

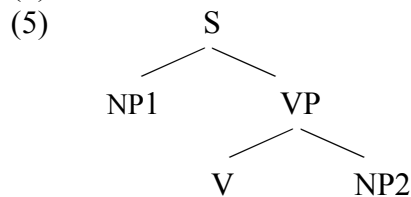
## Configurations and Theta Role Assignment: Residues of Deep Structure

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### I. Background - Deep Structure and ‘grammatical functions’

- (1) The ‘Standard Theory’ of Chomsky (1965) replaced generalized transformations with recursion in the phrase structure component.
- (2) This led to the postulation of a new level of representation *deep structure*, which had three fundamental properties. It was:
  - (3)a the locus of lexical insertion;
  - b the input to the transformational component;
  - c the structure subject to semantic interpretation, particularly with respect to ‘grammatical functions’.

- (4) Grammatical functions are structurally determined.



- (6) NP of S (NP1) is subject; NP of VP (NP2) is direct object.
- (7) John was persuaded by Bill to be examined
- (8) “In such cases as these, ... the deep structure in which the significant grammatical functions are represented will be very different from the surface structure. Examples of this sort, of course, provide the primary motivation and empirical justification for the theory of transformational grammar.” p.70
- (9) (3)c was thus crucial given that the relevant structural properties are often no longer present in derived structure.
- (10) It was observed in the earliest work on transformational grammar that certain aspects of meaning, quantifier scope in this case, crucially depend on **derived** structure, as in (11) from Chomsky (1957).
- (11)a Everyone in the room knows at least two languages
  - b At least two languages are known by everyone in the room

## II. Trace theory, surface structure and grammatical functions

- (12) Investigation of a variety of such phenomena led to the ‘Extended Standard Theory’ of Chomsky (1970), in which both deep structure and surface structure contribute to semantic interpretation. The contribution of deep structure concerns grammatical relations; the contribution of surface structure concerns virtually all other aspects of meaning, including scope, as in the examples mentioned just above, anaphora, focus, and presupposition.
- (13) With the advent of trace theory, the role of Deep Structure in semantic interpretation is still further lessened.
- (14) Chomsky (1975) suggests that surface structure can be the input for all semantic interpretation (the ‘Revised Extended Standard Theory’). Recall that the obstacle to such an approach was that movement operations seemed to destroy the configurations necessary for the determination of grammatical relations. But once traces are posited, this is no longer obviously so. Chomsky summarizes the situation as follows:
- (15) “... consider ... [(16)], derived by NP-preposing from [(17)]:  
[(16)] John seems [<sub>S</sub> *t* to be a nice fellow]  
[(17)] \_ seems [<sub>S</sub> John to be a nice fellow]  
To understand the sentence [(16)] we must know that “John” is the subject of the embedded sentence. The initial phrase marker provides this information, but the surface structure (it appears) does not... In fact, it was precisely such considerations as these that motivated the principle of the standard theory that deep structures (our “initial phrase markers”) determine semantic interpretation.  
But notice that under the trace theory of movement rules, the motivation disappears. The position of the...trace in surface structure allows us to determine the grammatical relation of “John” in [(16)] as subject of the embedded sentence. Similarly, in the other cases... There is a great deal [of] evidence that surface-structure information contributes to the determination of meaning. Thus, it seems reasonable to postulate that only surface structures undergo semantic interpretation...” [pp.95-96]
- (18) In the Standard Theory and the Extended Standard Theory, movement into  $\theta$ -positions was clearly impossible, as  $\theta$ -relations were specifically determined by Deep Structure configuration.
- (19) The question becomes more subtle, and more interesting, in the Revised Extended Standard Theory, and its successor, the Government-Binding Theory, where Deep Structure is not directly involved in semantic interpretation at all.
- (20) “... D-structure is a direct representation of GF- $\theta$  [Grammatical Function- $\theta$ ]...”  
Chomsky (1981, p.43)
- (21) Consider a chain  $(GF_1, \dots, GF_n)$  in some S-structure. “Suppose  $GF_i$  to be a GF- $\theta$ , for  $i \neq n$ . Then ... it is assigned an argument at D-structure, and this argument is “erased” by application of Move- $\alpha$  to this position. But any reasonable version of the principle of

recoverability of deletion will require that arguments cannot be erased by substitution ... It follows that movement must always be to a position to which no  $\theta$ -role is assigned ...” [p.46]

- (22) “Since the D-structure position of an argument is a  $\theta$ -position by definition, it follows that an argument cannot be moved to a  $\theta$ -position or the chain so formed will have two  $\theta$ -positions, violating [(23)].” Chomsky (1986, p.136)
- (23) A chain “has at most one  $\theta$ -position ...”
- (24) Thus, movement is always to a non- $\theta$ -position ... We cannot, for example, have a derivation of [(25)a] from [(25)b], yielding a chain (*John, e*) with two  $\theta$ -positions.” [p.136]
- (25)a John hit *e*  
 b *e* hit John
- (26) More on such examples later.

