Eliminating external merge

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'Merge over Move'

(1) a. A man seems to be in the room
b. There seems to be a man in the room
c. *There seems a man to be in the room

(2) Numeration a. { seem, [to be], [a man], [in the room] } > (1a)
b. { there, seem, [to be], [a man], [in the room] } > (1b), (1c)

(3) (1c) excluded if Merge ('external merge') takes priority over Move ('internal merge')
[to be a man in the room] > [there to be a man in the room]
*[a man to be in the room]

(4) further reasons for thinking Merge takes priority over Move
- Merge is not constrained by Greed/Procrastinate
- Move is more complex, involving also Agree

(5) Later, Chomsky realized that this was all wrong: both types of Merge are free, and blocking Move requires a stipulation

(6) In fact, Chomsky argues that Move is the unmarked operation (given the availability of the moving element)

(7) This implies:
if α needs some β merging to α, α looks for β inside α first

Naive ideas about Merge and Move

(8) separate spaces: - Numeration
- Workspace (object under construction)

(9) Numeration = a selection of elements from the Lexicon (certainly wrong)

(10) Merge ('External merge') **transfers** an element from the Numeration to the Workspace
Move ('Internal merge') **externalizes** an element from the Workspace

(11) Merge and Move are **formally** the same (set formation), but the 'trajectories' differ

(12) Locality: external conditions on the output of Merge/Move (i.e. phases are transfered)

(13) What drives Merge/Move: full interpretability (in terms of features)

Can we simplify this system?

(14) What do we want to keep?
  a. Full Interpretation
     the system is driven by the need to create something interpretable
  b. Merge
     each operation involves at most two elements, forming a set
  c. The extension condition
     movement is externalization

(15) Transfer is suspect
  a. it reifies a representation (spatial separation of Numeration, Workspace, Interface)
  b. merge stipulates which elements are in a relation (Bobaljik 1995)
  c. all you need is something that turns the Numeration into something interpretable

(16) Phases are suspect
  a. it is externally imposed (a constraint)
  b. it is sensitive to category (stipulative)
  c. it complicates the derivation (look-ahead, reassembly at the interfaces)
  d. it is domain-based, not sister-based (i.e. not a function of merge)

(17) Feature-driven operations are suspect
  a. postulates uninterpretable features
  b. stipulates their harmful effect
  c. stipulates a mechanism 'search'
  d. invites the proposal of entities to help the derivation along (cf. Agr of early minimalism)

Proposal

(18) a. starting point is the Numeration (an **unordered** heterogeneous set of elements)
  b. interpretation requires **order**
  c. merge turns an unordered set into an ordered pair/n-tuple

(19) Numeration { α, β }
  Merge { α { α, β }} = 〈 α, β 〉 (Kuratowski 1921, Langendoen 2003)

(20) If β is a set, repeat.

(21) Numeration 〈 α, { γ, δ } 〉
  Merge 〈 α, { γ, { γ, δ } 〉 = 〈 α, 〈 γ, δ 〉〉 = 〈 α, γ, δ 〉

(22) etc., until the set is turned into an ordered pair/n-tuple

(23) There is an obvious alternative to (21), but that would not create order:

  Numeration 〈 α, { γ, δ } 〉
  Merge { γ, 〈 α, { γ, δ } 〉}

Relevance of order

(24) An ordered pair is an asymmetric set, which is useful for:
a. deriving semantic interpretation (e.g. subject-predicate, scope, binding)
b. explaining morphosyntactic dependency marking (assumes **feature sharing**)
c. externalization (in a temporally ordered sequence)

(25) Epstein: c-command as a function of merge
Brody's problem: why is it not symmetric?
Now: because merge creates an ordered pair

(26) feature sharing (Koster 1987, Zwart 2006)
$\langle \alpha_F, \{ \gamma, \delta \} \rangle \rightarrow \langle \alpha_F, \{ \gamma, \delta \}_F \rangle$

e.g. if α is a 3SG subject, then αs sister { γ, δ } acquires the feature 3SG as a function of merge
> how 3SG is externalized on a term of { γ, δ } is a matter of morphology
(e.g. verbal inflection, clitic, auxiliary, linker, positional marking [verb second], or not)

(27) that an utterance is an acoustic string is not essential to grammar, but we may assume as a default case that the order derived in syntax is reflected by the externalization mechanism (PF), i.e. the simplified LCA (Kayne 1994, Zwart 2011):

LCA
$\langle \alpha, \beta \rangle \gg$ / a b /

Consequences

The subject/EPP

(28) a. why does a clause have to have a subject
b. why does it c-command the object and the VP
c. how can it assume various thematic roles

(29) **Hypothesis (definition)**
The subject is the first element merged (i.e. α in (19/21))

(30) This derives (28a,b)
a. you can't have a clause without a subject
b. the subject will always be ordered with respect to the rest ('predicate')

(31) For (28c) we need:
Thematic roles are interpretive (i.e. bound features of the verb)

Little vP

(32) Hale & Keyser's paradox (Hale & Keyser 1993)
A (transitive, agentive, causative) verb is syntactically structured, but also clearly lexical

(33) **Conjecture**
Derivational paradoxes involve derivation layering (Zwart 2009)

(34) How to make a transitive verb
a. v-V combination (better: a combination of an agentive element and a noncategorial root) is created in a separate derivation
b. it is then interpreted at the interfaces (explaining its idiomatic character and its category label)
c. and finally included in the Numeration for a next derivation **as a single verb**

(35) layered derivations derive locality if we assume:

Generalized Integrity
Given two derivations D1 and D2, where the output of D1 is in the Numeration of D2, elements merged in D1 cannot be merged in D2

(36) It follows that arguments cannot be generated in vP

(37) Thematic roles are a record of the derivation reflected in (interacting with) the features of the verb.

