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ABSTRACT: New observations about a variety of adverb effects, with both positive and negative effects on acceptability, suggest that adverbs link up to 'pro-realizational' complementizers. This proposal along with a further proposal that the co-occurrence of a subject-adjunct and a C is the result of a representational simplification of CP, facilitates explanation of an array of facts concerning the adverb effect, relative constructions, complement constructions, and embedded interrogatives.

Recent works on the Comp-trace effect and the adverb effect have posed a dilemma of structure. This article explores the opposition between the Comp-trace effect and the adverb effect and the adverb effect may instead find cheap explanation in terms of a reduction of CP structure, an economy of representation. The basic facts of the adverb effect are sketched up in section 1, and a CP recursion amount of this effect is outlined in section 2. Sections 3 and 4 offer a data and additional considerations which present problems for a recursive account and/or suggest the possibility of a different sort of analysis—minimizing structure. Section 5 offers an analysis of both the Comp-trace effect and the adverb effect based on minimizing structure. Section 6 deals with matters of data variation and section 7 concludes.

1. The Adverb Effect
The adverb effect, as discussed by Culicover (1992a; 1992b; 1993) and most recently by Browning (1996a, b) is illustrated in (1-3): 

(1) a. *Who did you say that would hate the soup?
   b. *Whom... say [[p t] [i] [o] [that] [p t]... ]

(2) a. Who did you say who would hate the soup?
   b. Whom... say [[p t] [i] [o] [who]] [p t]... ]

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(3) Who did you say that without a doubt would hate the soup?

Sentence (3) illustrates the Cog-trace effect, and (4), the adverb effect. As shown in (3), an adverbial phrase positioned after a complementiser appears to mitigate or completely undo the Cog-trace effect. A central assumption of this work (as well as of much other recent and earlier work on this effect; see, e.g., Chomsky 1991; Culicover and Sober 1991) is that a trace in subject position is only licensed by a C who is scheduled to appear with it, as in (3). The Cog-trace effect, in (1) results when the C and the trace in subject position are not coincided. Under these assumptions, the problem is to explain how the adverb offsets the indexing of the relevant C in (3) to license the subject trace, allowing (3) as grammatical.

2. CP Recursion and the Adverb Effect

Browning (1991) offers a quite interesting account of the adverb effect in terms of CP recursion, generally assuming the minimalist program as articulated in Chomsky (1995). As noted, a Cog-trace violation results if a subject trace is not licensed by a coincided C. The relevant structures of (1-2) are repeated here:

(1) a. Whom ... say (op $c$ [c-f that] [p t] ...

b. Whom ... say (op $c$ [c-f $\text{NP}\}$ [p t] ...

In a structure (2b), the subject of the lower clause has moved to the higher [Spec, CP] through the lower one. The trace of the moved subject $t$ and C are in a Spec-head configuration, resulting in Spec-head agreement and coindexation, so the C now governs the subject trace in IP and is coincided with it. Construction (2b) involves the same movement, but in this account a lexical C (i.e., that) cannot bear an index, so despite the fact that a subject trace and that are in a Spec-Nom configuration, the C cannot be indexed, and the subject trace in IP is not governed as it must be.

As for the adverb effect, the initially relevant portion of sentence (3) is [4a]:

(4) a. [without a doubt [c-f that] who would hate the soup...]

A consideration in the further derivation of this construction is clause-type. Following Chomsky (1991)
and Watanabe (1997), this account assumes that a clause-internal characteristic of a non-CP clause (in contrast to a CP clause) is that it has no [Spec, CP]. Thus, a clause with an adverbial filling [Spec, CP] such as (4a) cannot contain with a head (such as a verb) requiring a non-CP-complement clause unless some operation can create the requisite empty spec construction. Following Watanabe, this is the motivation for the next step in the derivation, that of extending the construction by moving the complementizer, as in (4b): (4) a. [Spec, CP] tō [who would...

Movement of the complementizer creates the complement clause structure required to complement the CP.

Subsequent movement of the CP away through the higher [Spec, CP] creates the construction in (4c): (4) a. [Spec, CP] tō [who would ...

b. [Spec, CP] tō [who would ...

c. [Spec, CP] tō [who would ...]

In structure (4c), one of the traces of who and the complementizer that are in a Spec-head relation. They undergo agreement, but the lexical complementizer cannot bear an index; however, it may transduce the index to its trace, which can bear an index. Thus, the subject trace in (4c) is governed by a coindexed C.

