

# Alignment in Syntax: Quotative Inversion in English

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## Abstract

This paper explores the idea that many languages have a phonological Align(ment) constraint that requires alignment between the tensed verb and C. This Align constraint is what is behind verb-second and many types of inversion phenomena generally. Numerous facts about English subject-auxiliary inversion and French stylistic inversion fall out from the way this Align constraint is stated in each language. The paper arrives at the Align constraint by way of a detailed re-examination of English quotative inversion. The syntactic literature has overwhelmingly accepted Collins and Branigan's (1997) conclusion that the subject in quotative inversion is low, within the VP. This paper re-examines the properties of quotative inversion and shows that Collins and Branigan's analysis is incorrect: quotative inversion subjects are high, in Spec-TP, and what moves is a full phrase, not just the verb. The constraints on quotative inversion, including the famous transitivity constraint, fall out from two independently necessary constraints: (1) a constraint on what can be stranded by phrasal movement like VP fronting, and (2) the aforementioned Align constraint which requires alignment between V and C. This constraint can then be seen to derive numerous seemingly unrelated facts in a single language, as well as across languages.

Keywords: Generalized Alignment, quotative inversion, subject-in-situ generalization, transitivity restrictions, subject-auxiliary inversion, stylistic inversion, verb second, phrasal movement

## 1 Introduction

This paper explores the idea that the grammar of many languages includes a phonological Align(ment) constraint that requires alignment between the tensed verb and C. This constraint can be stated in the framework of Generalized Alignment (McCarthy and Prince 1993) as follows:

- (1) Align V-C:  
Align(C(x), L/R, V<sub>tense</sub>, L/R)  
(The left/right edge of some projection of C must be aligned with the left/right edge of the tensed verb.)

This constraint says that the left or the right edge of some projection of C (C(x)) must be aligned with the left or the right edge of the tensed verb. The particular version that I will argue is active in English is the following:

- (2) Align V-C (English):  
Align(Comp-C\*, L, V<sub>tense</sub>, L/R)  
(The left edge of the complement of C\* (i.e., TP) must be aligned with an edge of V<sub>tense</sub>.)

In English, the left edge of the complement of a certain class of Cs, those that require subject-auxiliary inversion (notated C\*), must be aligned with either the left or the right edge of the tensed verb. The complement of C\* is TP, so the left edge of TP must be aligned with the tensed verb.

This constraint is what is behind the subject-non-subject distinction in subject-auxiliary inversion. Non-subjects trigger inversion when extracted, but subjects do not:

- (3) a. \* What [<sub>TP</sub> the leprechaun ate]?  
 b. What did [<sub>TP</sub> the leprechaun eat]?
- (4) a. Who [<sub>TP</sub> *t* ate the Lucky Charms]?  
 b. \* Who did [<sub>TP</sub> *t* eat the Lucky Charms]?

The reason is that in (3a), with no inversion, Align V-C is violated: the left edge of TP is not aligned with an edge of the tensed verb. If an auxiliary occupies C as in (3b), Align V-C is satisfied. In contrast, in (4a), when the subject is extracted, the tensed verb is already aligned with the left edge of TP.

I show that viewing the grammar in this way makes sense of numerous phenomena in the grammar of English, phenomena which have required various stipulations in previous accounts. In addition, I show that cross-linguistic variation can be accounted for by the way Alignment constraints can vary. They can vary in two dimensions: (1) the entities that are to be aligned (here, which projection of C); and (2) the directionality of that alignment (left or right edges). I show that differences between English and French stylistic inversion fall out exactly as expected from this variation, as do facts about German and Spanish.

I motivate Align V-C in a somewhat roundabout fashion. First, I undertake a detailed re-examination of English quotative inversion. Quotative inversion has figured prominently in the recent syntactic literature, particularly in discussion of the *subject-in-situ generalization* proposed by Alexiadou and Anagnostopoulou (2001, 2007). This literature has embraced the conclusion of Collins and Branigan (1997) that quotative inversion subjects are low, within the VP. In contrast, I argue that they are high, in the normal preverbal subject position (Spec-TP), while what moves is a phrase, not just the verb. Most importantly, several well-known constraints on quotative inversion fall out from this phrasal movement analysis of quotative inversion, coupled with the Align V-C constraint. As we will see, Align V-C can derive numerous disparate facts, and thus seems to be very well motivated.

Sections 2–6 examine quotative inversion in detail. Section 2 introduces the phenomenon and previous accounts of the restrictions it obeys, in particular the ban on a direct object. Section 3 shows that quotative inversion subjects are not in situ, but have raised to Spec-TP, while section 4 makes the case for phrasal movement. In section 5, I present my analysis and show how the ban on a direct object follows from Align V-C. Section 6 examines other restrictions on quotative inversion and again demonstrates the utility of the Align V-C constraint. Finally, section 7 returns to subject-auxiliary inversion in English and shows that numerous puzzling facts fall out from the Align V-C constraint. This section also extends the Align model to French stylistic inversion and inversion phenomena in other languages.

## 2 Quotative Inversion and the Transitivity Restriction

Quotative inversion is illustrated below:

- (5) a. “I am going to follow you all the rest of my life,” declared the man.  
 b. Said the woman: “I see you with both my eyes.”

Quotative inversion is characterized by the inversion of the usual order of the verb and subject. Additionally, a quote typically occurs before the inverted verb, but it may also occur after the subject.

Importantly, quotative inversion does not allow an NP object in addition to the subject (Collins and Branigan 1997). PPs are permitted (6a), and objects are allowed when a quote is fronted but there is no inversion (6b), but when inversion takes place, no NP object may appear (6c–d):

- (6) a. “Why?” asked Gabrielle of the attendant.  
 b. “Why?” Gabrielle asked the attendant.  
 c. \* “Why?” asked Gabrielle the attendant.

- d. \* “Why?” asked the attendant Gabrielle.

A prominent account of this transitivity restriction has been proposed by Alexiadou and Anagnostopoulou (2001, 2007). Alexiadou and Anagnostopoulou motivate a generalization that they call the *subject-in-situ generalization*. This generalization states that no more than one NP that needs structural case may remain inside the VP. If the subject remains in-situ and does not move to Spec-TP (or some other position), then there may be no object in the VP in addition. There either may not be an object at all, or the object must move outside of the VP. Alexiadou and Anagnostopoulou propose a theoretical account of the subject-in-situ generalization that is meant to explain the transitivity restriction on these two constructions, but the details of this will not concern us here. (See also Richards 2010 for a different account, but based on the same generalization, as well as Chomsky 1995, 2001.)

However, there are some reasons to doubt this account of the transitivity restriction on quotative inversion. As I will show in the next section, the subject actually seems to be high, outside of VP. In addition, quotative inversion does not behave like other inversion phenomena in English, where the subject does appear to be low. For instance, locative inversion and the presentational *there* construction both disallow objects, as well:

(7) *Locative Inversion*

- a. Around the tree trunk was coiled a snake.
- b. \* Around the tree trunk was coiling a snake Satan.
- c. \* Around the tree trunk was coiling Satan a snake.

(8) *Presentational There*

- a. When out on the lawn there arose such a clatter, . . .
- b. \* When out on the lawn there raised such a clatter Santa, . . .
- c. \* When out on the lawn there raised Santa such a clatter, . . .

As stated above, the subject-in-situ account of this restriction says that what is not permitted is for more than one NP to remain inside the VP. If either NP moves out of the VP, the sentences should improve. This appears to be correct for locative inversion and presentational *there*. Speakers consistently judge transitive versions of these sentences better if one of the NPs has undergone heavy shift. This was noted by Chomsky (1995), who credits Richard Kayne with the observation that heavy subjects greatly improve transitive examples with presentational *there* (but many other earlier publications cited examples with the verb *enter*). I also evaluated this by sending an email questionnaire to several native speakers of English (n=8). This questionnaire presented violations of the transitivity constraint in pairs. The first member of each pair had short subject and object NPs, while the second involved heavy shift of one of the NPs. The following pairs tested locative inversion. The average rating from the respondents on a 7-point scale (7=fully grammatical) appears in parentheses:

- (9) a. At the gate had positioned the chief twenty guards. (3.38)
- b. At the gate had positioned the chief twenty heavily armed guards in full body armor. (4.25)
- (10) a. Round the tree trunk had coiled Satan a serpent. (4.75)
- b. Round the tree trunk had coiled Satan a shimmering, hypnotic serpent. (5.38)

Respondents were asked to compare the members of each pair. Seven of eight respondents judged the second sentence in each pair, with heavy shift, as either better than or the same as the first. Actual judgments varied somewhat, but most people judged the first member of each pair to be quite marginal, while the second was at worst only mildly deviant.

Although the number of respondents was small, and the experiment not rigorous (no control items, etc.), I think that we can take these findings to indicate that the subject-in-situ-generalization analysis is on the right track for locative inversion and presentational *there* constructions. The subject remains inside the VP in these constructions, and if there is an object as well, the result is deviant. However, if one of the NPs moves out of the VP, as it does in heavy shift, the violation is ameliorated, at least somewhat.

In contrast, heavy shift does not improve violations of the transitivity restriction with quotative inversion. I included three violations of the transitivity restriction with quotative inversion on the same questionnaire. Again, examples were presented in pairs, as follows, with the numerical rankings in parentheses:

- (11) a. “Yes,” texted Robert the client. (3.25)  
b. “Yes,” texted Robert immediately the client that had been bugging him all day. (2.13)
- (12) a. “Of course!” bullshitted Bob the salesman. (2.88)  
b. “Of course!” bullshitted Bob again the snake oil salesman with the greasy hair. (1.88)
- (13) a. “The plane will arrive on schedule,” assured the stewardess the crowd. (3.13)  
b. “The plane will arrive on schedule,” assured the stewardess soothingly the crowd of passengers that was gathering outside the cockpit door. (2.88)

Respondents were again asked to compare the members of each pair to each other. Unlike locative inversion, where the sentence with heavy shift was almost always judged to be better, in this case seven of eight respondents judged the sentence with heavy shift to be *worse*. Actual judgments again varied somewhat, but six out of eight respondents judged the (a) examples to be marginal or completely ungrammatical. (Interestingly, two respondents judged them to be fully acceptable. I return to this pattern of judgments in section 4.4, where I show that it argues for phrasal movement rather than head movement.)

This difference in the effect of heavy shift indicates that the transitivity restriction on quotative inversion is different in kind from that holding of other postverbal subject constructions in English. In particular, it does not appear that Alexiadou and Anagnostopoulou’s subject-in-situ account is on the right track for quotative inversion. If it were, we should see the same improvement in grammaticality when one of the two NPs has shifted out of the VP.

This leaves us with no account of the transitivity restriction on quotative inversion. However, in the next few sections, I re-examine the properties of quotative inversion and provide an account. First, the subject in quotative inversion is high, in Spec-TP (section 3). Second, what fronts around the subject is a phrase, not just the verb (section 4). Material stranded by movement of this phrase is adjoined late, as in the analysis of partial VP fronting in Landau (2007). The transitivity constraint on quotative inversion then falls out from two independently necessary constraints. First, NP objects may not adjoin late, as can be shown in partial VP fronting in English, and for reasons that follow from the mechanism of late adjunction. Second, an object cannot front with the phrase without violating Align V-C. Align V-C also explains some additional restrictions on quotative inversion. Showing this will serve to motivate Align V-C, independently of its utility in explaining facts of other inversion phenomena, which I will return to in section 7.

### 3 Quotative Inversion Subjects are Not In Situ

The dominant analysis of quotative inversion, adopted in all subsequent publications, is that of Collins and Branigan (1997) (see also Collins 1997). According to this analysis, the subject stays low, inside the VP. The transitivity restriction on quotative inversion is then part of the subject-in-situ generalization, as described above. However, as I show here, the subject in quotative inversion actually appears to be outside of VP, and so the subject-in-situ generalization cannot be behind the transitivity restriction.

