

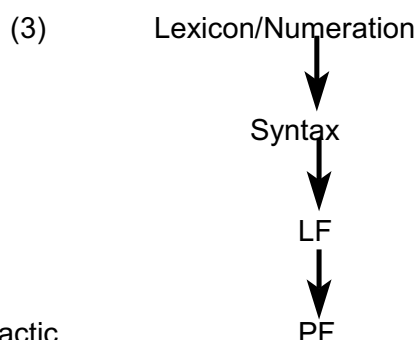
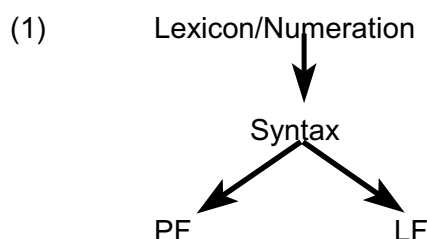
Reconsidering the model of grammar: PF after LF

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Introduction

Main idea: the traditional model of grammar (1) cannot be maintained given the minimalist tenets in (2), and needs to be replaced by the model in (3)



- (2)
- a. syntax = just Merge
 - b. (inflectional) morphology is postsyntactic
 - c. LF = conceptual/intentional interface (i.e. no Merge)

- | | |
|--|-------------------------------|
| (4) what happens at PF | (5) what happens at LF |
| a. inflectional morphology | a. speaker/hearer information |
| b. prosody | b. ad sensum information |
| c. linear order (cliticization, verb second) | c. discourse information |

- (6) relevant observation
the stuff in (4) is typically informed by the stuff in (5)

Some initial observations

- (7) Ignaciano (Ott and Burke de Ott 1983:36)

- | | |
|---|---|
| a. ma -yana | b. ñi -yana |
| 3SG.MASC-go | 3SG.MASC-go |
| 'he must go' (spoken by a male) | 'he must go' (spoken by a female) |

The problem: if agreement is a function of Merge, then *pro* shares its [3.SG.MASC] features with V (via T if we assume Agree, or directly via c-command) which should be spelled out at PF — where does the gender feature of the speaker come in?

- (8) Kham (Watters 2002:68)
- gē:h-ye ŋa-lai duhp-na-ke-o
ox-ERG I-ACC butt-1SG-PERF-3SG
'The ox butted me.'

The problem: tripartite case system where the *subject* is ergative if it is *less animate* than expected, and the *object* is accusative if it is *more animate* than expected. With pronouns, definiteness/familiarity enters

into the definition of animacy and "the distinction between definite and indefinite (..) pronouns is primarily a matter of *speaker construal* and presupposition" (op.cit. 69), where 'definite' means uniquely identifiable.

(9) Tsez (Polinsky and Comrie 1999:116-117)

- a. eni-r [už-ā magalu b-āc'-ru-λi] r-iy-xo
 mother_{II}-DAT boy_I-ERG bread_{III}:ABS III-eat-PART-NMLZ IV-know-PRES
- b. eni-r [už-ā **magalu** b-āc'-ru-λi] **b**-iy-xo
 mother_{II}-DAT boy_I-ERG bread_{III}:ABS III-eat-PART-NMLZ III-know-PRES

(both) 'Mother knows the boy ate the bread.'

The problem: the exceptional agreement with the embedded object (LDA) takes place only when the object is a *topic* (same in Innu-aimûn, cf. Branigan and MacKenzie 2002). This can work via Agree, provided the object moves to a left-peripheral topic position *at LF*. But this entails the model in (3).

NB if discourse status is key, then, given (5c), we can skip the covert movement.

Inflectional morphology fed by LF

Several cases: (i) agreement, (ii) case, (iii) pronoun selection.

Agreement

- (10) Swahili (Bokamba 1980:12) (11) Inari Sami (Corbett 2006:146)
- | | | | | |
|-----------------|----------------|----------------|---------------------------|-------|
| ki -jana | a-me-anguka | alma- h | kuá'láást- ava /eh | onne |
| 7-youth | SU:1-PERF-fall | MAN-NOM.PL | fish-3DU/3PL | today |
- 'The lad fell.'
- 'The (two) men are fishing today.'

