θ-Roles and NP Movement

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Chomsky (1981, 1982) proposes the θ-Criterion which specifies a one-to-one correspondence between arguments and thematic roles. The θ-Criterion is a well formedness condition on LF. Given the Projection Principle, it holds at all levels of syntactic structure. On Chomsky's analysis, the matrix subject position in

1. a. It seems [$_{\overline{S}}$that [$_S$John is winning]$_S$]$_{\overline{S}}$

    b. John seems [$_S$t to be winning]$_S$.

    c. It appears [$_{\overline{S}}$that [$_S$John is intelligent]$_S$]$_{\overline{S}}$

    d. John appears [$_S$t to be intelligent]$_S$.

is not assigned a θ-role. 1a and 1c are generated by the insertion of non-argument 'it' in the empty subject. 1b and 1d are derived by the movement of 'John' from the embedded subject into the matrix subject position. As 'it' is a non-argument, and a θ-role is assigned to the position of embedded subject, the θ-Criterion is satisfied in all of these cases.

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Now let us look at sentences in which the complement clauses of 'seems' and 'appears' are introduced by the complementizers 'as if', 'as though', and 'like'.

2. a. It seems $\left\{\begin{array}{l}\text{as if}\\ \text{as though}\\ \text{like}\end{array}\right\}$ John is happy

     b. <u>John</u> seems $\left\{\begin{array}{l}\text{as if}\\ \text{as though}\\ \text{like}\end{array}\right\}$ <u>he</u> is happy

3. a. It appears $\left\{\begin{array}{l}\text{as if}\\ \text{as though}\\ \text{like}\end{array}\right\}$ John is happy

     b. <u>John</u> appears $\left\{\begin{array}{l}\text{as if}\\ \text{as though}\\ \text{like}\end{array}\right\}$ <u>he</u> is happy.

It should be noted that the pronoun 'he' in the b sentences is necessarily bound by 'John'.[1] This can be seen from the fact that an independently referring NP can not be substituted for 'he' in

4. a. *John seems as if Bill is happy.

     b. *John appears as if Bill is intelligent.

Evans' (1980) test for the bound interpretation of pronouns also indicates that 'he' in 2b - 3b is bound.

5. a. <u>No one</u> seems as if <u>he</u> is happy.

     b. <u>No one</u> appears as if <u>he</u> is happy.

The fact that 'he' can be co-indexed with a negative quantifier in 22 implies that it does not denote an object but ranges over the elements of the extension of 'No one'.

Furthermore, the b constructions seem to permit the bound pronoun to occur in positions other than embedded subject.[2]

6. a. <u>Bill</u> seems as if Mary is chasing <u>him</u>.

     b. *Bill seems as if Mary is chasing Sam.

7. a. <u>Mary</u> appears as if <u>her</u> job is going well.

     b. *Mary appears as if John's job is going well.

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In 2a - 3a 'it' is a non-argument which is not assigned a
θ-role, as in 1a and 1c. However, 2b - 3b (as well as 'Bill' in
6a and 'Mary' in 7a) can not be derived by moving 'John' out of the
embedded subject position, which is already filled by a pronoun, but
must be generated with 'John' in the matrix subject in S-structure.
As this position is not assigned a θ-role, these sentences violate
the θ-Criterion.

There are various ways in which one might attempt to avoid
this conclusion. First, one could claim that the matrix subject of
2 and 3 is, in fact, a θ-position, and so 'it' and 'John' are assigned
θ-roles. This would require us to distinguish two senses of 'seems'
and 'appears'. On one sense, the subjects of these verbs are non-
arguments, as in 1, and on the other they receive a θ-role, as in
2 - 3.

The θ-role in question would be something like bearer-of-an-
appearance. The fact that constituents of idioms can appear as
subjects of 'seems to be' constructions but not of 'seems as if'
constructions appears to lend support to this view.