In response to the question of why no CP recursion does not apply to clauses without adverbials allowing complement clause violations as in (5), it is argued that CP recursion is limited by Chomsky (1995).

(5) a. [Spec, CP] tō [who would hate the soup...

b. [Spec, CP] tō [who would ...

c. [Spec, CP] tō [who would ...]

In particular, the recursive structure in (4) is activated by the demands on complement clause type of the operation that demand an [Spec, CP] trace. As no such movement is necessary for the merger of the verb with the clause, and hence such movement is not possible here.

2. Questions About a CP Recursion Account

Despite its appealing aspects, the CP recursion analysis faces a number of difficulties, as will be
(Co-)indexation of lexical complementizers. First, the essential claim that lexical complementizers cannot bear an index appears questionable on size-internal grounds. As is apparent in (40-2), the move's complementizer must be linked to the trace for the analysis to succeed. Coordination is the normal, general means of accomplishing such linking. Though the subsect. 2.7 establishes the needed relation, it seems more to mask the problem than to offer an analysis. One can, of course, hypothesize this linking as not coindexing, and yet as enough like it to slide down to be passed on to the trace of the complementizer.

Further, there are indications that the complementizer DAT can in fact be indexed. First, on the assumptions of these other analyses, relative clause constructions such as (8) would most likely here an indexed that licensing the trace in subject position:

(6) The person that she liked arranged the pizza.

Further, other languages or varieties of languages, including Dutch (Pustejus 1971; Holec and Koolen 1978; and French (Kaye 1981), and possibly Black American English (Pewittsky 1982) are attested not to exhibit a that-trace effect. Under the normal assumptions, there would be an indexed declarative complementizer licensing the subject trace, as in the Dutch example in (7):

(7) Wie wilde je op dat [p t] gekomen was ...

... who asked you that came was

"Who did you say that had come?"

(adapted from Pustejus 1971)

Thus, a single stipulation that the overt complementizer that cannot be indexed seems at least open to question.

Agreement Positioning. Another question arises from positional shifts in a Spec position: why should the character in the assumed theoretical framework as a position of agreement? Subjects occur here, and when other entities move into Spec position, they are also subject to agreement. That is, a wh phrase moved into
[49, 4] agree with the C hand at least on the feature [+Ed]. However, there is no proposal that these mainstays involve agreement; hence their positioning here lacks the normal positive motivation.

Additional facts. Beyond the facts and considerations already noted, there are, I believe, some additional facts of interest, some which point toward an analysis of a very different sort. These facts are subject to variation—that is, some speakers have these judgments more strongly than others. Such a state of affairs is not uncharacteristic of Comp-trace phenomena. I think that, although they are variable in acceptability, the constructions below are strongly suggestive of a different approach to analyzing the Comp-trace effect and the adverb effect, an economy-of-representation approach, which will be pursued in subsequent sections.

For some speakers, the adverb in constructions like (4) easily forms a predicative unit with the complementizer as shown in (8a), with the commas here marking significant pauses:

(8) a. Who did you say, that, without a doubt, would have the soup?
  b. Who did you say can, without a doubt, would have the soup?
  c. Who did you say, that, without a doubt, would have the soup?

Given a choice between (8a) and (8b), other speakers claim to prefer the predicative pattern in (8b), though these speakers tend to reduce the complementizer that (indicated by the reduced font size of that). One informant who claimed to prefer (8b) over (8a) suggested a revision to the predicative in (8b) as better than (8b'). In (8b'), the complementizer is set off, and the adverb is further set off. Such predicative patterning supports the possibility that the complementizer and the adverb may form a syntactic constituent, something which will be explored in greater detail below.

An additional fact, pointing in the same direction is that adverbs may (again subject to some variation) similarly interact with V-identified Comp (IFC) constructions as in (9a-d):

(9) a. I just saw a person who, chat for all intents and purposes, could pass for Albert Einstein!
b. There are people WHO, that with very little propping, would do some extreme things.

c. Harvard has a player WHO, that with a little more work, could play for the Steelers.

d. I just saw a sprinter WHO, that in all likelihood, will break the 200 meter record.

e. 'I just saw a person who that could pass for Albert Einstein.'

In (9a-d), as emphasized WHO and pause setting off the complementizer and subord. is very 'natural' for some informants, and for nearly all of the interlocutors that I have asked, (9a-c) are markedly preferable to (9e).