Ad sensum agreement (cf. The police **have** left): the information that the subject is *really* animate (Bantu class 1) or dual (Sami), is subjective to the speaker, and should enter the derivation not before the Conceptual-Intentional interface (LF)

- (12) Muna (Van den Berg 1989:51)
- | | | |
|--------------------------------------|-----|-------|
| do/to/o-mai-ghoo | ne | hamai |
| 2SG.REALIS.UNFAM/HONOR/NEUTR-come-IO | LOC | where |
- 'Where do you come from?'
- (UNFAM = unfamiliar, HONOR = respected, NEUTR = unmarked)

- (13) Maithili (Yadav 1997:181)
- a. tō ok-ra beta-ke dekh-l-əhik
 2:NHON 3:NHON-GEN son-OBJ see-PAST-2NHON>3NHON
 'You saw his son.'
- b. **toh**-ər beta ok-ra dekh-l-**kəuk**
 2:NHON-GEN son 3:NHON-OBJ see-PAST-3NHON>2NHON
 'Your son saw him.'

Honorific agreement, referencing the respect felt by the speaker towards the referents of the arguments (i.e. speaker subject = LF). The Maithili case (13b) may in fact be *addressee* agreement, cf. Angika (14b).

- (14) Angika (Bhattacharya 2011:11)
- | | |
|-------------------------------|--------------------------------------|
| a. huni ok-raa dekh-al-ak-hin | b. huni ok-raa dekh-al-ak- hō |
| 3:HON he-OBJ see-PAST-3SU-3OB | 3:HON he-OBJ see-PAST-3SU-2:HON |
- 'He saw him.'
- 'He saw him.' (to a respected person)

Addressee agreement is triggered by an entity not represented in the syntax.

- (15) Side note: typical response to such facts is to postulate a functional projection in Narrow Syntax in which speech act participants or honorificity features can be located. This is *unnecessary* if LF feeds PF.

Case

(16) Turkish (Kornfilt 1997:219)

- | | | | |
|----|--|----|--|
| a. | ben kitab-ı oku-du-m
I book-ACC read-PAST-1SG
'I read the book.' | b. | ben kitap oku-du-m
I book read-PAST-1SG
'I read books.' |
|----|--|----|--|

Differential (subject/object) marking is typically sensitive to animacy, specificity and definiteness (Malchukov and De Swart 2009). These features (I submit) are a matter of *speaker construal* (cf. the Watters observation above) and therefore belong to the conceptual-intentional component (LF).

(17) Tagalog (Donohue 2009:777)

- | | | | |
|----|--|----|---|
| a. | nakita ng bata ang aso
OB.PIV:saw NG child ANG dog
'The child saw the dog.' | b. | nakakita ng aso ang bata
SU.PIV:saw NG dog ANG child
'The child saw a dog.' |
|----|--|----|---|

Western Malayo-Polynesian voice marking involves a single prominent element 'pivot' (marked by *ang* in Tagalog) which is tracked on the verb; I follow Rackowski (2003) in concluding that the marking on the verb tracks the *grammatical function* of the pivot (not its theta-role). But the pivot can have any grammatical function, so what is its status? Not theta, not GF, not topic, not focus - simply 'prominence', decided by the speaker.

(18) Tukang Besi (Donohue 1999:467, 2009:776)

- | | | | |
|----|--|----|---|
| a. | no-balu te pandola na wowine
3R-buy TE eggplant NA woman
'The woman bought an eggplant.' | b. | no-balu-'e na pandola te wowine
3R-buy-3OBJ NA eggplant TE woman
'The woman bought the eggplant.' |
|----|--|----|---|

Generalization: postverbal TE = non-given, preverbal TE = focus, NA (always postverbal) = given. Morphological realization determined by discourse = LF (5c). Many more exx.

- (19) structural case = function of Merge
inherent case = function of theta-roles (GB)

(20) Marathi (Pandharipande 1997:287)

tyālā	apghātāt	dzakham	dzhālī
3SG:DAT	accident:LOC	injury:3SG.F	happen:PAST:3SG.F

'He suffered an injury in the accident.'

