

Pseudopassives, Expletive Passives, and Locative Inversion

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1 A Recent Account of Expletive Passives and Locative Inversion

English passives regularly allow an expletive passive (1)—sometimes also called a *participial expletive construction*—and locative inversion (2):

(1) *Expletive Passive*

- a. There was a study done in 1979.
- b. There were many topics discussed during the conference.
- c. There was a bridge crossed during the war.

(2) *Locative Inversion*

- a. During that time period were constructed numerous monuments and temples.
- b. In those days were debated numerous abstruse questions of little practical relevance.
- c. To the servants were left the silver dog collars but not the dogs.

In the expletive passive, the underlying object appears in a position to the left of the passive participle, while the expletive *there* occupies the canonical subject position. In locative inversion, a PP appears to the left, while the underlying object (agreeing as the subject) appears in a rightward position.

Although passives allow both expletive passives and locative inversion, they do not allow both at the same time (Rezac 2006):

- (3)
- a. * During that time period were numerous monuments and temples constructed.
 - b. * In those days were numerous abstruse questions debated.

That is, the pre-participle position is incompatible with a fronted PP and no overt *there*.

Rezac (2006) offers an account of this incompatibility. In Rezac's analysis, passive participles obligatorily project a position that must be filled, either by moving the underlying object into it, or by moving a PP into it that then moves further to derive locative inversion. If the underlying object moves to this position, and then further to the surface subject position (Spec-TP, for Rezac), we get a canonical passive (4a); if it moves to this position, and an expletive is inserted in the surface subject position, we get an expletive passive (4b); and if a PP moves through it instead, we get locative inversion (4c):¹

- (4)
- a. Canonical passive: [TP [numerous monuments]₁ were [PassPart t_1 constructed t_1 during that time period]]
 - b. Expletive passive: [TP there were [PassPart [numerous monuments]₁ constructed t_1 during that time period]]
 - c. Locative inversion: [TP [during that time period]₁ were [PassPart t_1 constructed [numerous monuments] t_1]]

Since the PP moves through the participial position in locative inversion, nothing else is allowed to move there. Rezac's analysis thereby accounts for the fact that locative inversion and the pre-participial position of the underlying object are incompatible.

The puzzle that I take as my starting point here comes from the fact that pseudopassives permit the expletive passive, but very strongly disallow locative inversion (the latter fact was noted by Bresnan 1994, 79):

(5) *Expletive Passives*

- a. There wasn't a single bed slept in on that fateful night.
- b. There was a bridge marched across during the war.
- c. There were many questions talked about during the deliberations.

¹Following Bresnan (1994) and others, Rezac has the PP extract further in locative inversion, to an A-bar position, but this is not relevant to the issues at hand.

- d. There was more than one speaker jeered at during the debate.

(6) *Locative Inversion*

- a. * During that time period were slept in many beds built originally for chipmunks.
- b. * In those days were argued about numerous abstruse questions of little practical relevance.
- c. * On Fridays are relied upon servants with impeccable timing and demeanor.
- d. * In grade school are jeered at many children with awkward social skills.

What is puzzling here is that, in pseudopassives, the object of the preposition acts like the object of the verb in a regular passive in becoming the subject:

- (7) a. Many beds were slept in.
- b. This bridge was marched across more than once during the war.
- c. Numerous abstruse questions were argued about in those days.
- d. Servants are relied upon less and less even in old-fashioned households.

Hence, it appears that the object of the preposition can move to the surface subject position, and on the way, it can stop in the specifier of the participle posited by Rezac, since the expletive passive is possible. Given that this position is available, a different PP should be able to move through it, as well, giving rise to locative inversion. Rezac's theory predicts, incorrectly, that locative inversion should be compatible with pseudopassives.

I conclude that Rezac's account of locative inversion is not correct. Rather, locative inversion involves rightward movement of the NP that agrees as the subject. Pseudopassives are then incompatible with locative inversion because objects of prepositions cannot undergo rightward movement, as has been known since Ross (1967). I construct an analysis of English clause structure in both the active and the passive voices, and analyses of expletive passives, pseudopassives, and locative inversion. This analysis will explain numerous facts about English, and it will also explain the inability of objects of prepositions to undergo rightward movement.

As a preliminary to investigating more complicated cases of expletive passives, I first go through arguments for distinguishing expletive passives from biclausal constructions with reduced relative clauses. I then give my analysis and discuss its implications.²

2 Identifying Expletive Passives

Pseudopassives are grammatical as both prenominal and postnominal modifiers, taking a form that looks identical to the expletive passive:

- (8) a. a slept-in bed
- b. a much-relied-upon technique
- (9) a. the bed slept in on that fateful night
- b. the thesis talked about during the deliberations
- c. the noble cause fought over for centuries

One might try to claim that expletive pseudopassives are actually nominal, perhaps a reduced relative clause, and that pseudopassives therefore do not truly participate in the expletive passive. On this account, locative inversion and expletive passives would pattern alike, as Rezac's analysis would predict (although without saying something further, Rezac's analysis would not explain why pseudopassives do not allow either the expletive passive or locative inversion).

However, numerous researchers have shown that expletive passives must be treated as a single clause, with the participle as the main verb of that clause, and are not biclausal constructions. The same sorts of arguments that these researchers have given can be applied to pseudopassive expletive passives, showing that they are not reduced relative clauses (or, more accurately, have a parse that is not a reduced relative clause, since at least some of them will admit such a structure).

First, the expletive passive can be distinguished from a reduced relative clause by its compatibility with extraction (Milsark 1974, 70–71, Lasnik 1999, 90, Chomsky 2001, 25–26). Reduced relative clauses, as nominal modifiers, do not permit extraction:

²Before moving on, I should also note that the differences introduced here between passives and pseudopassives raise numerous problems for *reanalysis* accounts of pseudopassives, where the verb plus preposition reanalyze as a verb. (Reanalysis is advocated by, among others, Chomsky (1981, 123, 292–300). See Baltin and Postal 1996 for extensive references and discussion.) The problem is, if this reanalysis is available, the object of the preposition should act just like the object of a simple verb, and there should be no contrast between passives and pseudopassives in the possibility of locative inversion. I therefore assume that reanalysis is not a tenable account of pseudopassives, as was shown by Baltin and Postal (1996), and do not address it further.

- (10) a. I like to buy [lemons grown in Florida].
 b. * It's Florida that I like to buy [lemons grown in].
- (11) a. I enjoyed [many topics talked about at that conference].
 b. * It was that conference that I enjoyed [many topics talked about at].

In contrast, expletive passives do permit extraction:

- (12) a. There was a study done on swallows in 1969 with great scientific rigor.
 b. It was with great scientific rigor that there was a study done on swallows in 1969. *compare:*
 c. * It was with great scientific rigor that there was a study.
 d. * It was with great scientific rigor that there was [a study that was done on swallows in 1969].

Pseudopassive expletive passives also permit extraction:

- (13) a. It was with unerring accuracy that there were two men shot at.
 (cf. *It was with unerring accuracy that there were two men.)
 b. It was with heated tempers that there were many topics talked about at that conference.
 (cf. *It was with heated tempers that there were many topics at that conference.)

In addition, reduced relative clauses may not be preceded by a full relative clause, but full relative clauses can modify the pre-participle NP in the expletive passive (Deal 2009, note 28 credits this observation to Rajesh Bhatt):

- (14) a. There may have been [many books that were written in haste] being sold on the veranda.
 b. * [Many books [that were written in haste] [being sold on the veranda]] are missing their covers.

This is true of pseudopassive expletive passives, as well:

- (15) a. There may have been [many beds that were built for chipmunks] being slept in that night.
 b. There might have been [many topics that had previously been rejected] being talked about at that conference.
 c. * [Many beds [that were built for chipmunks] [being slept in that night]] were gone in the morning.
 d. * [Many topics [that had previously been rejected] [being talked about at that conference]] were not amenable to scientific inquiry.

Additionally, eventive modifiers are not compatible with existential constructions, but they are compatible with expletive passives (Milsark 1974, 77–85, Caponigro and Schütze 2003, 303), including pseudopassive ones:

- (16) a. * There have just been several books.
 b. There have just been several books sold to fishermen.
- (17) a. * There have just been two speakers.
 b. There have just been two speakers jeered at.

Having established that pseudopassive expletive passives are indeed expletive passives and not reduced relative clauses, I turn to the task of constructing an analysis of expletive passives.

3 The Analysis of Expletive Passives

The first step in constructing an analysis is to determine exactly where the leftward position of the underlying object is in the expletive passive. Contra Rezac (2006), it is not adjacent to the participle.

3.1 The Pre-Participle Position

To determine the position of the underlying object in the expletive passive, we must examine expletive passives that have more auxiliaries. Here is the full range of data, including modals and the auxiliary *have*:

- (18) a. There were many books sold.
 b. There were many books being sold.
 c. There have been many books sold over the years.

- d. There may have been many books being sold.

The surprising sentences here are (18b) and (18d). If both progressive *be* and passive *be* are present, the NP comes between them; otherwise it immediately precedes the participle. This was noted by Milsark (1974, 65), who states the generalization as, “the noun phrase appears in general immediately to the right of the leftmost occurrence of *be*.”