Third, an adverb may sometimes, but not always, successfully link to other CP elements. Thus, an adverb may link to a wh word in a relative clause, as in (10a), but not to a wh word in an interrogative, as in (10b):

(10) a. I know the person, who without a doubt, ordered the anchovies.

b. 'I asked, who without any hesitation, would order anchovies.'

c. I asked who, without any hesitation, would order anchovies.

In (10b-d), the interrogative who is not reduced, and pauses are only possible as shown in (10c). I believe that sentence (10b) shows a rather interesting negative adverb effect.

For the body of this analysis, I will treat the data in (8) and (9) as though they were invariant, and in particular, as though (8a) and (9a-d) are significant indicators of what syntactic phenomena may be at work here, as I believe they are. In section 6 below, I return to the question of pronominal avoidance since an account of it will rely up aspects of the analysis to be developed below.

How one approaches the adverb effect depends crucially on the analysis of elements in CP and on the analysis of the Copy-Trace effect. There are reasons to suspect that what happens between the Copy and Head
elements of CP may not be simple agreement. We turn to these next.

4. Questions about Agreement in CP

Although a number of works have explored the possibility that the Spec and head elements of CP simply undergo agreement (general Spec-head Agreement), there are nevertheless reasons to think that this might not be so. First, what we think of as "pre-theoretical" agreement (e.g., subject-verb agreement) often involves two overt elements, and one of them does not normally "disappear" in favor of the other. However, the Hugh in CP is for one element at most to appear, a fact nicely codified in the now classic doubly-filled Comp filter (Kayne 1975; Chomsky & Lasnik 1977).

Second, "pre-theoretical" agreement typically involves shared morphology or morphology reflecting coordinated choice of features from person and number. However, CP elements do not typically exhibit coordinated morphology or morphology indicating features. On the simplest of assumptions, if CP elements "agreed," one might even expect to find possible agreement constructions like (11) (with who being a singular element in [Spec, C]) and in occupying CP but of course, these are not found.

(11) Who is they visiting?

Such a possibility is not entirely negligible, since moved constituents can trigger agreement, as in passives such as (12):

(12) Mary is being visited (by them).

Finally, while agreement in CP as discussed in the literature (e.g., Browning (1996) or Robb (1991)) is index sharing, it is not clear that normal subject-verb agreement is index sharing in any light-verb sense.

5. CP Reduction

Given such considerations, it is possible that the Spec and head elements of CP are not undergoing agreement, but are undergoing a different process-structure relation. Following a suggestion by Reasen (1992) and developed further in Reasen (1997), I suggest here that CP undergoes a structural simplification under specific conditions, the Spec and head elements of CP being or fused together into a single indeclinable element, as will be spelled out in greater detail below. I refer to this process...
simply as "Fuse". There are two subcases of Fuse, the case where a chain head is involved, and the case where a trace is involved. We will deal with each of them in turn.

**GF Reduction Involving a Chain Head**

Here we consider first the basic operation of GF reduction with a chain head, and then its interaction with adverbs.

**The basic operation**: When a chain head (that is, an indexed wh phrase or null operator) is in [Spec, CP], Fuse works along the following lines. The chain head may collapse with C if either of these elements ([Spec, CP] or C) is overt (that is, phonetic). As a consequence of this collapse, CP is simplified: the constituent C is eliminated. The resultant head element bears the index of the chain head and has the form of the overt element. It also retains the mood feature of the original C. Still assuming, along with Kreuzing and others, that the Comp-trace affect in (1) is due to the lack of a complementizer, collapsed with a trace in subject position, Fuse results in an indexed C, and licensing such a trace.

This process affects a range of constructions involving GF sincere and elements which interact with it. Consider first the relative constructions in (13) through (18):

(13) a. the person who ordered the anchovies
b. ... [o who | [c [o -WH] [o t] ...] 
   c. ... [o [o who]; [o t] ...

(14) a. the person that ordered the anchovies
b. ... [o a; [c [o -TH] [o t] ...] 
   c. ... [c [o -TH]; [o t] ...

(15) a. the person ordered the anchovies
b. ... [o B; [c [o -WH] [o t] ...] 
   c. ... [o [o who]; [o Mary ...

(16) a. the person who Mary saw
b. ... [o who; [c [o -WH] [o Mary ...] 
   c. ... [o [o who]; [o Mary ...}
(17) a. the person that Mary saw
b. ... [w 0; l: i: [that] [z Mary ... ...]
c. ... [w; l: [that] [z Mary ...

