

Back to the Future:
Towards a Minimalist Theory of Syntax

Howard Lasnik
University of Connecticut

- (1) This example is for my recalcitrant word processor.
- (2) A human language is a way of relating (certain aspects of) sound with (certain aspects of) meaning. This relation is not direct. Rather, it is mediated by syntactic structure.
- (3) Minimally, we have a structured representation of linguistically significant aspects of sound, 'PF' (Phonetic Form), and a structured representation of linguistically significant aspects of meaning, 'LF' (Logical Form). The relationship is instantiated via syntactic transformations: operations mapping structured representations into structured representations.
- (4) An early theory of this mapping (1950's): Phrase structure rules create simple clause structures. Singularly transformations alter these structures. Generalized transformations merge simple structures together into more complex ones. And singularly transformations operate on these more complex merged structures, producing a final structure. The T-Marker, which is the record of the transformational derivation of a given sentence, provides the basis for the structural aspects of the meaning of that sentence. And the final structure provides the basis for the structural aspects of the phonetic properties of the sentence.
- (5) Some reasons for thinking there are transformations
 - Relatedness between sentences: "John is singing"- "Is John singing"; "You will like this argument"- "This argument, you will like".
 - Apparent form/interpretation mismatches: In "John is likely to lose the election", John is the understood subject of lose the election, but is in the subject position of is likely.
 - The descriptive correctness of generalizations of the sort: Move the first auxiliary verb, if there is one, to the front of the sentence. And the excessively cumbersome nature of non-transformational characterizations.
- (6) An observation in the '60's about a certain class of missing derivations: Apparently it is never necessary to apply a singularly transformation to a 'matrix' prior to the operation of a generalized transformation embedding another clause into that matrix. If this option is never utilized, the theory should be reformulated to exclude it, it was reasoned, a typical argument from restrictiveness. Thus was born Deep Structure.

- (7) Recursion was removed from the transformational component (i.e., generalized transformations were eliminated) and introduced into the base phrase structure component. The output of the PS component (the Deep Structure) of the sentence is a structured indefinitely multiply embedded abstract structure. The transformations (all singularly now) apply in 'cyclic' fashion, beginning on the most deeply embedded clause, and sequentially working their way up to the 'root' of the phrase structure tree. The culmination of the transformational derivation is the Surface Structure.
- (8) Proposal: Deep Structure is not just the initial stage in a transformational derivation, but is also the locus of lexical insertion, and of certain aspects of semantic interpretation, most notably, those having to do with 'grammatical relations'.
- (9) A grammar of a language, in the model of the mid '60's:
 - A lexicon.
 - A set of PS rules particular to that language, and particular to the specific constructions they characterize.
 - A strictly ordered set of transformations particular to that language and particular to the specific constructions they characterize (Passive T, Relative Clause T, etc.). Some are optional, others are obligatory.
- (10) Towards explanatory adequacy: a more restrictive theory:
 - PS rules limited to the 'X-bar' format.
 - X' → SPECifier X'
 - X' → X Complement
 - Further restriction: SPEC is Y''; Complement is Z''.
 - S is headed by a Tense-Agreement morpheme, INFL.
 - Many properties are factored out of particular transformations, and stated in terms of general constraints on the form and/or functioning of transformations, or on the outputs of the transformational component.
- (11) -Locality constraints on movement, including 'island' constraints and clause-mate constraints.
 - Structure preserving constraint: the output of a transformation must be of a structure independently base-generable. (This constraint depends on Deep Structure, hence provides further evidence for it.)
- (12) Move α . Optionally move any constituent in a structure to any other position. Do any number of such operations in any order, subject to general locality constraints, structure-preservation, the cyclic principle, etc.
- (13)a What do you think that Mary read _
b *What do you wonder whether Mary read _ (WH-island constraint)
c *What do you wonder why Mary read _ (WH-island constraint, and cyclicity)

- (14)a John is likely [to lose the election]
 b *(It) is likely [John to lose the election]
 c It is likely [that John will lose the election]

- (15)a John was arrested [
 b *(It) was arrested John

- (16)a John is believed to own a house
 b *(It) is believed [John to own a house]
 c It is believed [that John owns a house]

- (17)a The subject of a finite clause is Nominative.
 b The object of a transitive verb is Accusative.
 c The object of a preposition is Oblique.
 etc.

