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PHASES AND NOMINAL INTERPRETATION**

Key words: phase theory, mapping principle, nominals.

1. Introduction

The phase theory of Chomsky (1999, 2000, 2002) holds that derivation of a sentence proceeds step-wise through a series of multiple merge, move, and spellout operations. These operations are organized into "phases". The output of each phase is a partial LF and partial PF, which are then assembled into structures that are fed to the Articulatory/Perceptual and Conceptual/Intentional components. Chomsky defines phases in terms of "complete propositions". This translates for him into a strong lexical phase of the VP and vP, followed by a strong functional phase consisting of TP and CP.

In this short paper, we show that this version of phases conflicts with what we know about the structure of LFs when taken together with the Mapping Principle of Diesing (1992). We show that it predicts the uninterpretability of sentences that are, in fact grammatical. Instead, following in the spirit of Percus (1993), we propose that the definition of phase be relativized to each argument as set out in (1). Each phase consists of an argument, the predicative element that introduces the argument (V or vP) and a functional category that represents a temporal operator which locates the predicate in time or space (Asp, T, etc.)

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- (1) *Phases consist of:*
- a predicative element (v or V)
 - a single argument
 - a temporal operator that locates the predicate and argument in time and space (Asp, End, or T)

This gives rise to phases such as those seen in (2):¹

- (2) a) Theme Phase [AspP [Asp' Asp [vP theme V]]]
 b) Goal Phase [EndP [End' End [v goal [v' v ...]]]]
 c) Agent Phase [TP [T' T [vP agent [v' v ...]]]]

The clausal architecture created by such phases is essentially that of Travis' (1992) inner aspect approach, or the split VP approach of Koizumi (1995):

- (3) [TP [T' T [vP agent [v' v [EndP [End' End [vP goal [v' v [AspP [Asp' Asp [vP theme V]]]]]]]]]]

The argument is structured as follows: we start by showing that Chomsky's definition of phases incorrectly predicts the unacceptability of two kinds of sentences in English with specific definite objects. We then show how relativized phases, as defined above in (1) can be applied to these sentences.

2. Two Problematic Cases

In phase theory, there is no covert movement. Relationships previously taken to be covert movement are checked through the Probe-Goal relation (via AGREE). This means that the surface position of a phrase also marks its position with respect to scopal relations. Consider the sentence in (4):

- (4) The woman always drove her car with her gloves on.

Taking temporal adverbs to mark the left edge of the vP (Emonds 1976), we have, a definite NPs surfacing in the nuclear scope, which can't be rescued without covert movement.

¹ We are assuming here, of course, a Hale and Keyser (1993) analysis of theta roles, where theta role is determined by syntactic position.

A similar problem is seen in the example in (5):

- (5) There was some guy kissing the linguist (when I walked into the room).²

We assume that this sentence is acceptable with a non-specific reading of *some guy*, which we take to be the canonical reading of a *there* existential sentence. In this sentence we have a clear marker of the vP edge: *some guy*. We can thus also conclude that vPs mark the top end of the nuclear scope of the clause. What is surprising here is the acceptability of the sentence given the presence of the definite *the linguist*, also presumably within the nuclear scope. Under standard assumptions about how the mapping principle works (see Diesing 1992, and much subsequent work), definites like *the linguist* should raise out of the vP in order to escape the nuclear scope. In versions of the minimalist program prior to Phase Theory, this was accomplished by covert raising of the DP.

