

On Efficient Production, the Units of Spell-Out, and Agreement Paradigms

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1. Introduction

- (1) Goals:
 - To explain regularities in Agreement paradigms across languages, specifically, the fact that in a number of languages moved elements trigger agreement as opposed to in situ elements
 - To test the pertinence of a Spec,Head approach to this paradigm (Chomsky 1995) vs. a Long Distance Agreement approach (e.g., Chomsky 2001)
- (2) Claim: Incremental computation of Agreement explains such paradigms in a way that is compatible with Long Distance Agreement (Chomsky 2001, etc.)

2. Agreement paradigms

- According to Greenberg's Universal 33 (Greenberg 1966: 94), one can find languages where verbal agreement follows the paradigms in (3) and (4) but not the one in (5) (where this is illustrated in terms of Probes (P) and Goals (G)):
- (3) G P_{overt agreement} vs. P_{overt agreement} G v across languages
 - (4) G P_{overt agreement} vs. P G v across languages
 - (5) G P vs. P_{overt agreement} G * across languages
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- (7) The crosslinguistic validity of this observation is present in some way or other in later works as Barlow (1992), Corbett (1979), Manzini and Savoia (1998), Moravcsik (1978) and Samek-Lodovici (2002).
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- (6) *Brazilian Portuguese*
 - a. Mesmo / *Mesmas as meninas criticaram o professor.
even / even-FEM.PL the girls criticized the teacher
 - b. As meninas mesmas / *mesmo criticaram o professor.
the girls even.FEM.PL / even criticized the teacher
'Even the girls criticized the teacher.' (Hornstein et al. 2006: 119)
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- (7) *Italian Dialect of Ancona*
 - a. Questo, lo fa / *fanno sempre i bambini.
thisACC itACC does / do always the children
 - b. Questo, i bambini lo fanno / *fa sempre.
thisACC the children itACC do / does always (Cardinaletti 1997: 38-9)

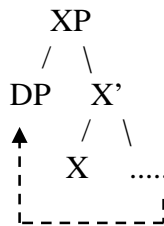
- (8) *French*
- a. Jean a vu / *vue la fille
Jean has seen / seen.AGR.FEM the girl
 ‘Jean saw the girl.’
 - b. Quelle fille Jean a(-t-il) vue / *vu?
which girl Jean has-he seen.AGR.FEM / seen
 ‘Which girl did Jean see?’
 - c. Cette fille a été vue / *vu
this girl has been seen.AGR.FEM / seen
 ‘The girl was seen.’ (Boeckx 2004: 23)

(9) Other languages: Arabic, Hungarian, etc.

3. Relevance for syntactic theorizing

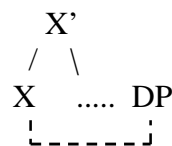
- Such facts have played a prominent role in syntactic theorizing, i.e., they provided part of the empirical basis of the LCA in its original formulation (Kayne 1994).

(10) Spec,Head relations



- the relation between the P and the G at the point of Spell-out is different in the in situ and the movement counterparts. Hence, it is natural to consider the Spec,Head relation the domain of (morphological) agreement (Kayne 1994) at least in the relevant languages.

(11) Long Distance Agreement (LDA)



- there is no distinction between the moved and the in situ version in terms of the relation of P and G at the point of Spell-out. Surely enough, things move or do not move but the relation between P and G is the same no matter what.

- (12) Minimalist desiderata within the LDA system
- ‘For minimal computation, the probe should search the smallest domain to find the goal: its c-command domain. It follows that there should be no m-command, hence no SPEC-head relations, except for the special case where the SPEC itself can be a probe. That requires considerable rethinking of much important work, particularly on agreement (Chomsky 2005: 13; my emphasis).’
 - Chomsky (2001: 46, note 39) observes that the French facts pose an interesting challenge for Agree.

4. Towards a solution compatible with minimalist desiderata: Left-to-right syntax

- (13) Recent research has provided evidence for:
- the fact that overt agreement is a PFish or morphological thing (e.g., Bobaljik 2004 and Sigurdsson 2006)
 - the incremental nature of production (e.g., Bock et al. 1992, Phillips 1996 and Ferreira 1996)
- (14) Left-to-right syntax (Phillips 1996): why adopt it?
- Incremental production
 - Agreement paradigms (cf. Legate’s 1999 discussion of Irish)
 - Cf. Drury (2005), Guimarães (2004), Phillips (1996 and 2003) and Richards (1999 and 2003) among others for syntactic evidence in favor of this framework

5. The proposal

- (15) Left-to-right syntax (Phillips 1996)
- (16) Left-to-right computation of Agreement (Phillips 1996, Legate 1999)
- (17) Incremental production (Ferreira 1996, Schriefers et al 1998, Levelt 1989, among others)
- (18) P–G order
- The production system would work on P irrespective of whether the rest of the sentence has been coded or not, so as to allow for fast(er) production (cf. Phillips 1996).¹
 - Still, a P showing morphological / rich agreement cannot be uttered till G has been coded, because agreement causes P to ‘wait’ for G to become available. Only then can P be spelled-out.
 - Inasmuch as such a ‘wait’ goes against the spirit of incremental production, one option to avoid it is to drop agreement markers or adopt default agreement.