(21) Icelandic (Thráinsson 2007:201)

- | | | | |
|----|--|----|--|
| a. | mig dreymdi illa
1SG.ACC dreamt badly
'I had a bad dream.' | b. | þeim finnst Haraldur skemmtilegur
3PL.DAT find Harald:NOM interesting:NOM
'They find Harald interesting.' |
| c. | hennar nýtur ekki við lengur
3SG.F.GEN enjoys NEG with longer
'She is no longer here (to help).' | | |

If theta-roles are assigned to NPs in syntax, case can just be a spell-out of the theta-role at PF (without being fed by LF). Problem: given minimalist assumptions, this cannot be the case (Talsma 2025). In fact, theta-roles do not exist (and certainly not as features of NPs). Predicates have thematic role features ('PR-features') that are valued by NPs in GF-positions (as a function of Merge). As a result, the NPs get interpreted as playing a certain role in the event denoted by the predicate, and this interpretation takes place **at LF**. Hence, inherent case points to PF being fed by LF.

Pronoun selection

- (22) binding theory is not about the distribution of pronominals, but about how to express reflexivity >> where in the model does reflexivity marking belong?
- (23) realizations of reflexivity (Geniušienė 1987, Schladt 2000)
- | | |
|----------------------------------|--------------------------------------|
| a. reflexive marking on the verb | e. dedicated auxiliaries |
| b. pronominals | f. directional prepositional phrases |
| c. body part noun phrases | g. repetition of the antecedent |
| d. dedicated self-markers | |

syntax has just an unspecified pronoun (PRON), spellout picks the right form
>> reflexivity marked at LF (arguably)

- | | |
|---------------------------------|---------------------------|
| (24) Dutch | (25) Frisian |
| Kim was-t haar / zich | Kim waske-t har |
| Kim wash-3SG 3SG:OBJ / 3SG:REFL | Kim wash-3SG 3SG.OBJ |
| 'Kim washes her / herself.' | 'Kim washes her/herself.' |

Dutch (but not Frisian): pronoun gets spelled out as [$\pm$ reflexive] depending on the **reflexive interpretation** of the predicate — this belongs to LF (intentional).

- (26) Dutch
- | |
|--|
| Kim zag een slang naast haar / zich |
| Kim see-PAST.SG INDEF snake next.to 3SG:OBJ / 3SG:REFL |
| 'Kim saw a snake next to her(self).' |

Choice of pronoun spell-out dependent on point of view: subject (i.e. reflexive) or speaker (non-reflexive). Where is this point of view choice made? Arguably LF.

- (27) English (Bolinger 1977)
- | | |
|------|--|
| a. * | He flunked when John cheated (he $\neq$ John) |
| b. | He usually flunks when John cheats (he = John) |

Generalization: to express anaphoricity, use an anaphoric device (cf. Levinson 2000), hence no anaphoricity interpretation in (27a). But in (27b), *John* is a topic (thus Bolinger), and is spelled out as such to 'reidentify its topic status'. This need to reidentify something as a topic is only felt at LF, and leads to spellout of the pronoun as an R-expression (again LF feeding PF).

Prosody fed by LF

- (28) Dutch
- | | |
|----|--|
| a. | TASMAN heeft Nieuw-Zeeland ontdekt (not Cook) |
| b. | Tasman heeft NIEUW-ZEELAND ontdekt (not Australia) |
| | 'Tasman discovered New-Zealand.' |

Focus (high pitch in Dutch) evokes an alternative set. There is no evidence that focus in (28) is a function of Merge (i.e. syntactic). The decision to put elements in focus lies with the speaker > LF. This has a prosodic effect at PF, hence LF should feed PF.

- (29) Dutch
- | | | | |
|----|---------------------------------|----|--------------------------------|
| a. | Het kan niet WAAR zijn | b. | Het kan NIET waar zijn |
| | it can:SG NEG true be:INF | | it can:SG NEG true be:INF |
| | 'It can't be true.' (neg > can) | | 'It can be false.' (can > neg) |

- (30) a. What did everyone BUY? (all > wh)
 b. What did EVERYONE buy? (wh > all)

On the traditional model (1), there must be a feature in syntax that has simultaneous effects at PF (pitch) and LF (scope). Such a feature is unknown. On the model in (3), a property is assigned to *niet* and *everyone* that leads to a particular interpretation (modification of *waar* in 29b, collective reading in 30b), explaining the scope effects. This then feeds prosodic realization at PF.