### III. $\theta$ -positions?

- (27) “...each lexical element  $\alpha$  assigns a  $\theta$ -role to every NP or clause in its complement...” Chomsky (1981, p.93)
- (28) “If we succeed in eliminating recourse to c-selection as well as phrase structure rules, thus reducing syntactic representations at D-structure to projections of semantic properties of lexical items, it will follow that the complement of any lexical head in a syntactic representation must be s-selected by it, because there is no other way for the position to exist. For example, there cannot be such sentences as (68), where V is a verb that does not s-select an object and there is a pleonastic element...lacking any semantic role...”

John [<sub>VP</sub> V there] (68)

...Similarly, we cannot have "raising to object" to yield (70ii) (with e the trace of Bill) from the D-structure (70i):

- i* John [<sub>VP</sub> believes e [<sub>S</sub> Bill to be intelligent]] (70)  
*ii* John [<sub>VP</sub> believes Bill [<sub>S</sub> e to be intelligent]]

The verb believe s-selects only a proposition. Therefore, in (70i) the position occupied by e cannot exist at D-structure, because it is not s-selected by believe.” Chomsky (1986, pp.90-91)

- (29) But this line of reasoning would lead to the problematic conclusion that not only non-thematic objects, but also non-thematic subjects, are precluded. That is, it would

disallow even raising into **subject** position, or, for that matter, pleonastic subjects like it or there.

- (30) I dislike it that he is so cruel
- (31) I didn't suspect it for a moment that you would fail
- (32) I regret it very much that we could not hire Mosconi
- (33) I resent it greatly that you didn't call me
- (34) I don't mind it very much that he did that                      Postal and Pullum (1988)

(35) Based on such examples, Postal and Pullum conclude that object position need not be thematic (and therefore that there is nothing to prevent raising into object position).

BUT

- (36) ??I dislike him to be so cruel
- (37) ?\*I didn't suspect you to have failed
- (38) \*I regret them not to have hired Mosconi
- (39) \*I resent you not to have called me
- (40) \*I don't mind him to have done that                      Lasnik and Saito (1991)

COMPARE

- (41)a I believe (??it) that John left
  - b I believe John to have left
- (42)a I will prove (?\*it) that Mary is the culprit
  - b I will prove Mary to be the culprit
- (43)a They have found (\*it) that there is a prime number greater than 17
  - b They have found there to be a prime number greater than 17
- (44)a I will show (\*it) that the Coordinate Structure Constraint is valid
  - b I will show the Coordinate Structure Constraint to be valid
- (45) The best instances of expletive objects occur with factive verbs, in the sense of Kiparsky and Kiparsky (1970), while, as the Kiparskys observed, 'raising' is generally not permitted with factives. Thus, while Postal and Pullum's examples of apparent expletive objects potentially provide a conceptual basis for allowing raising to object, they provide little if any empirical basis.

#### IV. Minimalism and $\theta$ -structures

- (46) "...there should be no interaction between  $\theta$ -theory and the theory of movement."  
Chomsky (1995, p.312)
- (47) In particular, according to Chomsky, movement can never create a  $\theta$ -configuration.
- (48) In a theory with D-structure, this is fairly straightforward, as already discussed. But within a minimalist approach where LF is assumed to be the sole interface with semantics, and D-structure is assumed not to exist at all, the consequence that " $\theta$ -relatedness is a 'base property'..." would be considerably more surprising and interesting.