8. a. Advantage $\begin{Bmatrix} \text{seems} \\ \text{appears} \end{Bmatrix}$ to have been taken of John.

   b. Much headway $\begin{Bmatrix} \text{seems} \\ \text{appears} \end{Bmatrix}$ to have been made on the
   project.

9. a. *Advantage $\begin{Bmatrix} \text{seems} \\ \text{appears} \end{Bmatrix}$ as if it had been taken of
   John.

   b. *Much headway $\begin{Bmatrix} \text{seems} \\ \text{appears} \end{Bmatrix}$ as if it had been made on
   the project.

However, it is possible to account for 8 - 9 without assuming
that 'seems as if' assigns a θ-role. Consider

10. a. It seems that snow is falling on Mt. Hermon.
    b. Snow seems to be falling on Mt. Hermon.
    c. It seems that cows are grazing in Fred's field.
    d. Cows seem to be grazing in Fred's field.

11. a. It seems as if snow is falling on Mt. Hermon.
    b. *Snow seems as if it is falling on Mt. Hermon.
    c. It seems as if cows are grazing in Fred's field.
    d. *Cows seem as if they are grazing in Fred's field.

'Seems' (as well as 'appears') is a verb of propositional attitude,
and its complement constitutes an opaque or intensional context.
Expressions such as 'snow' and 'cow' can, in general, be interpreted
either as existentially quantified NP's or as generic terms. When
'snow' and 'cows' receive an existential reading in 11a, c, the
existential quantifier occurs within the scope of 'seems'.

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12.   a. It seems as if ($\exists$x:) x is falling on
                              quantity of snow (x)
             Mt. Hermon.

      b. It seems as if ($\exists$x) ($\exists$y)...($\exists$z):   x,y,...,z
                                    (x, y,...,z ϵ Cows)
             are grazing in Fred's field.

In this case, the object of the propositional attitude is an
existential assertion, and the readings assigned to the sentences
are acceptable. The generic interpretation is ruled out by virtue
of the fact that the predicates 'is falling on Mt. Hermon' and 'are
grazing in Fred's field' do not express generic properties of snow
and cows, respectively.

     In 11b, d, 'snow' and 'cows' bind variables from outside the
scope of 'seem'. These constructions constitute instances of
quantification into an opaque context. The generic reading is
excluded here for the same reason that it is not possible in 11a, c.
The existential reading yields

13.   a. ($\exists$x:) (it) seems as if x is falling on
                quantity of snow (x)
             Mt. Hermon.

      b. ($\exists$x) ($\exists$y)...($\exists$z):   (it) seems as if
                             (x,y,...,z ϵ Cows)
             x,y,..., z are grazing in Fred's field.

(I have inserted a bracketed 'it' in the matrix subject position of
13 a - b rather than a bound variable in order to indicate that it
is not an argument position.)

     13 a - b are peculiar because it is not possible to identify
specific values for their bound variables, and so it is not clear
precisely what assertion constitutes the object of the propositional
attitude 'seems'. Specifically, as there is no identifiable object
(or set of objects) to which the predicates of the complement
sentences in 13 a - b can be attributed, we can not determine which
possible state of affairs seems as if it holds. Hence, 11 b, d are
anomalous on both the generic and the existential interpretations.

     Definite NP's like 'John' and 'the man I spoke to yesterday'
are assigned specific entities or sets of entities as their denotations.
Therefore, when they bind pronouns from outside of the complement of
'seems as if', specific values are assigned to these pronouns and the
proposition expressed by the complement can be clearly determined.
Quantified NP's such as 'everyone', 'many men', 'most people', and
even 'some girl' can occur as the subjects of 'seems as if' cons-
tructions provided that they are understood as picking out a more
or less determinate object or set of objects. This can be seen from
the fact that such sentences become proportionally more natural when

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relative clauses are added to the quantified NP subjects in a manner which renders them more determinate.