In Phase theory, however, this option is not available. Word order considerations alone demonstrate that if we assume that surface order fixes scope and there are no covert operations,³ then it is impossible for *the*

² Norvin Richards (p.c.) has suggested to us that sentences such as (5) may have a reduced relative structure rather than the structure we drew in (6); i.e., are constructed as in (ia) rather than (ib):

- (i) a) There was [DP some guy [CP Ø kissing the linguist]] (Reduced Relative RR)
 b) There was [vP [DP some guy] [vT kissing the linguist]] (Main Clause – MC)

The crucial difference between the two being that in (ia) the linguist and some guy are in different strong phases (CP and the main clause VP), as such they are not subject to the interpretive conflict we describe above, whereas in (ib) they are in the same strong phase. We agree with Richards that there is an ambiguity here between the main clause (MC) (ib) and reduced relative RR (ia) readings; What is crucial to our story is that sentences like (5) allow at least the MC reading, which is the one problematic for the interaction of phase theory and semantic mapping. An anonymous commentator has pointed out to us that in the presence of a full relative clause, the reduced relative must precede it:

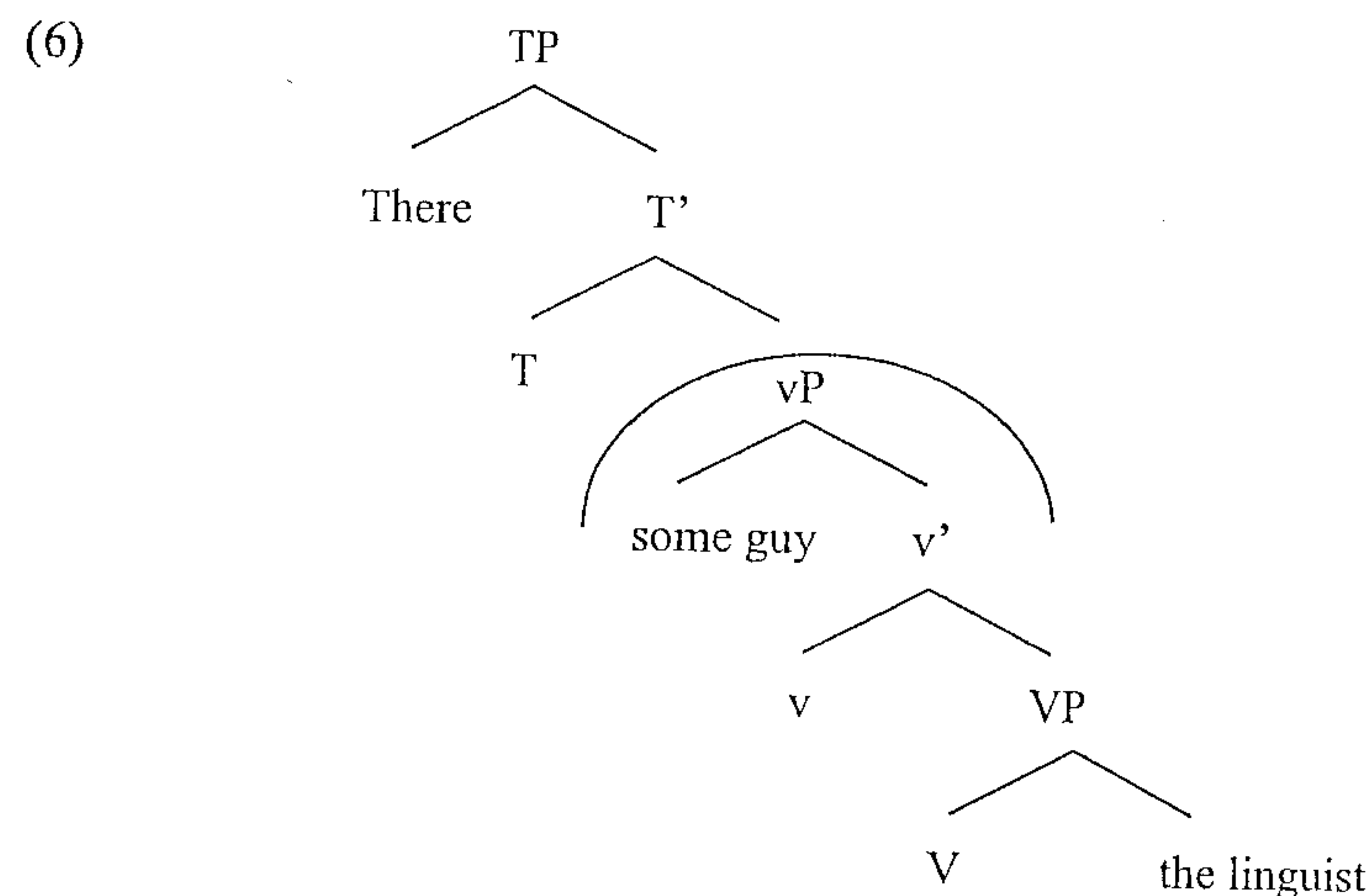
- (ii) a) [3 men smoking a pipe who really know what they are talking about] are about to enter the room
 b) *[3 men who really know what they are talking about smoking a pipe] are about to enter the room