Of course, one could object that, just when more auxiliaries are present, these sentences must have a biclausal, reduced-relative analysis. The same arguments as above show that they can be monoclausal, though; in fact, the examples in (14) and (15) have already shown this. Additionally, expletive passives with multiple auxiliaries can be extracted from:

- (19) a. Who did you say that there may have been many books being sold to?
(cf. *Who did you say that there may have been [many books that were being sold to]?)
b. Who did you say that there may have been many topics being discussed for?
(cf. *Who did you say that there may have been [many topics that were being discussed for]?)

Having established that the paradigm in (18) does in fact represent the expletive passive, we arrive at the following generalization:

- (20) Generalization: The underlying object in an expletive passive occurs immediately after the highest *be* auxiliary.

If there are two *be* auxiliaries (one the progressive and one the passive), the underlying object comes between them (18b, 18d); if there is only one (which must be the passive *be*), it comes between that one and the passive participle (18a, 18c). Note that the analysis of Rezac 2006 does not expect the position between the two *be* auxiliaries, since the position occupied by the underlying object in that analysis is the specifier of the participle.

I will account for this generalization by hypothesizing that the surface position of the underlying object in the expletive passive is the specifier of passive *be*, which I will label Spec-PassP. The head of this projection, be_{pass} , moves across its specifier to the position occupied by be_{prog} if the latter is not present. I will call this projection Inner Aspect (InAsp). If be_{prog} is present, both *be* auxiliaries stay in situ, with the NP between them in the specifier of PassP:

- (21) a. There were many books sold. b. There were many books being sold.
-

Some independent evidence that this is correct comes from its ability to explain a puzzling fact about VP ellipsis. This is that passive *be* can be pronounced only if progressive *be* is not present (Baker, Johnson, and Roberts 1989):

- (22) a. These books might have been being sold at a discount, and those books might have been (*being) too.
b. These books have been sold before, and those have (been) too.
c. These books are being sold at a discount, and those books are (*being) too.
d. These books were sold before, and those were too.

In (22a, c), passive *be* cannot be pronounced when the VP is elided. One might take this to indicate that passive *be* must be obligatorily included in what is elided, except that the exact same auxiliary *can* be pronounced in (22b, d).

This rather strange fact has a simple explanation given the theory above. Passive *be* moves to InAsp only when progressive *be* does not occupy that position. So just when progressive *be* is absent, passive *be* moves out of PassP. If PassP is obligatorily included in ellipsis, then passive *be* must not be pronounced when progressive *be* is present and prevents it from moving.

As will be stated immediately below, Pass corresponds to active Voice. I take Voice to be the phase head in the sense of Chomsky (2000). In the passive voice, it is Pass that is the phase head. We can therefore hypothesize that the following is true:

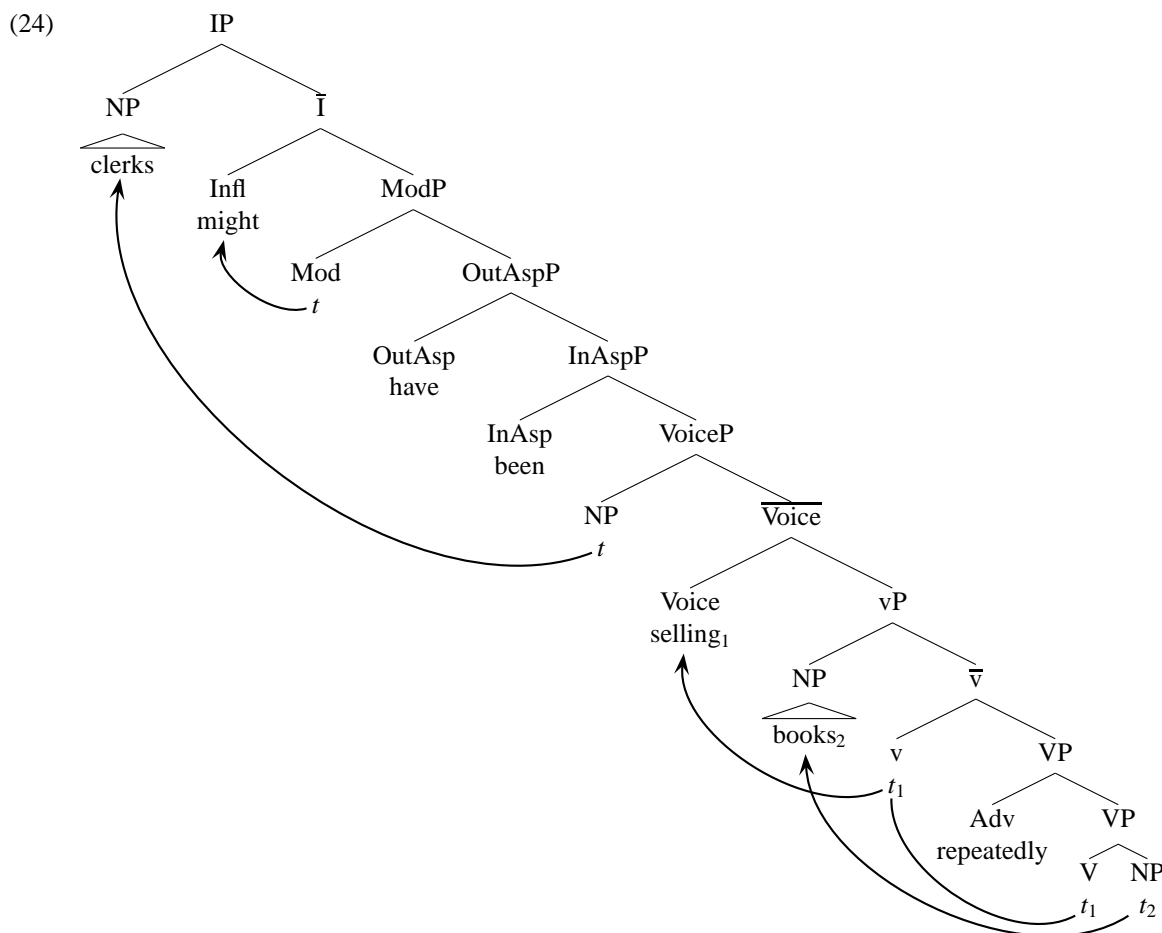
- (23) Ellipsis minimally targets a phase.

That is, ellipsis must target at least PassP in the trees above; it cannot target just VP.

Turning back to the expletive passive, this basic analysis will account for the data in (18). However, it must be fleshed out to account for the full range of facts, which I do in the next subsection.

3.2 Proposed Clause Structure

I will begin by constructing an analysis of English clause structure in the active voice. First, I hypothesize that the external argument starts in Spec-VoiceP, where Voice heads a functional projection above the lexical VP (Kratzer 1996). In addition, there is a semantically contentless category-defining node *v* (Marantz 1997) between VP and Voice. In every active clause, the underlying object moves to Spec-vP, while the active V moves through *v* to Voice:³



Adverbs may adjoin to VP but not to vP, so adverbs may not come in between the V and the direct object (see Johnson 1991). It is plausible that adverbs may not adjoin to vP because *v* is semantically vacuous. I assume that adverbs semantically select a constituent to modify, and may only adjoin to a category that they *can* semantically modify; they may therefore never adjoin to vP.

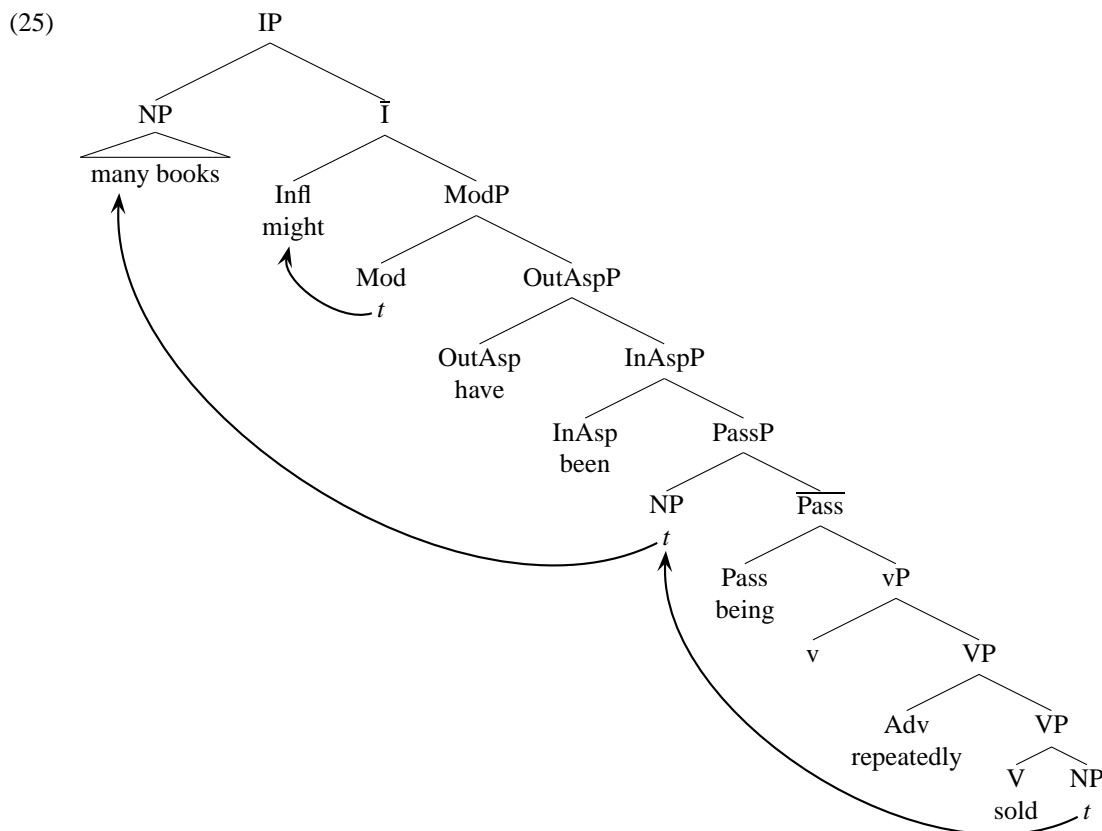
Outside VoiceP, there is first an InnerAspect (InAsp) projection that includes progressive *be*, but this projection is always projected, even when the aspect is something else and there is no progressive *be*. Then there is an OuterAspect (OutAsp) projection for *have*, and then Mod for modals. I have no evidence regarding whether these projections are present even when the auxiliaries are not, unlike InAsp, so I leave them out of the trees when they are not present. The highest auxiliary that is present will move to Infl (across negation if present).

