Course Overview

Structure Building, Selection & Selective Opacity, Meeting 1

McFadden/Sundaresan/Zeijlstra, EGG 2019

July 29th, 2019

Overview

Here's what we plan to do in this course:
maybe add a table with dates and topics?

Expectations for locality

Grammatical dependencies in natural language seem to be constrained by locality:

- ☞ Relationships and operations can only apply when the bits involved are close enough to each other.

E.g. in many languages verbs agree with a noun phrase, but this is only possible when the verb and the noun phrase are local:

(1) a. I am stinky.
b. She is stinky.

(2) a. She thinks that I am stinky.
b. * She thinks that I is stinky.

- ☞ In 2b, she is not close enough to is for agreement.

Locality is also relevant for the distribution of reflexives and other anaphors:

(3) a. I saw myself.
b. I doubt that she saw herself.
c. * I doubt that she saw myself.

(4) a. I want to see myself.
b. * I want her to see myself.

And it's important for how things can move around in a sentence, e.g. in questions:

(5) Steve thinks Rachel bought a pie.

(6) a. Who does Steve think <who> bought a pie?

b. What does Steve think Rachel bought <what>?

(7) a. Who does Steve think <who> bought what?

b. * What does Steve think who bought <what>?

. . . and for how close together different pieces of a complex verb have to be. . .

(8) a. You made out your classmates to be fools.
b. You made your classmates out to be fools.
c. * You made your classmates to be fools out.

The fact that locality should matter in languages is not so surprising.

- Most (perhaps all?) physical processes and relationships care about locality too.
- E.g. if I want to physically move an object, like a chair, I have to be close enough to physically touch it.
- Even forces and relationships that involve 'action-at-a-distance' generally get weaker the further away two objects are (gravity, electromagnetic waves, etc.)

In the non-physical realm, there are also clear advantages to having locality in other information systems:

- If you're writing a paper or an article or a book, you put the parts about related ideas close to each other in the same chapter, section or paragraph.
- If you're designing an office building, you want to put people who work on the same projects in offices close to each other.
- Computer programming languages are often designed to enforce a certain amount of locality — e.g. variables have to defined in the same scope where they're used.

And if you're thinking from the perspective of how the mind actually constructs and interprets sentences, a bit of locality is a good principle for keeping things simple:

- Imagine that you want to build a sentence with a few emeddings, like (9).

  (9) Dave thought that you claimed that the aristocrats regretted that I am here.

- Without locality, it's not obvious what the verb am should agree with. Should it be Dave. . . is or you. . . are or the aristocrats. . . are? Is there optionality?
- In principle you might have to consider an unbounded amount of material to find the controller of agreement.
- With locality, it's much simpler. The space in which you have to look is quite restricted, and you can quickly and unambiguously determine that it has to be I. . . am.

But there's a big difference between recognizing that locality is good thing for language to have, and really understanding it.

- Given how pervasive it is, it seems like the sort of thing our theory of grammar should cover, and ideally explain.
- There are a lot of different specific approaches, but one thing that most recent ones have in common is the idea that locality is really fundamental to how syntax works.
- This leads to the expectation that locality constraints, however exactly defined, should hold quite generally.

This is where the phenomenon of selective opacity comes in...

An empirical puzzle

- There are a number of different ways to think about locality, and many competing approaches that incorporate one or more of these ways.
- This is partly motivated by the different phenomena that people focus on.
- Selective opacity — *cases where, in a particular context, locality effects obtain under a set of conditions α, but not under another set of conditions β* — force us to confront tensions between different views of locality.

Basic Locality:

- The simplest local configuration is one where X and Y are already in the same locality domain.

Thus, in (10), subject-verb agreement may only obtain between a verb and subject that are already in the same clause:

(10) BASIC LOCALITY (verb agreement in German):

Ich behaupte/*behauptet, [dass Maria Bier mag].
I declare.1SG/*3SG, that Maria beer likes.3SG
'I declare that Maria likes beer.'