Thus to restrict the structure to a MC reading, we simply need a sentence such as (iii):

- (iii) There was some guy who I met at the park kissing the linguist (MC only).

³ In fact, Chomsky seems to go back and forth over the status of covert movement, in some works he either eliminates it in favor of simple feature movement (1995) or relations expressed by AGREE (2000). In other work, such as *Beyond Explanatory Adequacy*, he seems to retreat a bit on the question and allow both covert movement and AGREE. We will adopt the strongest possible view; the one that seems to us to be the most compatible with phase theory, where there is no covert movement at all; and all "covert" movements occur via AGREE. Given this we are left with the obvious question arises as to how one deals with

linguist to have moved outside the nuclear scope, yet have *some guy* remain inside it (6). (An arch here indicates the nuclear scope. The first phase is the vP and all it dominates.)



When the LF for the lowest phase is created, there is no way for the *linguist* to move to create an appropriate variable. That is, on a theory with no covert movement, the Mapping principle is seemingly violated, since the definite DP *the linguist* has to be interpreted in situ, within the nuclear scope.

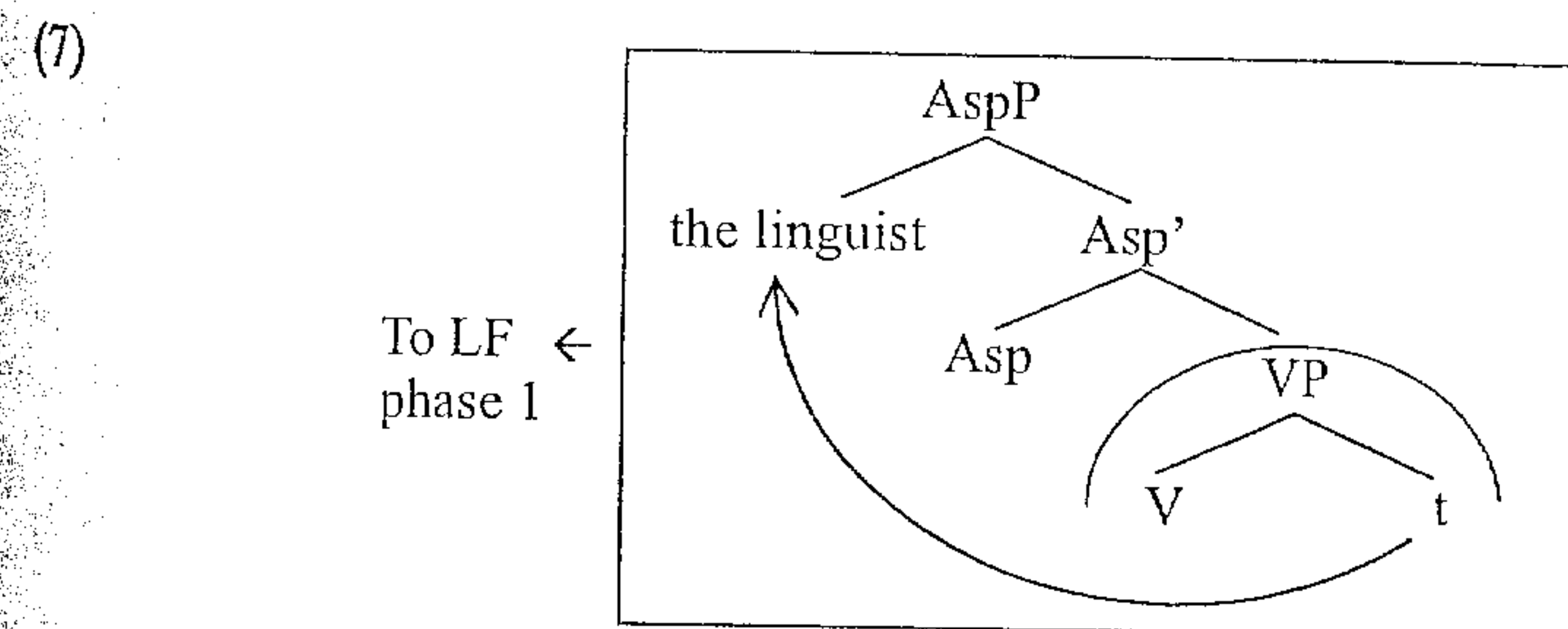
3. Relativized Phasing

If each nominal has its own phase, it has its own partial LF and its own bipartite structure for interpretation. Further, those interpretive domains will not interact with the domains for other nominals in the clause.

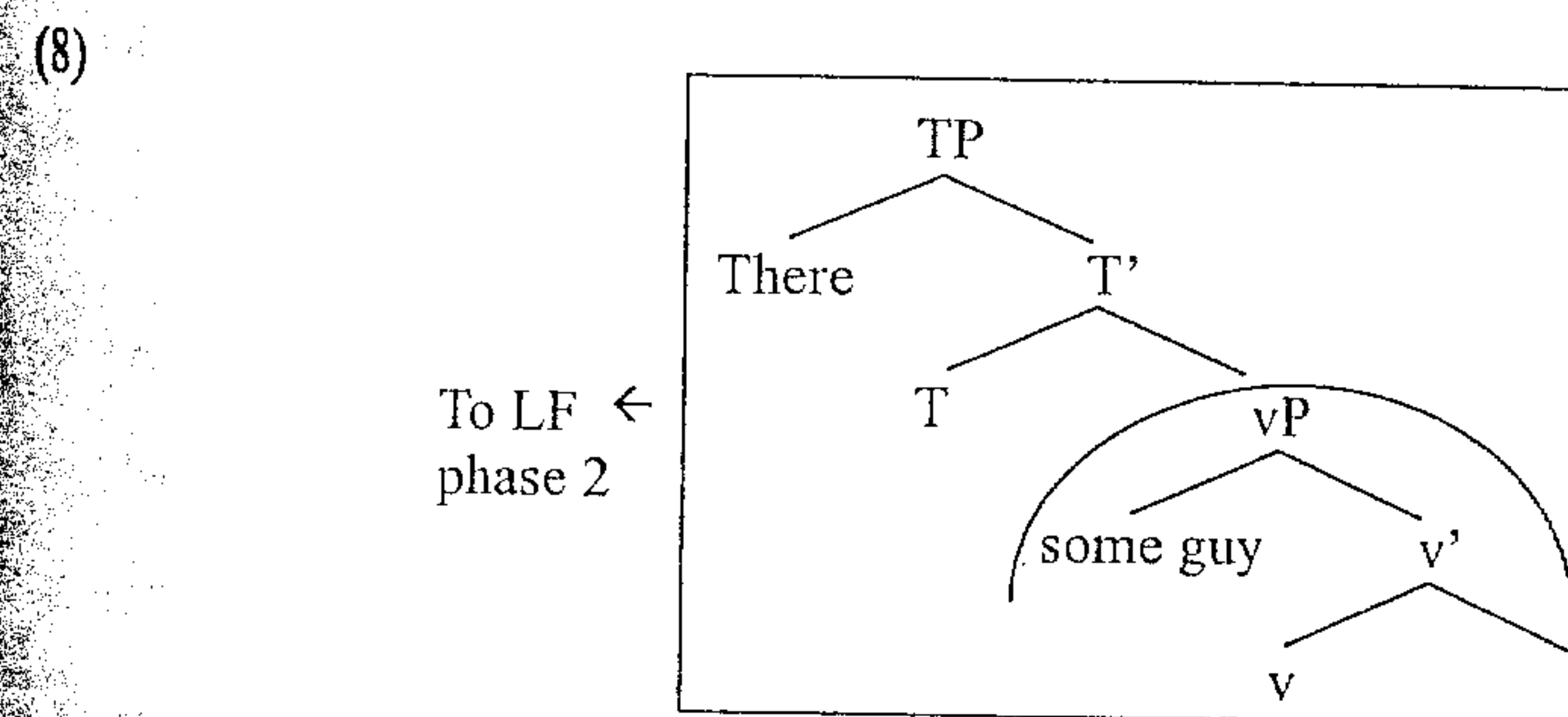
Consider now a relativized phase analysis of the *there*-sentence in (4). In order to get the correct word order, we will need to assume a certain amount of head-movement occurs in English (Johnson 1991 and Lasnik 1999). More precisely, we assume that *was* is generated as the T node, and that the verb undergoes head-movement to the Aspect node and to the little *v* head. For reasons of clarity, we don't indicate this movement in the trees that follow.