- (49) “A  $\theta$ -role is assigned in a certain structural configuration...”
- (50) “If  $\alpha$  raises to a  $\theta$ -position Th, forming the chain CH=( $\alpha$ ,t), the argument that must bear a  $\theta$ -role is CH, not  $\alpha$ . But CH is not in any configuration, and  $\alpha$  is not an argument that can receive a  $\theta$ -role.” [p.313]
- (51) Unintended, but, as far as I can tell, unavoidable consequence: A-movement of an argument should **never** be permitted. Movement **from** a  $\theta$ -position creates a chain just as much as movement **to** a  $\theta$ -position. Hence, the moved argument again would not be in any configuration.
- (52) Alternative: suppose that instead of being determined specifically at the LF level,  $\theta$ -roles are ‘checked’ in the course of a derivation.
- (53) The argument of Chomsky (1995, p.301), that traces of A-movement must be present at LF for  $\theta$ -role assignment, then does not follow.
- (54) But then, the prohibition against movement into  $\theta$ -positions also does not follow. If an A-trace is not only not helpful in the assignment of a  $\theta$ -role, but would actually make such assignment impossible, then, obviously, the argument that such a trace must exist for  $\theta$ -theoretic reasons fails. But if A-traces don't exist, then an argument will invariably be a single-membered chain no matter how many times it moves. Thus, even if it were to move into a  $\theta$ -position, it would still be in a ‘configuration’ in the relevant sense, so the  $\theta$ -role should be assignable.
- (55) Possible evidence that A-movement does not leave a trace:
- (56)a (it seems that) everyone isn't there yet  
 b I expected [everyone not to be there yet]  
 c everyone seems [*t* not to be there yet]
- (57) “Negation can have wide scope over the Q in [(37)a], and it seems in [(37)b] but not in [(37)c],.... reconstruction in the A-chain does not take place, so it appears.” Chomsky (1995, p.327)
- (58) The mathematician made every even number out not to be the sum of two primes
- (59) The only reading of (39), with its raising of every even number into the higher clause, is the implausible one where the mathematician was engaged in the futile activity of trying to convince someone that no even number is the sum of two primes (and not the far more plausible one where she is merely trying to convince someone that Goldbach's conjecture is false). [See Lasnik (1999) for further discussion.]
- COMPARE:
- (60) The mathematician made out that every even number isn't the sum of two primes
- (61) \*Which claim that John<sub>i</sub> was asleep did he<sub>i</sub> later deny Lebeaux (1988), Lebeaux (1991), Chomsky (1993) [Though see Lasnik (1998) for a caveat.]
- (62) The claim that John<sub>i</sub> was asleep seems to him<sub>i</sub> [<sub>IP</sub> *t* to be correct] Chomsky (1993)

- (63) \*I seem to him<sub>i</sub> [*t* to like John<sub>i</sub>]
- (64) John was chosen *t*<sub>John</sub> and Mary was ~~chosen~~ *t*<sub>Mary</sub> too
- (65) Why does the trace of John count as identical to the trace of Mary?
- (66) John was chosen and Mary ~~was chosen~~ too
- (67) There seems to be no clear theoretical bar to moving into  $\theta$ -positions. Does such movement exist? Possible instances:
- (68)a John shaved  
 b Mary dressed  
 c Harry washed
- (69) In all 3 instances, the surface subject also palusibly bears the object  $\theta$ -role as well.
- (70) A Juan le quiere gustar Marta  
 ‘Juan wants to like Marta’ Gonzalez (1988), Boskovic (1994)
- (71) A Juan le gusta la musica  
 ‘Juan likes music’
- (72) \*A Juan le quiere comer la torta  
 ‘Juan wants to eat the cake’
- (73)a Gustar assigns a to its experiencer argument.  
 b Querer does not assign a to any argument.
- (74) In (51), Juan received experiencer  $\theta$ -role of gustar in the complement clause, then raised to receive subject  $\theta$ -role of querer. Boskovic (1994)
- (75) What about movement **from** a non- $\theta$ -position **to** a  $\theta$ -position?
- (76)a \*John [<sub>VP</sub> *t*’ believes [*t* to seem that Peter likes Mary]]  
 b \*John [<sub>VP</sub> *t*’ remarked [*t* to seem that Peter likes Mary]]
- (77) Possibly these can be ruled out as instances of ‘Improper Movement’ as suggested by Boskovic (1994), as the movement is from a non- $\theta$ -position to a  $\theta$ -position and finally to another non- $\theta$ -position.
- (78) Returning now to movement from  $\theta$ -position to  $\theta$ -position, many problematic cases remain, including (25) above, repeated here:
- (79) John hit *e*
- (80) In fact, there are very few verbs like those in (49). I have no idea why this should be so, or what the relevant property is. This is the central persisting residue of Deep Structure.

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