

The *That-Trace* Effect in Minimalism

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0. Introduction

This paper is concerned with the *that*-trace effect, which has been discussed in syntactic theory for many years. In prior formulations of the theory, such effects were handled in various ways relating to the Empty Category Principle (ECP); that is, failure of some empty category to be properly governed. In the Minimalist Program, there has been an attempt to get rid of concepts like proper government, and new ways must be found to account for phenomena previously attributed to such concepts. One such attempt, a paper by Pesetsky and Torrego (2000), serves as the primary inspiration for this paper. They provide a very interesting and thorough discussion of a set of ideas which account for three separate phenomena, one of which is the *that*-trace effect. The effort is brilliant, but not without problems: I will point out a few of these problems, and attempt to provide an alternative analysis of the *that*-trace effect. This proposal is not in opposition to the ideas presented by Pesetsky and Torrego, but rather a suggested revision which is in line with the core concepts they propose.

In essence, I propose that the complementizer *that* is a lexical item which is distinct in its properties from its null counterpart. It is these differing properties (specifically, *that* bears and selects for ϕ -features while the null declarative does not) which result in the differing behavior observed between *that* and the null declarative complementizer.

1. Subject non-subject asymmetries

In their 2000 paper, Pesetsky and Torrego provide a unified account of three subject/non-subject asymmetries. These are T-to-C movement (traditionally called subject-auxiliary inversion or SAI), the *that*-trace effect, and obligatory *that* in subject clauses. In this section I briefly outline their ideas, both because they are interesting and worthy of consideration, and because they strongly influenced what I propose to account for the *that*-trace effect.

1.1 T-to-C movement, that-trace, and that in subject clauses

The phenomena that Pesetsky and Torrego are concerned with were originally pointed out quite early in the development of syntactic theory, and have each been accounted for in various ways in various frameworks.

They cite Koopman's (1983) discussion of the T-to-C asymmetry, and provide her data:

T-to-C asymmetry (Koopman 1983)

- (1) What did Mary buy?
- (2) *What bought Mary?
- (3) *Who did buy the book? (unless *did* is emphatic)
- (4) Who bought the book?

It appears that when one constructs a matrix wh-question in English, the only instance where SAI does not occur is when the wh-word is the subject (bears nominative case).

For what they call the *that*-omission asymmetry (obligatory *that* in subject clauses) they cite Stowell (1981).

***That*-omission asymmetry (Stowell 1981)**

- (5) Mary thinks [that Sue will buy the book].
- (6) Mary thinks [Sue will buy the book].
- (7) [That Sue will buy the book] was expected by everyone.
- (8) *[Sue will buy the book] was expected by everyone.

It is not entirely clear that this asymmetry can really be attributed to the subject status of the clause. While any tensed clause which serves as a subject certainly must be introduced by *that*, this is not the only place where one sees obligatory *that*.

Obligatory *that*

- (9) It was expected by everyone [that Sue will buy the book].
- (10) *It was expected by everyone [Sue will buy the book].
- (11) Everyone accepted the fact [that Sue will buy the book].
- (12) *Everyone accepted the fact [Sue will buy the book].

Some passive verbs apparently require their complements to be introduced by *that*, as do all nouns. This is an important issue which I will return to later.

Finally, we come to the *that*-trace effect. The discussion they cite is Perlmutter's (1971).

That-trace effect (Perlmutter 1971)

- (13) Who do you think (that) Sue met ___?
(14) Who do you think (*that) ___ met Sue?

It appears that the complementizer *that* cannot introduce a clause from which the subject has been extracted.

1.2 Nominative Case and tense

It is clear that the T-to-C asymmetry has something to do both with subjects and tense. In matrix questions, the only cases where one need not move the tense-bearing auxiliary (or dummy *do*) to C are those in which the subject is moved to Spec,CP one. The question then arises what the relationship is between tense and subjects, and why they should interact in this way.

Pesetsky and Torrego's answer to that question is somewhat bold, but it plays out quite convincingly. They assert that nominative case, born by subjects in many languages, is actually an uninterpretable tense feature on a DP (I will follow their example and refer to this feature hereafter as *uT*). They then go on to claim that the matrix question C in English also bears *uT*, as does the embedded C (declarative and standard interrogative; set aside *if/whether* for now). Note that they consider the attraction of the subject to Spec,TP to be due to uninterpretable ϕ -features (hereafter *u ϕ*) on T; they also must assume that while T can check *uT* on DP, it does not do so until the end of the CP cycle. They assume that wh-movement is an uninterpretable wh-feature (*uWh*) on C. To sum up, DP bears *uT* and ϕ -features, and a wh-phrase additionally bears wh-features. C bears *uT* and in instances where wh-movement occurs, *uWh*.