### 3.1 Arguments that the Subject is in VP

Collins and Branigan (1997) give two arguments that the subject is low. First, it can undergo heavy shift:

- (14) (Collins and Branigan 1997, (9a–b))
- a. “Where to?” asked of us the balding driver with a blond mustache.
  - b. “The strudel is rather dry,” whispered to Joan the woman sitting at the end of the counter.

Subjects in the normal preverbal subject position (here, Spec-TP) cannot undergo heavy shift. This, Collins and Branigan suggest, indicates that the subject is not in Spec-TP. However, this argument is not a compelling one, since it has not been demonstrated that inability to undergo heavy shift is tied to a designated position. It is not clear why in sentences without inversion a subject could not undergo heavy shift without ever stopping in Spec-TP. In other words, a theory that would explain why heavy shift is banned from Spec-TP is lacking, and without one, there is no reason to think that heavy shift is tied specifically to Spec-TP (rather than to, say, word order).

The second argument that Collins and Branigan (1997) give for thinking that the subject is low is that floating quantifiers are apparently not allowed in quotative inversion:

- (15) (Collins and Branigan 1997, (11c), (12c))
- a. \* “We must do this again,” declared the guests all to Tony.
  - b. \* “Do you have the time?” asked the bankers each of the receptionist.

There is an alternative explanation for this restriction, however. In section 4 I will argue that what moves to the left of the subject is a whole phrase that includes the verb, not just the verb by itself. Support for this conjecture comes from the fact that any elements to the right of the subject in quotative inversion have to be ones that are independently able to strand in VP ellipsis and VP fronting (see section 4.4). While the PPs in (15) are able to strand in VP ellipsis and VP fronting, the floating quantifiers are not able to strand with them:

- (16) a. Declare “Yes!” though the guests might (\*all) to Tony, . . .  
b. The hostess declared “Of course!” to the pastry chef, and the guests did (\*all) to the head waiter.
- (17) a. Ask the time though the bankers might (\*each) of the receptionist, . . .  
b. The CEO asked what time it was of the bellhop, and the bankers did (\*each) of the receptionist.

I assume that this is because floating quantifiers cannot form a constituent with this sort of PP. They cannot appear immediately before PPs of this sort in general:

- (18) a. The guests (all) declared “Yes!” (\*all) to Tony yesterday.  
b. The bankers (each) asked what time it was (\*each) of the receptionist.

Where a floating quantifier *can* form a constituent with a PP or some other constituent and strand with it in VP fronting or VP ellipsis, it actually can appear in quotative inversion (see Bobaljik 1995 on floated quantifiers with these types of phrases):

- (19) a. “We must do this again,” declared the guests all at the same time.  
b. “Happy New Year!” shouted the guests all punctually at 12 o’clock.  
c. “Thank God,” whispered Sam and Isaac, both dead tired.

- (20) a. Declare “Yes!” though the guests might all at the same time,...
- b. Shout “Happy New Year!” though the guests might all punctually at 12 o’clock,...
- c. Mary whispered “Thank God,” and Sam and Isaac did too, both dead tired.

It is just not true that floating quantifiers are ungrammatical in quotative inversion. I assume that in these examples, the floating quantifier forms a constituent with the phrase to its right. This constituent is a possible remnant when the VP is fronted or elided. As such, it can be stranded in quotative inversion, as well.

So, floated quantifiers do not actually constitute an argument that the subject is low. Some floated quantifiers are grammatical in quotative inversion, and the ones that are ungrammatical are ungrammatical remnants in general.

The two arguments that Collins and Branigan (1997) give that subjects are low in quotative inversion are not compelling, then. Additionally, numerous arguments can be given that the subject is actually high, in the ordinary preverbal subject position (Spec-TP). I present several here.

### 3.2 Tag Questions

The first argument comes from tag questions. Tag questions (in American English) have a pronoun that must correspond to what is in Spec-TP in the main clause (e.g., Culicover 1992b). Consider the following cases of pre- versus post-verbal subjects:

- (21) a. That that theory is wrong and that it is overly complicated are (both) generally acknowledged, aren’t they?
- b. It is generally acknowledged that that theory is wrong and that it is overly complicated, isn’t it? (\*aren’t they?)
- (22) a. Afterwards, violent earthquakes and floods occurred, didn’t they?
- b. Afterwards there occurred violent earthquakes and floods, didn’t there? (\*didn’t they?)
- (23) a. The fiercest dragon you ever did see stormed out of that cave, didn’t it?
- b. Out of that cave stormed the fiercest dragon you ever did see, didn’t there? (??didn’t it?)

Conjoined sentential subjects in preverbal position may have the pronoun *they* in the tag, but with *it*-extraposition, only *it* is permitted in the tag (21). In an existential sentence with *there*, only *there* can appear in the tag (22). In locative inversion (23), the tag is also *there* (Bowers 1976, 236–237 cites an unpublished manuscript by Elliott and Kelly for this observation; see Bruening 2010b for discussion). I take this to mean that in locative inversion, a null *there* occupies Spec-TP (Lawler 1977; Postal 1977, 2004; Bruening 2010b).<sup>1</sup>

Now consider quotative inversion:

- (24) a. “Hello,” said the prettiest woman you ever did see, didn’t she? (\*didn’t there/it)
- b. “Yes,” answered men and women, didn’t they? (\*didn’t there/it)

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<sup>1</sup>A pronoun corresponding to the postverbal subject is permitted in locative inversion and presentational *there* if the postverbal subject is definite:

- (i) a. Into the room stepped Archie, didn’t he?
- b. Out of the cave there stormed the fire-breathing dragon, didn’t it?

For this reason I use bare plurals and non-specific definites like *the fiercest dragon you ever did see* (suggested by a reviewer). It is with these that we see a contrast between quotative inversion and other instances of postverbal subjects.

If Spec-TP is simply empty in quotative inversion (Collins and Branigan 1997), or it is occupied by a quotative operator (Collins 1997), we would not expect the pronoun in the tag question to correspond to the postverbal subject. In other cases of postverbal subjects, the pronoun in the tag question does not correspond to the postverbal subject, it corresponds to an expletive, even when there is no visible expletive in the surface subject position (23). Yet, in quotative inversion, there is no option besides a pronoun corresponding to the postverbal subject; in particular, an expletive is sharply ungrammatical.

An alternative account of tag questions, suggested by a reviewer, is that the pronoun in the tag must correspond to the *highest* NP in the main clause. In all the other postverbal subject constructions, this is an expletive. In Collins and Branigan's (1997) theory of quotative inversion, Spec-TP is empty, so the highest NP is the postverbal subject. One problem with this analysis is that this would be the one environment in English where the Extended Projection Principle (EPP) is violable. English otherwise strongly requires that *some* NP occupy Spec-TP, even when it is not overt. Such non-overt subjects become visible in the tag questions that go with them, as in (23b) and the following:

- (25) a. Went running, did you?  
 b. Perjured himself, did he?  
 c. Rained on you, did it?

It is therefore extremely doubtful that English has any clause type where Spec-TP is empty. More plausible is the theory of Collins (1997), where the quotative operator occupies Spec-TP. In this analysis, we might expect the tag to have *so*, since *so* is the overt counterpart of the null quotative operator, according to Collins and Branigan 1997 (see below). This is also ungrammatical:<sup>2</sup>

- (26) a. \* "Hello," said the prettiest woman you ever did see, didn't so?  
 b. \* "Yes," answered men and women, didn't so?

Another problem with this suggestion is that it is not always the highest NP that corresponds to the pronoun in the tag. In topicalization, the pronoun corresponds to the subject in Spec-TP, not the topicalized object:

- (27) a. You, she likes, doesn't she?  
 b. \* You, she likes, don't you?

Additionally, quotes themselves can be subjects and correspond to the pronoun in a tag question:

- (28) "Liar!" was shouted more than once, wasn't it?

On the reviewer's alternative, then, we should expect the pronoun in the tag to correspond to the fronted quote, since it is the highest NP, but this is ungrammatical (24, with *it*).

Another alternative suggested by the same reviewer is that the tag clause is simply an interrogative clause with VP ellipsis. Since quotative inversion is incompatible with interrogatives (see below), a clause without quotative inversion must be constructed instead in building the tag. The other postverbal subject constructions are compatible with interrogatives (except for locative inversion). However, this alternative does not explain the severe restrictions on tag questions. For example, it is well known that VP ellipsis is licensed even in cases of voice mismatch (e.g., Merchant 2008 and references there):

- (29) a. John said someone would call me, but I never was.

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<sup>2</sup>The same reviewer suggests that what these data show is that *so* is not an NP. If that were the case, however, I do not see how it could possibly occupy Spec-TP, since that position seems to be reserved for NPs (on apparent CP subjects, see Alrenga 2005). I take the ungrammaticality of *so* in tag questions to indicate that *so* is never a subject, the same way the PP in locative inversion is never the subject.

- b. A: The janitor should empty the trash. B: Does it need to be?

However, tag questions cannot mismatch this way:

- (30) a. \* Someone called you, weren't you?  
b. \* The janitor should empty the trash, shouldn't it be?

Additionally, expletive constructions can license VP ellipsis in a non-expletive construction:

- (31) The magician said that out of the cave there would storm the fiercest dragon you ever did see, but none ever did.

However, a tag question with the same clause requires *there* (as noted by a different reviewer):

- (32) a. Out of the cave there stormed the fiercest dragon you ever did see, didn't there?  
b. \* Out of the cave there stormed the fiercest dragon you ever did see, didn't it/one?

It therefore appears that the constraints on correspondence in tag questions are much stricter than they are on VP ellipsis in general, and the reviewer's suggested account of tag questions is not adequate. Tag questions are not simply independent interrogative clauses with VP ellipsis. (See also the opposite polarity requirement discussed in Culicover 1992b.) I conclude that the pronoun in a tag question must always correspond to what is in Spec-TP in the main clause, and that tag questions then lead to the conclusion that quotative inversion subjects occupy Spec-TP.

### 3.3 VP Ellipsis

The second argument that quotative inversion subjects are in Spec-TP is that the subject in quotative inversion may never be included in VP ellipsis, unlike other postverbal subjects. First, consider the following examples involving locative inversion, *it*-extraposition, and presentational *there*:

- (33) a. Into the room stepped a large purple dragon, and out of it there did too.  
b. She hoped it would be acknowledged that her theory was correct, and eventually it was.  
c. In Galilee there occurred violent earthquakes and floods, and in Sicily there did, too.

As can be seen in the above examples, the postverbal subject can be elided with the VP. In locative inversion (33a), an expletive must be pronounced when VP is elided (see Bruening 2010b).

Now consider quotative inversion. If the subject remained in VP while the V moved out of VP, we would expect VP ellipsis to strand the V and elide the subject, along with other VP material. However, this is simply ungrammatical:

- (34) a. \* "Beef," said the woman to Sandy and Erica, and "Chicken," said too.  
b. \* "When?" asked the bankers of the receptionist, and "What time is it now?" asked too.

On the V-movement, low-subject analysis, this ungrammaticality is unexpected.

One might propose that verb-stranding ellipsis is not allowed in English, for some reason other than the usual lack of verb movement out of VP; perhaps only auxiliary verbs can license VP ellipsis. We can then turn to inversion with *so*, which Collins and Branigan (1997) suggest is very similar, if not identical, to quotative inversion (they suggest that *so* is an overt instantiation of their quotative operator). Inversion with *so* seems to allow the auxiliary *have* (such examples are robustly attested on the web):

- (35) Or so has said an anonymous Obama official.



Now, we can try ellipsis, stranding just the auxiliary *have*. Again, this is impossible:

- (36) a. A: Or so had said an anonymous Obama official. B: \*So had, indeed.  
b. A: Or so had said an anonymous Obama official. B: So had said one, indeed.

Only complete pronunciation, without ellipsis, is possible.

One could of course argue that inversion with *so* here is *not* the same as quotative inversion, and so dismiss this evidence. This would ignore the numerous similarities between *so* and quotative inversion documented by Collins and Branigan (1997), like the fact that inversion with *so* is also subject to the transitivity restriction:

- (37) a. Or so an anonymous Obama official has told the press corps.  
b. \* Or so has told the press corps an anonymous Obama official.  
c. \* Or so has told an anonymous Obama official the press corps.

