SOME SPECULATIONS ON THE DEVELOPMENT OF THE ROMANCE PERIPHRASTIC PERFECT

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Abstract. The goal of this paper is to look again at the very well-known development of the periphrastic perfect in the Modern Romance languages in the light of recent approaches to the passive based on Collins (2005) (see also Cyrino (2009), who develops very similar ideas from the same starting point). Alongside the diachronic analysis, the paper aims to provide a general and somewhat novel picture of the nature of both auxiliaries and participles, something which, despite the great familiarity of periphrastic tenses of this form in many European languages, has not really emerged clearly before. Another construction which has been somewhat neglected, and which we briefly analyse, is the English *have*-causative construction. Further, we compare and contrast this Romance development with the development of split-ergativity from a Sanskrit passive in some Indo-Iranian languages.

Key words: Diachronic Change, Periphrastic Perfect, Passive, Resultative, Causative, Smuggling, Auxiliary, Ergative.

The goal of this paper is to look again at the very well-known development of the periphrastic perfect in the Modern Romance languages in the light of recent approaches to the passive based on Collins (2005) (see also Cyrino 2009, who develops very similar ideas from the same starting point). The fundamental change is illustrated by the following Classical Latin and Italian sentences:

(1) a. Habeo epistulas scriptas.
I-have letters-ACC.PL written-ACC.PL
'I've got the letters written.'
b. Ho scritto le lettere.
I-have written the letters
'I've written the letters.'

In (1a), *habeo* takes a reduced clausal complement (whose exact nature I will make clear in §4) consisting of the passive participle *scriptas* and the passivised complement DP *epistulas*. Both elements agree for accusative case, plural number and feminine gender. The Standard Italian construction is given in (1b); here the direct object is in its usual postverbal position, the participle is active (in the sense that neither it nor the clause has any of the

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usual properties of passive, except for the presumably synchronically accidental fact that the participle has exactly the same form as the corresponding passive), there is no object agreement of any kind and the auxiliary bears subject agreement, like any finite verb in Italian. Of course, in all these respects Standard Italian is representative of most of Romance, at least regarding the formal properties of the periphrastic perfect[2].

Alongside the diachronic analysis, the paper aims to provide a general and somewhat novel picture of the nature of both auxiliaries and participles, something which, despite the great familiarity of periphrastic tenses of this form in many European languages, has not really emerged clearly before. Another construction which has been somewhat neglected, and which we briefly analyse, is the English *have*-causative construction.

The paper is organised as follows: in §1 I describe Collins' (2005) smuggling approach to passives. In §2 I extend the idea by treating the smuggling derivations as a general class of derivations, which I call "indirect derivations". In §3 I sketch briefly how this can extend to a variant of the classic analysis of Romance *faire*-causatives (Kayne 1975, Burzio 1983, 1986), and to the English *have*-causative. This provides the basis for the analysis in §4 of the Latin construction in which *habere* appeared with a passive complement, which seems very similar to the English construction. I propose that in neither of these constructions is *habere/have* an auxiliary, in the sense that it has both θ-role and Case properties (and in English there is independent evidence from the fact that this *have* shows obligatory *do*-support in negation and inversion contexts). The diachronic change is also discussed in §4.

In §5 we discuss the implications of this for the general account of HAVE/BE alternations (following standard practice, I write capital HAVE/BE as cover terms for the perfect auxiliaries in various languages which are homophonous with possessive and copular verbs/auxiliaries, respectively, e.g, Italian *avere* and *essere*, German *haben* and *sein*, etc). The incorporation analysis that follows is similar to those of Freeze (1992) and Kayne (1993). In §6 we briefly sketch an account of ergative alignment, showing that this too can be handled as a kind of indirect derivation. We then contrast the passive-to-ergative shift with the development of HAVE perfects, showing that the two changes are in a sense opposites. In §7 I present the conclusions.

1. SMUGGLING, (A-)MOVEMENT AND LOCALITY

Consider the abstract structure in (2), where H is an active probe endowed with a movement-triggering feature (following Biberauer, Holmberg & Roberts (to appear) I use

[2] The construction differs semantically somewhat more across Romance, in that it is the default past-tense construction in French and most Northern Italian dialects as well as regional Northern Standard Italian. The same is true of modern spoken Standard Romanian, although Adam Ledgeway (p.c.) informs me that that there are some dialects of south-western Romania where both periphrastic and synthetic forms are still used, but with the "opposite" values (i.e. periphrastic *am mâncat* 'I ate' vs synthetic *mâncai* 'I have eaten'). In Central and Southern Italian dialects, both the auxiliary and the past-participle agreement patterns are very variable, something I cannot go into here; see Loporcaro (1998), Manzini & Savoia (2005, II, Ch 5), D'Alessandro & Roberts (2010), Legendre (2010), and the references given there. In Ibero-Romance, the periphrastic form largely retains its perfect value. Portuguese has the auxiliary *ter* (< Latin *tenere* 'hold') and Catalan has a *va*-auxiliary, historically derived from *anar* ('go') with the infinitive as a past perfective, alongside a perfect with *haver* + participle (Wheeler 1998).