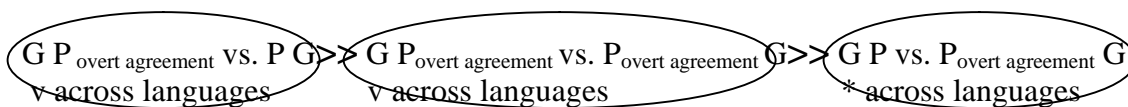
¹ Cf. the crosslinguistic tendency for old information to come before the new information, in keeping with the idea that optional movement is related to surface semantics effects (Chomsky 2001 etc)

- (19) G–P order
- o In the Spec,Head configuration, the ‘wait’ for G takes place anyway because it precedes P.
 - o Hence, there is nothing to be gained by dropping agreement markers.
- (20) The presence/absence of overt Agreement does not play a role in the syntactic computation (cf. Chomsky 2005). Rather, the relevant languages are specified for overt Agreement marking irrespective of the order found between P and G and incrementality would be causing those Agreement Asymmetries.
- (21) *Italian Dialect of Ancona*
- a. Questo, lo **fa** / ***fanno** sempre i bambini.
*thisACC itACC does/ *do always the children*
- b. Questo, i bambini lo **fanno** / ***fa** sempre.
*thisACC the children itACC do / *does always* (Cardinaletti 1997: 38-9)

(22) Course of production of (21)a:
Questo – available for production
lo – available for production
fa(no) – contingent on the availability of the object -> wait or adopt default Agr.²

(23) Course of production of (21)b:
Questo – available for production
i bambini – available for production
lo – available for production
fanno – object is available so default Agr is unnecessary

(24) Back to Greenberg’s typology: The present approach suggests the following ranking among Agreement patterns, from the most advantageous system in terms of incrementality to the less advantageous one.



- (25) The system at the bottom of the ranking should be fairly uncommon if it exists at all.
- (26) Crosslinguistic variation regarding agreement (and lack of thereof) with in situ elements come from the fact that the strategies of the parser/production system are defeasible: e.g., central embedding in English is disfavored due to its costly nature, but it is not banned by the parser/production system.

² This presentation has focused on the importance of precedence relations. Cf. also Barlow (1992).

6. Is left-to-right syntax necessary here?

- Yes, because the insitu G would become available later than the moved G. In contrast, in right-to-left syntax, G becomes available at exactly the same point in the derivation, irrespective of whether there is movement or not.
- Alternative: If overt Agreement is computed in a separate operation (completely different from LDA) AFTER syntax (Bobaljik 2004), this approach would be compatible with right-to-left syntax. Assuming that such a computation is incremental, we can derive the mentioned Agreement Asymmetries without recourse to Spec,Head relations, a necessary step for the adoption of LDA (e.g. Chomsky 2005: 13).

8. Conclusion

- (27) This approach explains the Agreement paradigms by claiming that:
 - Agreement Asymmetries are not a purely syntactic phenomenon
 - Incremental production conspires to derive Agreement Asymmetries
- (28) This analysis is compatible with minimalist desiderata (Chomsky 2001 & 2005) in that:
 - Such Agreement Asymmetries play no role in the syntactic computation
 - It explains the paradigm without recourse of Spec,Head Agreement, in keeping with Long Distance Agreement

Appendix

1. On First/Second Conjunct Agreement

- In a number of languages such unbalanced coordination facts are found in the G-P order (Johannessen 1993), a fact incompatible with the current analysis. Furthermore, the contrast between full agreement and first/second conjunct agreement affects interpretation in some languages, (e.g., binding possibilities, see Aoun, Benmamoun and Sportiche (1994) among others), a fact at odds with a PF treatment of the phenomenon.

2. Anti-Agreement effects

A'-moved subjects may fail to trigger overt agreement in a number of languages in spite of the fact that they precede the subject:

- (1) Quante ragazze gl'ha / *hanno telefonato?
how-many girls GLI has/ *have phoned? (Campos 1997: 94)

Note that in the current framework T is not in itself the locus of Case, Agreement or EPP features, rather the C/T complex is. Hence, A'-moved elements in C not only can interact with EPP or Agreement features, they are indeed predicted to do so. In that sense, Anti-Agreement effects are part of the system and the claim that overt Agreement is computed incrementally is not at odds with such facts.

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