If we want the same account of the transitivity restriction for both cases of inversion, then we have to treat them the same in the position of the subject, as well.

In VP ellipsis, then, quotative inversion contrasts strikingly with other cases of postverbal subjects. Other postverbal subjects can be included in VP ellipsis, while the subject that is pronounced in the elided clause is an expletive. This holds even when the antecedent clause has no visible expletive, as in (33a). This never happens with quotative inversion. This discrepancy between quotative inversion subjects and other postverbal subjects indicates that the former, unlike the latter, are not inside the VP, they are in Spec-TP.

### 3.4 Floating Emphatic Reflexives

Floating emphatic reflexives also distinguish subjects in quotative inversion from other postverbal subjects:

- (38) a. “Well done,” said the governor to me himself.  
b. The governor danced across the floor with a flourish himself.  
c. \* Across the floor danced the governor with a flourish himself.  
d. Elias and Moses appeared unto me on that day themselves.  
e. \* There appeared unto me Elias and Moses on that day themselves.

According to Napoli (1989) and Radford (1988), floating emphatic reflexives are only grammatical associated with surface subjects (ones in Spec-TP).

### 3.5 Control

In addition, the subject in quotative inversion can control into a purpose or rationale clause, while other postverbal subjects only marginally can:

- (39) a. “Yes, I can,” said Bonnie<sub>1</sub> in order PRO<sub>1</sub> to appear intelligent.  
b. “No,” lied Robert<sub>1</sub> in order PRO<sub>1</sub> to get in his hostess’s good graces.  
(40) a. A pirate<sub>1</sub> strode across the room in order PRO<sub>1</sub> to grab a bottle of rum.  
b. ?? Across the room strode a pirate<sub>1</sub> in order PRO<sub>1</sub> to grab a bottle of rum.  
(41) a. [Elias and Moses]<sub>1</sub> appeared unto them PRO<sub>1</sub> to deliver a message from God.  
b. ?? There appeared unto them [Elias and Moses]<sub>1</sub> PRO<sub>1</sub> to deliver a message from God.

The literature on purpose clauses has concluded that either the NP in Spec-TP controls the subject of the purpose clause, or there is event or “S” control (Williams 1985, Lasnik 1988). If this is correct, then the fact that the subject in quotative inversion controls into the purpose clause is evidence that it is in Spec-TP. In fact, it is my judgment that the postverbal subjects in (40b) and 41b) are really only acceptable on the event or S-control reading, where it is some other entity that controls the purpose clause, like an author or narrator in (40b) and God in (41b). This is a delicate judgment, but there does appear to be a contrast with quotative inversion.

### 3.6 *Not-Initial NPs*

Postal (1974, 95) argues that *not*-initial NPs may only appear as subjects (see also Radford 1988). These also distinguish quotative inversion subjects from other postverbal subjects:

- (42) a. “Aye!” said not many of those present.  
b. Not many couples waltzed into the room.  
c. \* Into the room waltzed not many couples.  
d. Not many prophets appeared unto them.  
e. \* There appeared unto them not many prophets.

This test also treats quotative inversion subjects like ordinary subjects in Spec-TP, in contrast with other postverbal subjects.

### 3.7 *Summary*

All of the arguments given above indicate that the subject in quotative inversion, unlike other postverbal subjects in English, is in Spec-TP. This means that the transitivity restriction on quotative inversion cannot be an instance of the subject-in-situ generalization, because the subject is not in situ. We must look elsewhere for an explanation for the transitivity restriction. First, however, we must examine the nature of the movement involved in the inversion. In the next section I show that the movement involved is phrasal movement, not head movement as previously supposed.

## 4 *Quotative Inversion is Phrasal Movement*

In the analyses of quotative inversion proposed by Collins and Branigan (1997) and Collins (1997), the subject stays in situ, while the main verb moves across it in an instance of head movement. I have already shown that the first part of this cannot be correct. The verb movement part cannot be correct, either. What moves seems to be phrasal, not just a verb.

### 4.1 *Auxiliary Verbs*

First, given the conclusion that the subject is in Spec-TP, a verb-movement analysis would have to make quotative inversion similar to subject-auxiliary inversion in English in moving the verb at least as far as C. However, V movement to T and to C in Modern English only affects auxiliary verbs. Quotative inversion would be extremely unusual, in fact unique, in affecting main verbs (other than *have*, *need*, and *dare* in some varieties of English).

Second, although most auxiliary verbs are ungrammatical in quotative inversion (Quirk *et al.* 1985), the auxiliary *have* seems to be marginally allowed (Collins and Branigan 1997 give examples with *had asked* and *had thought* two question marks):

- (43) a. ?“Yippee!” has said Gil on more than one occasion.  
 b. ?“Yes,” had responded Gil before I had even finished.

As we saw above, *have* is also permitted with *so* inversion, which patterns with quotative inversion in numerous ways (Collins and Branigan 1997). Because both types of inversion can have a sequence of an auxiliary verb and a main verb come before the subject, it is unlikely that they get there by head movement. In the Romance languages where auxiliary and main verbs both invert with the subject together, most researchers have concluded that phrasal movement, not head movement, is involved (see the papers in Hulk and Pollock 2001, especially Kayne and Pollock 2001).

## 4.2 Particles

A second phenomenon that points to phrasal movement is particles. Particles can move with the verb (Collins and Branigan 1997):

- (44) a. “No!” shouted out the man.  
 b. “What?!” blurted out Jill without thinking.

One might think that the particle is moving with the verb as a single head, and this is what Collins and Branigan (1997) suggest. However, in all the Germanic languages, particles *never* move with the verb as high as C (and the verb must be moving to C, since we have concluded that quotative inversion subjects are in Spec-TP). Particles are always stranded in verb second clauses. They never even move with the verb as high as T. This is particularly apparent in older stages of English, where the verb can move to T, but it never takes a particle with it (I owe this observation to Darrell Larsen). For instance, Shakespeare has examples like the following:

- (45) Why ring not out the bells aloud throughout the town? (Henry VI Part 1)

In this example, the verb has moved to T across *not*, but it has not taken the particle with it. There are no examples where a verb has moved across negation and the particle is also to the left of negation; examples like \**ring out not* are unattested. The same is true of the King James Bible and other sources that permit main verbs to precede negation. It therefore appears that particles may not actually undergo head movement with the verb.

At this point a comparison with German will be useful. In German, quotes can front in main clauses. When they do, the clause acts like any verb-second clause. The quote is the first constituent, and the verb is the second. There are no peculiar properties that distinguish quote-first sentences from any other main clauses. In particular, particles are stranded at the end:

- (46) “Dann lass uns zum Strand gehen,” schlugte er vor.  
 then let us to.the beach go suggested he Part  
 ‘“Let’s go to the beach,” suggested he.’

If there is an auxiliary verb, it appears in second position, and the verb is at the end (together with the particle):

- (47) “Schreib doch auch etwas über den Schatten,” hat er vorgeschlagen.  
 write Part also something about the shadow has he Part.suggested  
 ‘“Write something about the shadow,” suggested he.’

If English quotative inversion involved verb movement as in German, we would expect it to behave similarly. In fact, it behaves differently in numerous respects: it never fronts just an auxiliary (in fact most auxiliaries are ungrammatical; see below); it can marginally front the auxiliary *have* along with the main verb; and it can front a particle. It can also front an adverb, as I show next. None of these are possible in German, where head movement takes place.

### 4.3 Adverbs

Adverbs can appear before the verb in quotative inversion, where they are not allowed before the subject without inversion (Collins and Branigan 1997, Alexiadou and Anagnostopoulou 2001):

- (48) a. “Let’s find our mittens!” then said the kittens. (Jerry Pinkney, *Three Little Kittens*)  
 b. “Let’s find our mittens!” the kittens then said.  
 c. \* “Let’s find our mittens!” then the kittens said.
- (49) a. “I’m leaving!” abruptly shouted John.  
 b. “I’m leaving!” John shouted abruptly.  
 c. \* “I’m leaving!” abruptly John shouted.  
 d. “I’m leaving!” John abruptly shouted.

Let us take the sentence with a fronted quote but no inversion as the base for whatever movement effects inversion. For the series in (49), this would be the following:

- (50) “I’m leaving!” John shouted.

Possible places for the adverb are the following:

- (51) (\*Abruptly) “I’m leaving!” (\*abruptly) John (abruptly) shouted (abruptly).

Suppose the quote is adjoined to CP, as Collins and Branigan (1997) argue. The subject, *John*, is in Spec-TP. We can conclude that *abruptly* may not adjoin to CP,  $\bar{C}$ , or TP, but it may adjoin to the left or the right edge of the extended VP, call this VoiceP (see below).

Now consider the verb-movement derivation of (49a). We have already concluded that the subject is in Spec-TP in quotative inversion, and so the verb must be moving to C. But there is nowhere for the adverb to adjoin in between the quote in CP and C, since we already concluded that it may not adjoin to  $\bar{C}$  or CP. The only possible derivation is one where the adverb fronts with the verb, and we have phrasal movement, not head movement.

This hypothesis looks increasingly likely when we consider more complex cases of quotative inversion. What fronts around the subject seems to be the linear string that begins immediately after the subject and ends with the V or V+particle. What follows the subject is the linear string that corresponds to the rest of the VP:

- (52) a. “Wait a minute!” Michael abruptly broke in *in an affronted tone*.  
 b. “Wait a minute!” abruptly broke in Michael *in an affronted tone*.

Again, the subject is in Spec-TP and the adverb *abruptly* may not adjoin to CP,  $\bar{C}$ , or TP; the only possibility is that the entire underlined string moved as a unit, stranding the rest of the VP.

#### 4.4 Stranding Possibilities

One final argument seals the case for phrasal movement, stranding postverbal material. This is something that was mentioned above regarding floating quantifiers, namely, that what appears to the right of the subject in quotative inversion must be a constituent that is independently strandable when the VP moves or is elided. That is, the conditions on what can be stranded in quotative inversion exactly match the conditions on what can be stranded in VP fronting and VP ellipsis. This correspondence is highly indicative of phrasal rather than head movement, since head movement is insensitive to what it moves around.

PPs that can appear to the right of the subject in quotative inversion can all be stranded by VP fronting and VP ellipsis:

- (53) a. “Yes!” said the man to Mindy.  
b. ... and say “yes” he did to Mindy.  
c. Did the man say yes? I think he will to Mindy.
- (54) a. “Why?” asked Gabrielle of the attendant.  
b. ... and ask why she did of the attendant.  
c. Did she ever ask why? She did of the attendant.
- (55) a. “The cuckoo barks at midnight,” whispered Hilary to his companions. (Collins and Branigan 1997, (1d))  
b. ... and whisper that he did to his companions.  
c. Did he whisper that to anyone? He did to his companions.
- (56) a. “Baby, baby, baby!” carried on Jimmy with his singing.  
b. ... and carry on he did with his singing.  
c. Has he ever carried on with anything? He has with his singing.

Constituents that cannot strand in VP fronting and VP ellipsis also cannot appear to the right of the subject in quotative inversion:

- (57) a. “I’m a cross-dresser,” Raymond put out there.  
b. \* “I’m a cross-dresser,” put out Raymond there.  
c. \* “I’m a cross-dresser,” put Raymond out there.  
d. ... and put it out there he did.  
e. \* ... and put it out he did there.  
f. \* ... and put it he did out there.
- (58) a. “I don’t think we should,” Jamie chickened out of the dare.  
b. \* “I don’t think we should,” chickened out Jamie of the dare.  
c. \* ... and chicken out he did of the dare.  
d. Has he ever chickened out? \*Yes, he did of that dare.
- (59) a. “You have beautiful eyes,” James came on to Natalia.  
b. \* “You have beautiful eyes,” came on James to Natalia.  
c. \* ... and come on he did to Natalia.  
d. Has he ever come on to anyone? \*Yes, he did to Natalia.
- (60) a. \* “Baby, baby, baby!” carried Jimmy on with his singing.  
b. \* ... and carry he did on with his singing.