inverse scope interpretations of the classic sentence "Everyone loves someone." This is of course an important problem but it is unresolved for any version of the theory that does not adopt covert movement, so we don't attempt an answer here.

On the theme phase, we have a typical bipartite structure. The definite NP raises out of the nuclear scope so as to create a variable. This structure is then sent to LF, where it correctly receives an interpretation where the *linguist* is definite.



The agent phase is independent of the theme phase, and as such the non-specific *some guy*, can remain inside the VP (8).



Note that although this phase contains an AspP constituent, which is dominated by the vP. The Asp constituent's LF has already been created in phase 1 and thus can't be interfered with by the higher-level nuclear scope.

A similar solution applies to the adverb case: Although the adverb marks the left edge of the vP, the definite NP is interpreted on the theme phase, and is thus independent of the agent's nuclear scope.

4. Conclusion

In this short paper, we have pointed out a technical problem with Chomsky's definition of phase when taken in conjunction with the mapping principle. Existential sentences with a non-specific agent and a definite theme don't receive an interpretation because there is no covert movement of the theme to create a variable in the nuclear scope. Similarly, definite themes appearing to the left of temporal adverbs should be uninterpretable.

Under a version of phasing where phases are relativized to a single argument, these problems don't arise. Each phase has its own nuclear scope, within which the nominal can either appear or not. This analysis correctly predicts that the interpretation of nominals do not necessarily affect one another.

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A COMPOSITIONAL TREATMENT FOR ENGLISH COMPOUNDS

Key words: compounds, compositionality, Generative Lexicon, morphology.

1. The problem

Nominal compounds and their treatment raise numerous problems both theoretically and for applications to Natural Language Processing. They have been under scrutiny for several decades now and the various analyses provided have ranged from thorough descriptions to modellings. Jespersen (1909-1942) and Marchand (1969) provided descriptive accounts, Lees (1963, 1970) and Levi (1978), among others, tried to offer a syntactic treatment. Lees analysed them as the output of transformations operating on kernel sentences: for instance, in Lees (1970:175) the internal organization of a compound such as *drawbridge* is built via the reduction of a relative clause construction like *a bridge which is for someone to draw* and a derivation of *someone draws the bridge*. Obviously the same would go for compounds like *blowpipe*, *stopwatch*, etc. Downing (1977), departed from such a strict syntactic account and showed that the semantic interpretation of compounds is largely unconstrained. Her basic assumption is that the meanings of compounds cannot be listed, as the compound relation is entirely underspecified, and can only be resolved contextually, a case in point here being the famous example of *apple juice seat*, which refers to a place-setting identified by a glass of apple juice.

Consequently, it is generally admitted that a compositional treatment of English nominal compounds (the class of compounds of the form N1 N2 of

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