With these assumptions in place, the asymmetry demonstrated in (1-4) can be attributed to the concept of economy. When an interrogative C initiates wh-movement, it needs to check a *wh*-feature and *uT*. Because a nominative subject wh-phrase bears *uT* as well as *uWh*, C can attract that one element and delete both *uT* and *uWh*. This is the most economical move, and thus the only grammatical one. If it attracts any other wh-phrase,

however, the *wh*-phrase cannot delete *uT* on C and C thus must also attract the closest bearer of tense features: T itself.¹ The following illustration is provided by Pesetsky and Torrego (they exclude ϕ -features for clarity):

T-to-C asymmetry illustrated (Pesetsky and Torrego 2000)

- (15) [C, *uT*, *uWh*] [_{TP} [Mary, *uT*] T [_{VP} bought what]]
 (16) [C, *uT*, *uWh*] [_{TP} [who, *uT*] T [_{VP} bought the book]]

In (15), attraction by *uWh* cannot satisfy *uT* on C and thus a second operation (T-to-C) is required; in (16), attraction by *uWh* does satisfy *uT* on C, and economy excludes T-to-C movement. This is a very clean and simple account of the T-to-C asymmetry, but it runs into problems when one considers embedded clauses.

1.3 The embedded clause

Embedded clauses in English differ from matrix clauses in a number of ways. The most obvious difference is that an embedded clause can be introduced by a complementizer (*that* in tensed clauses) while matrix clauses cannot. It's also true that in Standard American English, one does not see the same T-to-C pattern with embedded questions as with matrix questions. Consider these data:

Embedded Questions

- (17) I said what (*that) Sue likes __.
 (18) I said who (*that) __ likes cake.
 (19) *I said what did Sue like __. (unless *did* is emphatic)
 (20) *I said who did like cake __. (unless *did* is emphatic)

The way that Pesetsky and Torrego account for this difference, is by saying that the interrogative complementizer in embedded clauses bears *uT* which does not have the EPP-property (i.e. it is a weak feature). Being weak, it is not satisfied until after spell out (i.e. at LF) because overt movement is more costly (see Chomsky 1995).

1 The reasons for English do-insertion, rather than main verb raising, are certainly interesting to consider in this regard, but fall outside the scope of this paper. Pesetsky and Torrego do provide a reason for head-to-head movement, rather than attraction to Spec,CP. Essentially, it boils down to a constraint against merging the same two elements twice (C + TP; TP + C); in an instance where this would occur, the grammar instead moves just the head of the lower element to the head position of the higher element (T → C).

This claim also accounts for the obligatory absence of *that* in embedded questions: they claim that the complementizer *that* is actually not a distinct complementizer, but the presence of *T* in *C* (i.e., the satisfaction of *uT* on *C* by T-to-*C* movement). They note the oddness of it being pronounced *that* in embedded clauses, rather than as an auxiliary verb (or dummy *do*) as in matrix clauses, but do not offer an explanation. This indeed explains *that* is not allowed in (17-18): if *that* is derived via overt T-to-*C* movement, a *C* which bears weak *uT* cannot motivate that movement.

Now consider cases where a *wh*-word is extracted out of an embedded clause to form a matrix question:

Extraction Cases

- (21) Who do you think (*that) ___ likes cake?
- (22) What do you think (that) Mary likes ___?

It is the assumption of Pesetsky and Torrego that successive cyclic movement is an instance of Attract. Thus, in cases such as (21-22) they must assume that *C* bears *uWh*. Note that in (22) *that* may appear: thus, the “extraction *C*” must also bear *uT* under the Pesetsky and Torrego system. The reason *that* cannot appear in (21) is once again due to economy: *uT* on *who* survives long enough to delete *uT* on the intermediate *C*, though not long enough to do so for the matrix *C*. This is the so-called *that*-trace effect.