- c. Has he ever carried on with anything? \*He has on with his singing.

Constituents that are marginal when stranded in VP fronting and VP ellipsis are marginal to the right of the subject in quotative inversion:

- (61) a. “You horrible man!” Melinda blew up at Raymond.  
 b. ?? “You horrible man!” blew up Melinda at Raymond.  
 c. ?? ... and blow up she will at Raymond.  
 d. Has she ever blown up at anyone? ??I think she did at Raymond.
- (62) a. “You horrible woman!” George went off on Marge.  
 b. ?? “You horrible woman!” went off George on Marge.  
 c. ?? ... and go off he did on Marge.  
 d. Has he ever gone off on anyone? ??Yes, he did on Marge.
- (63) a. “And then,” Bob continued with his story, ...  
 b. ? “And then,” continued Bob with his story, ...  
 c. ? ... and continue he will with his story.  
 d. ? Rob continued with his joke, and Bob did with his story.

See also the discussion of floating quantifiers above, where their ability to appear in quotative inversion correlates perfectly with their ability to strand in VP fronting and VP ellipsis.<sup>3</sup>

Finally, I mentioned in section 2 that two respondents to the email survey judged violations of the transitivity restriction to be grammatical. Specifically, here are the three sentences that they judged to be grammatical (marked with “%” to indicate speaker variation):

- (64) a. % “Yes,” texted Robert the client.  
 b. % “Of course!” bullshitted Bob the salesman.  
 c. % “The plane will arrive on schedule,” assured the stewardess the crowd.

Significantly, they both indicated in follow-up questioning that only the first NP can be understood as the subject (*Robert*, *Bob*, and *the stewardess*). I take this to follow from the adjacency constraint, discussed below. This means that for these two speakers, the second NP, the object, has been stranded. Both speakers permit stranding of objects in VP fronting, and judge the following sentences to be fully grammatical:

- (65) a. % Robert said he would text someone, and text he did the client.  
 b. % Bob is just itching to bullshit someone, and bullshit he must the salesman, in order to get a good deal.

---

<sup>3</sup>Since NPs can strand in VP fronting and VP ellipsis if they are heavy and undergo heavy shift, we might expect that NP objects would be acceptable after the subject in quotative inversion just when they are heavy. However, we saw above that this is not possible. The reason is that all NP objects of verbs that can undergo quotative inversion are indirect or applied objects (that is, the first object of a double object construction). Such objects cannot undergo heavy shift, unless they can appear with a preposition (Bruening 2010a). This gives the appearance that only PPs can strand. This is also true in VP fronting:

- (i) a. ... and ask a question he will \*(of) the tall, dark stranger sitting at the bar.  
 b. ... and tell a story he will \*(to) the tall, dark stranger sitting at the bar.

Once again, quotative inversion patterns exactly like VP fronting.

The other respondents who were asked judged the above sentences with NP stranding to be ungrammatical.

I have since found other speakers with the same pattern of judgments: they permit stranding of NP objects in VP fronting, and they also permit stranding of NP objects in quotative inversion. I take this idiolectal variation to strongly support the stranding analysis proposed here. In every case, material that follows the subject in quotative inversion is also allowed to strand in VP fronting. This striking correspondence between VP fronting/ellipsis and quotative inversion indicates that the same type of phrasal operation is at work in both of them.<sup>4</sup> In particular, there are constraints on what can be stranded when a phrase is moved or elided. There do not seem to be any constraints on what can be stranded when verb movement applies in V2 languages like German: head movement is simply insensitive to the contents of the phrases it moves around (Rizzi 1990). This is also true of subject-auxiliary inversion in English and V-to-T movement in French. This means that English quotative inversion must not involve verb movement, it involves phrasal movement.

## 5 Analysis of Quotative Inversion

As noted above, what fronts around the subject seems to be the linear string that begins immediately after the subject and ends with the V or V+particle, while what follows the subject is the linear string that corresponds to the rest of the VP:

- (66) a. “Wait a minute!” Michael abruptly broke in *in an affronted tone*.  
b. “Wait a minute!” abruptly broke in Michael *in an affronted tone*.

I argued above that what follows the subject is stranded by something very like VP fronting. I suggest that the way to account for this stranding theoretically is in the system of Landau (2007), proposed for partial VP fronting. Landau proposes that remnants of partial VP fronting late-adjoin to the copy of the moved VP *after* it has moved. Take an example like the following:

- (67) ... and ask a question he will of the professor.

Before the PP *of the professor* is ever added to the structure, the VP is copied to a high position, let us say, Spec-CP. The VP that moves includes VoiceP, the projection that introduces the external argument (Kratzer 1996), and the trace of that external argument (traces are unpronounced copies, indicated with strikethrough; I assume the verb moves to Voice):

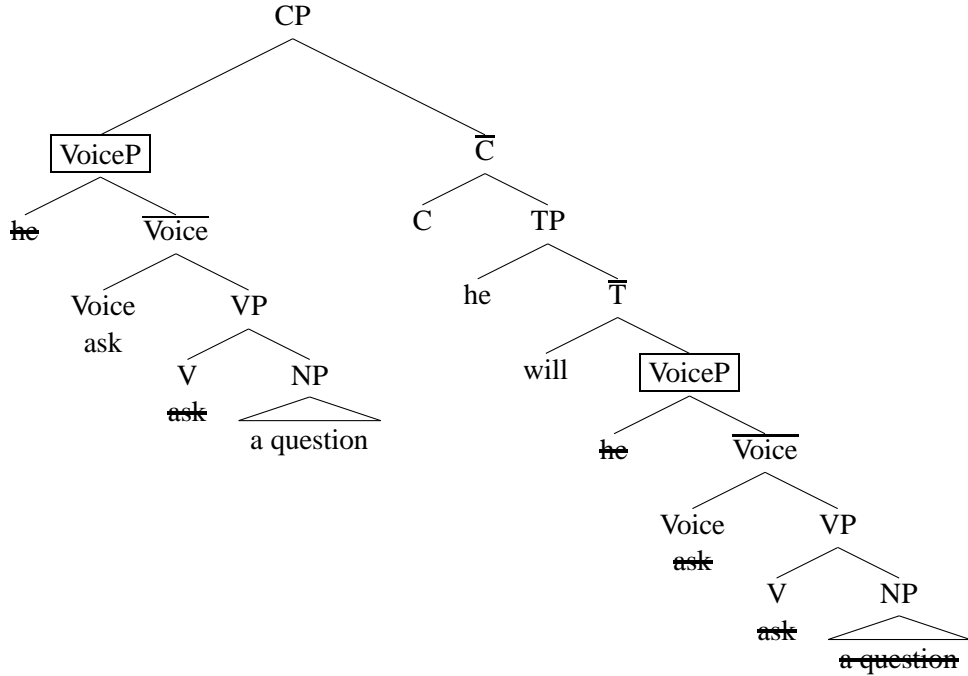
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<sup>4</sup>There is one case where the correspondence breaks down: certain particles can follow the subject in quotative inversion, but may not strand in VP fronting or ellipsis:

- (i) a. “This won’t work,” shouted John out angrily. (Toivonen 2003, 176)  
b. ?? We thought he would shout, and shout he did out angrily.  
c. \* Robert shouted, and then John did out angrily.

I have no good explanation for this, but note that it is quite restricted: first, most particles cannot do this (\*“No!” *broke Robert in angrily*); second, the particle cannot strand by itself, but requires another adverb or PP to follow it. I put this aside for the time being.

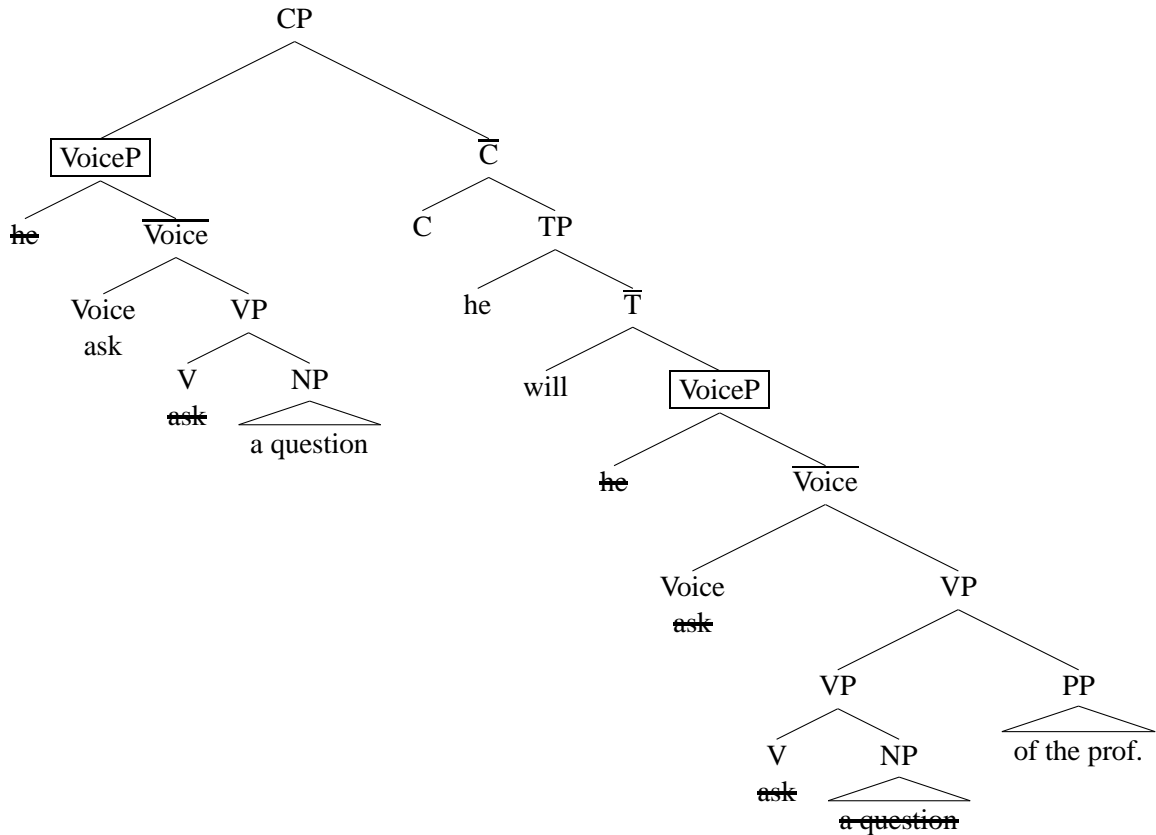
(68)



The two copies of the moved constituent, VoiceP, are outlined.