V moves to Voice even if other auxiliaries are present, even *do*. (One might want to say that *do* is InAsp with a feature that says it must move all the way to Infl; so all other nodes have to be empty, or missing. This will account for the incompatibility of *do* with all other auxiliaries.)

3.3 Passive Voice

Turning to the passive voice, I hypothesize that Pass replaces Voice. The head of Pass is *be_{pass}*. I also adopt the analysis of Blight (1999) and Caponigro and Schütze (2003) where the passive verb does not undergo the movement that the active verb does, so V stays in VP:

³See Bruening 2010a on movement of both objects to Spec-vP in ditransitives.



The underlying object moves to Spec-PassP, and, in the canonical passive, it moves on to Spec-IP. Movement of the object to Spec-vP only takes place in the active voice, for reasons explained immediately below.

The step of movement to Spec-PassP is an important feature of the analysis here, as will become apparent when we turn to expletive passives. I hypothesize that Pass strictly requires its specifier to be filled. Hence, there must be an NP available that can move to its specifier, and English therefore disallows impersonal passives. The available NP may not stay in situ in the passive, either. Thus, we account for two remarkable facts about English: that it does not allow impersonal passives, and the underlying object must not stay in situ in the passive (**There was done a study in 1979*). (See below on clausal complements.)

I will formalize this as the following requirement:

- (26) Pass requires that its specifier be occupied by an NP with a full set of phi-features. (Pass = [Spec:N ϕ])

So, Pass has a [Spec:N ϕ] feature that must be satisfied by moving an element of category N with a full set of phi-features to its specifier.

In the active voice, the head v must have a different requirement, because it is not necessary that some NP move to Spec-vP (with intransitives). Only objects of the verb move to Spec-vP, and if there is none, v simply does without a specifier. Let us formalize this as a requirement on the NP, then, and not on the head v. I will hypothesize that NPs must be immediately dominated by a projection of some case-licensing head. In the active voice, v is such a case-licensing head. Any NP in the vP that needs case licensing (so, *not* objects of prepositions, which are case-licensed by P) must move to a position immediately dominated by a projection of v, so, Spec-vP.

- (27) Case Licensing: An NP chain must have a link that is immediately dominated by a projection of a case-licensing head.

Merging the head Pass with vP must cancel the case-licensing ability of v. Instead Pass is the case licenser:⁴

- (28) Case Licensing Heads:
P, v selected by Voice, Pass, Infl ...

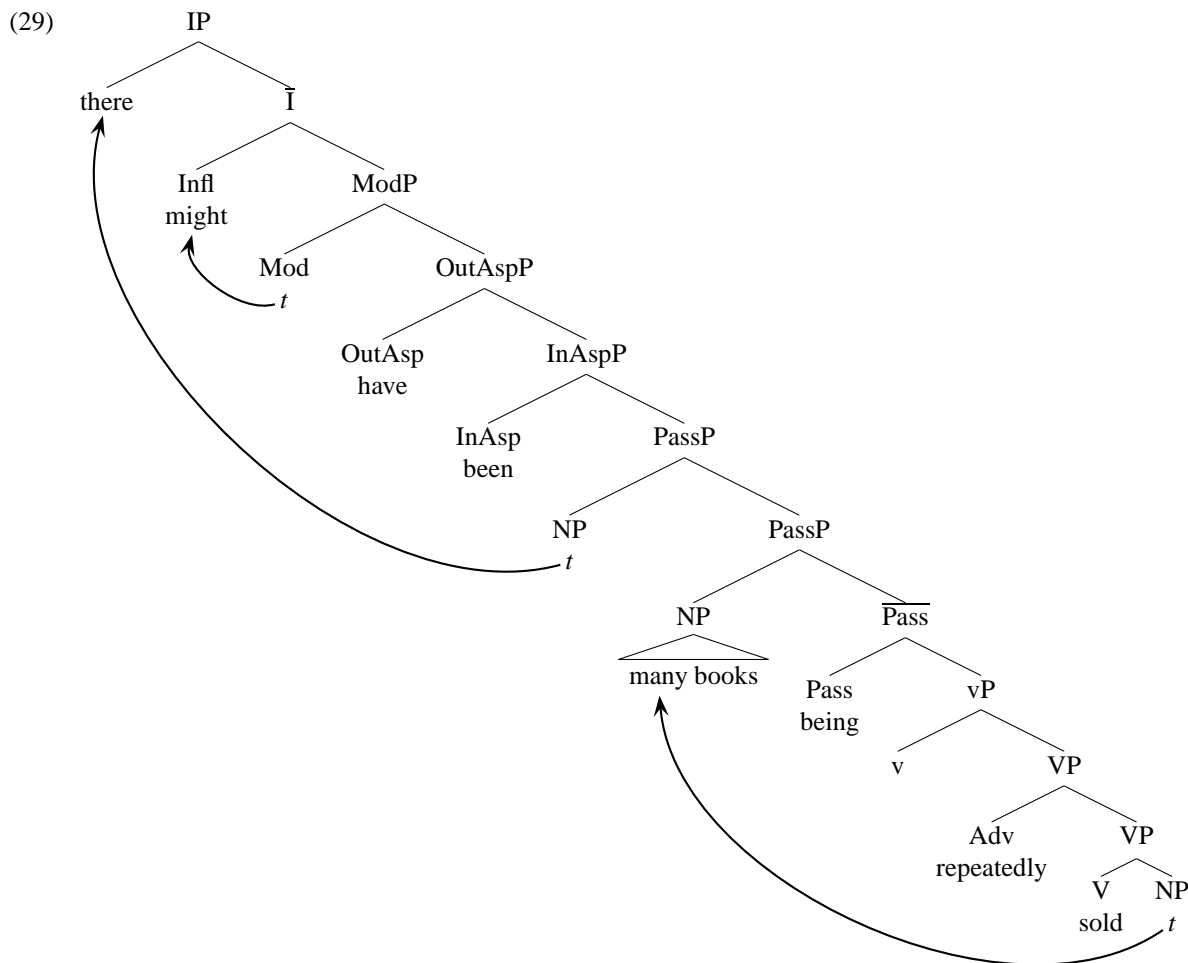
So, only a v that is selected by Voice is a case-licenser. Note also that nothing stops an NP from occupying more than one case-licensing position: in the canonical passive, the underlying object moves to Spec-PassP, a case-licensing position, and

⁴Actually, this must be more complicated: v must still be able to case-license an NP in passive ditransitives. Because these are not my concern, I will not attempt to complicate the model of grammar being proposed here to accommodate them.

then on to Spec-IP, another case-licensing position. I assume that an NP just needs to have a chain link in *some* case-licensing position; the surface form of the case it receives will be determined by the highest such position (nominative for Spec-IP, accusative everywhere else outside of nominals in English).

3.4 Expletive Passives

As just described, Pass strictly requires an NP with a full set of phi-features to be merged in its specifier. This NP will be found in the immediate c-command domain of Pass (the local *phase* in the sense of Chomsky 2000) and will move to Spec-PassP. In the expletive passive, this NP will stay there, and will not move on to Spec-IP. Instead, the expletive *there* will. I follow Deal (2009) in hypothesizing that *there* is inserted low, and not directly in Spec-IP. However, I posit an even more local relation between *there* and its associate than Deal does. I hypothesize that *there* is inserted in a second specifier of PassP, immediately c-commanding its associate in Spec-PassP, and from there it moves on to Spec-IP:



The two specifiers of PassP agree, such that *there* takes on all of the features of the NP in the first specifier of PassP. This happens because the phi-features of *there* are unvalued, and can only be valued by entering into an Agree relation (Chomsky 2000) with an NP with a full set of phi-features, which are then copied onto *there*. Moreover, *there* is a member of a class of elements that I will call *dummies*, which have the feature [dummy]. The defining property of dummies is that they must enter into an Agree relation with some other element of a designated type:

(30) Dummies: An element with the feature [dummy] must Agree with an element with feature [F]. (notate as [dummy:F])