(18) a. the person Mary saw
b. ... [w 0; l: [i: [that] [z Mary ... ...

(19) (17-19), (b) shows the relevant details of each CP structure, and (c) shows the result of Fuse if it applies. The arrow indicates that Fuse applies, and the slash arrow, that it does not. In (19), the spec element a is overt, allowing Fuse to apply, resulting in a CP as in (19a) with the intermediate constituent c eliminated, and a single indexed head that now licenses the trace in subject position. A similar situation holds in (4), with the complementizer that being overt. The result of applying Fuse in (19b) with the more reduced structure but with an index that licenses the subject trace. The CP in construction (19c) cannot fuse, since neither CP element is overt; as a result, the trace in subject position is left without a conditioned C to license it, and (19d) is ungrammatical.

Constructions (14-18) work in parallel to (17-19), though here, in subject traces licensing is involved. Consequently, construction (18) is grammatical, in distinction to (19), despite the inapplicability of Fuse.

The Adverb Effect: Consider next doubly-filled comp constructions, as in (19-20) ([9] above):

(19) a. I just saw a person who, that for all intents and purposes, could pass for Albert Einstein!
b. ... [w 0; l: i: [that] [z that [z that [z that [z that [z that ...
c. ... [w 0; l: i: [that] [z that [z that [z that [z that [z that ...

d. ... [w 0; l: i: [that] [z that [z that [z that [z that [z that ...

(20) a. "I just saw a person who that could pass for Albert Einstein!"
b. ... \[ \text{who, \[ \text{that} \] \[ \text{it} \] ...} 

Taking (23) first, I propose that Pure can apply here; this simplification does not result in a loss of tr-relevant material, since the resultant element bears the mood feature of the original \( C \) (as it would in (13) and (18) above), and since that has a null allomorph, the effect on PF of applying here may be negligible (perhaps a sort of "construction," as far as PF identity with an original numeration is concerned). It is only a structural simplification. (Cheung 1995:294) If this is the case, then the construction producible from the elements in (20b) is not (20a), but (21), with the CP structure in (21b):

(21) a. I just saw a person who could pass for Albert Einstein.

b. ... \[ \text{who}, \[ \text{...} \]

In such a construction, Pure allows a more economical representation than the VC structure, one with a simplified CP structure. Viewed in this way, a doubly-filled CP as in (20) forces an otherwise unnecessary constituent, \( C \), and minimal representation does not allow superfluous constituents. Thus, it might be argued that the more economical representation blocks the less economical one, deriving the effect of the Doubly-Filled Comp Fill.

Now we come to the adversative effect and to (19). Here, I propose that the adversative effect occurs because the advers in constructions like (19), as well as in (37b), is attaching to \( C \) and repositioning it as a part of a parenthetical expression, effectively rendering it invisible (or uninterpretable, as we shall see below, optionally visible). This is strongly suggested by certain of the pragmatic and prosodic effects of the construction in (19). The effect will not attempt to resolve the very significant and much larger problem of the structural representation of parenthetical expressions. For the time being, I will simply represent the parentheticalized \( C \) and advers as an underscored sequence, as in (19). The structure in (19) indicates the essential features which these adjoined adversives appear to impose. The phonetic form and the ads have been folded into a single parenthetical constituent, and the \( C \) head position with its phonetic content has moved to another location may be viewed as phonetically null, as in (18b). Pure will apply in this construction based on the phonetic form of the Spec element, yielding (19d),
with the phonetic C that not consumed by Fuse, but phonetically present and "displaced."

For the purposes of the overtress Condition on Fuse (the condition that one of the elements of CF must be overt), when a C has been parenthesized, Fuse can choose to look at its phonetic form or opt.

As stated earlier, the phonetic character of the head position is generated, and the possibility is generated in (17b) with a parenthesized that in C. This possibility is not additional consequences here (as in Fuse could apply here too, but this phonetic option does play a role elsewhere, so we shall immediately use.

Constructions (22–23) show the results of adding an advers to one of the subject relatives considered earlier:

(22) a. (I know) the person, that without a
b. (not the) (the) relatives

(23) a. (I know) the person, who without a doubt ordered the authorities
b. (not the) (the) relatives

In (22), the C has been parenthesized with the advers; Fuse now has the option to extracted of looking at the C head position at phonetic (represented as (22c) or not (reproduced in (22b). Mark; it is (22b), the phonetic option, which allows Fuse to apply to reduce the CP structure, allowing C to license the subject relative) in (22b). Notworthy that although a parenthesized phonetic C considered by "Fuse" as phonetic (the CF) region) triggers the reduction of CP, the complemented is not properly in C (that is, it is no longer a proper
CP element), and a complementizer so positioned cannot contribute to a phonetic form to the C element, as the resulant C head in (22d) is null.