14. a. Everyone seems as if he is happy.
     b. Everyone in Mary's class seems as if he is happy.
     c. Many men seem as if they support the government.
     d. Many men who John interviewed seem as if they support the government.
     e. Most people seem as if they are pleased with their jobs.
     f. Mose people Sam knows seem as if they are pleased with their jobs.
     g. Some girl seems as if she is in love with John.
     h. Some girl I met at the party seems as if she is in love with John.

It should be noted that if the predicate in the complement of 'seems as if' corresponds to an appropriate generic property, sentences similar to 11b, d are acceptable.

15. a. Snow seems as if it is white in normal light.
     b. Cows seem as if they are lethargic to the casual observer.

I conclude, then, that the NP subject of a 'seems as if' construction can bind a pronoun within the complement clause if (i) the complement can be understood as making an assertion about a determinate entity (set of entities) which serves as the value of the bound pronoun, or (ii) the complement can be given an appropriate generic interpretation.

Returning to 9a - b, within the context of an idiom, an idiom constituent can not be interpreted generically, nor can it be taken as denoting an entity or set of entities. As neither 'advantage' nor 'much headway' can bind the pronominal subject of the complement of 'seems as if', these sentences are ruled out independently of whether or not 'seems' and 'appears' assign θ-roles to their subjects.

It appears to be a lexically determined property of 'seems' and 'appears' that when combined with the complementizer 'as if' ('as though', 'like') they permit their matrix subject NP's to bind pronouns in their complements. However, $\left\{ \begin{array}{l} \text{'seems} \\ \text{'appears} \end{array} \right\}$ that' blocks quantifying into the complement. Given the assumption that the subject of 'seems' ('appears') is not a θ-position and the stipulation that every NP argument must receive at least one (not necessarily unique) θ-role, this accounts for the unacceptability of

16. *John $\left\{ \begin{array}{l} \text{seems} \\ \text{appears} \end{array} \right\}$ that he is happy.

There is, in fact, a good reason for not maintaining that 'seems' and 'appears' do mark their subjects for θ-roles in 2 - 3 but not in 1. The claim that 'it' in 2a - 3a receives a θ-role

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implies that it denotes a state of affairs which functions as the bearer-of-the-appearance described in the complement. But if we are prepared to treat 'it' as an argument of this kind in 2a - 3a, then it is not clear why it should not receive the same interpretation in 1a, c. One might insist that there are two sorts of 'it', an argument 'it' in the matrix subject of 2a - 3a and a non-argument 'it' in 1a, c. However, the only apparent motivation for making this distinction is the desire to preserve the θ-Criterion. Allowing the matrix subject of 2 - 3 to bear a θ-role thus undermines the raising analysis of 1b, d.

The second possibility is to maintain that while 'it' is a non-argument in 2a - 3a, 'John' does receive a θ-role in 2b - 3b. This would force us to make an ad hoc counter intuitive distinction between two senses of 'seems' and 'appears'.

Third, we might argue that 'John' is, in fact, moved into the matrix subject position in 2b - 3b, and 'he' is the lexical realization of its trace, in a manner analogous to that in which a resumptive pronoun is the lexical expression of a variable bound by a wh-phrase or a relativized NP in COMP. This view would entail a complete revision of the theory of NP-trace. Moreover, if we wish to claim that the assignment of case to an NP in an argument position is a sufficient condition for its constituting an argument, then we must still regard 'John' and 'he' as distinct arguments in 2b - 3b.

It seems, then, that on the most reasonable analysis of sentences like 2b - 3b, the subject NP appears in matrix subject position at D-structure and inherits its θ-role from the pronoun which it binds in the complement clause. Given this view, these sentences constitute cases in which a single θ-role is shared by two arguments.