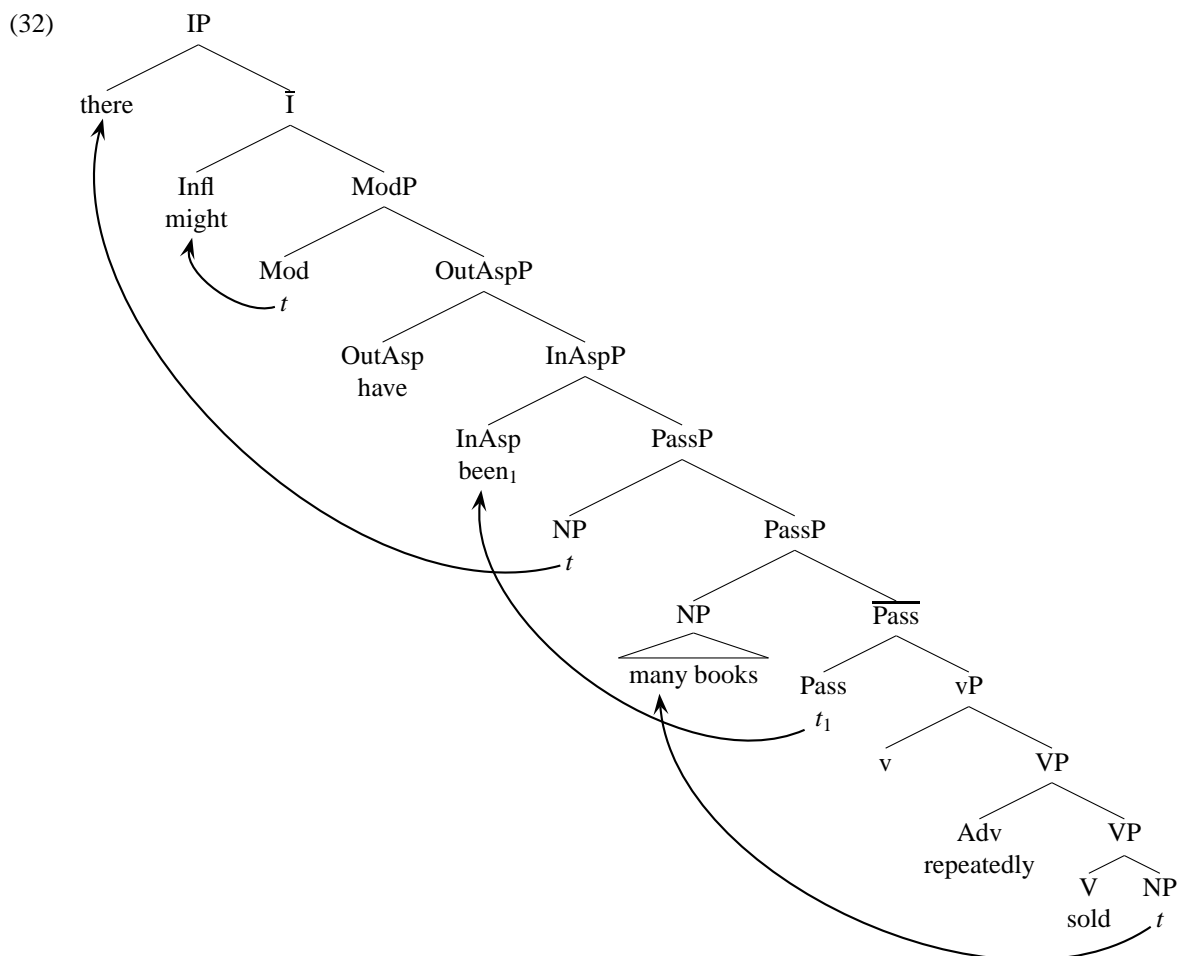
(31) *there*:

- a. Has the feature [dummy:N].
- b. Has unvalued phi-features, which must be valued by Agree.

General principles of economy will dictate that one operation of Agree is preferable to two, so *there* will always get its phi-features from the same [N] element that satisfies its [dummy] feature. Following general practice, I will refer to this NP as the *dummy's associate*.

Note that *there* having unvalued phi-features explains why it cannot satisfy the Spec requirement of Pass by itself, without moving the associate NP to Spec-PassP first. That is, it is first necessary to move an NP to Spec-PassP; Pass's requirements cannot be met simply by merging *there* with it. Supposing that heads with featural requirements must satisfy those requirements immediately, the first thing that must be done after Pass is merged with vP is satisfy its requirement for an NP with a full set of phi-features (26). Merging *there* will not satisfy Pass's requirements, because *there* lacks phi-features. If what Pass requires is a specifier with complete phi-features, *there* is inadequate. It can only be merged after some other NP has satisfied Pass's requirement. So the first step after merging Pass with vP must be movement of an NP within vP to Spec-PassP. Only then can *there* be merged into a second specifier. Subsequent to that merger, *there* Agrees with its associate NP and values its phi-features, but this is too late for satisfying Pass (but it can satisfy a higher Pass; see (47b) below).

As described above, if InAsp is unoccupied, Pass moves there:



This captures the generalization about the expletive passive above: if InAsp is be_{prog} , the underlying object will come between be_{prog} and be_{pass} ; but if be_{prog} is not present, the underlying object will follow be_{pass} .

Turning to adverbs, we saw regarding the active voice that adverbs could not intervene between the verb and the object, because the V moves to Voice while the object moves to Spec-vP, and adverbs cannot adjoin to vP. In the passive, the V does not move, so adverbs can come before the V (Blight 1999). Given the hypothesized structure, we predict that adverbs will come between the underlying object and the V in the expletive passive, which is correct:

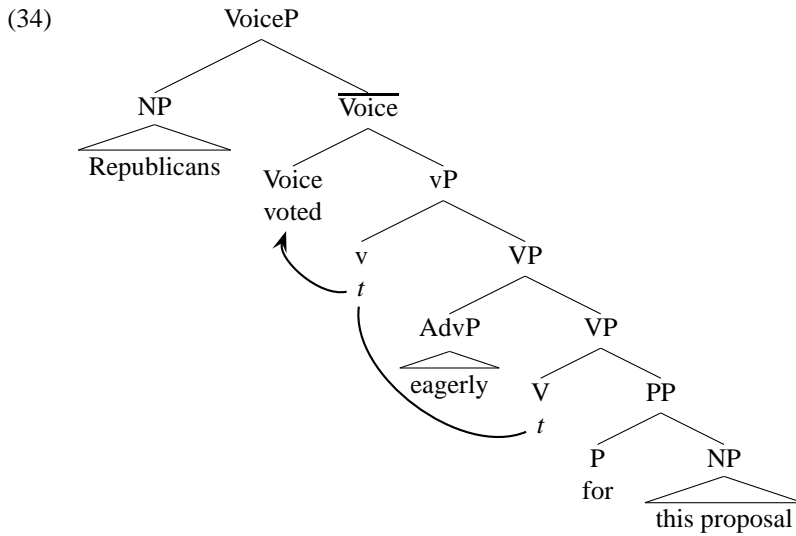
- (33)
- There were many books repeatedly sold.
 - There were many books being repeatedly sold.
 - There may have been many books being repeatedly sold.
 - Who did you say that there may have been many books being repeatedly sold to?

Example (33d) verifies that adverbs still have the expletive passive analysis, and not a biclausal one. (Adverbs may also adjoin on the right, giving *There may have been many books being sold repeatedly*.)

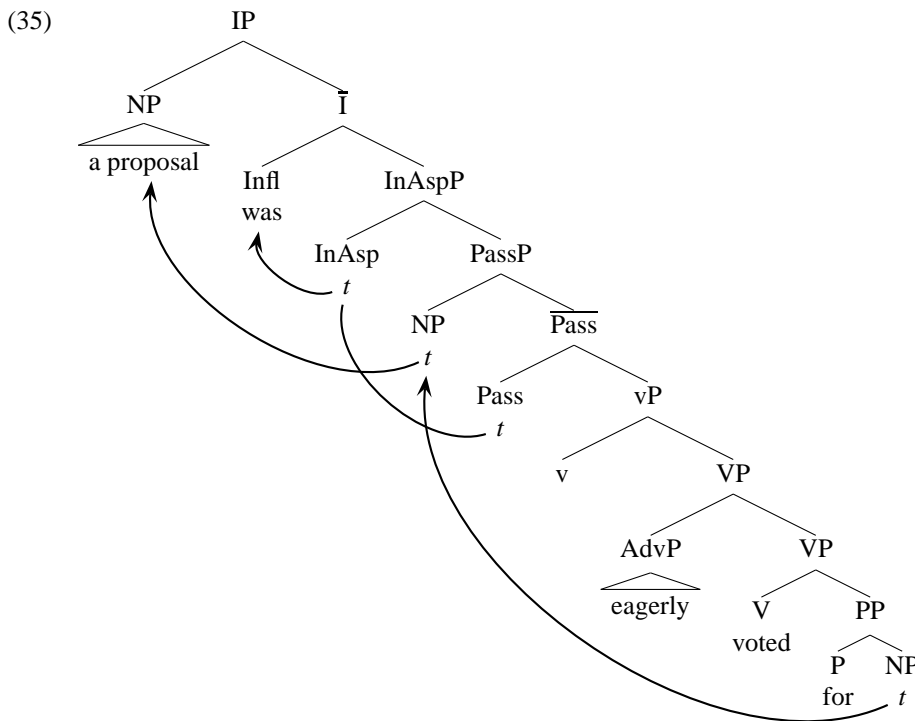
As for agreement with finite Infl, I assume that Infl Agrees with the highest NP in its local c-command domain. In the expletive passive, this is *there*, which now has a complete set of phi-features, copied from its associate. In addition, Infl must have a [Spec:N] feature, like Pass, which drives movement of an NP to its specifier.