NB again, it is common to postulate left-peripheral functional projections and (covert) movement to account for the focus interpretation and scope facts, but assuming (3), these moves are unnecessary.

Ellipsis

- (31) two approaches:
 a. generating empty structure, reconstruction at LF
 b. generating full syntactic structure, failure to spell-out at PF
- (32) a. John graduated before Bill did [VP --]
 b. John graduated before Bill graduated
- (33) a. Dulles suspected everyone Angleton did [VP --] >> infinite regress
 b. Dulles suspected everyone Angleton suspected
- (34) Tancredi (1992): deaccenting/deletion of the 'focus related topic' (FRT)
 a. (32) focus set = { John, Bill }, FRT = 'x graduated'
 b. (33) focus set = { Dulles, Angleton }, FRT = 'x suspected y'
- (35) how is the distinction focus/FRT made? arguably at LF
- (36) nonconstituent FRT
 John wrote a paper about ellipsis and Bill a book (= x wrote y about ellipsis)
- (37) additional condition of identity
 Biden believes in himself, even if Harris doesn't <believe in him>

Linear order fed by LF

Head movement

- (38) Dutch
- a. ... dat Tasman Nieuw-Zeeland ontdekt heeft
 C Tasman New-Zealand discovered AUX:3SG
 '... that Tasman discovered New-Zealand.'
- b. Tasman heeft Nieuw-Zeeland ontdekt
 Tasman AUX:3SG New-Zealand discovered

Zwart (2017): *heeft ontdekt* is the postsyntactic realization of 'anterior' (present/past) tense, i.e. a single item in the verbal paradigms. If so, verb-second (38b) *must* be postsyntactic. Question now: can we see influence of LF?

(39) German (Truckenbrodt 2006)

- | | | | |
|----|--|----|---|
| a. | Komm-t er noch ?
come-3SG he still
'Is he coming?' | b. | Ob er noch komm-t ?
whether he still come-3SG
'I wonder if he is coming.' |
|----|--|----|---|

Difference is pragmatic: (39a) is an appeal to the addressee, where the speaker knows that the addressee can supply information, and the addressee knows that the speaker knows etc; (39b) lacks this pragmatic inference. But pragmatics is not in Narrow Syntax but in LF (if anywhere). Hence again LF feeds PF.

A-movement

(40) Dutch

- | | | | |
|----|---|----|--|
| a. | Pak de fiets maar
take the bike just
'Take the bike.' | b. | Pak maar een fiets
take just a bike
'Take a bike.' |
|----|---|----|--|

Definite objects precede discourse particles, indefinite (unless 'strong') follow. The difference is essentially given vs. new information, properties we associate with LF rather than Narrow Syntax. Analyses in terms of designated licensing positions for objects are not compelling (cf. Zwart 1994: flexible positioning of AgrOP). Alternative that now beckons: object placement is a PF operation fed by information that becomes available only at LF.

A'-movement

(41) Bijection principle (Koopman and Sportiche 1982)(arguably an LF-condition)
There is a bijective correspondence between variables and operators.

(42) where do operators and variables come from?
>> internal merge > Form Copy > copy 1 = operator, copy 2 = variable

- (43) a. John read the book
b. Which book did John read e (i.e. for which x, x a book, John read that book)

Alternative: merge variable in syntax, add operator at LF to satisfy (41)(i.e. operator is the output of a separate derivation, interacting with the main derivation after Narrow Syntax). If so, obviously PF should be after LF.

(44) syntax: John read x LF: $\langle$ [which book], [John read x] $\rangle$

If the introduction of an operator at LF can happen only once per derivation, the Wh-island effect follows automatically.

(45) *Who_i did you wonder [_A when_j [Bill saw e_i e_j]]

when merged at LF of A to meet (41), binding e_j, but unbound e_i still violates (41) > *

Conclusion

- (46)
- a. syntax is just merge
 - b. > LF is the component dealing with
 - focus
 - quantification
 - operator/variable (wh)
 - scope
 - information structure
 - participant features (incl. honorificity)
 - ad sensum phenomena
 - c. these can all be shown to have an impact on spell-out
 - d. >> LF must feed PF
- (47) no need to expand clause structure at the left periphery for the stuff in (46b)

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