Constructive (23) shows something of further interest. Here, the overt main head who in (22b) fuses with C, yielding (23a). Theproduk of this example suggests that the main head who can be pulled through, is to speak, so that it is paraphrased as the who as "empty" C (realis = non-classificatory), the wh- C type for relative clauses.

Another observation further suggests that an adverb attaches to C, and not in other CP elements (Spec), while sentence (25) is quite acceptable [like (13) above], sentence (26) is not:

(24) *I just saw a book, which for all intents and purposes, that Mary would like!

(25) I just saw a book which, that for all intents and purposes, Mary would like!

Here, there is no subject trace problem. It appears that a wh word in Spec does not host an adverb. If it could, one might expect that the wh word could paraphrase, leaving an effective null operator, and rendering (25) as acceptable as (24):

(26) I just saw a book that Mary would like!

But such is not the case. So I take it here that the adverb only attaches to a wh word when it is in C.

Thus the adverb is judged paraphrasable C is further suggested by the contrast in pronominalization between the grammatical subject relative constructions (22) and (23) on the one hand, and the ungrammatical interrogative in (23j) on the other (this is the role-by contrast mentioned earlier).

(27) a. I wonder who, for all intents and purposes, is the mayor?
   
   b. *I wonder, who for all intents and purposes, is the mayor?

A subject relative construction (as already discussed in connection with (13-15)) must have an overt CP element, as the constructive fails, as done (23). However, as shown in (22) and (23), in such subject relative constructions, one can nonetheless
parenthetical and this obligatory overt element. As argued above, although the parentheticalized overt element does not occupy the C position, one has the option of "looking" at its phonetic form, allowing Fase to operate as it does, and yielding this "obligatoriness" effect—the construction would fall if Fase did not apply. However, the parentheticalization or removal of C content is quite genuine, so that a construction with a parentheticalized/removed C will violate any condition which substantively requires the C head position actually to be filled (or, in other analyses, to be checked C-pronominally). Such a condition is the one which requires that an interrogative C (w) must be pronominally filled (or checked). The adverbial in (76b) (imply displaces the WH word, leaving an empty (or untraceable) interrogative C, and thereby rendering the condition of this filling condition on the interrogative C satisfyable. In contrast, no such condition makes the left-edge interrogative C, and the lowering of the WH phrase in (24) (or that in (22)) possible.

Now, let's turn our attention to the COMP-trace effect in (1) and the adverb effect in (2/8a).

CE Reduction Involving a Trace. Here, we consider first the basic operation of CE reduction involving a trace, a non-head head. Then we go on to consider the interaction of this operation with adverbials, the adverb effect in COMP-trace constructions.

The basic operation. Trace, which we are not chain heads, aka undergo Fase, but not in the same way that chain heads do. The difference is reflected in a very striking contrast between subject relative clauses and object extractions whose subjects are trace elements, whereas a subject relative (with a chain head occupying /p0pO.C/), as in (1) [in which a trace occupies /p0p0.C/]; fails if its C contains an overt element, as in (1). Following the earlier analyses of Kayne (1984) and Zyn, 1978/1984, the complementizer that is not empty unambiguously as more recent work has claimed rather, the source of the index is crucial. In terms of the present analyses, a chain head easily fuses with this, importing its index, but a trace most typically does not. If illustrated in (28) if (2) above, a trace not easily fuses with a null C (preserving its covert character) because substantively requires the C head position licensed by a coindexed C and is unacceptably acceptable.
(24) a. Who did you say would hate the soup?
   b. Who ... say in (t; \{c[\cdot -\mathrm{H}\}] [n t; ...)
   c. Who ... say in (t; \{c[\cdot -\mathrm{H}\}] [m t; ...)

The Corp-trace effect illustrated in (24) is repeated in (29):

(29) a. A Who did you say that would hate the soup?
   b. A Who ... say in (t; \{c[\cdot \mathrm{H}] [c that]; [\mathrm{t} ...)

In the marked instance, a trace will not collapse with the overt complementizer, as in (29b), leaving an unlicensed subject trace.