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the ^ notation to indicate a movement-triggering feature, which should be seen as a pure diacritic)[3] and DP is a potential goal:

(2) $H^{\wedge}_{[u\varphi]}$ $[_{XP}$ $DP_{[i\varphi,\ uCase]}$ [X YP]]

The standard view is that H can only attract its DP goal here. This is clearly one possibility, and represents what I will refer to as a **direct** derivation. For example, if H is T and XP is vP, this would be raising of the external argument (EA) to SpecTP on standard assumptions – see Chomsky (2000, 2001). But is this the only possibility? Chomsky (2001: 4) proposes that a probe with an EPP feature must raise its goal to its specifier. Let us suspend that assumption, allowing probe-goal agreement between H and DP to take place without DP-movement even in the case where H has ^, and consider what other elements in (2) could in principle move to SpecHP.

We can rule out XP-movement on general anti-locality grounds (Abels 2003, Grohmann 2000)[4]. If we assume a generalised non-intervention constraint on both movement and Agree, then we can see that in (2) H can attract YP only if YP ≠ DP. For the same reason, H can Agree with X but not Y. Although they can Agree, if there is no syntactic head-movement, X can't move to H.[5] Furthermore, any category contained in or asymmetrically c-commanded by YP will prevented from moving by the presence of YP.

But there is no obvious barrier to YP-movement. This involves the maximally local case of movement which is not excessively local, i.e. movement of the complement of the complement. I therefore conclude that this is possible.

So we now arrive at the basic characterisation of the two kinds of derivation. In relation to (2), then these are as follows:

(3) a. **Direct** derivation: DP moves to SpecHP (to value H's [uφ] features, triggered by ^), YP doesn't.
b. **Indirect** derivation: YP moves to SpecHP, DP doesn't (but enters into an Agree relation with H).

In the next two sections, I will briefly show how these ideas underlie the active/passive alternation, as well as one kind of causative construction.

[3] It can be seen as an extra EF, in addition to the one permitting External Merge of H's complement. Given the binary nature of Merge, and the definition of a complement, the only possibility for satisfying a second EF is the creation of a Specifier.

[4] Biberauer, Holmberg & Roberts (to appear) suggest that complement-to-specifier movement is possible just in the case of movement for linearization, what they call L-movement. In this particular case, they argue that the movement diacritic is associated with the categorial feature of the head, and therefore causes movement of the complement to the specifier. The presence of the movement-triggering feature on the categorial feature of the head gives rise to surface head-final order in the category in question. Aside from this case, though, maximally local movement (complement-to-specifier movement) isn't allowed.

[5] Here I follow Chomsky (2001: 37–8) in (temporarily) assuming that there is no syntactic head-movement. Roberts (2010) argues that Agree can give rise to incorporation, i.e. syntactic head-movement, under certain conditions.

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2. PASSIVES (ADOPTING AND ADAPTING INSIGHTS FROM COLLINS 2005)

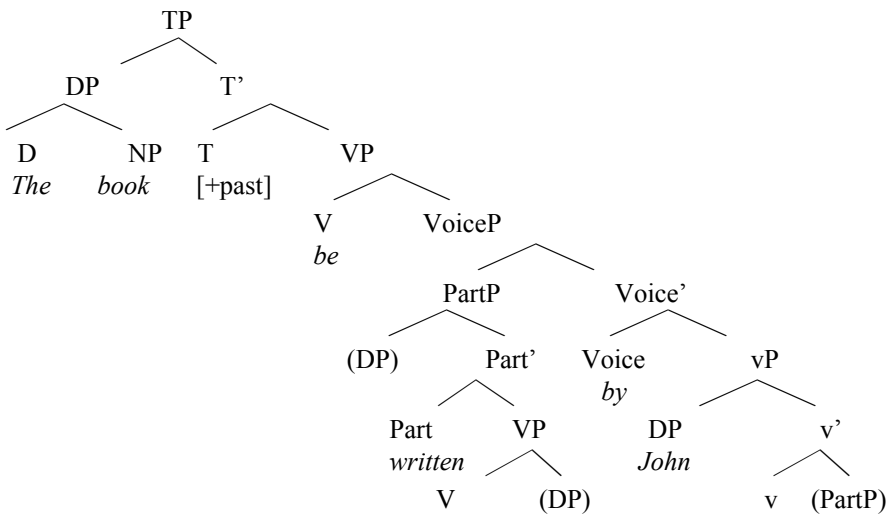
Here I present the main elements of an analysis of passive based on, but not quite identical to, that in Collins (2005). One modification is that I assume Voice is always present, as the head of the "internal clausal phase" rather than v. In this I follow Kratzer (1994), although I differ from her analysis in that I assume that vP is present, and that the EA is first-merged in Spec,vP. Following Collins, I take it there is a PrtP between vP and VP in passives. Thus we have the following clause structure for both actives and passives (the single difference being the obligatory presence of PrtP in passives):

(4) … $T_{[u\varphi, \wedge]}$ .. [$_{VoiceP}$ Voice [$_{vP}$ EA v ([$_{PrtP}$ Prt) VP (])]]

In the **direct** derivation, T probes the EA, which raises to the subject position in the usual way. This gives an active clause[6].