- (18) The Case Filter: * an NP whose Case is not appropriate to its position in the structure.

- (19) Under (18), an NP is introduced into a syntactic structure with an arbitrarily chosen Case, and Move *a* might reposition it into a position appropriate to its Case. If not, 'Case checking' fails, and the representation is marked as ill-formed.

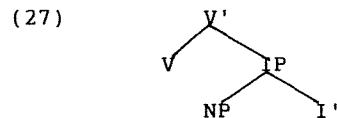
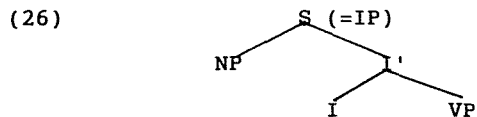
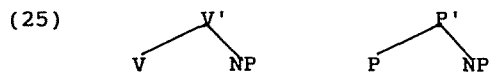
- (20) This theory of abstract Case allowed for the unification of several earlier independent filters, and made it possible to dispense with several stipulations of obligatoriness on transformations. If NP movement optionally refrains from applying, as in (14)b, (15)b, (16)b, the Case Filter rules out the derivation. This represented a major step towards explanation and simplicity.

- (21)a I believe [(that) John owns a house]
 b I believe [John to own a house]

- (22) The Case of John in (21)a is 'exceptional'. It is licensed by believe, even though it bears no grammatical relation to that verb.

- (23)a I believe [(that) he owns a house]
 b I believe [him to own a house]

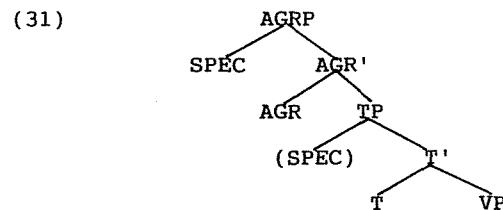
- (24) Case is licensed under government. A head governs its specifier and complement, and, sometimes, the specifier of its complement.



- (28) Government characterizes a rather arbitrary conglomeration of geometric configurations. The terms of the theory ought to be limited to core irreducible relations, e.g., those provided by X'-theory. In (25), the head governs its complement; in (26), the head governs its specifier. But in (27), there is no core X' relation between V and NP. Somehow, (27) ought to be reduced to a configuration more like (25) or (26).

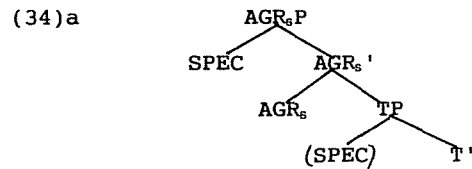
- (29) The Spec-head Case configuration in (26) is often (perhaps always) created by 'Raising', an instance of Move *a*. (14)a and (16)a have such derivations. Is it possible that (27) has such a derivation?

- (30) INFL, the hypothesized head of S, embodies both tense features (finite vs. non finite; past vs. present) and agreement features (person, number, gender). It is reasonable to think that INFL is not a single head. Rather, Tense and AGREEMENT constitute independent heads:

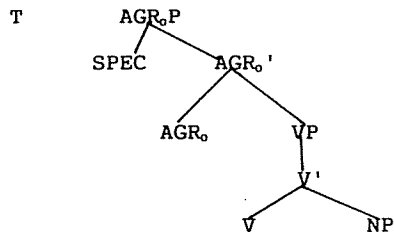


- (32) SPEC of AGRP is the position licensing agreement. It also is the position licensing nominative Case, when T is finite and raises to AGR (an instance of head movement).