3.5 The Pseudopassive

In active clauses with PPs, the V again moves through v to Voice, but the object of the P does not move to Spec-vP, because it is licensed by P. So adverbs can intervene between V and PP, but not V and NP (above):



In the passive voice, Pass again replaces Voice, and V stays in situ. As stated above, Pass strictly requires that its specifier be filled, independent of case licensing. So it attracts the only NP that is available, namely, the object of the preposition. This NP moves to Spec-PassP, and then may move on to Spec-IP:



Since the V does not move in the passive, we predict that adverbs may intervene between the V and PP in the active, but not in the passive:⁵

⁵Note that adverbs can come between a direct object and a PP in the active, and can still immediately precede the PP in the passive:

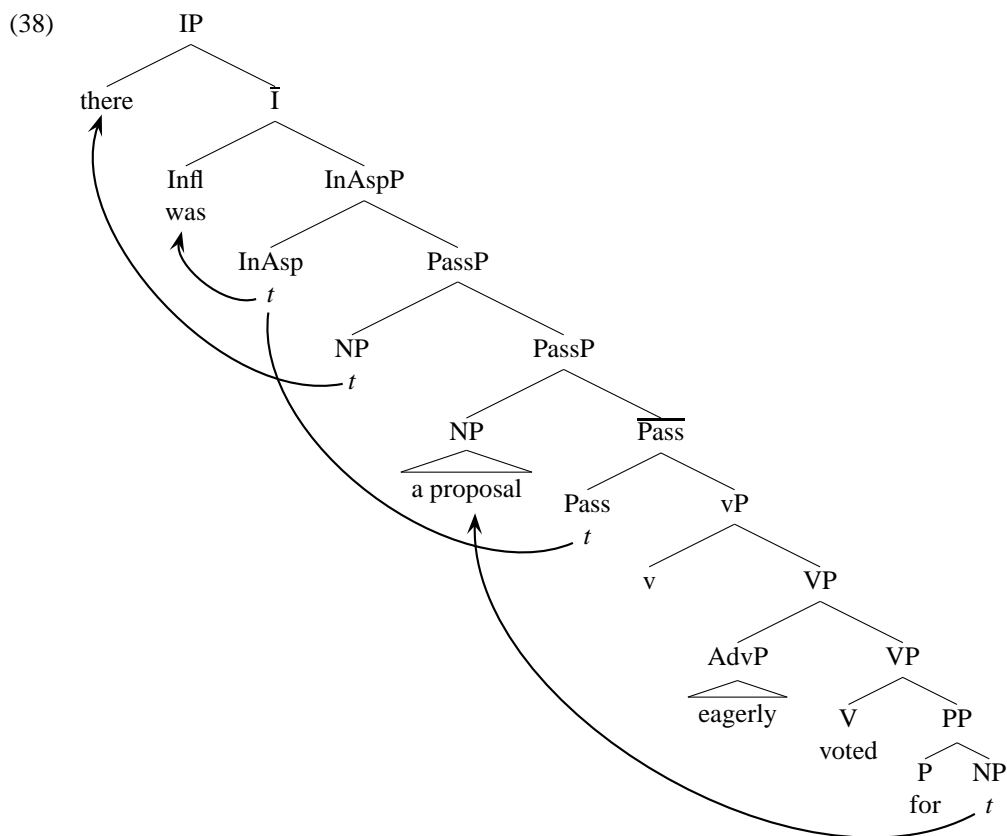
- (i) a. They hit the ball angrily to John.
- b. The ball was hit angrily to John.

I assume that another derivation is possible where the adverb is adjoined on the right, and the PP moves across it to adjoin higher on the right. This rightward movement is not possible when the object of the preposition is extracted in the pseudopassive (or in wh-movement: **Who was the ball hit angrily to?*).

- (36) (Chomsky 1981, 123, (20))
- They spoke angrily to John.
 - John was spoken to.
 - * John was spoken angrily to.

- (37) (Blight 1999)
- They voted eagerly for this proposal.
 - * This proposal was voted eagerly for.

As an alternative to the NP moving on to Spec-IP, it may also remain in Spec-PassP, while *there* is inserted into a second specifier of PassP and then moves to Spec-IP:



This results in an expletive pseudopassive.

As explained above, Pass requires that an NP move to its specifier, so the object of the P may not remain in-situ:

- (39)
- * There was slept in a bed on that fateful night.
 - * There was marched across a bridge during the war.
 - * There was sat on a man in this room.
 - * There was talked about a thesis during the deliberations.
 - * There was fought for/over a noble cause for centuries.

Note also that Spec-PassP does not have to be filled by an argument of the verb; any NP will do, here an object of P. So we predict, correctly, that ECM/raising-to-object verbs should also allow expletive passives:

- (40)
- There are three people considered to be viable candidates for president.
 - There was a Senator found to be guilty of accepting bribes from children.
 - There are three theories known to be compatible with this set of facts.

Once again, the possibility of relative clause modifiers shows that these are truly expletive passives, and are not biclausal:

- (41)
- There are three people [who come from Arkansas] considered to be viable candidates for president.

- b. There are three theories [that originate with Nobel laureates] known to be compatible with this set of facts.
- c. * Three people [who come from Arkansas] [considered to be viable candidates for president] had extramarital affairs.
- d. * Three theories [that originated with Nobel laureates] [known to be compatible with this set of facts] were discredited at the conference.

I analyze ECM as involving movement from a lower non-finite Spec-IP to Spec-vP in the active, and to Spec-PassP in the passive (possibly followed by movement to Spec-IP).

3.6 Clausal Complements

An important feature of the analysis proposed here is the obligatory movement of an NP to Spec-PassP, which rules out impersonal passives and in-situ passives in English. However, there is one case in English where nothing appears to move, namely, with clausal complements. The expletive *it* appears in Spec-IP, while the CP appears to be in its canonical, postverbal position:

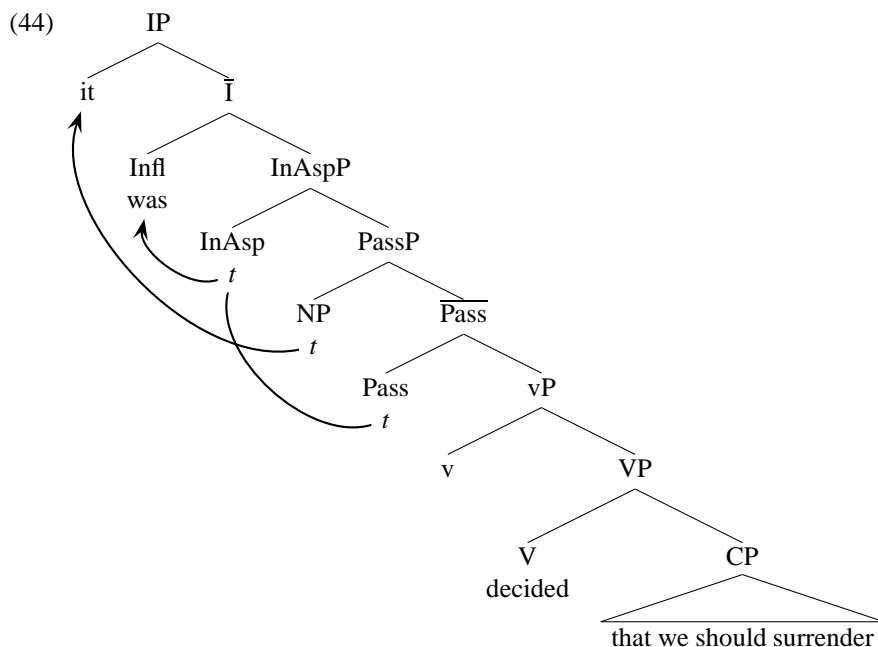
(42) It was decided [that we should surrender].

Note that clausal complements are incompatible with expletive passives:

- (43) a. * There was (it) decided [that we should surrender].
- b. * There was [that we should surrender] decided.

Neither *it* nor the CP itself may appear in Spec-PassP, while *there* occupies Spec-IP.

The question here is what satisfies the Spec requirement of Pass in (42). This requirement is that the specifier be occupied by an NP with a full set of phi-features. This requirement rules out (43b), because a CP is not an NP with a full set of phi-features. As for (42), it must be the expletive *it* that satisfies the Spec requirement of Pass. That is, *it* must be merged into Spec-PassP, and then move to Spec-IP:



It is a dummy, like *there*. Unlike *there*, however, it seems to have a full set of phi-features. *It* is invariantly third person singular, unlike *there*, which will take whatever features its associate has. Because it has a full set of phi-features inherently, *it* can satisfy the Spec requirement of Pass, without moving another NP to Spec-PassP first. I repeat the properties of *there* below, and provide the features of *it*:

- (45) *there*:
 - a. Has the feature [dummy:N].
 - b. Has unvalued phi-features, which must be valued by Agree.

- (46) *it*:
- a. Has the feature [dummy:C].
 - b. Has valued phi-features (non-human, third person singular).

Since *it* is a dummy, it has to Agree with some other element, in this case a CP. So we still rule out impersonal passives in English, because *it* can only be inserted into Spec-PassP if there is a local CP that it can Agree with. If there is none, the [dummy] requirement of *it* will not be satisfied.