In the **indirect** derivation, Voice's ^-feature triggers movement of the PrtP to SpecVoiceP. This movement "smuggles" the VP-internal direct object past the EA, and makes it possible for this argument to be probed by and raise to SpecTP. But the EA clearly requires a distinct probe. I propose that Voice, as the internal phase head, has φ-features which are, in active clauses, inherited by v and thereby available to licence the direct object. In passive clauses these features licence the EA, either as a null pronominal or as a *by*-phrase. So in this way, a passive clause can be derived. The structure of a passive clause is as follows (compare Collins 2005: 90):

(5)



In active clauses, Voice's uninterpretable φ-features are inherited by *v*, while its ^-feature triggers raising of the EA to its edge, allowing EA to be probed and attracted by

[6] If A-movement is subject to the PIC, then the EA will have to move through the edge of Voice, and so Voice must have a movement-triggering feature in this case.

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T. Hence, in an active clause, EA cannot be probed by Voice. In passives, on the other hand, Voice withholds its φ-features and these are therefore available to probe the EA, while at the same time retaining its ^-feature which attracts PrtP, placing the direct object in the probing domain of T. The direct object moves through SpecPrtP, triggering past-participle agreement in Romance languages in that position (Kayne 1989, Collins 2005). However, as D'Alessandro & Roberts (2008) point out, Spec-head agreement, as opposed to Agree more generally, is no longer generally seen as the mechanism for morphological agreement; the object may easily trigger morphological agreement by being the goal of a probe where the Agree relation is contained in a single spell-out domain, and that may be the case here. See D'Alessandro & Roberts for a proposal concerning the nature of past-participle agreement in Standard Italian which does not refer to Spec-head agreement.

Following Collins (2005) and Roberts (1987), I take it that the external argument is merged in the same position as in actives; this is in line with the simplest and strongest interpretation of Baker's (1988) Uniformity of Theta-Assignment Hypothesis, which requires a one-to-one correspondence between θ-roles and first-merged positions of arguments. Evidence for this, pointed out by Collins (2005: 82–3), comes from the fact that any argument able to function as the subject of the active can appear in the *by*-phrase of a passive[7]:

(6) a. It was believed by everybody that Mary was a thief.
b. Danger was sensed by John.
c. A black smoke was emitted by the radiator.
d. That professor is feared by all his students.
e. Mary was respected by John.
f. A copy of the book has been received by everyone.
g. Ted was bitten by the lovebug.
h. *A train was arrived by there.

[7] There are two exceptions to this generalisation, both pointed out by Bruening (2011). The first involves the "meteorological" *it* of weather verbs:

(i) John got rained on (*by it).

One possibility is that meteorological verbs have a zero argument structure: they have no argument beyond a possible cognate object. This is supported by the fact that Italian *piovere* is indifferent to auxiliary selection: *E' piovuto/ha piovuto* (It is/has rained = "It rained"). The verb acts indifferently as an unaccusative or an unergative. This would follow if it has no argument structure at all. Another possibly relevant consideration is that, in many languages, the equivalent expression is "It fell rain" or "Rain fell" suggesting that in English there is incorporation of the cognate object into an unaccusative light verb. If so, this would be a unique case of cognate object with an unaccusative (except for *die a death*, which might be coerced as an agentive unergative).

The second case is generic pronouns:

(ii) a. You should always speak Latin in this College.
b. Latin should always be spoken (*by you) in this College.

This fact may be related to the fact that passive implicit arguments have the quasi-existential arbitrary interpretation identified by Cinque (1988:546), while these pronouns only have the "quasi-universal" interpretation. Cinque points out that the quasi-existential interpretation is restricted to external arguments, although it remains unclear why this is.

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In the passive, then, Voice licenses the EA in Spec,vP. Where the EA is overt Voice is realised as *by*; where it is not overt it has a zero realisation[8]. Following a suggestion in Roberts (2010: §3.6.1), I characterise the informal notion of "Case-marker" in Agree terms as a probe with uninterpretable φ-features and an interpretable Case feature. Often, the interpretable Case-feature is of the dative kind. The other kind of "Case-marking" v that concerns us is precisely the passive kind: this one is associated with what I will call "EA Case" (which may be taken to stand for either "External Argument" or "Ergative-Ablative"; the link to ergative case patterns will emerge more clearly in §6 below). The realisation of EA Case is as *by* when the EA is overt, and zero when it is covert, suggesting that only φ-features (which, as „internal" φ-features are always phonologically null in English) are required to license the empty EA. Evidence for the empty EA comes from well-known examples like the following (for extensive discussion of the nature of the passive "implicit argument", see Baker, Johnson & Roberts 1989: 224f. and Roberts 1987: Ch 3):

(7) The book was *pro* written [to make money].