Cyclic Locality:

- Here, what looks at first glance like a single unbounded dependency turns out to be comprised of a series of local/bounded dependencies.

(11) CYCLIC LOCALITY (West Ulster English wh-movement (McCloskey, 2000)):

a. $[_{CP_1}$ [What all]$_j$ did Susan say $[_{CP_2}$ t$_j$ (that) Maria liked t$_j$?

b. $[_{CP_1}$ What$_i$ did Susan say $[_{CP_2}$ [t$_i$ all]$_j$ (that) Maria liked t$_j$?

c. $[_{CP_1}$ What$_i$ did Susan say $[_{CP_2}$ t$_i$ (that) Maria liked [t$_i$ all]?

d. * $[_{CP_1}$ What$_i$ did Susan ask $[_{CP_2}$ whether Maria liked t$_i$]?

- The wh-object in (11a) may licitly Ā-move out of the embedded CP in (11a)-(11c);
- but it must first *cyclically* stop over at the edge of CP_2 before moving on to its final landing site in CP_1, as overtly reflected by the optional presence of the floating quantifier 'all'.
- When such intermediate movement is made impossible, as by the presence of 'whether' at the edge of CP_1, the sentence is rendered ungrammatical, as in (11d).
- Long movement in Irish (McCloskey, 1979, a.o.) and Chamorro (Chung, 1998; Lahne, 2009) famously affects the morphological shape of complementizers and verbal agreement, respectively, along its path; in Asante Twi, such movement leaves tonal reflexes (Korsah and Murphy, To Appear).
- These provide further support for the idea that long-distance dependencies involve cyclic locality.

I. Domain-based Locality/DL (e.g. Phases):

- In Minimalism (Chomsky, 2001, et seq.), basic and cyclic locality are modelled in terms of categorially-defined, semi-permeable locality domains (conventionally, *v*Ps and CPs) called phases.
- Upon completion of a phase, the phase domain, which is everything but the phase-edge comprising the head, specifier and optional adjuncts, is spelled out leaving only the phase-edge visible for further syntactic operations (Phase Impenetrability Condition, PIC).
- Basic locality as in (10), involves dependencies within a minimal phase.
- But given cyclic Spell-Out, cyclic locality, as in (11), is possible just in case it is mediated through material at the phase edge.

☞ Phases thus implement a kind of Domain-based Locality (DL): XP constitutes a locality domain under DL iff properties inherent to XP restrict operations across it.

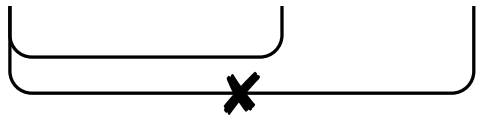
II. Intervention-based Locality/IL (e.g. Relativized Minimality):

- Orthogonal to this absolute notion of locality is a relative kind.
- This is defined, not in terms of domains, but in terms of intervention.

☞ Intervention-based Locality (IL) cannot be defined in terms of a domain, but must be *relativized* to the properties of a specific probe, goal, and intervener.

One instantiation of this is (Relativized) Minimality (in Rizzi, 1990, and another recent one is the probe-horizons model in Keine, 2016, 2019):

(12) $[\ldots \mathrm{X}_{\alpha} \ldots [_{ZP}\ \mathrm{Z}_{\alpha} \ldots [\ \mathrm{Y}_{\alpha}]]]$



- I.e. in order for a dependency between X and Y (where X c-commands Y) to obtain for some syntactic feature α …
- X cannot c-command an element Z marked for α, which in turn c-commands Y.

- Syntactic dependencies in Minimalism are *feature-driven* via Agree, between a probe and a goal with matching features.
- For instance, *wh*-movement is triggered by a [wh]-feature on a silent element (the *probe*) which is matched by a [wh]-feature on a wh-element (the *goal*).
- Given (12), in a structure where two (or more) wh-elements are involved, a lower one cannot move past a higher one.

