Syntactic operations exceed what the interfaces can account for
(or: The heartbreak of interface-driven syntax)
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1. Overview

- This talk argues against the possibility of a syntax that is entirely interface-driven
- Consequently, insofar as we need a wholesale alternative to formal features, the interfaces are probably the wrong place to go looking for it
  - because, even in the best case, interface considerations will be able to subsume only a proper subset of formal features

1.1. Premises

P1: An ‘interface’ between syntax and some other module of grammar, $\mathcal{P}$, is defined as the (representational or derivational) point at which the primitives and processes of $\mathcal{P}$ replace those of syntax.
  - In particular, the set of primitives/processes available at the interface should be the intersection of the primitives/processes of syntax with those of $\mathcal{P}$.
  - So, for example, consider a hypothetical condition like (1):

  (1) The complement of a head $H^0$ cannot move to / remerge in [Spec,HP].
  - Suppose we found that (1) were correct; we could not then claim that it applied “at the interface” —
    - since there is no $\mathcal{P}$ aside from syntax itself that is supposed to deal in primitives like head, spec, and move/remerge

  $\Rightarrow$ Saying that (1) is an “interface condition” would mean that there are two modules that deal in the primitives of syntax
  - which I take to be in conflict with the very definition of a module

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P2: Both overt agreement in $\phi$-features (“$\phi$-agreement”) and morphologically-expressed case (“m-case”) are syntactic phenomena
  (notwithstanding the fact that, like many other things in syntax, their effects are visible at PF)
  - This may very well be derivable from P1; but it has in fact been argued on independent grounds (Preminger 2014), roughly:
    - m-case feeds $\phi$-agreement, which in turn feeds the kind of movement that has LF consequences
      - in particular: movement to subject position (which has consequences for scope)
  $\Rightarrow$ both m-case and $\phi$-agreement must occur in the part of the grammar that affects both PF and LF — a.k.a., “syntax”

1.2. The General Structure of the Argument(s)

- Let $\delta$ be some process or property of syntactic derivations that is manifestly obligatory
- To derive the obligatoriness of $\delta$ from interface conditions, there must be a way to identify all and only those structures in which $\delta$ is suppressed
  - so that they can be flagged as “crashing” at the relevant interface
  [NB: Any single $\delta$ will be necessary-but-insufficient for grammaticality; so flagging all the instances where $\delta$ has applied (as “non-crashing”) won’t do.]
  - And all of this needs to be done in a way that does not violate P1
- We will see two examples (namely, $\delta=$agreement and $\delta=$case) where a P1-compliant identification mechanism is not available
  $\Rightarrow$ meaning the obligatoriness of the relevant $\delta$s cannot be derived from interface considerations

2. Agreement

2.1. General

- A useful straw-man to keep in mind throughout section 2 is the uninterpretable features proposal (Chomsky 2000, 2001)
  - where certain features are “illegible” at the interfaces
and (for some reason?) the interfaces cannot simply ignore features that are illegible

- instead, if such features reach the interfaces untouched, the result is a crash

But the intended conclusion is broader than “uninterpretable features don’t work” —

- as noted above, the idea is to show that there is no way to enforce the occurrence of agreement using a condition evaluated at the interfaces

- be it with uninterpretable features, or otherwise

Let us adopt the following labels:

$H^0 = $ some head (e.g. a finite verb)

$\alpha = $ some phrase (e.g. a nominal/DP argument) whose features control agreement morphology on $H^0$

- There is, by now, substantial evidence that agreement is subject to the structural conditions in (2):

(2) a head $H^0$ can agree in some feature $f$ with a DP $\alpha$ only if:

i. $H^0$ c-commands $\alpha$

ii. $H^0$ and $\alpha$ are in the same locality domain

iii. there is no bearer of valued $f$ that c-commands $\alpha$ and is c-commanded by $H^0$

- Now, suppose that—empirically speaking—we observe that agreement between some particular $H^0$ and some particular $\alpha$ is obligatory

Here’s what the interfaces can’t do:

- they can’t impose a restriction saying, “any $H^0$ and $\alpha$ that satisfy (2.i–iii) with respect to some feature $f$ must agree in $f$”

- because evaluating whether a triplet $\langle H^0, \alpha, f \rangle$ satisfies (2.i–iii) requires access to syntax-specific primitives

- and therefore, can only be done in syntax

What the interfaces can do is inspect the state of $H^0$ and/or $\alpha$ themselves

- Not surprisingly, perhaps, both alternatives have been proposed:

  - the inspect $H^0$ variant is called “uninterpretable $\varphi$-features”
  - the inspect $\alpha$ variant is called “the Case Filter”

- If either (or both) of these two variants worked—as a way of enforcing the occurrence of agreement—then the obligatoriness of agreement could be derived from interface conditions

- Alas, neither of these variants work.