As indicated here, I take the null EA in passive to be a pronoun with quasi-existential arbitrary reference in the sense of Cinque (1988: 546); see also Note 7.

These, then, are the main elements of the analysis of passives I assume. The formal mechanism behind the active-passive alternation is that Voice either keeps (passive) or donates to v (active) its uninterpretable φ-features (the "keep-donate" terminology is from Ouali 2008). In the former case, an indirect derivation featuring movement of PrtP to SpecVoiceP followed by movement of the direct object to SpecTP is triggered and Voice licenses the EA in situ. In the latter case, v licenses the direct object in situ, and the EA raises through SpecVoiceP to SpecTP. The difference between the two derivations is a single, minimal formal property (whether Voice keeps or donates its φ-features).

One issue which will be relevant below concerns the choice of auxiliary. The structure given in (5) follows Collins in taking *be* to be inserted into a higher V node. However, it is plausible that *be*, as an auxiliary, is first-merged in v (which arguably always moves to T in finite clauses, while V does not always raise to v; this gives the effects of Emonds' (1976, 1978) *have/be*-raising rule, see Biberauer & Roberts (2010) for an analysis English auxiliaries along these lines). For the moment, I take it simply that *be* is inserted as the default auxiliary, purely to carry the finiteness features in T, since V cannot carry them, being a participle (see again Biberauer & Roberts (2010) on the distinction between *be* and *do*, and for an analysis of the latter as something more than just a "support" element; on why some languages have passive participles and others do not, see the suggestion in Roberts (forthcoming)).

The default value of the participle is passive, as shown by contrasts like the following from Collins (2005: 92) (see also Fabb 1984):

[8] Here again I follow Collins (2005: 95) in assuming that *by* and the EA do not form a constituent in passives. See Collins for discussion. It is possible to take a more traditional view, and perhaps construe *by* as a reflex of the Case property of the goal rather than the probe. Aside from the issues surrounding constituency tests that Collins alludes to, I take this question to be tangential to the main concerns of this paper, and so I will leave it aside.

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(8) a. Written in only three days, this book sold millions of copies.
b. *Written her dissertation in only three days, Sue took a break.
c. Having written her dissertation in only three days, Sue took a break.

Therefore both the participle and the auxiliary are non-defaults in the perfect. Following Haider (1984), Hoekstra (1984) and Kayne (1993), I will propose below that this is due to a special property of *have*; what, following D'Alessando & Roberts (2010), I will refer to as its anti-ergative nature.

Before looking in more detail at perfects, however, we need to look briefly at how the smuggling approach to causatives works. This will allow us to understand the Latin construction in (1a), a necessary prelude to understanding how it changed into the Italian construction in (1b).

3. CAUSATIVES

There are several different kinds of causative constructions cross-linguistically (see Comrie 1985), but for our present purposes it is enough to distinguish two. I refer to one as ECM-like causatives, for obvious reasons. This type is illustrated in (9):

(9) a. She will [let John eat the cake].
b. Elle [laissera Jean manger le gâteau]. (Kayne 1975: 270)

We analyse the bracketed part of the structure in (9) as follows (see also Den Dikken 2006: 45–7):

(10) LET $[_{\text{VoiceP}}$ Voice $[_{\text{vP}}$ EA v $[_{\text{InfP}}$ Inf VP]]]

Here, in the **direct** derivation, EA raises to SpecVoiceP and is probed by LET, Voice's [uφ]-features are inherited by v, and license the direct object. In other words, internally to VoiceP, the derivation is exactly as in an active transitive. The difference is that LET, unlike T in a normal transitive clause, has uninterpretable φ-features but no ^-feature, and so the EA remains in SpecVoiceP.

In the **indirect** derivation, Voice withholds its φ-features, licensing the EA *in situ*, and InfP raises to SpecVoiceP. This places the object inside VP in a position where it can be probed by LET. This derivation is not allowed in English (with an InfP inside VoiceP),[9] but is allowed in French with *laisser*:

(11) Elle [laissera manger le gâteau par Jean].

Note that the Case-marker for the EA is exactly the one that appears in passives in French. The causative verb *faire* only allows the indirect derivation in its complement:

(12) a. *Elle fera Jean manger le gâteau.
b. Elle fera/laissera manger le gâteau à/par Jean.

[9] Although it used to be: see the examples in Roberts (1993: 286–7).

