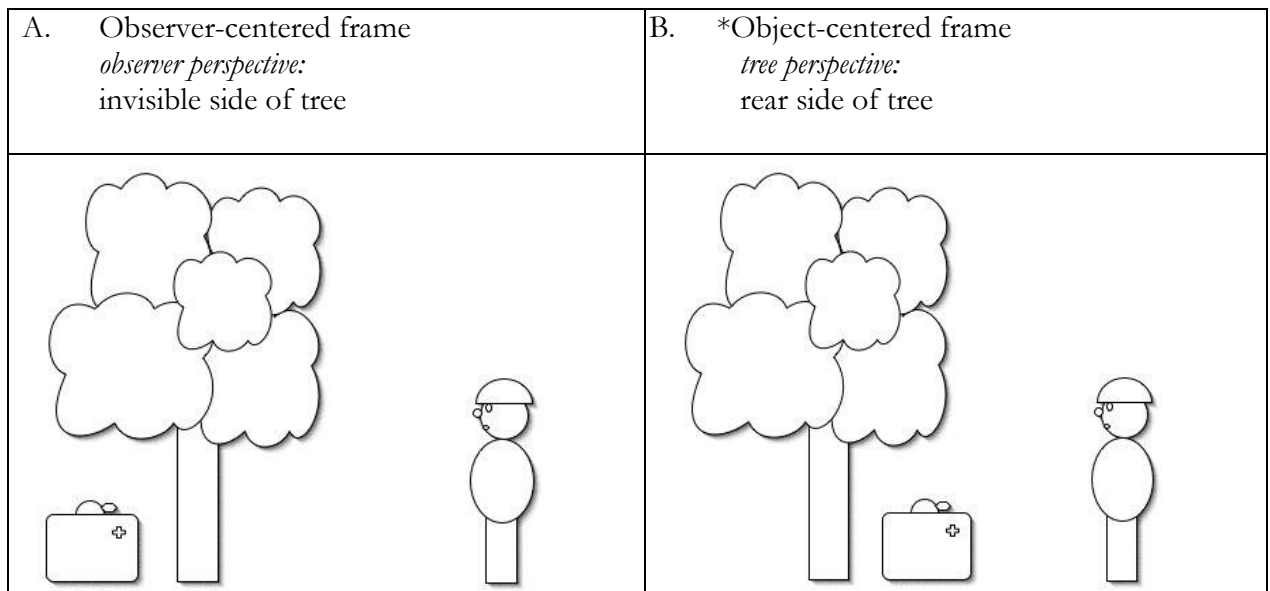
The axial vocabulary is used within a frame of reference; frames of reference come in two kinds:

- an intrinsic or object-centered frame (this frame has to do with properties of the object, e.g. its shape or its canonical orientation).
- a deictic or observer-centered frame

(15) The suitcase is behind the car.



(16) The suitcase is behind the tree.



### 3.2. Implementation: spatial relationships

- The difference between an object-centered and an observer-centered interpretation for a preposition is grammatically represented.



- (25) Object-centered: unvalued feature: {HOR: \_\_\_} → Agree → {HOR: back\*}  
 Observer-centered: lexically valued feature: {HOR: back}  
 Postsyntactic lexical insertion: *-hind*.
- (26) Anaphors: unvalued  $\varphi$ -features: {P:\_, N:\_, G:\_} → Agree → {P:3\*, N:sg\*, G:m\*}  
 Pronouns: lexically valued  $\varphi$ -features: {P:3, N:sg, G:m}  
 Postsyntactic lexical insertion.

#### 4. BINDING IN SNAKE-SENTENCES

- (27) *Assumptions about Axial parts, pronouns and -self.* (Postma 1996, Pica 1988)
- pronouns lack grammatical axial dimensions.
  - self* contributes grammatical axial dimensions to the pronoun it attaches to.

##### 4.1. Binding

- Pronoun has no axparts, i.e. allows no object-centered perspective (like tree in (16)).  
 Axpart has unvalued feature → crash.  
 Axpart has lexically valued feature → Speaker binds AxPart → *observer-centered* interpretation

- (28)  $[_{Evid} \mathbf{Sp}_{1P.SG} [_{TP} \text{John saw a snake} [_{VP} [_{Place} \text{behind} [_{AxPart} \{HOR: back\}_{Sp} [_{Kase} \emptyset [_{D} \text{him} ]]]]] [_{VP} \text{John} [_{VP} \text{saw a snake} ]]]]]]$

- Anaphor does have axparts (like car in (15)) → values Axpart under Agree → object-centered interpretation

- (29)  $[_{Evid} \mathbf{Sp}_{1P.SG} [_{TP} \text{John saw a snake} [_{VP} [_{Place} \text{behind} [_{AxPart} \{HOR: back*\} [_{Kase} \emptyset [_{D} \text{himself} \{HOR: front, back\}]]]]]] [_{VP} \text{John} [_{VP} \text{saw a snake} ]]]]]]$   
 (the object is anaphoric to the subject → object-centered = subject perspective)

- Speaker-variable in (28)/(30) creates opaque domain for Binding:

- (30)  $*?[_{Evid} \mathbf{Speaker}_{1P.SG} \text{Everyone saw a snake} [_{Place} \text{near} [_{AxPart} \emptyset_{\mathbf{Speaker}} [_{Kase} \emptyset [_{D} \text{him} ]]]]]]$

- (31)  $[_{Evid} \mathbf{Speaker}_{1P.SG} \text{Everyone came in.}] [_{Evid} \mathbf{Speaker}_{1P.SG} * \text{He sat down.}]$

- C-command is a necessary, but not a sufficient condition for variable binding (Kratzer 1998, 2006)

- (32) Only I got a question that I understood.  
*Strict*: nobody else got a question that I understood  
*Sloppy*: nobody else is an x such that x got a question that x understood.