It must now be explained why *that* is not obligatory in (22) if the intermediate *C* bears strong *uT*. To do so, Pesetsky and Torrego suggest vacuous subject raising as an optional, equal cost alternative to T-to-*C* movement. Thus, two two options in (22) actually represents two structures:

Vacuuous Subject Raising

- (23) What do you think [t' [C that] [Mary likes t]]?
- (24) What_k do you think [t_k' Mary_j [C] [t_j likes t_k]]?

This raises an issue for Matrix clauses, which I will discuss later: if *C* can motivate two overt movements, and the subject is an equidistant (to *T*) candidate for movement to delete *uT* on *C*, why is that not a possibility in the instances where we see T-to-*C*

movement?

Vacuous subject raising also comes into play in standard declarative embedded clauses: any embedded clause without *that* deletes *uT* on C in this manner.

2 Issues in the Pesetsky and Torrego model

To briefly summarize, the *that*-trace effect under the Pesetsky and Torrego model boils down to economy; when an element which bears *uT* passes through Spec,CP, C can delete *uT* and has no reason to motivate T-to-C movement (which would result in the presence of *that*). There are a few issues with this analysis.

2.1 Spec-head agreement and ellipses

First, it is not clear that successive-cyclic movement should be considered to be motivated by Attract. Indeed, it's not clear that a declarative (or "extraction") complementizer can undergo spec-head agreement (SHA) at all. A 2007 paper by Bošković presents evidence that successive-cyclic movement should be motivated by something more like Greed (see Chomsky 1995). Part of his argument involves the idea that while a functional head which undergoes SHA agreement can license ellipses, *that* (declarative or "extraction" C) cannot (see Lobeck 1990).

Licensing of Ellipses (Bošković 2007)

- (25) John met someone but I don't know [_{CP} who_i [_{C'} C ~~John met t_i]].~~
- (26) *John met someone but I don't know who_i Peter said [_{CP} t_i [_{C'} C/*that* ~~John met t_i]].~~
- (27) *John believes C/*that* Peter met someone but I don't think [CP[C' C/*that* Peter met someone]].

Setting aside the question of how to account for successive cyclic movement without Attract (see Bošković 2007 for a discussion on that topic), let's consider what it would mean for the *that*-trace effect in Minimalism.

2.2 The selectional properties of verbs

Not considering successive-cyclic movement to be Attract-based allows us to eliminate another issue with the Pesetsky and Torrego model. They were forced to consider the C of intermediate complementizers in long distance wh-movement to bear *uWh*. This is peculiar because a verb such as *think* cannot, in general, take an interrogative

complement, but clearly it can take the “extraction” complementizer.

Think Interrogatives

- (28) *I think who __ won the race.
- (29) *I think what John won __.
- (30) *I think why John won the race __.
- (31) Who do I think won the race?

A theory which does not consider the C in (31) to bear the wh-feature is more consistent with the facts regarding the selectional properties of verbs discussed in Lasnik and Saito (1984).

Once the ability of the intermediate C head to undergo SHA is eliminated, it becomes difficult to account for the *that*-trace effect using the Pesetsky and Torrego model. Such an element would be unable to eliminate its *uT* (or its *uWh*, but in such an analysis C would not bear *uWh*) via the wh-element in its spec; thus, even if the wh-element is nominative and bears *uT*, another process would be necessary to delete *uT* on C, such as T-to-C movement (which would allow the presence of *that*). Indeed, there should be no difference between subject movement and non-subject movement, which is not the case. In order to maintain the Bošković (2007) claim about SHA and successive cyclic movement, I think it is necessary to consider *that* a distinct lexical item from the null complementizer which can often appear in the same position.

2.3 The pronunciation of T in C

Pesetsky and Torrego themselves note that it is somewhat difficult to explain why, in Standard English embedded clauses, T-in-C is pronounced as *that*, while in matrix clauses it is pronounced as an auxiliary (or dummy *do*). They give evidence from Belfast English to show that embedded clauses can have standard T-to-C movement, but in fact this complicates the issue. In Belfast English, embedded clauses can have standard T-to-C with an auxiliary, or they can have *that*. This eliminates the possibility of attributing the *that* pronunciation to the nature of embedded clauses.

Belfast SAI

- (32) She asked who had I seen.
- (33) They couldn't understand how had she had time to get her hair done.
- (34) They didn't know which model that we had discussed.