2.2. Omnivorous Agreement in Kichean Agent-Focus

(3) $3pl \gg 3sg$

a. ja rje’ x-e/*$\phi$-tz’et-ö rja’
   rfc them com-$3pl$/*$3sg$.abs-see-af him
   ‘It was them who saw him.’

b. ja rja’ x-e/*$\phi$-tz’tz’et-ö rje’
   rfc him com-$3pl$/*$3sg$.abs-see-af them
   ‘It was him who saw them.’

(4) $1(2) \gg 3$

a. ja rat x-at/*e-ax-an rje’
   rfc you(sg.) com-$2sg$/*$3pl$.abs-hear-af them
   ‘It was you(sg.) who heard them.’

b. ja rje’ x-at/*e-ax-an rat
   rfc them com-$2sg$/*$3pl$.abs-hear-af you(sg.)
   ‘It was them who heard you(sg.).’

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1Here and throughout, the term ‘agreement’ refers to morpho-phonologically overt covariance in $\varphi$-features between a verb or tense/aspect/mood-marker and a nominal argument. No stance is taken about other phenomena that have been (or may yet be) conjectured to arise via the same underlying mechanism (cf. Zeijlstra 2004, Kratzer 2009, among others).

See Preminger & Polinsky 2015 for a recent review of the various types of evidence that have accumulated in favor of (2) and against various conceivable alternatives.

2This implicitly assumes a causal relationship between agreement with $\alpha$ and the assignment of case to $\alpha$. As it turns out, this assumption doesn’t work (contra, e.g., Chomsky 2000, 2001; see Preminger 2011b, 2014 for the relevant argumentation). But as we will see, the interface-driven treatment of agreement fails even if we grant this assumption.
(5) OKAY TO HAVE TWO PLURALS, OKAY TO HAVE NO PLURALS
   a. ja rőj x-oj-t’et-ô rje’
      foc us com-1pl.abs-see-of them
      ‘It was us who saw them.’
   b. ja río x-φ-tz’et-ô ri achin
      foc the woman com-3sg.abs-see-of the man
      ‘It was the woman who saw the man.’

• What this is not: (Preminger 2014:18-20, 67–73, 89, 123–128)
  ◦ Multiple Agree
  ◦ feature-percolation
  ◦ a morphological effect (e.g. portmanteau morphemes)
  ◦ the effects of a scale/hierarchy (e.g. reflecting “cognitive salience”)
  ◦ multiple lexical variants of the probe (cf.: C₀[+decl] vs. C₀[+decl, +wh])

Here are schemata of a few derivations —
  • and what we would need the interfaces’ verdict to be in each case

(6)\[\begin{array}{ccc}
\text{PROBE} & \text{OBJ} & \text{desired}\\
H^0 & e’ & 3pl & 3sg & ✓ (agreement w/closest available pl target) [\text{cf. (3a)}] \\
H^0 & e’ & 3sg & 3pl & ✓ (agreement w/closest available pl target) [\text{cf. (3b)}] \\
H^0 & φ & 3sg & 3pl & ❌ (“gratuitous non-agreement”: pl target available) [\text{cf. (6b)}] \\
H^0 & φ & 3sg & 3sg & ✓ (no pl targets, no agreement) [\text{cf. (5b)}]
\end{array}\]

What rules out “gratuitous non-agreement”, as schematized in (6c)?

• Can it be ruled out because of a property of the probe (H⁰)—e.g. an unchecked “uninterpretable feature”?
  ➡ No. — There are two possibilities to consider:
  ◦ If 3sg targets can remove this property (“check the uninterpretable feature”), then (7) should be good. . . contrary to fact:

(7)\[\begin{array}{ccc}
\text{PROBE} & \text{OBJ} & \text{desired}\\
H^0 & φ & 3sg & 3pl & ✓ (“forced” agreement w/sg target) \\
\end{array}\]

  ◦ If 3sg targets cannot remove this property (“check the uninterpretable feature”), and only 3pl ones can, then (6d) (above) should be bad. . . – again, contrary to fact.