The question now is what rules out (43a). Without *it*, the sentence is ruled out because the Spec requirement of Pass is not satisfied. With *it*, however, that requirement is satisfied. The problem must be that *there* is not allowed to associate with *it*. This appears to be a more general constraint: a [dummy] element cannot satisfy its Agree requirement by Agreeing with another [dummy]. For instance, in a biclausal passive, there can never be two *theres* (cf. Deal 2009, 308–309):

- (47)
- a. I expect there to be a study done later this year.
 - b. There is expected to be a study done later this year.
 - c. There is a study expected to be done later this year.
 - d. * There is there expected to be a study done later this year.

In (47b), the *there* that starts out in the embedded Spec-PassP must move through Spec-PassP in the matrix clause, by hypothesis. Given everything that has been said so far, we should expect it to be able to stay there, while a second *there* is merged above it in a second specifier of PassP, as happens with a non-dummy NP in (47c). However, this is impossible (47d). The problem cannot be non-local agreement, because the same non-local agreement holds in (47b). In the analysis here, *there* copies the features of its associate, and so it itself has features that it should be able to impart to the second *there*, with no issue of locality.

In fact, nothing blocks (47d). Deal (2009, 308) claims that it should be blocked by a preference for Move over Merge. That is, the grammar prefers to move one *there* rather than insert another. However, if there were such a preference, then *there* would never be inserted; its associate would always move, instead. Moreover, the availability of both (47b) and (47c) shows that there is no such preference: at any given step of the derivation, the grammar seems to allow either Move or Merge. So, in (47b), *a study* moves to the embedded Spec-PassP, and *there* is merged in a second specifier of that PassP. That *there* then moves on to embedded Spec-IP, then to the matrix Spec-PassP, and from there to matrix Spec-IP. In (47c), in contrast, *a study* moves first to embedded Spec-PassP, then embedded Spec-IP, then to matrix Spec-PassP. Only at that point is *there* merged. If there were some general preference for Merge over Move or Move over Merge, one or the other of these sentences would be ruled out in favor of the other one. Since both are allowed, there can be no such preference. (Note also that (47c) can have the expletive passive parse, and not just the reduced relative parse, because it allows eventive modifiers: *There is currently a study (*that is) expected to be done later this year.*)

I conclude that the relevant constraint is that *there* simply cannot associate with another dummy. This will also rule out *there* associating with dummy *it* in (43a). Call this the *Double Dummy Constraint*:

- (48) The Double Dummy Constraint
An NP that has the feature [dummy:F] may not Agree with an element with [F] if that element has the feature [dummy].

Space considerations preclude me from exploring this restriction further and trying to derive it from other principles of the grammar of dummies. Suffice it to say that it seems natural that a dummy that doubles another element may only double a non-dummy.

Note that this analysis explains the original data that led Chomsky (1995) to hypothesize that Merge is preferred over Move. An NP cannot first move to an embedded Spec-IP, and then have *there* be inserted higher:

- (49)
- a. There is likely to be [a panda] at the zoo.
 - b. * There is likely [a panda] to be at the zoo.

It appears from (49) that an NP that is associated with *there* cannot move before *there* is inserted. Yet, this is exactly what happens in (47c). Rather, the relevant constraint appears to be that *there* can only be inserted in certain positions: Spec-PassP in all of our examples, where the associate is also in Spec-PassP. In the next section we will see that *there* can also be inserted in a second specifier of VoiceP. We can therefore state the constraint as the following, which will rule out (49b) and account for all of the data above:

- (50) *There* can only be inserted in the specifier of a verbal phase head.

(On active participles with *-ing*, see Deal 2009. The qualification “verbal” is there to rule out insertion of *there* in Spec-CP and Spec-PP; P will be seen to be a phase head below.)

In summary, the analysis permits clausal complements of passive verbs with the expletive *it*, because *it* is inserted at Spec-PassP and satisfies Pass’s requirement for an NP with a full set of phi-features in its specifier. Otherwise, an NP must move to Spec-PassP, where it may be doubled by *there* in a second specifier of PassP. *There* cannot double another dummy, so it may not double *it* in (43a), or *there* in (47d).

3.7 Summary

I have so far outlined analyses of active clauses, passive clauses, pseudopassives, expletive passives, and expletive pseudopassives in English. This analysis captures numerous facts about these clause types in English, including the placement of the associate NP in expletive passives (after the highest *be* auxiliary); the obligatory displacement of the associate NP; the lack of impersonal passives in English; and CPs staying in situ in passives but being incompatible with expletive passives. It also captures adverb placement facts and a strange restriction on ellipsis. The two key features of the analysis are movement of passive *be* to InAsp if that head is not occupied by progressive *be*, and obligatory movement of an NP to Spec-PassP.

4 Locative Inversion

Having constructed an analysis of expletive passives and the pseudopassive, we now need to explain why pseudopassives are incompatible with locative inversion, unlike regular passives. As noted at the outset, we cannot adopt Rezac’s (2006) analysis, according to which the fronted PP in locative inversion moves through the expletive passive position (here, Spec-PassP). This analysis predicts, incorrectly, that pseudopassives should be fine with locative inversion.

4.1 Analysis of Locative Inversion

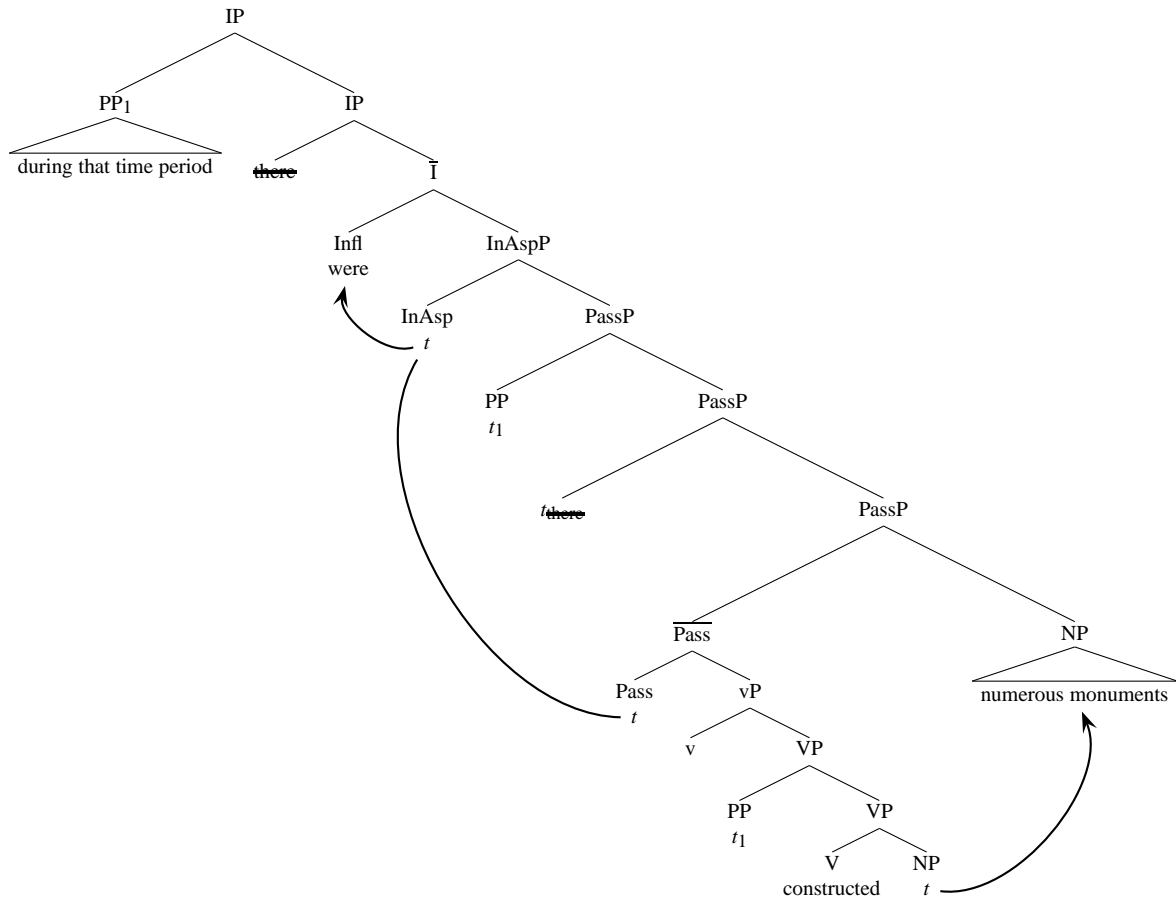
I therefore adopt a different analysis of locative inversion. First, because the arguments for the null expletive analysis of locative inversion are overwhelming (Lawler 1977; Postal 1977, 2004; Bruening 2010b), I hypothesize that the surface subject position is filled by a null *there* expletive (“~~there~~” in the trees below). In addition, because locative inversion involves a postverbal NP (the one that Agrees with Infl), I hypothesize that one of the characteristic properties of locative inversion is that a specifier be projected on the right. This is always the specifier of the phase head: Spec-VoiceP in the active, Spec-PassP in the passive. The null *there* is generated as a second specifier of that phase head, agreeing with the NP in the first specifier. As discussed more below, rightward specifiers have to be specifically licensed. In English, a rightward specifier can be licensed at VoiceP/Pass only if *there* merges as a second specifier and, additionally, a PP moves to another specifier of VoiceP/PassP on its way to adjoin to IP. Because these two specifiers are not specifically licensed on the right, they project on the left. I state the licensing conditions on the rightward specifier below:

- (51) A rightward specifier of VoiceP/PassP is licensed only if:
- a. The dummy *there* merges into another specifier of the same head and
 - b. A PP merges into another specifier of the same head.