In a subsequent step, the PP adjoins countercyclically to the lower copy:<sup>5</sup>

(69)



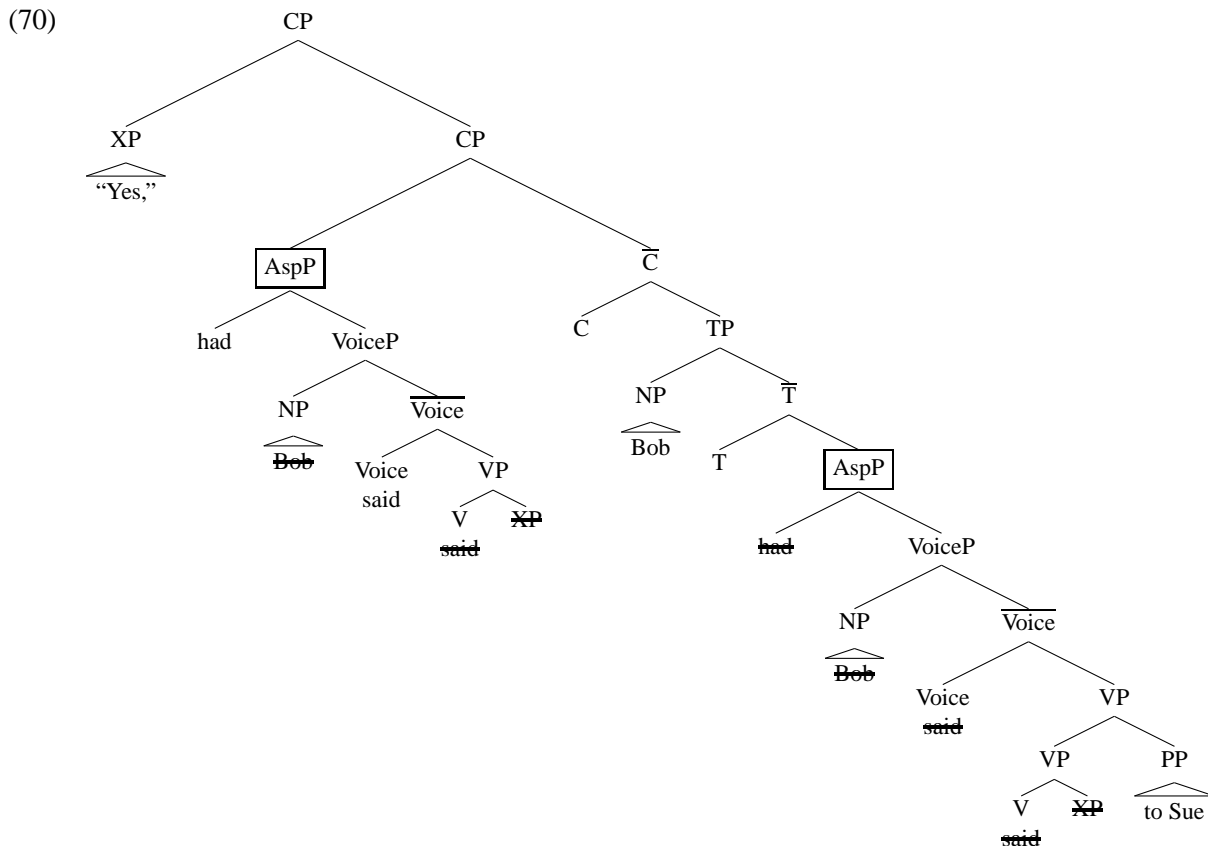
<sup>5</sup>As shown by Pesetsky (1995), material stranded by VP fronting can be bound by an element fronted with the VP, such as an object. This is compatible with the structure in (69), since c-command is not the relevant relation for binding, *phase-command* is (Bruening 2012a). In the lower copy of the VP in this structure, the object phase-commands the adjunct, since the first phasal node that dominates it, VoiceP, also dominates the adjunct.



Landau (2007) shows that this hypothesis accounts for the constraint that the fronted phrase must be an independently possible complete VP in the language: the theta criterion or its equivalent is checked at the VoiceP phase (in the sense of Chomsky 2000), so the verb in the fronted VoiceP must have all of its selectional requirements satisfied. Only constituents that are optional may adjoin late and strand. Even if optional constituents are selected arguments of a given verb, that verb does not require them, and so the requirements of the verb will be satisfied when they are not present.<sup>6</sup>

## 5.1 The Analysis

I adopt this hypothesis for quotative inversion (and VP fronting, since they behave the same in this respect). Since what fronts in quotative inversion can marginally include *have*, I assume that the phrase that moves is some sort of AspP immediately dominating VoiceP (more precisely, it is always the complement of T that moves; see below). The quote, following Collins and Branigan 1997, adjoins to CP (since it can appear on either side or even split around the rest of the clause). There is no reason in this analysis to posit a null quotative operator that moves to Spec-CP, as in Collins and Branigan 1997. The AspP does move to specifier of CP:



Subsequently to AspP moving, the PP is late-adjoined to the VP in the lower copy (only the final output is shown in the tree). (If quotes are NPs, as was suggested above, XP in the tree above can be replaced with NP.)

<sup>6</sup>It is not clear why the same constraint should hold of VP ellipsis. One possibility, suggested by Johnson (2001) and Funakoshi (2012), is that VP ellipsis involves a prior step of VP fronting, but this has been shown to be untenable (see Aelbrecht and Haegeman 2012, and <http://lingcomm.blogspot.de/2012/11/vp-ellipsis-inside-islands.html>). Another, more promising possibility invokes derivational timing: the step that elides material and renders it unpronounced follows checking of selectional requirements at the phase level, so only optional constituents can be added countercyclically after that step.

If there is an adverb adjoined to the left of VoiceP, it is carried along with the phrasal movement. Particles will also be carried along.

As stated above, this theory explains the constraints on stranding in VP fronting, which we have now seen to characterize quotative inversion, as well. The fronted constituent must be a potential complete VP in the language, because all the selectional properties of the verb must be met in the fronted copy. Only optional constituents may adjoin late and hence strand.

To flesh out this analysis in a little more detail, I propose that the head C may optionally have a feature that will attract a phrase. Call this feature [M]. What this feature requires is that C attract a phrase that contains both a quote-embedding main verb and Tense. I also assume that T assigns its tense specification to its complement. The result is that the smallest phrase that contains both the main verb and Tense is the complement of T. Hence, the complement of T must move to Spec-CP to satisfy the [M] feature. Furthermore, a C with the [M] feature is a member of C\*, the class of Cs that require alignment with the tensed verb. Quotative inversion then must satisfy Align V-C, which we can see in the adjacency requirement, next.

## 5.2 The Adjacency Requirement: Generalized Alignment

Alexiadou and Anagnostopoulou (2001) observe that the subject in quotative inversion has to be adjacent to the fronted verb, except for particles. This constraint is easiest to see by comparing quotative inversion to VP fronting again. As we have seen, quotative inversion and VP fronting pattern together in numerous ways. However, VP fronting may carry along optional postverbal PPs and adverbs, but quotative inversion may not:

- (71) a. ... and ask a question of his professor he will.  
 b. ... and complain loudly he will.
- (72) a. \* “Why is that?” asked of his professor the student.  
 b. \* “It’s too hot!” complained loudly Ray.

I propose to relate this to Germanic V2, English subject-auxiliary inversion, and inversion in Romance languages, like French stylistic inversion. In V2 and inversion contexts, the tensed verb always seeks to be in the vicinity of C. In the usual case in Germanic, including in English, this seems to be accomplished by head movement. In the Romance languages and in English quotative inversion, however, it is accomplished by phrasal movement. Nevertheless, I suggest that the same driving force is behind all of these cases.

A common approach to V2 and subject-auxiliary inversion is to posit a feature on C that attracts the tensed verb. The feature itself has no motivation other than to account for the fact that movement to C occurs; the reason for the movement is a complete mystery. I propose that the driving force for the movement is phonological alignment, as in the theory of Generalized Alignment in phonology and morphology (McCarthy and Prince 1993).<sup>7</sup> The basic idea is that the grammar seeks to align the edge of an element of the C domain with the edge of the tensed verb. I will propose below that we see variation across languages in exactly which element of the C domain is constrained to align, and which edge, as predicted by the theory of Generalized Alignment. In English, it is the *complement* of C, TP, that must be aligned with the tensed verb. The specific constraint I propose is the following:

- (73) Align V-C (English):  
 Align(Comp-C\*, L, V<sub>tense</sub>, L/R)  
 (The left edge of the complement of C\* (i.e., TP) must be aligned with an edge of V<sub>tense</sub>.)

---

<sup>7</sup>Alignment constraints have been proposed for syntax before, most extensively in Alignment Syntax (Newson 2004). I envision a much more limited role for alignment constraints, and do not adopt an Optimality Theoretic approach to syntax. The alignment constraint I propose does not interact with other, ranked constraints and always leads to ungrammaticality if it is violated.

“C\*” refers to the class of C elements that trigger inversion (which I will have little to say about). In the framework of Generalized Alignment, this constraint requires that for each Comp-C\*, there is a  $V_{\text{tense}}$  such that the left edge of Comp-C\* coincides with either the left or right edge of  $V_{\text{tense}}$ . Note that this constraint is evaluated categorically: it is either satisfied, or it is violated, and if it is violated, the result is ungrammatical (cf. McCarthy 2003).

Align V-C is a constraint that holds of the mapping from syntax to phonology and refers to phonological edges. I assume that it is checked at the end of a C\*P phase, as that phase is spelled out. The edge of a constituent will always be the edgemoost *phonological* material; traces (unpronounced copies) and other null elements will be ignored. In grammatical examples of quotative inversion, one can see that the right edge of the pronounced verb abuts the left edge of the TP (which begins with the NP in Spec-TP):

(74) “We must do this again,” said [<sub>TP</sub> the guests to Sam].

This is true in every grammatical example of quotative inversion, as the reader can verify (I return below to the marginal examples with auxiliaries). If anything follows the verb in the fronted phrase, Align V-C is violated. This is what renders the sentences in (72) ungrammatical, and in general requires adjacency between the verb and the postverbal subject.

This proposal accounts for Alexiadou and Anagnostopoulou’s observed adjacency requirement, without having to invoke case adjacency, as Alexiadou and Anagnostopoulou did. This is an advantage, for several reasons: first, the theoretical status of case adjacency has always been unclear; and second, because the subject is in its usual position and gets case in the usual way (from T, presumably). There is no reason to think that there is a case relation between the verb and the subject, any more than there is in any typical clause without inversion.

Additionally, this proposal relates the adjacency requirement of quotative inversion to a similar requirement in subject auxiliary inversion. The same adjacency requirement holds between a fronted auxiliary and the subject in English (Rizzi 1997, Haegeman 2012):

(75) a. When at last the sun came up, . . .

b. \* When will at last the sun come up?

(76) a. I think that, unfortunately, the gorilla has escaped.

b. \* Only once has, (un)fortunately, the gorilla escaped.

(77) (Rizzi 1997, (59))

a. If yesterday John had done that, . . .

b. \* Had yesterday John done that, . . .

An adverb is generally able to appear between something in CP (a wh-phrase, a complementizer) and the subject. However, such fronted adverbs may not intervene between a fronted auxiliary and the subject. This is just like what we see with quotative inversion, and my proposal makes both of them violations of Align V-C. More generally, it is a striking generalization about English that nothing may come between the tensed verb and the subject in inversion contexts. Align V-C captures this generalization.

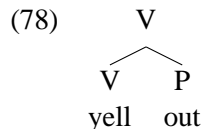
I assume that fronted adverbs are in a specifier of CP in an instance of CP recursion (Reinhart 1981, Bhatt and Yoon 1991, Culicover 1991, Authier 1992, among others). The fact that the second C can sometimes be pronounced provides support for this conjecture (e.g., *He says **that** if that happens **that** he must be warned immediately*; see McCloskey 2006).<sup>8</sup> I assume that fronted adjuncts and arguments are always

<sup>8</sup>As pointed out by a reviewer, such examples violate the Doubly Filled Comp Filter (Chomsky and Lasnik 1977). That filter has been shown to be of dubious validity, however (e.g., Radford 1988, 500–501, Seppänen and Trotta 2000). Matrix non-subject questions with subject-auxiliary inversion also violate it. I assume that there is no such filter.

in Spec-CP, so that Spec-TP is always the left edge of TP.<sup>9</sup> Additionally, I assume that in CP recursion, the lower C is C\*, so that it is again the left edge of TP that needs to be aligned with the tensed verb.

Interestingly, then, English uses both the head movement strategy and the phrasal movement strategy to satisfy the Align V-C constraint. In subject-auxiliary inversion contexts, English uses head movement, like the rest of the Germanic languages. Just in quotative inversion, however, it makes use of a phrasal movement analysis to achieve the same effect, as Romance languages do (see section 7).