Crucially, the same contradiction obtains even if we avail ourselves of covert expletives, and/or other undetectable agreement targets.

• Suppose H⁰ in (6d) successfully agrees with some XP β; then either:
  (i) β is formally singular → ⊥
  ◦ if H⁰ could target singular DPs, (7) would be okay, contrary to fact
  (ii) β is formally plural → then H⁰, having agreed with β, would be spelled out as ‘e’ (pl.) → ⊥
  ◦ this is simply not so, in the relevant cases (e.g. (6d))

• Can “gratuitous non-agreement” be ruled out because of a property of one of the DP arguments—e.g. a lack of “Case”—that causes ungrammaticality at the interface?
  ➡ No. If DPs in this language/construction needed to be agreed with, then (6a–b) would be bad—as would (8), below—contrary to fact.

(8)\[\begin{array}{ccc}
\text{PROBE} & \text{OBJ} & \text{desired}\\
H^0 & e’ & 3pl & 3pl & ✓ (agreement w/closest available pl target) [\text{cf. (5a)}]
\end{array}\]
Interim summary:

- A theory where the occurrence of agreement is enforced at the interfaces is not viable
- Consequently, any reduction of syntax to “interface needs” can at best be partial
  - since it would not include agreement

3. Case

3.1. General

- A useful straw-man to keep in mind throughout section 3 is the Case Filter proposal (Chomsky 1981, Vergnaud 1977/2006)
  - where the valuation of a noun phrase’s case feature(s) is enforced via a late-applying representational condition (see also Chomsky & Lasnik 1977)

But as in section 2, the intended conclusion is broader than “the Case Filter doesn’t work” —
  - the idea is to show that there is no way to enforce the valuation of case features using a condition evaluated at the interfaces

- I will focus, here, on the assignment of accusative (ACC)
- As with regard to agreement (§2), there is copious evidence regarding the sensitivity of the assignment of ACC to fine-grained structural properties
- For concreteness, I will adopt the implementation given in (9):

(9) a nominal/DP $\alpha$ is assigned ACC as soon as there is a nominal/DP $\beta$
  such that:  
    i. $\beta$ c-commands $\alpha$
    ii. $\beta$ and $\alpha$ are in the same locality domain
    iii. $\beta$ is caseless

- While I think it is fairly clear that (9) does better than its alternatives (see, e.g., Baker & Vinokurova 2010, Marantz 1991, McFadden 2004) —
  - the argument does not depend on adopting (9) in particular
  - all that is crucial is that the assignment of ACC is sensitive to factors that are clearly syntactic in nature
- Now, suppose that—empirically speaking—we observe that some nominal/DP $\alpha$ must surface bearing ACC

Here’s what the interfaces can’t do:
  - they can’t impose a restriction saying, “any $\alpha$ for which there is a $\beta$ that satisfies (9.i–iii) must bear ACC”
    - because evaluating whether a pair $\langle \alpha, \beta \rangle$ satisfies (9.i–iii) requires access to syntax-specific primitives
    - and therefore, can only be done in syntax
- What the interfaces can do is inspect the state of $\alpha$ itself:
  - if the interfaces flagged any derivation in which $\alpha$ did not receive case as ungrammatical;
  - and the only opportunity for this particular $\alpha$ to get case was via the configuration in (9);
  - then the obligatoriness of this instance of ACC could be derived from interface conditions.

Alas, this doesn’t work.

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6It is possible that (9) needs to be parameterized, so that it is suppressed in so-called “ergative languages.”
3.2. Raising-to-accusative in Sakha

(10) a. Sardaana Aisen-*\(y\) beqeheey [\(b\u0131g\u0131n t\) kel-\(e\)r dien ] ihit-te
Sardaana Aisen-*\(a\)cc yesterday today come-AOR COMP hear-PAST.3
‘Sardaana heard yesterday that Aisen is coming today.’

b. Sardaana beqeheey [\(b\u0131g\u0131n Aisen-*\(y\) \(k\u0131\)el-\(e\)r dien ] ihit-te
Sardaana yesterday today Aisen-(*)\(a\)cc come-AOR COMP hear-PAST.3
‘Sardaana heard yesterday that Aisen is coming today.’