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Here we see an apparent choice of Case-marker for the EA: *à* or *par*. Kayne (1975: 235f.) shows these are distinct constructions: the construction in which the lower EA is marked with *à*, is the *faire*-infinitive (FI) construction, while the one where the lower EA is marked with *par* is the *faire-par* (FP) construction. These are not identical constructions, although I will treat them similarly here; on the principal differences between them, see Kayne (1975: 235f.), Guasti (1993, 2006: 152–159), Folli & Harley (2007: 198–203).

The distribution of clitic-climbing in causatives shows that the two derivations are somewhat different. Clitic-climbing is required in the indirect derivation, impossible in the direct one:

(20) a. Je la fais/laisse laver à/par Marie.
I it make wash to/by Marie
'I make Marie wash it.'
b. Elle laissera Jean le manger.
She will-let John it to-eat
'She will let John eat it.'
c. *Elle le laissera Jean manger.
She it will-let John to-eat.

If, as argued at length in Roberts (2010), argument clitics are always realised on their probes in virtue of their defective nature, then the obligatory climbing of the clitic in the *faire* causative in (20a) shows that the nearest probe to the fronted InfP is in the matrix clause. In the ECM-type complement to *laisser*, on the other hand, the nearest probe to the direct object in the in-situ InfP is in the subordinate clause. This analysis is very close both in spirit and in detail to Kayne (1975) and Burzio (1983, 1986), both of which essentially anticipated the smuggling approach (see also Baker 1988).

Let us now extend this analysis to the English *have* causative, shown in (21):

(21) a. I had Mary wash the car.
b. I had the car washed (by Mary).

This construction is in a sense a hybrid of the two kinds of causativc seen so far. In those, we saw that the causative verb selects VoiceP: a direct derivation inside VoiceP gives rise to an ECM causative, while an indirect derivation gives rise to a FP/FI-style causative. We can apply the same analysis to the complement of *have*, as follows:

(22) ... have [$_{\text{VoiceP}}$ Voice [$_{\text{vP}}$ EA v ([$_{\text{PrtP}}$ Prt) VP (])]]

A direct derivation inside TP will give the active complement in (21a), with EA *Mary* in SpecVoiceP; an indirect derivation gives the passive complement in (21b), with the PrtP *the car washed* in SpecVoiceP (featuring obligatory raising of the internal argument to SpecPrtP, as in *There were several students arrested*). So the structure of the English *have*-causative is exactly like that of the French causative considered above, except that *have* tolerates either kind of derivation inside its VoiceP complement, unlike *faire* (but like *laisser*). The difference between the English causatives and the French ones is that the

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French ones contain a potentially smuggled InfP, while the English ones are more directly related to passives in containing a PrtP (this may be connected to the fact that English lacks overt infinitival morphology – see the reference in Note 9).

In this context, it is useful to compare *have* with the other English causative predicates *make, let* and *get.* These predicates differ along three dimensions: first, whether *to* is allowed or required to appear in their complement; second, whether the causative can itself passivise; and third, whether in the passive *be* is allowed or required in the passivised complement. In (23), we see that *have* never allows *to,* resists taking *be* in its complement, and cannot passivise[10]:

(23) a. *I had Mary to wash the car.[11]
b. I had the car (*to) (?be) washed by Mary.
c. *Mary was had wash the car.
d. *The car was had (be) washed
(24) a. I made Mary (*to) wash the car.
b. I made the car (*to) *(be) washed (by Mary).
c. The car was made *(to be) washed (by Mary).
d. Mary was made *(to) wash the car.
(25) a. I let Mary wash the car.
b. I let the car (*to) be washed by Mary.
c. *The car was let (be) washed by Mary.
d. ??Mary was let (*to) wash the car.
(26) a. I got Mary *(to) wash the car.
b. I got the car (to be) washed by Mary.
c. *The car was got (to be) washed by Mary.
d. ??Mary was got *(to) wash the car.

We see that *let* patterns like *have* regarding the possibility of passivisation and having *to* in its complement (although the judgement is a little more marginal), while it requires *be.* On the other hand, *make* does not allow *to* when it has an active complement, but it does not allow a passive complement without *to*, and *get* does not require *to* or *be* when it has a passive complement.

[10] *Have* and *get*, but not *make* or *let*, can also appear in an active causative construction where the lower verb is in the progressive form:
(i) Jean-Pierre had/got me speaking French in no time.
A range of aspectual verbs appear in this construction:
(ii) Jean-Pierre kept/started/stopped me speaking French.
The latter have raising and passive versions which *have/get* disallow:
(iii) a. I was kept/started/stopped speaking French (by Jean-Pierre).
b. I kept/started/stopped speaking French.
(iv) a. *I was got/had speaking French.
b. *I got/had speaking French.
This is consistent with the idea that the causative triggers have their own intrinsic φ-features, not subject to passive (iiia) or ergative (iiib) alternations. See below.

[11] (23a) is grammatical on the purpose-clause reading. But on this reading the construction isn't restricted to *have;* any main verb will do:
(i) I brought/hired Mary to wash the car.
Here the infinitive is clearly an adjunct (see Roberts 1987, Ch 3).