The primary significance of the θ-Criterion is that it restricts NP movement (and argument movement generally) to movement from a θ-position in D-structure into successive non-θ-positions. The considerations presented here show that the θ-Criterion, as stated in Chomsky (1981) is untenable, by providing examples in which two arguments share one θ-role. However, it is possible to maintain the θ-Criterion as a constraint on the relation between an NP argument and its traces. This restricted version of the criterion can be formulated as follows. Assume that an expression is an argument only if it is marked for Case. We will also stipulate that an expression receives a θ-role if it occupies a θ-position.[3] Following Chomsky, we will say that NP-trace transmits its θ-role to its antecedent.

17. If $C = (a_1,\ldots,a_n)$ is a chain such that there is at least one a_i $(1 < i)$, a_n and only a_n occupies one and only one θ-position.

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17 is not a general principle governing the correspondence between θ-roles and arguments. To the extent that it is viable, it constitutes a restriction on NP movement which is stated as a well formedness condition on LF.

Notes

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1This would suggest that at LF 'he' is a variable bound by 'John'. For theories of scope and binding which treat the binding of pronouns by quantified and non-quantified NP's in a uniform manner, see Lappin (1982) and Reinhart (forthcoming). If, as Chomsky (1982) proposes, expressions in A-positions are indexed at S-structure, interesting problems arise for Chomsky's theory of binding. In 2b - 3b 'he' is A-bound by 'John' at S-structure. Hence, it must be treated as a lexically realized pronominal anaphor which is governed and assigned Case, but free in its governing category (similarly for 6a - 7a, respectively). But governed pronominal anaphors are ruled out by the conjunction of principles A and B of Chomsky's binding theory, which jointly entail that such expressions do not have governing categories. We could attempt to avoid this problem by replacing principle A, which specifies that anaphors are bound in their governing categories, with

    A.' Non-pronominal anaphors are bound in their governing
          categories.

While A' permits lexical pronominal anaphors to be free and governed, the conjunction of A and B no longer entails that PRO is ungoverned. In order to rule ou governed PRO it will be necessary to stipulate that PRO lacks a governing category as a separate principle of U.G. This is clearly an undesirable result. Alternatively, we could reformulate A' as

    A". Anaphors are bound in their governing category if
          they are not both pronominal and Case marked.

A" permits governed lexical pronominal anaphors to be free in their governing categories while requiring that PRO be bound in its governing category. Thus, when A" is taken together with B, which specifies that pronouns are free in their governing category, the binding theory still implies that PRO lacks a governing category. A" is obviously ad hoc as a principle of U.G., but it is not clear to me how one can derive the conclusion that PRO is ungoverned from simple and general principles of binding, once one allows for

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the possibility of governed pronominal anaphors which are lexically realized.

[2]I am grateful to Paul Hirschbühler for pointing this out to me.

[3]It follows from these assumptions that PRO is a non-argument (more accurately, not an independent argument) which receives a θ-role. This is a conclusion which I defend in Lappin (1983).

References

Chomsky, N., (1981), Lectures on Government and Binding, Foris Publications, Dordrecht.

Chomsky, N., (1982), Some Concepts and Consequences of the Theory of Government and Binding, M.I.T. Press, Cambridge, Mass.

Evans, G., (1980), "Pronouns", Linguistic Inquiry, 11 (2), 337-362.

Higgenbotham, J., (1980), "Pronouns and Bound Variables", Linguistic Inquiry, 11 (4). 679-708.

Jackendoff, R., (1976), "Toward an Explanatory Semantic Explanations", Linguistic Inquiry, Vol. 7, No. 1. 89-150.

Jackendoff, R., (1982), Semantics and Cognition, Ms., Brandeis University Waltham, Mass., (M.I.T. Press, (forthcoming)).

Lappin, S., (1982), "Quantified Noun Phrases and Pronouns in Logical Form", Linguistic Analysis, Vol. 10, No. 2. 131-159.

Lappin, S., (1983), "The θ-Criterion and Pronominal Binding", unpublished Ms., University of Ottawa.

Reinhart, T., (Forthcoming), "The Interpretation of Pronouns: a Restatement of the Anaphora Problem", Linguistics and Philosophy.