As for particles, I adopt the suggestion that they may be either projecting or non-projecting categories (Zeller 2001, Toivonen 2003, among others). When they do not project, they are dominated by a category of V:



Now the right edge of V is the right edge of *out*. Thus, particles do not cause a violation of Align V-C when they come between the verb and the subject.<sup>10</sup>

In this theory of particles, particles necessarily project their own phrase when they are modified, for instance with *right*. When so modified, they are no longer part of the verb, and so they will violate the Align V-C constraint if they come between the verb and the subject. This is correct:

- (79) \* “Back to the bunker!” yelled right out the captain to the troops. (Collins and Branigan 1997, (8))

Finally, recall that the subject in quotative inversion may undergo heavy shift:

- (80) “The strudel is rather dry,” whispered to Joan the woman sitting at the end of the counter. (Collins and Branigan 1997, (9b))

If the subject moves out of Spec-TP, the left edge of TP then becomes the leftmost pronounced element in the TP, here *to Joan*. Align V-C is satisfied, since the tensed verb is aligned with the left edge of TP.

This accounts for the adjacency requirement on quotative inversion. The account relates it to similar adjacency requirements on fronted auxiliaries. In section 7, I also show how the proposal accounts for some puzzling facts regarding subject-auxiliary inversion in various extraction contexts in English, and also extend the account to French stylistic inversion and to Spanish.

I return now to what we began the investigation of quotative inversion with, the transitivity restriction.

### 5.3 The Transitivity Restriction

The transitivity restriction now follows with no further ado. NP objects cannot strand in phrasal movement (for most speakers of English), so they cannot appear to the right of the subject in quotative inversion:

- (81) a. “Yes,” he told us.  
 b. \* “Yes,” told he us.

<sup>9</sup>As pointed out by Thomas Roeper and an anonymous reviewer, *ever* seems to be able to occur between the subject and a fronted auxiliary: *Did ever anyone hear the like?* I take this to be the exception that proves the rule: *ever* is one of the few things that can actually adjoin to TP. When it does adjoin to TP, its left edge is the left edge of TP, and Align V-C is satisfied. Additionally, parentheticals can intervene between a fronted auxiliary and a subject, but they seem to be able to intervene in other cases where adjacency is required, too (e.g., between a verb and its object).

<sup>10</sup>Some speakers find violations of the transitivity restriction on quotative inversion relatively acceptable if the object is a weak pronoun. One possible approach to this is to treat weak pronouns like particles: they can optionally not project, perhaps by cliticizing onto the verb, and so the constituent that consists of the verb plus pronoun counts as the verb, and Align V-C is satisfied.

- (82) a. Tell us yes though he might, . . .  
 b. \* Tell yes though he might us, . . .

I propose that NPs cannot strand because case checking/licensing takes place at the same derivational point where selectional requirements are checked: at the VoiceP phase. Remnants are only adjoined after this derivational point. NPs cannot adjoin late, then, even if they are optional, because they will not be licensed if they do.<sup>11</sup>

This rules out NPs after the subject in quotative inversion. NP objects also cannot appear before the subject in quotative inversion, because nothing can, not even PPs or adverbs:

- (83) a. “What?” Ray asked (of) the attendant.  
 b. \* “What?” asked (of) the attendant Ray.  
 c. \* “What?” asked abruptly Ray.

This follows from the alignment constraint proposed above: the edge of the V must align with the left edge of TP. If an NP follows the verb and precedes the subject, the constraint is violated.

In short, there is no need to invoke the subject-in-situ generalization to explain the transitivity restriction on English quotative inversion. Constraints that are independently needed rule out NP objects. Importantly for the overall point of this paper, Align V-C is one of those constraints.

## 5.4 Summary

In this section I have proposed an analysis of quotative inversion that is consistent with the facts introduced in previous sections. The transitivity restriction follows from two independently necessary constraints. There is no need to invoke the subject-in-situ generalization, which is a desirable outcome since we saw that the subject is not in situ, nor does heavy shift help to alleviate violations of the transitivity restriction. Align V-C plays an important role in the account, explaining the adjacency requirement and part of the transitivity restriction.

## 6 Other Restrictions on Quotative Inversion

Quotative inversion is also restricted in other ways. I investigate them here, and propose an analysis, building again on the Align V-C constraint. The two main restrictions involve negation and auxiliary verbs.

### 6.1 Negation and Other SP Contexts

As observed by Collins and Branigan (1997), quotative inversion is incompatible with negation:

- (84) (Collins and Branigan 1997, (17–18))  
 a. “Let’s eat,” John didn’t just say once.  
 b. \* “Let’s eat,” said not John just once.  
 c. \* “Let’s eat,” not said John just once.

We should also add the following to their paradigm, in the interest of completeness:

- (85) a. \* “Let’s eat,” didn’t say John just once.

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<sup>11</sup>The speakers who permit NPs to strand in VP fronting and quotative inversion are problematic for this account. One possibility is that these speakers are much more liberal in allowing heavy shift, and permit it to affect even non-heavy object NPs.

- b. \* “Let’s eat,” didn’t John say just once.

As can be seen, negation is impossible with quotative inversion, whether or not *do* support applies.

This restriction turns out to be more general. As documented in Bruening (2010b), another inversion construction, locative inversion, is incompatible with all the contexts that require *do* support in English: negation, verum focus or emphasis, questions, VP ellipsis, etc. Bruening (2010b) refers to these contexts as *SP contexts* (for “Special Purpose,” after Baker 1991). Quotative inversion is also incompatible with all of the SP contexts. It is not compatible with verum focus (here and below I use the auxiliary *have*, because it is most compatible with quotative inversion, but *do* is equally bad):

- (86) a. “Booga booga!” Jimmy HAD said just once!  
b. \* “Booga booga!” HAD said Jimmy just once!

Inversion with *so* is also incompatible with both negation and verum focus, although here *so* without inversion also seems degraded (possibly just because of the pragmatics):

- (87) a. Or so administration officials had not said on the record.  
b. \* Or so had not said administration officials on the record.  
(88) a. ?? So an anonymous official HAD said to the press corps.  
b. \* So HAD said an anonymous official to the press corps.

The incompatibility of quotative and *so* inversion with VP ellipsis was shown above. There is simply no grammatical way to do VP ellipsis with these two inversion processes. In contrast, fronting a quote is possible with VP ellipsis if there is no inversion:

- (89) a. “Let’s eat,” John may say just once, but “Let’s drink,” he won’t.  
b. \* “Let’s eat,” said John just once, and “Let’s drink,” did he (too).  
c. \* “Let’s eat,” had said John more than once already, and “Let’s drink,” had he too.

The first clause in (89c) is not terribly ungrammatical, but the second one, with VP ellipsis, is irredeemable.

Questions and negative inversion are incompatible with quotative inversion for independent reasons and so cannot be tested. Nevertheless, from the above it appears that quotative inversion and *so* inversion pattern with locative inversion in being incompatible with all of the SP contexts. In Bruening (2010b), the locative inversion facts were explained as a restriction on the null expletive that occupies Spec-TP in locative inversion: the null expletive is only licensed in non-SP contexts, and in SP contexts it must be pronounced (as *there*). Clearly such an account will not work for quotative inversion. If Collins and Branigan (1997) are correct that quotative inversion involves a null quotative operator, we might expect it to have to be pronounced in SP contexts, not lead to ungrammaticality. Since they also suggest that *so* is the pronounced version of their operator, *so* inversion should be fine in SP contexts, but it is not.

We can also rule out another alternative, which is that the SP contexts all require auxiliaries, and auxiliaries are ungrammatical with quotative inversion and *so* inversion. As we have seen, the auxiliary *have* is not absolutely ruled out in either construction, and yet SP contexts with *have* are far worse than would be expected if the only problem was the presence of the auxiliary. There must be some other explanation for the incompatibility.

The explanation that I propose builds on the Align V-C constraint and again relates quotative inversion to subject-auxiliary inversion in English. In the alignment model proposed here, subject-auxiliary inversion is also triggered by Align V-C. A relevant question, then, is why typical subject-auxiliary inversion contexts cannot be satisfied by phrasal movement, and why quotative inversion contexts cannot involve subject-auxiliary inversion as a way of satisfying Align V-C.

As described briefly above, there is a feature on C, [M], which attracts the complement of T in quotative inversion. It does so because it seeks the smallest phrase that contains both the main verb and Tense. I assume it is interested in the main verb because of the relation to the quote: the verb must be one that can select a quote. In other words, the feature [M] seeks a feature that characterizes quote-selecting verbs, and these are all main verbs. This means that C in quotative inversion has to attract a main verb, but there is a problem: main verbs in Modern English may not undergo head movement. Hence, they must undergo phrasal movement. Without a quote-embedding verb, [M] may never appear on C, and so phrasal movement of the main verb is never forced, and by the logic of Last Resort is therefore never allowed.

This answers the first part of the question: subject-auxiliary inversion contexts never involve phrasal movement, because they do not involve the feature [M]. Only clauses with main verbs that embed quotes ever attract the main verb; the subject-auxiliary inversion contexts simply attract Tense.

The second part of the question was why quotative inversion cannot involve subject-auxiliary inversion. In quotative inversion, C may optionally have the feature [M], as described above. Above I said that this feature must attract both Tense and a quote-embedding main verb. Let me now be more precise, and split these two requirements. The feature [M] attracts a quote-embedding main verb; C has another feature, [T], which attracts Tense. (We might view [T] as the formal means for satisfying Align V-C; C\*'s can be given this feature as a means of satisfying Align V-C.) This means that C has two features, both of which must be checked by attracting something. The grammar can now kill two birds with one stone: the fronting of the complement of T satisfies the [M] feature, and it also satisfies the [T] feature at the same time. The fact that a single movement can check two features rules out a derivation where each feature is satisfied separately, by two different movements. The idea is basically that in Pesetsky and Torrego (2001): C has two features that it needs to satisfy, and if it can satisfy them both in one operation, that possibility rules out a derivation where it satisfies each by a different operation. The other possibility is that C satisfies its [M] feature by attracting VP or some other phrase, and then satisfies [T] by subject-auxiliary inversion in addition (head movement of T to C). This is ruled out, because a single instance of movement is available that can satisfy both features by itself.

Now, we can build on a suggestion in Bruening (2010b), and suppose that the feature [M] belongs to the family of [SP] features. Suppose there is a feature geometry of the following sort, where [M] is a dependent of the more general [SP], as is another feature [D]:



The family of [SP] features characterizes clause and phrase types, and the feature percolates throughout the clause. Any clause that includes a *do* support context is specified [SP:D]. The different dependents of [SP] are mutually exclusive, so that a clause cannot be both [SP:D] and [SP:M]. This results in quotative inversion being incompatible with the SP contexts: for quotative inversion to take place, there must be an [M] feature on C, but this makes the entire CP [SP:M], and [SP:M] is incompatible with [SP:D], which is the featural specification of the SP contexts. Either the clause is [SP:D], and no quotative inversion can take place because the [M] feature is lacking, or the clause is [SP:M] and quotative inversion takes place, but no *do* support context is permitted within the clause.

This explains the incompatibility of quotative inversion with all the SP contexts. We can also account for the incompatibility of locative inversion with the SP contexts, by supposing that fronting a PP to a specifier of CP optionally marks the CP with another [SP] feature, call it [SP:L]. A clause that is [SP:L] licenses non-pronunciation of the expletive in subject position. Now, in the same way, [SP:L] and [SP:D] are mutually exclusive, so that if the clause is [SP:D] (as it must be in all *do*-support contexts), non-pronunciation of the expletive will not be allowed.

We now have the beginnings of a general theory of certain features that characterize English clause types, and go a long way toward accounting for incompatibilities between them. Obviously this is only the sketchiest of beginnings, but I leave a complete working out of the details for future work.

## 6.2 Auxiliaries

The ideas introduced above will also help to explain why auxiliary verbs are generally not allowed in quotative inversion. First, the facts. The modal auxiliaries are absolutely banned:

- (91) a. “Let’s eat,” Raymond may say just once, but “Let’s drink,” he won’t.  
 b. \* “Let’s eat,” may say Raymond just once . . .
- (92) a. “No way,” you should say.  
 b. \* “No way,” should say you.
- (93) a. “Hodor!” Hodor will say (because that’s all he ever says).  
 b. \* “Hodor!” will say Hodor.