The adverb effect in Corp-trace constructions:
Now, as for the adverb effect on that-trace constructions, it is the same as in other cases, as shown in (30):

(30) a. Who did you say, that without a doubt, would hate the soup?
   b. ... in (t; \{c[\cdot \mathrm{H}] [\mathrm{that}\mathrm{\_aux}] [n t; ...)
   c. ... in (t; \{c[\cdot \mathrm{H}] [\mathrm{any}\_\mathrm{that}\_\mathrm{aux}] [\mathrm{t} ...)
   d. ... in (t; \{c[\cdot -\mathrm{H}] [\mathrm{that}\_\mathrm{aux}] [m t; ...)

The adverb attaches to C, parentheticalizing it and rendering the phonetic character of the C head position as optional for the purposes of triggering Fuse. The CP structure in (30b) is the case where the C head is being viewed as "phonetic," and (30c) is the case where it is being viewed as null. As in all earlier cases, either view is possible. Here, since a trace is involved, it is the null C in (30c) which allows Fuse to apply, resulting in (30b), with a licensed subject trace, and thus we get the adverb effect on subject satisfaction.

Corp-trace variability: One more aspect of the Corp-trace phenomenon should be mentioned here. In Roblin (1982) and (1983), it was argued that speakers of English actually show variable acceptance rather than simple rejection of that-trace constructions such as (11/129), in contrast to categorical rejection of avoidance-like (31) involving a subject extracausal
over whether:

(31) a. Who did you wonder whether would hate the soup?

The variable acceptability of constructions such as (31)/(32) can now be explained as follows: as argued earlier at a number of points, the complementizer that (in contrast to whether) is incapable/kosyable, but the source of the index, that is, the character of the other filling element, is crucial. In the unmarked instance, a trace will not fuse with an overt $g$, but evidently, this is subject to some degree of variation (learnability or data).

In the French sentence (32), on the other hand, the event of the event sentence (7), or the French example in (32):

(32) il fille que je croie qui est arrivé

la première

first

(first [Payne 1981:19]

The variable treatment of (1)/(29) seems to acknowledge this parametric possibility, so to some extent, speakers is fact accept, and passively accept quite strongly, (1)/(29). This possibility is schematized in (30), where in (33b), the subject trace is licensed:

(33) a. Who did you say that would hate the soup?

b. ... [p ti’ l: that] [p ti’ ...]

c. ... [p i: that] [p ti’ ...]

Perhaps it is the case that such a construction is marked in a language such as English, since English allows null $g$, and in a language which does, one need not resort to strategies as in (33) which would render a trace an overt. The process may be less marked or nonexistent in other languages, or may in fact not have null $g$, so that it is more easily available in Dutch or French than in English. This is quite speculative, and further work is called for.

6 Some Remarks on Prosodic Variation

Let’s return now to the Question of variation in the Prosody of examples like (4), with some speakers claiming to prefer the prosody of (4a), and others, that of (3b) or (3c). We have assumed that the prosody of (4a) is the one that is revealing of the semantic analysis of the adverb effect. The prosody
of (8c) is problematic for the analysis here, since it is in conflict with the analysis that it is quite plausible that (8c) simply reflects a further "harking off" of the adj-p constituent argued for here. As for (8b), although the C appears not to be marked off prosodically with the adjective, it is nonetheless noticeably reduced and somewhat "separated" from the noun. It is possible that a pause immediately before the C, which would correspond with its syntactic analysis here, is being suppressed by the presence of another pause immediately after it. In view of such considerations, we consider the prosody of nonrestrictive relative clauses, as in (34):

(34) a. was & peace, which everyone knows for its length, is a beautifully-written work.
    b. Mary, who we all know to be talented, was just admitted to Eastman.

Both relative clauses normally involve pauses, so much so that it is conventional to indicate them with commas. As in (34). However, consider what happens to this prosody when an adverb phrase is introduced, as in (35-36):

(35) a. was & peace, which without a doubt, everyone knows for its length, is a beautifully-written work.
    b. was & peace, which without a doubt, everyone knows for its length, is a beautifully-written work.

(36) a. Mary, who, without exception, we all know to be talented, was just admitted to Eastman.
    b. Mary, who, without exception, we all know to be talented, was just admitted to Eastman.
    c. Mary, who, without exception, we all know to be talented, was just admitted to Eastman.