This is confirmed for English: (14) instantiates a so-called Superiority Violation:

(13) [$_{CP}$ Who$_i$ [$_{TP}$ t$_i$ said what]?

(14) * [$_{CP}$ What$_j$ [$_{TP}$ did who$_i$ say t$_j$]?

III. Path-based Locality/PL:

- Both DL and IL define locality in terms of *opacity*, i.e. conditions under which dependencies are *blocked*.
- A third conception of locality is instead defined in terms of *visibility paths*, i.e. it specifies the conditions under which dependencies are *allowed*.

☞ Path-based Locality (PL): two elements X and Y are syntactically visible to each other iff they are connected by an uninterrupted sequence of steps, each of which satisfies the same (syntactic) condition.

Instantiations of PL:

- PL-based or -inspired approaches have been espoused in certain proposals within the GB framework (see e.g. Pesetsky, 1982, and Kayne, 1984).
- Analyses in this spirit have also regulated notions of locality in other grammatical frameworks like HPSG/LFG (functional uncertainty in Kaplan and Zaenen, 1989), CCG (Steedman, 1996) and TAG (Kroch, 1989).
- But PL has not, as far as I am aware, found as much currency within Minimalism.
- *In this course, we will pursue an approach to locality that combines PL with Minimalist assumptions.*

- DL and IL have been classically used to derive fundamentally distinct types of locality: simplifying, this is DL for distance-effects and IL for intervention-effects.
- PL seems to have been mostly superseded by DL within Minimalism, as described above.

Central questions of the course:

One of the central questions of this course will be the following:

- ☞ Do we really need both DL and IL, or can we just use one of them (specifically, IL)? (Concretely, given Minimalist assumptions, this amounts to asking: can we get rid of phases?).
- ☞ How does PL fit into this frame of things?
  - These are ultimately *empirical* questions, not theoretical or aesthetic ones.
  - We will use specific selective opacity phenomena as an empirical tool to try to get at an answer.

Island effects — a classic example of selective opacity:

- Island effects (Ross, 1967; Cattell, 1976) are perhaps the most famous instance of domain selective opacity in the literature.
- For instance, the Condition on Extraction Domains (CED) (Huang, 1982; Chomsky, 1986; Cinque, 1990; Manzini, 1992), a kind of island effect states that movement may not cross a barrier XP, unless XP is a complement (15):

  (15) Who$_i$ were you surprised [$_{CP}$ t$_i$ that/*when you saw t$_i$]?

☞ To reconcile such data with notions of standard opacity, we would need to show that the 'when'-CP and 'that'-CP constitute underlyingly distinct types of locality domain, e.g. because adjuncts have some special primitive status (Lebeaux, 1991; Fox, 2002; Abe, 2018).

To make things even more complicated …

Chomsky (1982); Cinque (1990) observe that movement out of *some* adjuncts is actually possible:

(16) * What$_i$ did Maria work [whistling t$_i$]?

(17) What$_i$ did Maria arrive/drive Jill crazy [whistling t$_i$]?

- Truswell (2011) argues that such movement is licit just in case the constituent containing the launching and landing sites of movement asserts the existence of a single event in the actual world (Single Event Condition).
- This is satisfied in (17) but not in (16).
- Any theory of the CED must thus be able to account, not only for its general applicability, but also its systematic exceptions in cases like (17) above.

Where we're heading

Question: what determines which node in the structure can satisfy a the need of another structural node?

- Any theory of locality needs to specify how syntactic dependencies can be established on a distance, and therefore has to address this question.
- By phrasing the question this way, selectional opacity cam find a natural place. A higher node in the structure can satisfy a lower node in an adjunct, but not the other way round.
- For our aim at at addressing this question, we first need to make a distinction between structure building and structure enrichment.