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One generalisation emerges from all of this: where the complement does not contain *to*, the causative predicate cannot be passivised. Since ability to passivise and containing *to* in the complement are both canonical properties of ECM, I take complements of this type not to be ECM TPs. On the other hand, passive *make* and and, optionally, active *get* take a TP complement.[12] This in turn implies that active *make*, as well as *have* and *let* do not take a TP complement; this of course immediately accounts for the absence of *to* if we make the standard assumption that *to* is the marker of non-finite T. Instead, for *have,* active *make* and *get* (the latter with a passive complement), I take it that the complement is VoiceP, as shown in (22).

Where *be* is present in the passive complements (required by *let*, marginally allowed by *have*), I take it there is a further vP with v occupied by *be*. There is clearly an external-argument position here, shown by the possibility of an expletive, as in *we had there be a riot/We let there be several students arrested*. This v has no external argument role (presumably because it is too distant from the thematic VP), but has a ^ feature.

In order to see why *have* and the other causative predicates cannot be passivised in this construction we have to see why the structure in (22) cannot participate in a well-formed smuggling derivation. Recall that in the discussion of passives above we said that Voice withholds its φ-features from v, and hence the internal argument of V cannot be Case-licensed in situ. Suppose, however, that causative predicates have their own φ-features; they do not inherit them from Voice. In that case, the argument raised to the highest Specifier position in the complement of *have* in (22) (whether this is EA, or, thanks to smuggling on the lower cycle, the internal argument of V) will effectively be "frozen in place" and unable to raise further. Even if an expletive is inserted in the matrix SpecTP position (giving either **There was had a car washed* or **There was had someone wash the car*) on standard assumptions regarding the deficient feature content of expletives (e.g. Chomsky 2001), not all of T's uninterpretable φ-features will be valued. This account carries over to French *faire*, which is also unable to passivise[13]. It is also worth pointing out that causative predicates clearly have their own argument structure: it is natural to think of them as having an external argument and an event as an internal argument (see Ramchand 2008: 45f.). So causative *have* in English differs significantly from auxiliary *have* (as in the perfect) in having both φ-features and θ-roles; in these respects it is like a main verb. This observation is independently confirmed in English by the fact that causative *have*, unlike perfect *have*, has unambiguously "main-verb" properties in relation to *do*-support in negation and inversion contexts:

[12] We can see that these are not control complements from the possibility of *there* and idiom chunks raising to the derived subject position:

(i) There was made to be a riot.
(ii) The shit was made to hit the fan.
(iii) There were made to be many students arrested.

Get can have an ECM use, but it consistently resists passivisation for unclear reasons:

(iv) We got there to be several students arrested.
(v) *There were got to be several students arrested.

[13] And leaves open the question of Italian *fare* in examples like (i):

(i) La macchina è stata fatta aggiustare.
the car is been made repain-Inf
"the car was made to be fixed".

See Zubizarreta (1985). It seems that Italian *fare*, unlike English *have* and French *faire*, does not have its own φ-features, but inherits them from Voice via v; hence it can passivise.

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(27) a. Did John have/*Had John Mary wash the car/the car washed?
b. John didn't have/*hadn't Mary wash the car/the car washed.

In this respect, causative *have* also differs from modal and possessive *have*, which, as is well-known, vary in these properties according to dialect and register.

So we take the four causative predicates to be alike in introducing their own φ-features (this of course makes them exceptional among lexical heads, and more like functional heads, but for present purposes just the distinction between Voice and V suffices). For this reason, they are unable to "passivise", since they always freeze a goal in their complement in place. English *have* and *let* select VoiceP, hence *to* never appears in their complement and *be* is possible as a realisation of the lower v (more marginally with *have* than with *let*; see (23b) vs (25b)). English *make* has the same properties, but has a semi-independent form which takes an ECM complement and passivises (so here *make* does not introduced its own φ-features); active ECM *make* appears to be "blocked" by the Voice-selecting *make*, however this is to be formalised, hence the ungrammaticality of (24a) with *to*. Causative *get* is an ECM verb which is unable to passivise, hence has its own φ-features; this *get* does not have a VoiceP complement, but passive *get*, like French *faire*, requires the passive derivation in its complement. The different properties of different causative verbs in English, along with *faire* and Italian *fare* (see Note 13) are summarised in Table One:

Table One

	[__ TP]	[__ VoiceP]	[+φ]	[__ indirect derivation]
Have	-	+	+	±
Let	-	+	+	±
Make	±	±	±	±
Get	+	-	+	+
Faire	-	+	+	+
Fare	-	+	-	+

To summarise, we have seen three types of causative construction in this section: VoiceP with a direct derivation (ECM), VoiceP with an indirect derivation (FI/FP) and vP containing a VoiceP allowing either a direct or an indirect derivation (English *have/let*). The last of these will play a role in the analysis of the diachronic development of perfects in subsequent sections.