Active/passive
(38) A-movement is just merge

(39) Active:
a. The verb (output of previous derivation) is active
b. It's features involve an array of thematic roles (say, AGENT-PATIENT), construed in the previous derivation
c. Merged noun phrases 'bind' those features

(40) Passive (or middle, inverse):
a. The verb is marked for a particular association of noun phrases to thematic roles
b. Passive = shift, inverse = inversion

(41) Uniform Thematic role Assignment Hypothesis (Baker 1988):
refers to the construction of an array of thematic roles in the v-V derivation

(42) Theta Criterion (Chomsky 1981): one-on-one relation NPs-thematic roles
refers to the binding relation of (39c); need not refer to *chains* anymore

(43) Projection Principle (Chomsky 1981): structure projected from the lexicon
this can no longer be maintained
> vP-internal subject hypothesis must be wrong

Case
(44) Neo-Jakobsonian approach (Zwart 2008)
a. nominative is not a case
b. accusative reflects the object-subject dependency
c. ergative is not part of the system > object needs no case

(45) structural vs. inherent case
a. structural case is dependency as a function of merge
b. inherent case is any other case (typically residue of earlier derivation, e.g. PP)

Empty categories

(46) a. There are no NP-traces (A-traces)
b. pro exists: it is part of the pronoun paradigm
c. PRO is more questionable (the movement analysis must be false, by (46a))
d. A'-traces, see below

(47) PRO presents another derivational paradox:
- we know there must a be subject there (subject-orientation effects)
- yet it is never visible (not even blocking contraction)

Binding

(48) C-command is relevant, so it must be a function of merge
> not about the distribution of NP-types, but about the realization of dependency

(49) Binding configuration

$$\langle\ \alpha,\ \{\ \gamma, \delta\ \}\ \rangle \rightarrow \langle\ \alpha,\ \{\ \gamma, \delta\ \}_{REFL}\ \rangle$$

(50) Realizations:
- special pronoun (derives Principle B)
- verbal marking
- clitic
- adverbs/ focus markers/etc.

(51) Principle C is not a hard principle (Bolinger 1977, Vergnaud pc, Zwart 2015)

A'-movement

(52) Must be an additional mechanism

(53) who did you see <who>
- inverts order of grammatical functions
- morphology/interpretation must refer to the 'trace'-position
- not triggered by the need to create order
- not universal (unlike subject placement)

(54) **Proposal**
externalization from an ordered n-tuple (secondary externalization)

(55) $\langle\ \alpha,\ \gamma, \delta\ \rangle$ > $\langle\ \gamma, \langle\ \alpha,\ \gamma, \delta\ \rangle\rangle$

(56) Ideally, this is *free* (i.e. not subject to constraints)
> modulo Generalized Integrity (35)

(57) *who did you see [<who> and Bill] < { you, see, [*x* and Bill] }

(58) explains typical constraints
(Coordinate Structure Constraint, Left Branch Condition, Condition on Extraction Domains)

Successive cyclic movement

(59) who did you say <who> you saw <who>

(60) a. the transparency of complement clauses is expected
(they need not be outputs of separate derivations)
b. the need for an escape hatch (edge) is not formulable in this system

(61) the classic argument for successive cyclicity (Chomsky 1973) may no longer hold
*who did you wonder why Bill fired <who>
assuming that embedded interrogatives are outputs of separate derivations

(62) Van Urk & Richards (2015) present new arguments involving Dinka (WNilotic)
various complications here:
- WNilotic languages use fronting only as a secondary strategy
- it looks like clefting *cum* relativization (it is who that you saw)
- relative clauses, like in Austronesian, require a preset highlighting the relatized noun (via voice in Austronesian, inversion in Dinka)
- this gives the impression of an edge effect suggesting successive cyclicity

Connectivity

(63) Case, theta-role, binding properties of the A'-moved category are established upon Merge

(64) Derived connectivity is problematic
[which pictures of himself] did John say < ..> Bill liked <..> best (ambiguous)

Conclusion

(65) A sharpening of minimalist analysis may be possible, covering much the same ground as standard analyses in GB-theory/minimalism

(66) This analysis assumes only merge and no external constraints on its operation

(67) The major innovation lies in what drives the system, which (in keeping with the principle of Full Interpretation) I suggest has nothing to do with features, but everything with the need to turn an unordered set into an ordered sequence.

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