(For more on the licensing of locative inversion, see Bruening 2010b.)

The following is the structure that I hypothesize for locative inversion with the passive. The PP starts out adjoined to VP, moves to the PassP phase edge, and then adjoins to IP:

- (52) During that time period were constructed numerous monuments.



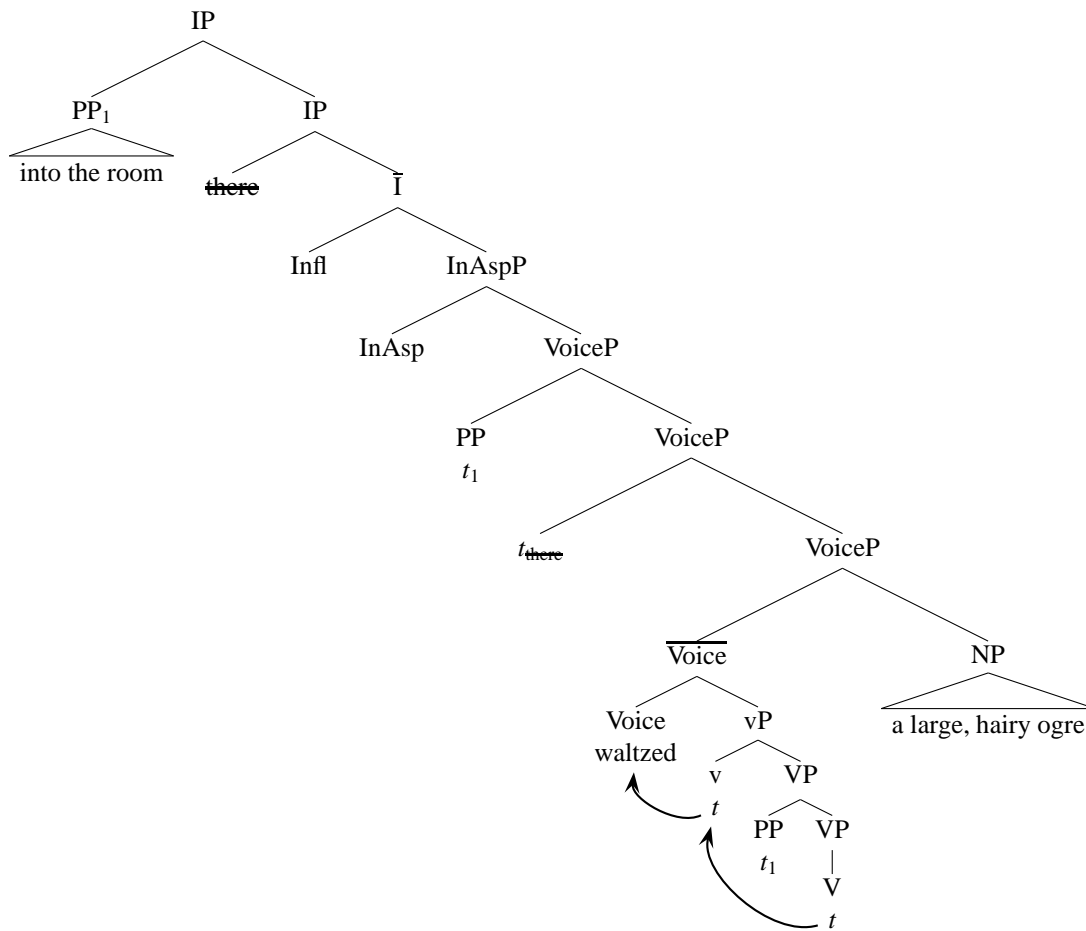
So locative inversion is incompatible with the underlying object being in the expletive passive position on the left (Spec-Pass), because Spec-PassP is projected on the right instead:

- (53) a. There were numerous monuments and temples constructed during that time period.
 b. During that time period were constructed numerous monuments and temples.
 c. * During that time period were numerous monuments and temples constructed.

This accounts for Rezac's facts, but without the problems listed above.

In the active, it is Spec-VoiceP that is projected on the right instead:

- (54) Into the room waltzed a large, hairy ogre.

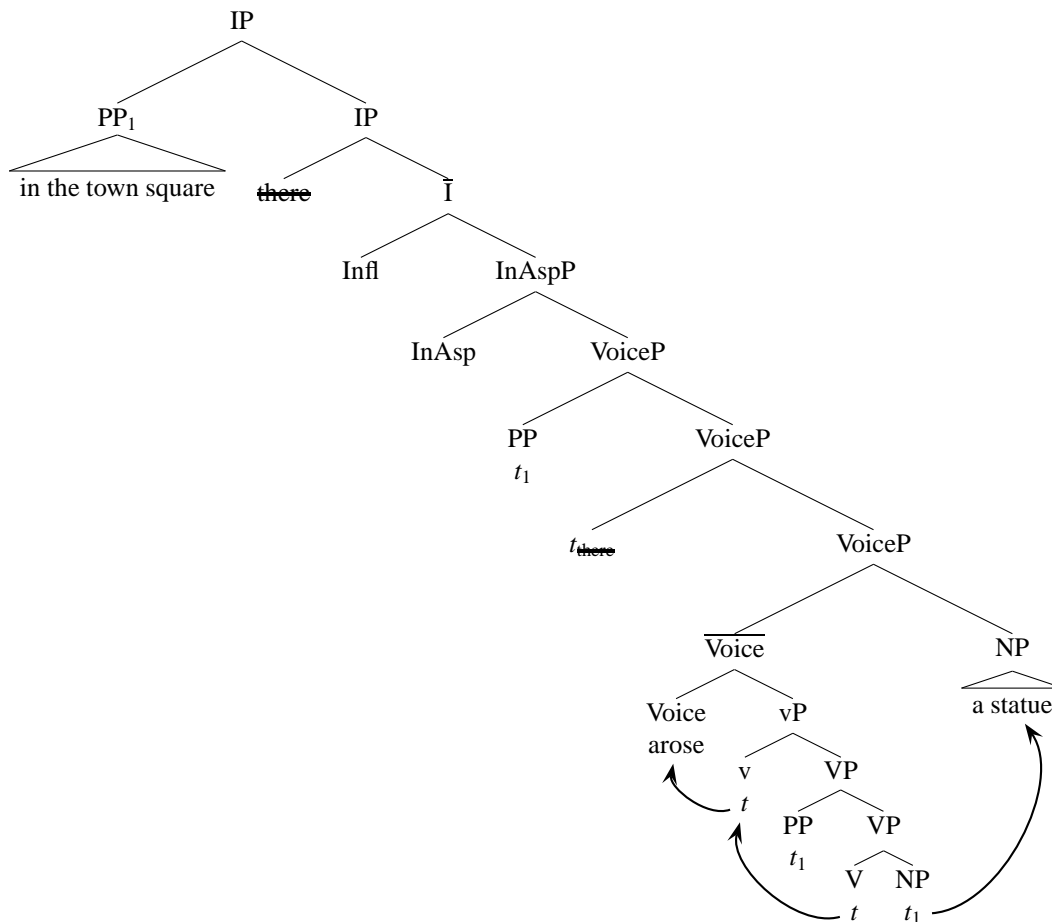


So, the rightward specifier of the phase head may be filled by movement, or by initial merger of an NP, as here.
 Unaccusatives also allow locative inversion:

(55) In the town square arose a statue.

I assume that unaccusatives have a VoiceP that does not project an external argument. However, it can project a non-thematic specifier, and does so on the right in locative inversion. The underlying object moves to this rightward specifier, exactly as in a passive:

(56)



Since unaccusatives occur in the active voice rather than the passive, though, V moves through v to Voice.

4.2 Arguments for a Rightward Specifier

Doggett (2004, 39–40) gives two arguments that locative inversion involves a rightward specifier. The first argument comes from verb-particle constructions. Normally, an underlying object can occur on either side of a particle:

- (57) a. Zane wrote down some figures.
- b. Zane wrote some figures down.

- (58) a. Greg put down some packages.
- b. Greg put some packages down.

However, in locative inversion, the underlying object has to follow the particle:

- (59) a. In the notebook were written down some figures.
- b. * In the notebook were written some figures down.

- (60) a. On the table were put down some packages.
- b. * On the table were put some packages down.

Doggett takes this to indicate that the agreeing NP has moved to the right in locative inversion, a conclusion that I agree with.

The second argument is that the agreeing NP cannot be extracted from, as was shown by Bresnan (1994):

- (61) *? What kind of mushrooms do you think on these trails can be found [specimens of t]? (Bresnan 1994, (48b))

This is just like elements that have undergone heavy shift to the right—they do not permit extraction:

- (62) (Doggett 2004, 40, (63))
 - a. What did you find [a picture of t] in your attic?

- b. * What did you find in your attic [a picture of *t*]?

These two arguments support the analysis of locative inversion as involving a rightward specifier.⁶

4.3 Pseudopassives and Locative Inversion

The main task for this analysis is to explain why pseudopassives are incompatible with locative inversion. I repeat the examples below:

- (63) a. * During that time period were slept in many beds built originally for chipmunks.
 b. * In those days were argued about numerous abstruse questions of little practical relevance.
 c. * On Fridays are relied upon servants with impeccable timing and demeanor.
 d. * In grade school are jeered at many children with awkward social skills.