What we see in (35-36) is this while it is possible to render all of the pauses, as in the a examples, it is
also possible to reduce the pauses around the relative pronoun to a single pause either preceding or following the relative pronoun, as in the b and c examples. Here, the c examples are especially interesting, because they involve not significantly pacing before the relative pronoun but instead altering the prominence of the relative pronoun (indicated above by the reduced font size) and saving the major pause in that vestry for the onset of the following phrase. In such cases, it would be equally not be permitted to say that the constituency is fundamentally different from that of the other relative constructions, but rather that pauses in such formality to each other may be reduced in favor of one or the other. In such a case, a syntactic boundary marked by a pause may alternatively be rendered as a reduction in prominence of a word.

Restrictive relatives are constructions in which the pronoun is present independent of any adverbial expression. In contrast, in the adverb effect constructions being considered here (repeated below for convenience), it is the introduction of the adverb phrase which induces the possible pauses.

(8) a. Who did you say, that without a doubt, would hate the soup?
b. Who did you say, without a doubt, would hate the soup?
c. Who did you say, that, without a doubt, would hate the soup?

By hypothesis, the adverb phrase attaches to C, forming a constituent. The adverb phrase itself is still capable of being prosodically marked off within that constituent. For those who prefer to do that, the initial pause preceding the C may be retained, as in (b). However, some speakers prefer the prosody of (8b) or (8c) to that of (8a), while others prefer the prosody marking the constituent formed by that of (8a). A preference for (8b) is therefore not clear evidence against the analysis offered here. Differences among the possibilities in (8b)–(8c) might be different from those preferences among the possibilities in (9), since the pronoun does not have the same source in both instances—i.e., (9b), it is partially independent of adverb introduction, whereas in (8), it is not.

Turning to varying in the acceptability of (9b–d); repeated below for convenience, the problem here-
(5) a. I just saw a person who, that for all intents and purposes, could pass for Albert Einstein!

b. There are people who, that with very little prodding, would do some extreme things.

c. Harvard has a player who, that with a little more work, could play for the Steelers.

d. I just saw a sprinter who, that it all likelihood, will break the 200 meter record.

e. I just saw a person who that could pass for Albert Einstein!

In the present analysis, sentences (4a-d) might give the appearance of having failed to undergo Fause, an economy violation. From the standpoint of judging acceptability (a different kind of performance from actual production/sense), it may be that one has to have the pause cue, with a pause strongly separating the relative pronoun and the C, rather than the C reduction cue, as discussed in connection with (8), to perceive that the C has been parenthesized with the adverb phrase, that Fause has in fact applied, and that there is no consequent economy violation. If this is right, then there should be a correlation between having a preference for the prosody in (8a) and judging sentences (4a-d) fully acceptable. As far as I can tell from the information I have asked, those who strongly prefer (8b) over (8a) also disfavor sentences like those of (9). Miller: Differentiation between the judgments for (8a) and (8b) (that they are both judged possible) does not lead to a favoring (9).)

7. Final Remarks

This paper has proposed that CP undergoes a structural simplification which, in conjunction with combinations of absence of representation, goes toward explaining the Comp-trace effect, the doubly-filled Comp filter effect, and the adverb effect. The adverb effect follows from a parametrization of the complementizer with the adverbial, and the interaction of this resultant C-AKv constituent with the process of simplifying CP structure. This analysis seems more compatible with notions of representational economy than do analyses which elaborate or proliferate structure.
A large question in need of further resolution is one concerning the syntactic nature of parentheticalization. In certain respects, the adverb effect looks very much like a straightforward instance of parentheticalization as in (33) [I.e., McNeill (1981)]. However, the question is what to do with the fact that, even though it is parentheticalized, we still play a limited role in serving as the phrase trigger for Faux. In this, the next research, the parentheticalized C has a limited effect on its surrounding, suggesting its presence in the structure. Thus, this work points toward the need for further consideration of the structure and the structuring of parentheticals.

It is also worth noting that the data as it is often rendered in work on the Comma-trace effect and the adverb effect is usually over-simplified. There is much variation about when the standard literature recognizes. For example, it is common practice in the literature to use the term "parenthetical" without differentiating it from a construction like (37), when in fact speakers do not consistently reject it. We do other more uniformly unacceptability constructions such as (37):

(1) a. Who did you say that would hate the soup?
(37) *Who did you ask whether would hate the soup?