Structure building vs Structure enrichment:

- Structure building: The extention of a structure by means of external or internal merge
- Structure enrichment: features present on one node are spread onto other nodes

In older versions of minimalism, structure enrichment drove structure building:

- So-called uninterpretable (or later on: unvalued) features on a probing head were said to trigger movement / merger of a matching goal in its specifier in order to check (or later on: value) these features.
- This approach, however, turned out to be untenable: Various instances of structure enrichment, generally clustered as long-distance agreement, did not require additional instances of Merge.

EXAMPLES ENGLISH / ICELANDIC

Chomsky (2008)

References I

Abe, Jun. 2018. Late Merge and phases for anti-c-command requirements. *Syntax* 21:91–111.

Cattell, Ray. 1976. Constraints on movement rules. *Language* 52:18–50.

Chomsky, Noam. 1982. *Some concepts and consequences of the theory of Government and binding*, volume 6. Cambridge, MA: MIT Press.

Chomsky, Noam. 1986. *Barriers*. Cambridge, MA: MIT Press.

Chomsky, Noam. 2001. Derivation by phase. In *Ken Hale: A life in language*, ed. Michael Kenstowicz. Cambridge, MA: MIT Press.

Chomsky, Noam. 2008. On phases. In *Foundational issues in linguistic theory: essays in honor of Jean-Roger Vergnaud*, ed. Robert Freidin, Carlos Otero, and Maria Luisa Zubizarreta, 133–166. Cambridge, MA: MIT Press.

References II

Chung, Sandra. 1998. *The design of agreement: evidence from Chamorro*. Chicago: University of Chicago Press.

Cinque, Guglielmo. 1990. *Types of A-bar dependencies*. Cambridge, MA: MIT Press.

Fox, Danny. 2002. Antecedent-contained deletion and the copy theory of movement. *LI* 33:63–96.

Huang, Cheng-Teh. 1982. Logical relations in Chinese and the theory of grammar. Doctoral Dissertation, MIT, Cambridge, MA.

Kaplan, Ronald, and Annie Zaenen. 1989. Long-distance dependencies, constituent structure, and functional uncertainty. In *Alternative conceptions of phrase structure*, ed. Mark Baltin and Anthony Kroch, 17–42. Chicago, IL: Chicago University Press.

Kayne, Richard S. 1984. *Connectedness and binary branching*. Dordrecht: Foris.

References III

Keine, Stefan. 2016. Probes and their horizons. Doctoral Dissertation, University of Massachusetts, Amherst.

Keine, Stefan. 2019. Selective opacity. *LI* 50:13–62.

Korsah, Sampson, and Andrew Murphy. To Appear. Tonal reflexes of movement in Asante Twi. *NLLT* .

Kroch, Anthony. 1989. Asymmetries in long distance extraction in a Tree-Adjoining Grammar. In *Alternative conceptions of phrase structure*, ed. Mark Baltin and Anthony Kroch, 66–98. Chicago, IL: Chicago University Press.

Lahne, Antje. 2009. Where there is fire, there is smoke. local modelling of successive-cyclic movement. Doctoral Dissertation, Leipzig.

Lebeaux, David. 1991. Relative clauses, licensing, and the nature of the derivation. *Syntax and Semantics* 25:209–229.

References IV

Manzini, Rita. 1992. *Locality, a theory and some of its empirical consequences*. Cambridge, MA: MIT Press.

McCloskey, James. 1979. *Transformational syntax and modern theoretical semantics: a case study in Modern Irish*. Dordrecht: Reidel.

McCloskey, James. 2000. Quantifier float and wh-movement in an Irish English. *LI* 31:57–84.

Pesetsky, David. 1982. Paths and categories. Doctoral Dissertation, MIT, Cambridge, MA.

Rizzi, Luigi. 1990. *Relativized minimality*. Cambridge, MA: MIT Press.

Ross, John Robert. 1967. Constraints on variables in syntax. Doctoral Dissertation, MIT, Cambridge, MA.

Steedman, Mark. 1996. *Surface structure and interpretation*. LI Monographs. Cambridge, MA: MIT Press.

References V

Truswell, Robert. 2011. *Events, phrases, and questions*. Oxford: Oxford University Press.