- (33) a. Only I think that Mary won't come if I invite her. *only strict*  
 b. Only I got a question that you thought I could answer. *only strict*

- (34) a. Only Sam thinks that Mary will not come if he invites her. *strict & sloppy*  
 b. Only I got a question that I thought I could answer. *strict & sloppy*

- in a case like (30), variable binding of the 3P pronoun by the quantifier is blocked by an intervening speaker with a different (1P) person feature.

#### 4.2. *Perspective*

- (1) a. They placed their guns, as they looked at it, in front of themselves/\*them.  
 b. They placed their guns, as I looked at it, in front of \*themselves/them.
- (35) a. *Self-form: axial features value unvalued Axpart → Object-centered interpretation*  
*(the object is anaphoric with the subject → subject perspective)*  
 [ They placed their guns, as they looked at it,  
 [<sub>Place</sub> in [<sub>AxPart</sub> front {HOR: front\*} [<sub>K</sub> of [<sub>D</sub> themselves {HOR: front, back}]]]]]]
- b. *Pronoun: no axial features → Axpart is lexically valued and bound by Speaker → Speaker-centered interpretation*  
 [<sub>Evid</sub> **Sp**<sub>1P.SG</sub> [ They placed their guns, as I looked at it,  
 [<sub>Place</sub> in [<sub>AxPart</sub> front {HOR: front} <sub>sp</sub> [<sub>K</sub> of [<sub>D</sub> them ]]]]]]]

#### 4.3. *The nature of the location*

- (5) a. Mary kept her childhood dolls close to herself. (=concrete: against her body)  
 b. Mary kept her childhood dolls close to her. (=more abstract: proximity/vicinity)
- The concrete-abstract distinction follows from the assumptions in (27):
    - axial dimensions provided by *self* account for a strictly locative interpretation
    - the pronoun lacks Axparts and therefore spatial dimensions. The Speaker's perspective determines a broad and rather abstract interpretation of 'general vicinity'.
- (36) John always keeps his wits about him/\*himself. (Bouchard 1983:19)
- (37) a. John put that episode behind him(\*self).  
 b. John put the box behind him(self).

4.4. *Left-right perspective in pictures*

- Left-right confusions when viewing a picture.

(38)



A. Bronzino (1503-1572) Eleonora of Toledo and Giovanni de' Medici

- Art historians' use strictly unambiguous terminology: 'proper left' and 'proper right' refer to the left or right from the perspective of the person that is being described.

(39) 'Eleonora curves her proper right hand protectively around her son's shoulder. He leans slightly against her, resting his proper left hand on her lap like a plump starfish.'  
Serena Urry, (1998). Evidence of replication in a portrait of Eleonora of Toledo by Agnolo Bronzino and workshop. *Journal of the American Institute for Conservation*, 37:2, 211-221. <http://aic.stanford.edu/jaic/articles/jaic37-02-004.html>

- (40) a. Eleonora has positioned Giovanni to the right/\*left of herself.  
b. Eleonora has positioned Giovanni to the right/left of her.

- The pronoun permits both perspectives: the speaker/observer is like the omniscient author of a novel, and can take whatever perspective (s)he chooses, including that of the subject/person depicted.
- See also (15) above: *The suitcase is to the left/right of the tree* → onlooker perspective

## 5. CONCLUSIONS

- The difference between an observer-centered and an object-centered perspective is syntactically represented.
- Reflexives have axial dimensions, pronouns do not.

This explains:

- perspective differences between reflexives and pronouns;
- the peculiar quantifier binding properties of reflexives and pronouns;
- differences with respect to the nature of the location.

## 6. REFERENCES

- Bouchard, Denis. 1983. *On the content of empty categories*. Dordrecht: Foris.
- Cantrall, William. 1974. *View point, reflexives, and the nature of noun phrases*. The Hague: Mouton.
- Chomsky, Noam. 1965. *Aspects of the theory of syntax*. Cambridge, Massachusetts: MIT Press.
- Kratzer, Angelika. 1998. More structural analogies between pronouns and tenses. In *Proceedings of SALT VIII*, ed. D. Strolovitch and A. Lawson, 93-110. Ithaca, NY: CLC publications.
- Levinson, Stephen. 1996. Frames of reference and Molyneux's question: crosslinguistic evidence. In *Language and Space*, ed. Paul Bloom and et.al., 109-169. Cambridge, Massachusetts: MIT Press.
- Pica, Pierre. 1988. Sur le caractère inaliénable de l'être. In *Transparence et opacité*, ed. Tibor Papp and Pierre Pica, 176-191. The Hague: Holland Academic graphics.
- Postma, Gertjan. 1997. Logical entailment and the possessive nature of reflexive pronouns. In *Atomism and Binding*, ed. Hans Bennis and Pierre Pica & Johan Rooryck, 295–322. Dordrecht: Foris.
- Poutsma, H. 1916. *A Grammar of Late Modern English*. Groningen, Noordhoff.
- Rooryck, Johan. 2001. State of the article: Evidentiality, part II. In *Glott International* 5:161-168.
- Ross, John. 1970. On declarative sentences. In *Readings in English Transformational Grammar*, ed. Roderick Jacobs and Peter Rosenbaum, 222-272. Waltham, Massachusetts: Ginn.
- Safir, Ken. 2004. *The Syntax of Anaphora*. Oxford: Oxford University Press.
- Svenonius, Peter. 2006. The emergence of axial parts. In *Nordlyd: Tromsø Working Papers in Linguistics* 33:50-71.