Such variance can have significant consequences for the theoretical interpretation of these phenomena. Here, I have tried to take some of this variation into account. It would be of considerable interest to see how other approaches might treat it.
1 I am most grateful to the Departments of Linguistics and Philosophy at M.I.T. and to the Department of Linguistics at Harvard University for their incomparable hospitality during my tenure as a visiting scholar at each institution. Special thanks are also due the Office of Research and the Center for the Study of Language and Information at Stanford University and its Director Andy Covington for partial support of my stay in Cambridge. In addition, my sincere thanks to Steve Anderson, Noah Chomsky, Sam Epstein, Byrd Gibbons, Greg Veenstra, Jay Keyser, Howard Lasnik, Jim Levenson, Carson Schütze, and Anne Malin Slobin for discussing various matters related to this work. Finally, I thank audiences at LASHO-UCLA, the University of Missouri-Columbia, and the Linguistics Association of Great Britain for their insightful and helpful comments on shorter versions of this work. Any errors of fact, interpretation, or analysis are solely the responsibility of the author.

2 Hazi (1997) also sketches an elaborated CP structure, which I have responded to elsewhere (Robin 88.).

3 Following Slobin (1983; 1987; 1991), (3a) is marked as involving variation in acceptability judgments, in contrast to the stark and systematic unacceptability of a construction with whether such as (3):

   (3) Who did you ask whether would hate the song?

   Sentence (3) is unmarked here, implying full acceptability. However, Browning [1996:237, fn 1] points out that for some speakers including himself, the additional whether consistently improves acceptability, but does not consistently lead to complete acceptability. Further, though it is generally claimed that the adverb effect holds for both that- and whether-clause constructions, Browning cites Culicover, noting that "...the IMPEDIMENT in the case of whether is less noticeable..." (Browning 1996:237, fn 1).

4 Browning uses a subscript "c" rather than an index to link the moved complementizer to its trace, presumably to comply with the stipulation that lexical complementizers cannot bear an index. Also, in the subsequent derivational steps, the adverbial here is abbreviated as "Adv".
Browning's example involves movement of a null operator in relative clauses.

6 Cullover (1993:164) noted the same problem for the PolP analysis.

7 E.g., see Solin (1987) and footnote 2 above. Also, the French Comp-trace construction in (32) below seems to vary in acceptability (Clichy bye, personal communication), as does the Dutch example in (1).

8 The commas that appear in these examples do not necessarily follow English punctuation convention; they are only intended to reflect spoken proses. The observations in (31) etc. are based on inquiries among native speakers from a variety of regions of the U.S. and Canada, and are consistent with region. This will be dealt with further below.

9 As with the examples of (8), the capitalization and comma punctuation here reflect emphasis and passing, respectively.

10 Thus, accounts must prevent the t (though it governs the subject position as to assign it Case) from entering-depriving the subject, or there should be no Comp-trace effect.

11 In a similar vein, but in a more ad hoc fashion, and without full consideration of the consequences, Rizzi (1997:32) proposes that separate C and T heads simply merge into a single entity.

12 The intuitive idea here is that in the unmarked instance, a main head wants to be overt. This does not exclude the possibility of null operators.

13 As noted earlier, I will deal with this (18a) here as though it were uniformly acceptable. Later I will offer some discussion of why its unacceptability varies.
By contrast, fuse cannot apply when C is
filled with a more contentious element such as *a modal
or tense element*, as in a question on an object such as (1):

(11) Who did Mary see?
Here, C is not the licenser of the object trace, so
there is no consequent ungrammaticality. However,
when C is required to license a subject trace in a
*verbal, nonmanicative interrogative*, such as in (11), C
cannot be filled with a tense/modal element:

(11) a. Who saw Mary?
b. *Who did Mary see?*
Fuse must apply to (11), yielding only (11a) as a
possibility.

The visibility/invisibility being discussed
here is not simple phonetic *visibility/invisibility*,
but only *visibility/invisibility with respect to the
process fuse*. Thus in either (19b) or (20a), that is
phonetically present/audible.

See McConkey (1982) and elsewhere for a
exploration of parentheticals and possible
discontinuous constituency.

Again, the claim here is that the real
"phonology" of that is present.

Thanks are due Carson Schütze (personal
communication) for bringing this to my attention.

In the b and c examples here, the commas only
indicate spoken pauses and do not follow standard
written convention.

It is worth reiterating here that (%e--) are
generally regarded as being from more to very much
more acceptable than (%e).


My further experience is that there are
people who claim not to say them but who find them
unremarkable in normal use, though they find sentences
like (%e) remarkably (notably bad) and will call
attention to them.
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