4. THE ORIGIN OF THE PERFECT

4.1. *Perfect vs causative HAVE*

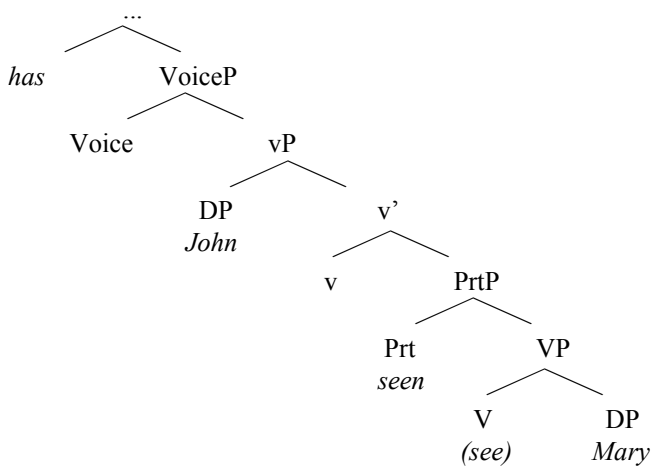
Let us begin by looking at the English perfect, in particular at the nature of *have* in this construction. Parallel to what we saw in the previous section with causative *have*, we could propose the structure in (29) for a simple perfect like that in (28)[14]:

[14] This approach to perfects differs from that put forward in Cyrino (2009), who assumes that these constructions also feature smuggling, like passives.

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(28) John has seen Mary,

(29)



Here, as in the causative, *have* takes a VoiceP complement which contains a PrtP. However, in the perfect interpretation *have* functions as a raising trigger (this was first observed by Ross 1969). In particular, *have* has no φ-features and no external θ-role (i.e. Burzio's generalisation applies here). Therefore, *John* is probed by the matrix T and attacted to the matrix subject position by T's EPP feature in the standard way. Furthermore, the English perfect is not inherently eventive, in the sense that statives are allowed as long as the "current relevance" aspect of perfect meaning is retained:

(30) a. That box has contained plutonium.
b. Hermione has always known the answers.
c. I have always hated spinach.

Compare this with the oddity of causative here (the same is true of the passive complements):

(31) a. ??We had the box contain plutonium.
b. ??We had her know the answers.
c. ??They had me hate spinach.

It appears that *have* lacks the internal eventive argument in the perfect. Since it has no θ-roles and no φ-properties, it is an auxiliary. As is well-known, this *have* has auxiliary syntax in relation to *do*-support, negation and inversion (see (27)). It is likely then that the category of perfect is *v*, while that of causative *have* is V.

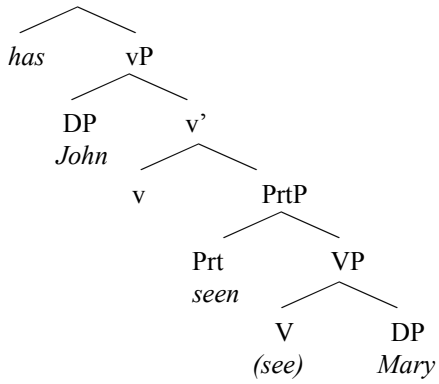
Only a direct derivation is possible in (29), unlike with causative *have*. In other words, the combination of raising from VoiceP and an indirect derivation inside VoiceP is not possible. If it were, (30) would result:

(30) *Mary has seen by John.

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It is certainly possible to state that *have* selects a Voice which only allows a direct derivation (just as French *faire* selects a Voice which only allows an indirect derivation, see §3), but it would obviously be desirable to have a less stipulative account of the ungrammaticality of (30). If no Voice alternation is allowed in the complement, and if the derivation is always and only direct, this casts doubt on the presence of Voice in the complement. So, we revise and simplify the structure in (29) as shown in (31):

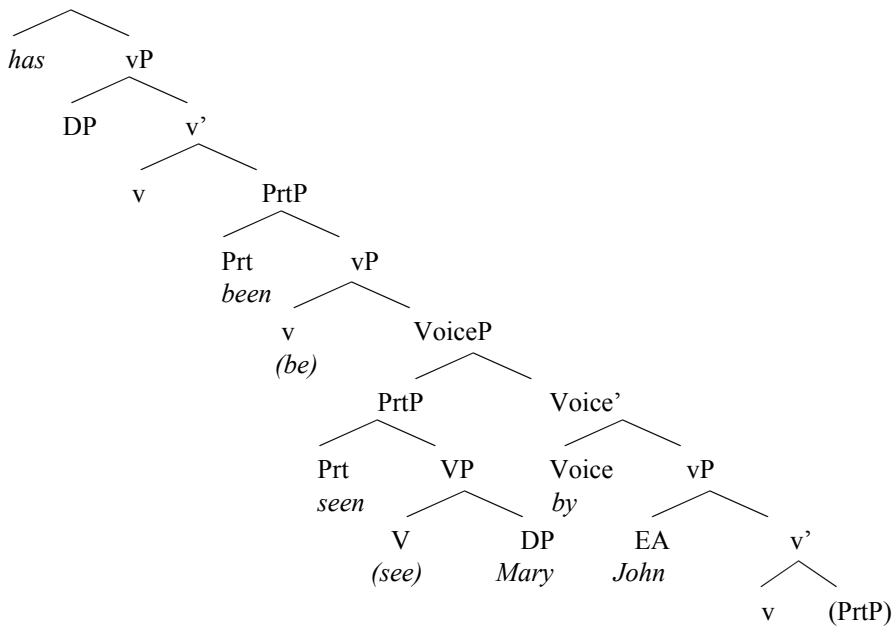
(31)