Note that in the example with *that* (34), an auxiliary is present; it is not the lack of an auxiliary which triggers *that* (which would be similar to dummy *do*). I think this is further evidence in support of considering the two complementizers (null and *that*) separate lexical items.

2.3 Obligatory that

To account for the obligatory presence of *that* in subject clauses, Pesetsky and Torrego make use of a device called the Match Condition.

Match Condition

- (59) If a head H enters an Agree relation with a set of phrases K, each syntactic feature of H must be present on some member of K (not necessarily with the same value, including value for EPP).

Thus, when T attracts an element bearing ϕ -features, that element must also bear T-features of some kind. Their argument is that an embedded complementizer which has deleted *uT* via vacuous subject raising (no *that*) no longer bears *uT* because those features have been deleted. An embedded complementizer which has deleted *uT* via T-to-C movement (*that*), however, still bears T-features by virtue of containing T itself. Thus, “bare” clauses violate the Match Condition, while *that* clauses do not.

They point out a problem with this analysis, however: interrogative CPs, even those in which the subject has raised to Spec,CP, can serve as subjects (i.e. can satisfy the EPP).

EPP Satisfaction

- (35) [That John likes cake] is clear.
- (36) *[C John likes cake] is clear.
- (37) [Who [C[*uWh*]] __ likes cake] is clear².
- (38) [What [C[*uWh*]] John likes __] is clear.

In order to account for this, Pesetsky and Torrego propose that *uT* on an interrogative C has a longer lifespan (it endures beyond the CP cycle) than *uT* on declaratives, by virtue of it not having the EPP property (i.e. by virtue of being weak). I think that this can be more easily explained if *that* is assumed to be distinct from its null counterpart.

3. The properties of *that*

The question now, if I am claiming that *that* is in some way distinct from its null counterpart, is in what way they differ. Clearly, one difference in behavior is illustrated in the *that*-trace effect, but that issue has proven difficult to characterize. Based on the discussion in the previous section, it seems that they also differ in terms of their ability to satisfy the EPP. *That* and interrogative C can satisfy the EPP, but the null declarative complementizer cannot. The simplest account for this difference is to consider *that* and interrogative C to bear ϕ -features, while null declarative C does not. Thus, a *that* clause or embedded question is able to delete *u ϕ* on T, but a bare clause cannot. This eliminates the need to posit different lifespans for *uT* on interrogative C compared to other C heads.

This also presents a relatively easy way to characterize those elements which require *that* as part of its complement clause: nouns, and certain verbs and adjectives, require a complement which bears ϕ -features.

Elements select for ϕ

- (39) The claim [*(that) John likes cake].
- (40) It was expected [*(that) John likes cake].
- (41) It was odd [*(that) John likes cake].

2 It is true that in some instances, subject embedded questions are degraded compared to object embedded questions, which is something that certainly bears investigating. Consider:

- (i) ? [Who won the race] is surprising.
- (ii) [What John won] is surprising.

I wouldn't say that (i) is ungrammatical, but there is something odd about it.

Some property of these elements can perhaps be shown to parallel their requirement for ϕ -features on their complements. Further discussion of this is beyond the scope of this paper, but it is certainly worth thinking about.

3.1 Summary of complementizer properties

To briefly summarize, I am claiming that at least three different complementizers with different properties can introduce tensed embedded clauses. Because complementizers generally agree in tense with the clause they introduce, and many verbs select only one value for $[\pm\text{finite}]$ in a complement clause, it makes sense to say that for the most part complementizers all bear uT (PRO clauses may be an exception, I will return to this later). Where complementizers do vary is whether or not they bear uWh or ϕ . Here is a partial typology of English complementizers:

	<i>That</i>	Declarative	Interrogative
<i>uWh</i>	no	no	yes
ϕ	yes	no	yes
<i>uT</i>	yes	yes	yes

It remains to explain how the difference between *that* and its null counterpart can account for the *that*-trace effect.

4. Feature selection

Lasnik and Saito (1984) point out that a verb such as *wonder* must select a CP headed by a complementizer which bears *wh*-features. Further, the *wh*-phrase which is attracted by that complementizer cannot be extracted out. To formalize this, they propose the following filter:

Wh-comp filter (Lasnik and Saito 1984)

- (42) *Comp unless it contains a $[\text{+wh}]$ element.
 $[\text{+wh}]$

I suggest reformulating (42) to make it more compatible with current theory. I think that if it can be stated abstractly enough, it could also perhaps account for other grammatical facts, such as the *that*-trace effect. Here is an attempt to restate (42) in an abstract way

that is compatible with a Minimalist theory of syntax:

Feature Freezing

- (43) When an element H selects for a feature F on an element K, any element in an Agree relationship with that feature is frozen.