Progressive *be* is also quite degraded:

- (94) a. “. . . walk around naked,” Beatrice was saying as I came in.  
 b. \* “. . . walk around naked,” was saying Beatrice as I came in.
- (95) a. “Hodor!” Hodor is always saying.  
 b. \* “Hodor!” is always saying Hodor.

Passive *be* is possible, but then it appears that the quote is the surface subject (Collins and Branigan give this sentence one question mark, which does not seem warranted to me):

- (96) “John called us” was repeated over and over by the witness. (Collins and Branigan 1997, (74a)).

If another NP is the surface subject of such a passive, so that inversion is detectable, quotative inversion is ungrammatical:

- (97) a. “Who paid you?” the witness was asked repeatedly.  
 b. \* “Who paid you?” was asked the witness repeatedly.

As we saw above, the only auxiliary that is marginally allowed is the auxiliary *have*.

The ban on auxiliaries follows straightforwardly from the Align V-C constraint proposed above. The Align constraint seeks to align the verb with  $\text{Comp-C}^*$ . However, not just any verb will do; in all cases of V-movement to C, it is only the *tensed* verb that can satisfy the constraint. This is why Align V-C refers to  $V_{\text{tense}}$ , and not just to V:

- (98) Align V-C (English, repeated):  
 Align( $\text{Comp-C}^*$ , L,  $V_{\text{tense}}$ , L/R)  
 (The left edge of the complement of  $C^*$  (TP) must be aligned with an edge of  $V_{\text{tense}}$ .)

All of the examples with auxiliaries above violate Align V-C, because the edge of the tensed verb is not aligned with the left edge of the complement of C. The verb that is aligned with TP is the main verb, not the tensed verb. We can go even further and account for their relative deviance: modals are the worst, because the verb that is aligned with the left edge of TP is completely untensed. Progressive *be* is also pretty bad, because *-ing* forms are also tenseless. We might suggest that *have* is only marginally bad because *have* is different in selecting a verbal form that is partially tensed. We might view the active past



participle as having some specification for tense, namely, past. Such a proposal has been made before, for instance by Julien (2001), although Julien analyzes all main verbs in compound tenses as tensed, a position we must reject in order to explain the distinction between *have* and other auxiliaries in quotative inversion. At any rate, possible support for the view that active past participles are tensed comes from the fact that they can be used in non-finite contexts to encode past tense; see Hoffman (1966) and Stowell (2007). Stowell (2007, 2008) in particular argues that the present perfect includes a past tense specification. Stowell (2008) rejects the view that this past tense resides in the active past participle, but the basis for this rejection is the fact that the homophonous passive participle has no such tense specification. Stowell believes that it is desirable to have a unified account of active past participles and passive participles, but there are good reasons not to unify them. The two forms differ widely in distribution despite their formal identity: passive participles may appear in reduced relative clauses but active ones may not; passive participles can be used as adjectives but active ones may not; active past participles can be used for past tense in non-finite contexts but passive ones may not. We have now seen another difference: active past participles can marginally undergo quotative inversion with *have*, but passive participles with *be* may not. There are also analyses of passive participles that treat them as featurally distinct from the active past participle, for instance Bruening (2012b), and numerous languages use different morphology for the two different forms. Additionally, Iatridou, Anagnostopoulou, and Izvorski (2001) argue that the semantics of the perfect always resides in the participle itself, and never in the auxiliary; if they are correct, the past tense specification identified by Stowell must be part of the active past participle.

Hence, we can follow Stowell (2007, 2008) and Julien (2001) in attributing a [past] specification to the perfect, but depart from both of them in locating it on the active past participle itself, while other verbal forms, including the passive participle, lack tense specifications altogether. This then explains why only *have* is marginally possible in quotative inversion: the main verb with *have* has a tense specification, and so satisfies Align V-C when it is aligned with the left edge of TP. All other main verbs embedded under auxiliaries violate Align V-C when they undergo quotative inversion.

If this is correct, we have successfully explained the ban on auxiliaries in quotative inversion, including the marginal exception with *have*. Importantly, we have done so without adding anything additional to the analysis; Align V-C, already necessary, accounts for the facts.<sup>12</sup>

### 6.3 Summary

This section has investigated two prominent restrictions on quotative inversion, the ban on negation and the ban on auxiliary verbs, and has proposed explanations for these restrictions. The explanations use the same mechanisms that were invoked for explaining other restrictions on quotative inversion, in particular the Align V-C constraint. The ban on SP contexts was related to a similar ban with locative inversion, and was accounted for in a general theory of English clause types. Most importantly, throughout this and previous sections, we have seen the effects of Align V-C in different aspects of quotative inversion. A single constraint is able to explain numerous restrictions on the phenomenon (the adjacency requirement, the ban on auxiliaries, one half of the transitivity restriction).

## 7 Align V-C

This section turns now to the Align V-C constraint outside of quotative inversion. We have already seen its numerous effects on quotative inversion; I argue now that its effects can be seen throughout English grammar

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<sup>12</sup>One reviewer finds auxiliaries and even raising and control verbs fine with quotative inversion. In all such examples, what immediately precedes the subject in Spec-TP is the main verb. One possible account of the reviewer's grammar is that the main verb is able to satisfy Align V-C. That is, in this person's grammar, Align V-C does not require that the verb that is aligned with the edge of TP be the *tensed* verb.

and can also be seen in Romance languages like French. As described above, Align V-C is not specific to English quotative inversion, but is meant to be the trigger for V2 in Germanic languages, subject-auxiliary inversion in English, and other phenomena. I start with English subject-auxiliary inversion, and show that Align V-C explains the patterns that we see, including some recalcitrant facts involving null and extracted subjects, and inversion in conditionals. Following that, I turn to cross-linguistic variation.

## 7.1 English Subject-Auxiliary Inversion

First, it is well-known that subject-auxiliary inversion does not apply when the local subject is extracted:

- (99) a. Who ate the Lucky Charms?  
 b. \* Who did eat the Lucky Charms? (ungrammatical without emphasis)

Align V-C, repeated below, captures this straightforwardly:

- (100) Align V-C (English, repeated):  
 Align(Comp-C\*, L, V<sub>tense</sub>, L/R)  
 (The left edge of the complement of C\* (TP) must be aligned with an edge of V<sub>tense</sub>.)

Note that this formulation enables *either* edge of V<sub>tense</sub> to coincide with the edge of the complement of C. That is, in English, the desire is to have V delimit the boundary between C and TP, but it does not matter which edge of V does this. In (99a), the constraint is satisfied, because the left edge of TP is aligned with the left edge of V<sub>tense</sub>:

- (101) [<sub>CP</sub> Who C [<sub>TP</sub> ~~who~~<sub>who</sub> ate the Lucky Charms]]?

The phonological edge of TP is the left edge of the verb when the subject is extracted.

In a non-subject extraction case, Align V-C will be violated without inversion:

- (102) a. \* What [<sub>TP</sub> the leprechaun ate]?  
 b. What did [<sub>TP</sub> the leprechaun eat]?

In (102a), the left edge of TP is not aligned with V<sub>tense</sub>, but in (102b), it is (the right edge of V<sub>tense</sub>, this time).

Align V-C also accounts for interesting cases like the following, which are not expected on traditional views of the trigger for subject-auxiliary inversion:

- (103) a. Only in that election did Leslie run for public office.  
 b. \* Only in that election Leslie ran for public office.
- (104) Culicover (1992a, note 4)  
 a. \* Leslie is the person who I said that only in that election did run for public office.  
 b. Leslie is the person who I said that only in that election ran for public office.

Fronting of an *only* constituent normally triggers subject-auxiliary inversion (103a–b). However, as noticed by Culicover (1992a), if the subject is also extracted, inversion becomes ungrammatical (104; Culicover gave (104a) two question marks, but I believe it to be as ungrammatical as unmotivated *do* support generally). Align V-C explains this pattern: in (104b), the fronted *only* phrase is in the specifier of a second CP (complement of *that*). Spec-TP is an unpronounced trace:

- (105) ... that [<sub>CP</sub> only in that election C\* [<sub>TP</sub> ~~who~~ ran for public office]]

Align V-C is satisfied, because the left edge of TP coincides with the left edge of  $V_{\text{tense}}$ . No inversion is necessary to satisfy Align V-C, and hence do-support is not triggered (104a).

We also account for why questioning the fronted PP in locative inversion does not trigger inversion (Hoekstra and Mulder 1990, Bresnan 1994, Postal 2004), even though the fronted PP is not the subject:

- (106) a. On which wall hung a picture?  
b. \* On which wall did hang a picture?

As argued extensively in Postal (2004) and Bruening (2010b), locative inversion sentences have a null expletive in Spec-TP. If non-subject extraction is what triggers subject-auxiliary inversion, as in the usual description of the English pattern, we would expect inversion to take place in (106), since the PP is not the subject. If the relevant constraint is Align V-C, however, the facts are expected: in (106a), the phonological content of Spec-TP is empty. Hence, the left edge of TP is the left edge of the verb, *hung*. This satisfies Align V-C, and no inversion is triggered:

- (107) [<sub>CP</sub> On which wall C\* [<sub>TP</sub> ~~there~~ hung a picture]]?

If the expletive is actually pronounced, inversion must take place, as expected:

- (108) a. \* On which wall there hung a picture?  
b. On which wall did there hang a picture?

In (108a), Align V-C is violated.

Above I showed that Align V-C also accounts for adjacency effects in subject-auxiliary inversion. These effects are actually quite problematic for traditional views of inversion. One of the main motivations for thinking that subject-auxiliary inversion is head movement to C is that, if it is, we can explain the complementarity between an overt C and inversion. In English this is clearest in conditionals:

- (109) a. If John had done that, ...  
b. Had John done that, ...  
c. \* If had John done that, ...

The idea is that inversion targets the position that is occupied by *if*, but may only do so if that position is unoccupied.

A problem for this view is that adjuncts can come between *if* and the subject, but not between a fronted auxiliary and the subject:

- (110) (Rizzi 1997, (59))  
a. If yesterday John had done that, ...  
b. \* Had yesterday John done that, ...

If subject-auxiliary inversion were head movement from T to the position occupied by *if* in (110a), (110b) would be expected to be grammatical. The head would simply move over the adjunct.

Recognizing Align V-C removes this problem. The sentence in (110b) is a violation of Align V-C, since the left edge of TP is not aligned with an edge of the tensed verb. We can maintain that inversion is head movement to C, and do not have to give up the idea that inversion targets the same position that *if*

occupies. This is an advantage, since doing that requires various stipulations to explain their complementary distribution (as in Rizzi 1997).<sup>13</sup>

This broad applicability of the Align V-C constraint to a wide array of otherwise puzzling facts is an indication of the usefulness of the model, and the correctness of the generalization that it expresses. Furthermore, given the way alignment constraints work in phonology, we derive expectations for variation across languages. This is the topic of the next subsection.

## 7.2 Inversion in Romance Languages

Alignment constraints can vary in two dimensions: the entities that are to be aligned, and the directionality of that alignment (left or right edges). Sticking just to V-C alignment, we might expect variation in these dimensions. I suggest that this is exactly what we see when we compare English to French stylistic inversion.

In French stylistic inversion, the subject in a [wh] CP optionally appears in a postverbal position, which is normally not allowed:

(111) (Kayne and Pollock 2001, (1a), (2a))

- a. A qui a téléphoné ton ami?  
to whom has telephoned your friend  
'Who did your friend telephone?'
- b. \*A téléphoné ton ami.  
has telephoned your friend  
'Your friend telephoned.'