- (33) In addition to subject agreement, which is visible even in a relatively morphologically impoverished language like English, some languages show object agreement. Suppose (following another major reductionist point of view) that the position for such agreement is always available, even when the language does not show overt object agreement:

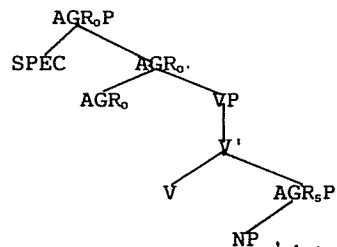


b



(35) Now there is a natural position for the licensing of 'exceptional' Case: SPEC of AGR₀.

(36)



(37) NP raises to SPEC of AGR₀, and V raises to AGR₀. If V is transitive, the amalgamated AGR-V complex licenses accusative Case.

(38) Just the same should be true of the direct object of a simple transitive sentence, as in (34). Thus, structural Case licensing is uniformly in the SPEC-head configuration.

(39)a John owns a house
b *John a house owns

(40) Raising to SPEC of AGR₀ is not audible; it is in the LF component. The Case Filter, one of the major apparent Surface Structure requirements, is, instead, an LF requirement.

(41)a Y is in the domain of X only if Y is c-commanded by X.
b X c-commands Y iff the first branching node dominating X also dominates Y.

(42)a *Joan believes him_i to be a genius even more fervently than Bob_i does
b *Joan believes him_i even more fervently than Bob_i does
c Joan believes he_i is a genius even more fervently than Bob_i does

(43)a ?The DA proved [the defendants to be guilty] during each other's trials
b ?The DA accused the defendants during each other's trials
c?*The DA proved [that the defendants were guilty] during each other's trials

(44)a No one saw anything

b *Anyone saw nothing

(45)a The DA accused none of the defendants during any of the trials

b ?The DA proved [none of the defendants to be guilty] during any of the trials

c?*The DA proved [that none of the defendants were guilty] during any of the trials

(46) Which book that Johni read did hei like

(47) *Hei liked every book that Johni read

(48) Johni wonders which picture of himselfi Mary showed to Susan

(49) *Johni wonders who showed which picture of himselfi to Susan

(50) Given this LF theory of Case, classic Case Filter violations like (14)b, (15b), (16b) are problematic. If the subject position is left empty overtly, why can't the offending NP move there covertly, in the LF component? From a strict minimalist perspective, the violation must be at PF or at LF.

(51) The 'Extended Projection Principle': a clause needs a subject. As seen in (52), this phenomenon is independent of the Case requirements of any NP.

(52)a *Is raining

b *Appears that the theory is incorrect

(53)a *John is likely [(that) _ will lose the election]

b *John is believed [(that) _ owns a house]

(54) 'Greed': Move *a* is a last resort, driven by the morphological needs of *a*.

- Chomsky, N. (1986) Knowledge of Language: Its Nature, Origin, and Use. Praeger; (1991) "Some Notes on Economy of Derivation and Representation," in R. Freidin, ed., Principles and Parameters in Comparative Grammar, MIT Press; (1992) "A Minimalist Program for Linguistic Theory," MIT Occasional Papers in Linguistics Number 1; (1994) "Bare Phrase Structure," MIT Occasional Papers in Linguistics Number 5.
- Chomsky, N. and H. Lasnik (1993) "Principles and Parameters Theory," in J. Jacobs et. al., eds., Syntax: An International Handbook of Contemporary Research, Walter de Gruyter.
- Hornstein, N. (1993) "One Cheer for Minimalism," U. of Maryland ms.
- Kitahara, H. (1992) "Checking Theory and Scope Interpretation Without Quantifier Raising," Harvard Working Papers in Linguistics, 1.
- Lasnik, H. (1993) "Lectures on Minimalist Syntax," U. of Connecticut Occasional Papers in Linguistics Issue 1.
- Lasnik, H. and M. Saito (1991) "On the Subject of Infinitives," GLS.
- Pollock, J.-Y. (1989) "Verb Movement, Universal Grammar, and the Structure of IP," Linguistic Inquiry 20:365-424.
- Postal, P.M. (1974) On Raising: One Rule of English Grammar and its Theoretical Implications, MIT Press.
- Takahashi, D. (1993) "On Antecedent Contained Deletion," U. of Connecticut ms.