In the proposed analysis, locative inversion in the passive is *identical* to the expletive passive: the underlying object moves to Spec-PassP. The only difference is the orientation of that position: leftward in the expletive passive, but rightward in locative inversion. The reason that pseudopassives allow leftward movement of the NP into Spec-PassP (the expletive passive) but not rightward movement into the same hierarchical position (locative inversion) is that objects of prepositions cannot undergo rightward movement (Ross 1967). It is well known that objects of prepositions cannot undergo heavy NP shift:

- (64) a. We discussed — at the conference numerous topics of only fleeting importance.
 b. * We talked about — at the conference numerous topics of only fleeting importance.

The entire PP can undergo heavy shift:

- (65) We talked — at the conference about numerous topics of only fleeting importance.

An account of this has been proposed by Drummond, Hornstein, and Lasnik 2010, which I adopt in slightly modified form here. First, I assume that PPs are phases (Abels 2003), and linear order is fixed once a phase is completed, as proposed by Fox and Pesetsky 2005. Unlike Fox and Pesetsky (2005), however, I do not think that locality can be reduced to linearization. So locality—the Phase Impenetrability Condition (Chomsky 2000)—is independent of linearization. Furthermore, rightward specifiers have to be specifically licensed, as discussed above. Intermediate steps of movement will therefore always be leftward, because they take place only for reasons of locality.

Putting this together, in order to escape from a PP phase, the complement of a preposition will have to move to the specifier of P first.⁷ Since this specifier only exists as an escape hatch, it is on the left:

- (66) [numerous topics [about *t*]]

At the PP level, precedence relations are stated, as in Fox and Pesetsky (2005). This results in the statement “NP>about.”

If the NP then moves to any leftward position, such as Spec-PassP in the expletive passive, or on to Spec-IP in the pseudopassive, the result will be well-formed. All the precedence statements will be consistent:

⁶Note that in the analysis proposed here, unaccusatives and passives involve rightward movement in locative inversion, but unergatives do not (see 54). Given that constituents that have undergone rightward movement are inviolable islands to extraction, we might predict a difference between unergatives on the one hand and unaccusatives and passives on the other in their compatibility with extraction from the postverbal NP. Culicover and Levine (2001) claimed that some postverbal subjects can be extracted from in locative inversion:

- (i) ? Who did you say that into the room walked [offensive friends of *t*] waving rude signs? (Culicover and Levine 2001, 303, (43a))

Although Culicover and Levine (2001) claim that the relevant verbs are unaccusative, they actually seem to be unergative. For instance, *walk into the room* permits a pseudopassive, which is usually taken to be a diagnostic of unergativity (Perlmutter and Postal 1984): *This room was walked into more than once last night*. In my judgment, clearly unaccusative verbs like *arise* do not permit extraction, and neither do passives:

- (ii) a. * Who did you say that in the town square arose [a statue of *t*]?
 b. * Who did you say that to the guests were given [inappropriate pictures of *t*]?
 c. * Who did you say that during that time period were constructed [numerous statues of *t*]?

I find a contrast between unergative examples like that of Culicover and Levine (2001) and unaccusatives and passives, supporting the structures posited here. However, no one else I have asked actually allows Culicover and Levine’s example in (i). Everyone uniformly rejects all such examples as ill-formed. I therefore hesitate to draw any conclusions from extraction, pending further research.

⁷It is also possible that PP is dominated by a functional head that is the phase head, as in van Riemsdijk 1990, Svenonius 2003, and others.

- b. *There* Agrees with an NP that occupies a rightward specifier.

Since a specifier is not projected unless it is occupied, there must be an NP on the right in locative inversion.

Given what was just said about pseudopassives, we predict that presentational *there* will be fine with pseudopassives when the NP is in the pre-participial position, but not when it is identical to locative inversion. This is correct:

- (74) a. During that time period there were numerous abstruse questions argued over.
b. * During that time period there were argued over numerous abstruse questions.

The rightward movement in (74b) results in conflicting linearization statements, as explained above.

In general, this analysis predicts that presentational *there* and locative inversion should pattern alike in most respects; this seems to be true, as documented extensively by Postal (2004).

4.5 Clausal Complements

We saw above that clausal complements are not compatible with the expletive passive. This is because *there* must Agree with an NP, not a CP, and it may not agree with the dummy *it*. Since in my analysis locative inversion also involves the dummy *there*, just not pronounced, it predicts that locative inversion will also be incompatible with clausal complements. This is correct (Bresnan (1995, 40) credits the observation that locative inversion does not allow complement clauses to David Pesetsky):

- (75) a. * At that time was decided [that we should surrender].
b. * On the roof was written [that enemies were coming]. (Bresnan 1995, 40, (48b))

We also predict, correctly, that presentational *there* is also incompatible with clausal complements (Postal 2004):

- (76) a. * At that time there was decided [that we should surrender].
b. * On the roof there was written [that enemies were coming]. (Postal 2004, 43, (103b))

5 Conclusion and Consequences

The analysis proposed here captures numerous facts about English, besides the data point that motivated the enterprise: that the expletive passive is compatible with pseudopassives while locative inversion is not. It also explains the complementary distribution of the pre-participle position and locative inversion, since they both involve the same position, differing only in directionality. It explains Milsark's generalization about the position of the associate of *there*: that it appears after the highest *be* auxiliary. The account of that fact also explained a curious pattern of ellipsis with *be* auxiliaries. Constraints on linearization explain the inability of the object of a preposition to move rightward, deriving the ban on pseudopassive locative inversion. That same account also has the happy consequence of deriving the Right Roof Constraint. The analysis also includes an account of dummy elements generally, which explains facts that researchers have previously tried to explain, unsuccessfully, with a preference for Merge over Move or vice versa. It also captures the distribution of clausal complements in passives, expletive passives, and locative inversion. Finally, the analysis also explains adverb placement facts in the active and passive.

Throughout this paper, the analysis has been motivated by the empirical facts. My primary concern has been modeling the grammar that comprises the competence of a native English speaker. In addition, however, the model that we have been led to has some interesting consequences for syntactic theory.

First, I have been led to posit completely different mechanisms for agreement and case licensing. Agreement takes place via Agree; case licensing, in contrast, seems to involve designated positions. An NP must be immediately dominated by a projection of a case licensing head. That head has no requirement of its own, and is perfectly satisfied if nothing moves to such a position. In addition, though, certain heads *do* have such requirements: Pass strictly requires a phi-complete NP to occupy its specifier, independent of case licensing (in the pseudopassive, the NP is case licensed by the preposition, but still has to move to Spec-PassP). I have formalized this as a [Spec:N] feature on the relevant head. The Extended Projection Principle can be thought of as such a feature: a [Spec:N] feature on Infl, as described above.

The facts addressed here do seem to motivate divorcing agreement and case licensing, as well as movement driven by a [Spec] feature. In the pseudopassive, for instance, the NP object of P should have all of its case requirements met within PP, since there is no difference between the active and passive voices internal to PP. The exact same object of P can remain in situ or move in the passive, depending on the presence of another NP:

- (77) a. The soldiers were marched across the bridge.

- b. The bridge was marched across (by the soldiers).

There is no reason to think that the PP differs in the two examples above. Movement of the object of P seems to be completely independent of case licensing, as does agreement.

Moreover, theories that rescind accusative case licensing in the passive have trouble dealing with the expletive passive. If objects must move to Spec-IP to get nominative case in the passive, how do they get case in the expletive passive? Movement to Spec-PassP and to Spec-IP really seems to have nothing to do with case, as most researchers have begun to recognize regarding at least Spec-IP with discussion of “EPP features” (Chomsky 2001). Agreement also seems not to be at issue: there is no evident agreement with non-finite Infl or Pass, yet movement to these positions still takes place. There is absolutely no agreement reflex of movement of the object to Spec-vP in the active voice in English, and if v had to Agree with something, then intransitives would remain unexplained. The analysis proposed here has divorced these three things (agreement, case licensing, and specifier requirements of heads), which appears to be necessary to account for the facts.

A second point of theoretical import concerns linearization. A crucial part of the analysis is the rightward specifier in locative inversion. Directionality must therefore be something that is encoded in the syntax, in addition to hierarchy. However, I have also severely restricted rightward projection of specifiers: it must be specifically licensed. In locative inversion, the rightward specifier is licensed by a second specifier occupied by null or overt *there* and fronting of a PP. Presumably, interface constraints can license rightward specifiers in heavy shift, as well. Otherwise, specifiers all have to be leftward. This combined with the Phase Impenetrability Condition and Fox and Pesetsky’s (2005) cyclic linearization results in rightward movement being strictly local.

At the same time, however, restrictions on rightward movement require *both* Fox and Pesetsky’s constraints on linearization *and* an independent locality condition like the Phase Impenetrability Condition. Locality conditions cannot reduce to linearization, as Fox and Pesetsky claimed. However, linearization does play a role, albeit a much reduced one compared to the role envisioned by Fox and Pesetsky.

Finally, it is important to note that I have provided analyses of expletive passives, pseudopassives, locative inversion, and presentational *there* without ever making reference to a *construction*. In particular, it is possible to state the constraints on locative inversion as holding at a local point in the derivation: at Spec-PassP, where the rightward specifier, the dummy *there*, and the moving PP all occur together at a phase edge. I take this to be strong support for a model of grammar that eschews constructions as a theoretical device (in contrast to, e.g., Goldberg 1995, 2006; Goldberg and Jackendoff 2004).

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