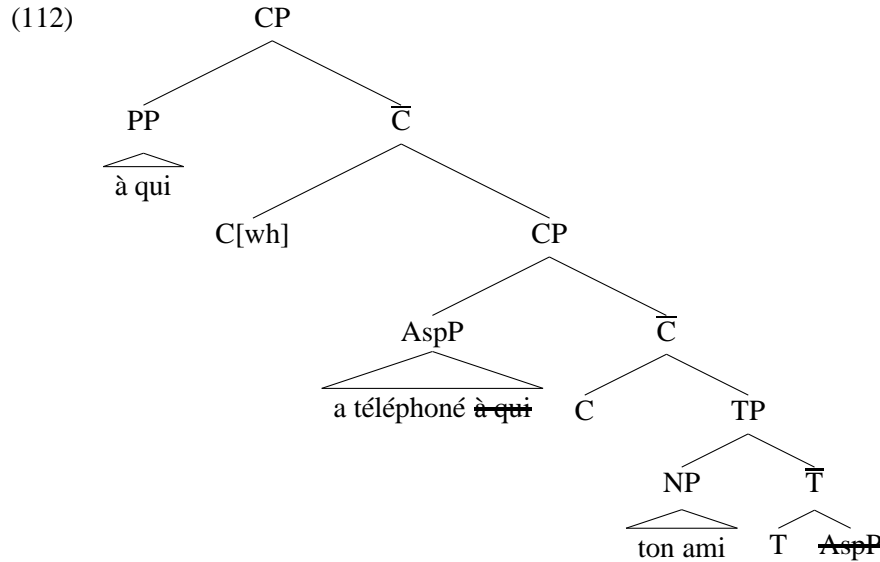
Kayne and Pollock (2001), among others, argue that the subject in stylistic inversion is in a high position, while a phrase including the auxiliary and main verbs fronts around it, exactly as in my analysis of English quotative inversion. I propose essentially the same derivation. First, a [wh] C attracts a wh-phrase to its specifier. In another instance of CP recursion (see above), a C that is the complement of the [wh] C attracts the complement of T to its specifier, as shown below:

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<sup>13</sup>I should point out that allowing CP recursion ought to predict that *if* and inversion *could* co-occur, if an adjunct occurs between them (in the specifier of the lower C to which the auxiliary moves). Personally, I believe that this is correct, and that the following attested example is an instance of this:

- (i) I often think that **if** when that happened **had** I been pushing my daughter in her stroller she would have been killed instantly...

However, many speakers reject this example as a performance error, so I will not push the point (but note that those same speakers seem to have no problem accepting examples with multiple *thats*).



The movement of the complement of T is exactly like the movement involved in English quotative inversion. In English, what is aligned is the complement of C (TP) and V. I suggest that in French stylistic inversion, the Align constraint is instead the following:

- (113) Align V-C, French:  
 Align(Residue-C[wh],R,V<sub>tense</sub>,L)  
 (The right edge of the residue of [wh] C must be aligned with the left edge of V<sub>tense</sub>.)

- (114) The *residue* of X is material immediately dominated by a projection of X, excluding the complement of X, i.e., Spec-X and X (Chomsky 1993).

This has the result that nothing may intervene between the complementizer or a fronted wh-phrase and the tensed verb (except preverbal clitics, which we can treat in the same way as particles, above):

- (115) (Kayne and Pollock 2001, (127a), (129a))
- a. ? le jour où, ce livre-là, Marie l' a lu  
 the day when that book-there Marie it has read  
 'the day when, that book there, Marie read it'
  - b. \* le jour où, ce livre-là, l' a lu Marie  
 the day when that book-there it has read Marie  
 'the day when, that book there, Marie read it'

In (115a), with no stylistic inversion, a fronted phrase can follow elements in CP (*où*), but in (115b), with stylistic inversion, one may not.

We can see that Align V-C is involved even more clearly by looking at adverbs. Adverbs can precede a preverbal subject in general (116a), which means that they can appear to the left of TP. But when stylistic inversion takes place they cannot appear between material in CP and the finite verb (116b, 117b):<sup>14</sup>

- (116) a. Evidemment Bob a enthousiasmé les juges avec son accordéon solo.  
 evidently Bob has impressed the judges with his accordéon solo  
 'Evidently Bob has impressed the judges with his accordéon solo.' (Engels 2004, (2.52a))

<sup>14</sup>Thanks to Marc Authier for French judgments.

- b. \* Quels juges évidemment a enthousiasmé Bob avec son accordéon solo?  
 which judges evidently has impressed Bob with his accordion solo
- (117) a. l' homme à qui a téléphoné ton ami  
 the man to whom has telephoned your friend  
 'the man your friend telephoned' (Kayne and Pollock 2001, (1b))
- b. \* l' homme à qui évidemment a téléphoné ton ami  
 the man to whom evidently has telephoned your friend

Unlike in English quotative inversion, however, the subject can be separated from the tensed verb by various types of constituents:

- (118) la lettre qu' enverra à la direction **le patron** ...  
 the letter that will.send to the management the boss  
 'the letter that the boss will send to the management. ...' (Bonami, Godard, and Marandin 1999, (12))

This means that the crucial part of the Align constraint is alignment between CP material and the verb, not the verb and the left edge of TP as in English.

In English, in contrast, material can intervene between fronted wh-phrases and the finite verb:

- (119) a. And why in Paris did the Americans modify the agreement at the last minute...? (example from *The Guardian*, cited by Haegeman 2000, note 2)
- b. To whom at last will the government turn? (*The Guardian*, cited by Haegeman 2012, 51, note 49)

A fronted adverb can even intervene between a subject wh-phrase and the finite verb, without triggering subject-auxiliary inversion:

- (120) a. Which delegation at the last minute modified the agreement?  
 b. Which hominid at that time started using simple stone tools?
- (121) a. \* Which delegation <did> at the last minute <did> modify the agreement?  
 b. \* Which hominid <did> at that time <did> start using simple stone tools?

Again, I assume that fronted phrases are in a specifier of an iterated CP, so that the boundary between C and TP follows the adverb (again, *that* can be repeated: *She said **that** at the last minute **that** the American delegation modified the agreement*):

- (122) [<sub>CP</sub> why C [<sub>CP</sub> in Paris [<sub>C</sub> did [<sub>TP</sub> the Americans ... ]]]]

Here, the left edge of TP is aligned with the right edge of the tensed verb.

If this is correct, we expect no *do* support with subject extraction, because the phonological left edge of the TP is aligned with the left edge of the tensed verb:

- (123) [<sub>CP</sub> Which delegation C [<sub>CP</sub> at the last minute C [<sub>TP</sub> ~~which delegation~~ modified the agreement]]?]

Hence, we see exactly the differences between French and English that are predicted by their respective Align V-C constraints.

Note furthermore that French stylistic inversion, unlike English quotative inversion, permits auxiliaries. This again follows from the way the Align V-C constraint is stated in French: it aligns the *left* edge of the

finite verb with the *right* edge of the residue of C[wh]. The tensed auxiliary is the left edge of the fronted constituent, so the Align constraint is satisfied even when there is an auxiliary verb.

This means that, although French stylistic inversion and English quotative inversion involve the same mechanism—phrasal movement of the complement of T—, the details of the way they work are very different but fall out from variation in the way Align constraints can vary (the specific elements that are aligned, which edge of each). Hence, an Align approach is able to capture a range of facts that do not fall out in any obvious way in other approaches. Concerning some of the English facts, in Rizzi (1997) and Haegeman (2012), for instance, various stipulations are offered about the ordering of topic and focus projections, and what kinds of things block head movement through the heads of these projections. None of this is necessary in the current approach.

Based on data in Torrego (1984), it appears that Spanish inversion in wh-questions behaves exactly like French. In Spanish, subjects can generally be postverbal, and when they are, an adverb is permitted in initial position:

- (124) Siempre lee lo mismo María.  
always reads the same Mary  
'Mary always reads the same.' (Torrego 1984, (4a))

However, in a question with inversion, adverbs may not intervene between material in CP and the finite verb:

- (125) (Torrego 1984, (4b–c))  
a. \*Qué siempre lee María?  
what always reads Mary  
'What does Mary always read?'  
b. Qué lee María siempre?  
what reads Mary always  
'What does Mary always read?'

As in French, auxiliaries front along with the main verb:

- (126) (Torrego 1984, (14a–b))  
a. Por quién fue organizada la reunión?  
by whom was organized the meeting  
'By whom was the meeting organized?'  
b. \*Por quién fue la reunión organizada?  
by whom was the meeting organized  
'By whom was the meeting organized?'

This pattern follows if the Spanish Align V-C constraint is as stated above for French, and, like French, alignment is achieved by phrasal movement of the complement of T rather than head movement.

### 7.3 V2 in German

V2 in German also fits into the Generalized Alignment model proposed here, although the facts are compatible with several different formulations of Align V-C. The most basic fact is that the tensed verb always follows the first constituent in main clauses, whatever it is. The only complications are cases of topic drop, which renders the first constituent phonologically empty, and yes-no questions, which apparently have no first constituent:

- (127) a. Gestern haben die Kinder ein Pony bekommen. (Basic V2)  
 yesterday have the children a pony gotten  
 ‘Yesterday the children got a pony.’
- b. Hab’ ich schon gesehen. (Topic Drop)  
 have I already seen  
 ‘I saw [him] already.’
- c. Hast du ein Pony mit langem Schwanz? (Yes-No Question)  
 have you a pony with long tail  
 ‘Do you have a pony with a long tail?’

In English, yes-no questions require no amendments, since it is the left edge of TP that needs to be aligned with the tensed verb. I suggest that the German version of Align V-C is the following, though other formulations are also compatible with the facts:

- (128) Align V-C, German:  
 Align(C\*,L,V<sub>tense</sub>,L)  
 (The left edge of C\* must be aligned with the left edge of V<sub>tense</sub>.)

C\* refers in German to the class of Cs that are V2 or V1 (mostly root Cs). If most such Cs also attract a constituent to their specifier, we have V2. Note that when the verb moves to C, the phonological left edge of C *is* the left edge of V<sub>tense</sub>. Unlike English, in German other constituents can come between the tensed verb and a following subject:

- (129) Wahrscheinlich wird später Hans dieselbe Uhr kaufen.  
 probably will later Hans the.same watch buy  
 ‘Hans will probably buy the same watch later.’ (Haeberli 2000, (6a))

It is apparently not the left edge of TP that needs to be aligned with the tensed verb in German. I suggest that it is C itself that needs to be so aligned.

From this we can see that the Generalized Alignment account proposed here for the relation between C and V<sub>tense</sub> can account for disparate facts in numerous different languages. In particular, we see variation across languages in exactly the ways that the Alignment model predicts.

## 8 Conclusion

This paper has proposed that numerous languages have an Align constraint that seeks to align the tensed verb with C in certain environments. This constraint is involved in V2, subject-auxiliary inversion in English, and Romance phrasal inversion. I showed that the Align V-C constraint can explain a range of facts that require various stipulations in other approaches. A whole array of puzzles just in English subject-auxiliary inversion fall out from a single constraint. Cross-linguistic differences also fall out from the ways that Align constraints can vary. Such success points to the usefulness of incorporating Align constraints in syntactic theory.

Additionally, a detailed analysis of quotative inversion in English showed that Align V-C can also explain numerous restrictions on that construction. It explains why auxiliaries are generally not allowed with quotative inversion, why the main verb has to be adjacent to the subject, and, in concert with independent constraints on stranding in phrasal movement, it explains the transitivity restriction. A single constraint, then, can explain numerous seemingly unrelated facts within the grammar of a single language, and it also explains differences across languages. Few proposed constraints have ever achieved such success.



This paper has concentrated on Align V-C, and movement to C or its vicinity. However, there are other potential areas where an Align model could be fruitfully applied. For instance, clitics might be viewed as having to align with certain elements. Preverbal clitics may have to align with T (or  $V_{\text{tense}}$  again), while second-position clitics may have to Align with some projection of C. I therefore offer the model as a useful one for thinking about some of the central problems of syntactic theory.

Finally, I have also sketched the beginnings of a theory of English clause types, where there is a family of [SP] features characterizing different clause types. This type of model should also prove extremely useful once the details are worked out, but I leave that to future research. (One relevant comparison is the account of different types of extraction clauses in English in Sag 2010, which is similar in spirit.)

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