Essentially, this says that when a head (such as the verb *wonder*) selects for a particular feature on its complement (such as *uWh*), any element which has moved to a position in order to check that feature (such as a *wh*-phrase in Spec,CP) can no longer move. This is perhaps somewhat stipulatory, but if it plays out empirically then it should be a good starting point from which to derive better formalizations. To be thorough, I will define “selection” in the sense intended for (43):

Feature Selection

- (44) An element H selects a feature F if it requires that its complement bear that feature.

While they are not entirely intuitive, I think that there is a certain amount of sense to (43-44). If an element is selecting a particular feature, say *wh*-features, it seems fair to say that it wants that feature to be complete in some sense. If a verb selects a *wh*-complementizer, and the *wh*-phrase which is “completing” that feature for the complementizer it selects is on the verge of moving on, it seems reasonable to imagine that there would be some kind of conflict for the computation.

4.1 Blocking movement

In order to improve the formulation of (43), it would be nice to have a way to prevent further movement of the element in question, without simply stipulating that it is “frozen.” One possibility of this is to make use of Chomsky's (2000) Activation Condition.

Activation Condition (reworded from Chomsky 2000)

- (45) An element undergoing movement must bear an uninterpretable feature.

This is similar in some sense to the Greed principle discussed in Chomsky's earlier work

(1995). There is much debate regarding whether (45) should really hold as a grammatical principle (for example, Bošković 2007 suggests that it only be used in successive-cyclic movement), but if it is maintained, then Feature Freezing in (43) can be restated as follows:

Feature Selection Constraint

- (46) When an element H selects for a feature F on an element K, any element in an Agree relationship with that must bear no uninterpretable features.

Rather than stipulating that the spec of element K is frozen, (46) is formulated so that certain properties of its spec can cause the derivation to crash: these properties happen to be the same as those which allow an element to move. To relate it to the discussion of “completeness” in the previous section, a verb which selects a *wh*-complementizer requires that an element which is checking the *wh*-feature on that complementizer not bear uninterpretable features; that is, that it be “complete.” The constraint in (46) will have essentially the same effect as (43) if Chomsky's Activation Condition is maintained, and is to some degree a more natural formulation.

4.2 Demonstrating the Feature Selection Constraint

I will provide a few examples of how a constraint like that in (46) can account for data regarding the verb *wonder*. Consider these examples:

Wonder's Selectional Properties

- (47) I wonder what John likes.
(48) I wonder if John likes cake.
(49) *I wonder that John likes cake.
(50) *Who do I wonder likes cake?

(47) is perfectly fine: *wonder* has selected a *wh*-complementizer, that complementizer has checked its uninterpretable features, and there are no Feature Selection Constraint violations. (48) is also fine, if we say that *if* bears an interpretable *wh*-feature: there are no unchecked uninterpretable features, and no violations of Feature Selection Constraint. (49) represents a violation of *wonder's* selection properties: its complement does not bear the feature it selects for (the *wh*-feature). (50) represents a violation of the Feature

Selection Constraint: *wonder* selected a complementizer which bore *uWh*. That feature was in an Agree relationship with *who*, which then moved further (suggesting that it still bore (an) uninterpretable feature(s)).

5. An account of the *that*-trace effect

I have asserted that the difference between *that* and the null declarative complementizer is that the null complementizer does not bear ϕ -features. Perhaps, in this same vein, it is also the case that *that* selects for ϕ -features on T, while the null complementizer does not. This is somewhat opaque to observation, because in English T seems to always bear $u\phi$. Nevertheless, if it were true then the asymmetry of the *that*-trace effect would fall out. A subject is in an Agree relationship with the ϕ -features on T; if *that* selects for those features, the Feature Selection Constraint would freeze the subject in place when *that* is present.

That-Trace Effect Revisited

- (51) John said [(that) he likes cake].
- (52) Who did John say [(**that*) __ likes cake]?
- (53) What did John say [(that) he likes __]?