(11) min ehigi(-\(n\)i) [\(b\u0131g\u0131n t\) kyaj-yax-\(x\)yt ] dien erem-mit-im
1 you-(\(a\)cc) today win-FUT-2pl.S that hope-PST-1sg.S
‘I hoped you would win today.’

Vinokurova 2005:363; annotations added

- That, unfortunately, just doesn’t seem to be so (at least not in Sakha): 8

(12) a. Masha salamaat-*\(y\) turgennik \(t\) sie-te
Masha porridge-*\(a\)cc quickly eat-PAST.3sg.S
‘Masha ate the porridge quickly.’

b. Masha turgennik salamaat-\(#\)\(y\) sie-te
Masha quickly porridge-\(#\)\(a\)cc eat-PAST.3sg.S
‘Masha ate porridge quickly.’

Baker & Vinokurova 2010:602

- The distinction between (10a) (obligatory ACC on the raised subject) and (11) (optional ACC on the raised subject) is simply a matter of the nominal’s position relative to VP-peripheral adverbs
  - as such, it is replicable even in monoclusal contexts: 9

What rules out “gratuitous non-ACC” on Aisen in (10a)?

- If this is to be derived from interface conditions —
  - there must be a way to detect the ill-formedness of the ACC-less version of (10a) by inspecting [\(DP\) Aisen] alone

- Prima facie, what (10b) shows is that there is nothing wrong with an instance of [\(DP\) Aisen] that has not been assigned ACC

⇒ The interface-driven approach to case is forced into the following position:
  - the embedded clause in (10b) has a property \(p\) —
    - (say, the ability to “assign nom case”)
    - that ameliorates whatever representational lacuna the ACC-less version of [\(DP\) Aisen], in (10a), has

- But at the same time, the embedded clause in (10a) must lack property \(p\)
  - otherwise, the ACC-less variant of (10a) would be fine

⇒ What ensures that the embedded clause in (10a) will lack property \(p\)?

- It must be the case that having property \(p\) would prevent the movement seen in (10a) from happening
  - as per, e.g., Chomsky’s (2001) Activity Condition

⇒ Contradiction.

8 The embedded verb in (11) shows full agreement with the raised embedded subject, in both number and person. Sakha also allows partial agreement (in number but not in person) on the embedded verb, in which case accusative on the raised embedded subject becomes obligatory (rather than optional, as it is in (11)); see Vinokurova (2005:361). Note, however, that the subject in (10a) is 3rd person, meaning the string in question is compatible with both a full agreement parse and a partial agreement parse (as far as the agreement morphology in the embedded clause is concerned). Therefore, the possibility of partial agreement does not explain the obligatoriness of accusative in (10a) (cf. Baker 2011:893–896).

9 As Baker & Vinokurova (2010:602) note, accusative in (12b) is possible only if the object bears contrastive focus, hence the ‘\#’ annotation (w.r.t. a neutral context).

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7 This subsection builds partly on joint work with Theodore Levin and with Jaklin Kornfilt; see Kornfilt & Preminger 2015, Levin & Preminger 2015.
Interim summary:

- The ungrammaticality of the acc-less version of a sentence like (10a) cannot be determined by inspecting the relevant DP alone
  - instead, it requires inspecting the structural configuration in which that DP occurs
    - in a way that requires reference to syntax-specific primitives
- Consequently—again—any reduction of syntax to “interface needs” can at best be partial
  - since it would not include case (or agreement)

4. Implications for Chomsky’s Strong Minimalist Thesis

- Chomsky (2004) proposes a division of the properties of language—and consequently, of the task facing the language-acquirer—as in (13):

  (13) i. language-specific factors
      ii. interface conditions
      iii. general properties
      (of cognition, or of the physical world more generally)

- The Strong Minimalist Thesis (SMT) is:

  (14) there are no properties that fall under (13.i) [Chomsky 2004:106]

- But we have seen that neither agreement nor case can be accounted for using (13.ii)...

5. Conclusion

- Neither the occurrence of agreement nor the occurrence of (accusative) case can be derived at the interfaces
- Therefore: if there is an outright alternative to formal features, the interfaces are not where it will be found

REFERENCES


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