In a case such as (47), when *that* introduces the clause, the subject is not allowed to bear any uninterpretable features, and thus cannot move further. When that is not present, there is no such constraint; it is coincidence that the subject also does not move. In (48), when *that* is present, the subject *who* should not bear any uninterpretable features. The fact that it moves further is evidence that it does; thus, an earlier step of the derivation for (48) violated the Feature Selection Constraint causing the ungrammaticality. Once again, this depends on the status of the Activation Condition; it does not quite seem right to say that the *wh*-feature on *who* is uninterpretable, so it's not entirely clear what uninterpretable feature on *who* causes the violation of the Feature Selection Constraint. If the field moves away from the Activation Condition, it would be necessary to fall back on Feature Freezing in (43), or to find some other way to formulate the constraint. When *that* is not present in (48), the subject of the embedded clause is permitted to bear uninterpretable features and thus move on.

5.1 Non-finite clauses

For the most part, the ideas discussed for finite clauses also accounts for the *for*-trace cases. *For* can be considered the non-finite equivalent of *that*:

For-Trace Effect

- (54) John wants [(for) Mary to win the race].
- (55) Who does John want [(**for*) __ to win the race]?
- (56) What does John want [(for) Mary to win __]?

There is some oddity, however, when it comes to PRO sentences. Consider these data:

PRO Clauses

- (57) John_k wants [(**for*) PRO_k to win the race].
- (58) Who does John want [(**for*) __ to win the race]?
- (59) What does John_k want [(**for*) PRO_k to win]?

It is not clear why PRO clauses cannot be introduced by *for*. It also appears that whatever complementizer does introduce these clauses does bear ϕ -features, as they can satisfy the EPP.

PRO Subject-clauses

- (58) It is John_k's desire [(**for*) PRO_k to win the race].
- (59) [(**For*) PRO_k to win the race] is John_k's desire.

The simplest solution seems to be to posit yet another complementizer which is specifically used to introduce PRO clauses. This complementizer bears ϕ -features, and might also select for ϕ -features (note that 52 is indistinguishable from 49; once *who* replaces PRO it is unclear whether the same C would be used). There is perhaps some difference between the T in (51) and that in (48) which is the reason for using this particular complementizer. This could perhaps be the same complementizer and tense heads found in root imperatives (in these root instances, T is not pronounced). The scope of this paper does not allow me to explore this further, but it would be an interesting direction for further research. It might help to explain why it is that the only [-finite] clauses allowed as root clauses are those in which the subject is PRO.

5.2 A note on T-to-C movement

So where does this alternative analysis of the *that*-trace effect leave the status of T-to-C movement asymmetries? For the most part, it can be accounted for in the same way as in the Pesetsky and Torrego (2000) paper, with the difference being that *that/for* are distinct complementizers with distinct properties. C in matrix questions still bears *uT* which must be deleted by overt movement. In subject questions, this is done via nominative case on the *wh*-word, otherwise via T-to-C movement. In standard English, the embedded complementizers bear weak *uT* which is deleted via LF raising of tense-features from T-to-C in the declarative case (since non-interrogatives cannot undergo SHA), and either by LF T-to-C raising or via SHA with a nominative *wh*-word in the interrogative case. In Belfast English, it appears that the extraction and interrogative null complementizers bear strong *uT*, while *that* bears weak *uT*. Further, it appears that the interrogative and extraction complementizer (both pronounced and null) select for ϕ -features, resulting in a “*that*-trace” effect:

“*That*-trace” effect in Belfast English (from Pesetsky and Torrego 2000)

- (60) *I wonder [who did __ go to school]?
- (61) *I wonder [which author that __ wrote the book]?
- (62) *Who did John say [did __ go to school]?
- (63) *Who do you think [that __ left]?

In (60-63) the subject cannot be extracted, even by the local C head, due to the Feature Selection Constraint.

6. Conclusion

Postulating *that* as a distinct lexical item allows the concepts put forward by Pesetsky and Torrego (2000) to be made compatible with the data regarding spec-head agreement for intermediate/declarative C discussed by Bošković (2007). It also resolves the issue of pronunciation variance of T in C, and eliminates the need to postulate different lifespans for *uT* on interrogative C versus declarative C. Finally, it makes the theory consistent with observations about the selection properties of verbs such as *think* and *wonder*, and provides a unified account of the requirement that *wonder*'s complement not “lose” its *wh*-phrase and the *that*-trace effect.

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