The grammatical counterpart of (30) is of course (32), which has the structure in (33):

(32) Mary has been seen by John.

(33)



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Here perfect *have* introduces its usual vP complement, which can contain PrtP, which can in turn select vP (assuming *be* is a light v). *Be* can select a passive VoiceP. The PrtP *seen Mary* triggers movement of *Mary* to its Spec (not shown in (33)), as can be independently verified by examples like *There have been many students arrested*.[15] From here it can raise successively, ultimately to the matrix SpecTP position.

So we arrive at the following differences between causative and perfect *have*:

(34)

causative *have*	perfective *have*
assigns θ-roles	no θ-roles
has intrinsic φ	no intrinsic φ
main-verb syntax	auxiliary syntax
takes VoiceP	takes vP

All of the properties in (34) arguably follow from the single statement that causative *have* is a lexical item while perfective *have* is functional. This is pretty clear as far as the thematic properties are concerned, as this is often seen as a fundamental difference between lexical and functional categories (see for example Pollock 1989). The intrinsic φ-features can be thought of as a form of inherent Case, especially since, as we saw, they cannot be affected by passivisation, and therefore are naturally seen as a property of lexical heads. Since Pollock (1989), it has been observed that "main-verb" vs "auxiliary" syntax in relation to *do*-support, negation and inversion is correlated with lexical vs functional status of the items in question respectively, although it has never been entirely clear why. Finally, we could think that lexical items can only have phasal complements, while of course functional items are free to have any kind of complement. Hence causative *have* takes a VoiceP complement while perfect *have* takes a vP; the former resembles French *faire*, while the latter resembles English *be*. The general characterisation of diachronic change from a causative/resultative to a perfect will involve a change from a lexical to a functional element as sketched in (34). In fact, if we treat perfect *have* as Voice itself we retain the regular functional sequence: *Voice – v – (Prt) – V* in all cases. In these terms it is clear that *have* must instantiate "active" Voice, i.e. a Voice which only triggers a direct derivation. This is a step in the direction of D'Alessandro & Roberts' (2010) characterisation of *have* as an "anti-ergative" auxiliary. So we arrive at the following conclusion regarding causative and perfect *have*:

(35) a. Causative *have* is a V with VoiceP complement
b. Perfect *have* is active Voice (with a vP complement)

We can now see the causative-to-perfect change as a shift from a lexical to a functional category. As such, this is a paradigm case of grammaticalisation (see Roberts and Roussou 2003).

[15] It seems that only the "passive" PrtP, the one which undergoes smuggling, allows an indefinite subject to stay in its Specifier when *there* appears in the matrix SpecTP. This can be seen from examples like the following:
(i) *There have many students arrived.
(ii) *There have many students been arrested.
It is not clear why this is. For a proposal which is not obviously compatible with our assumptions here see Chomsky (2001).

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We are now in a position to look at the Latin construction and how it changed in Romance.

4.2. *The Latin Construction*

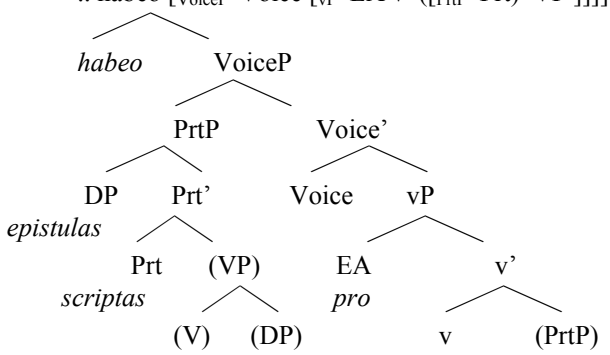
Latin *habeo*, like English *have*, appeared in a variety of constructions, including as a possessive with a nominal complement and as a modal of obligation with an infinitival complement. As in the case of English, we will not speculate here as to how these constructions relate to perfect and causative *have*; the evidence from the equivocal behaviour of English *have* in these constructions, as opposed to its unequivocally auxiliary-like behaviour in the perfect and its unequivocally main-verb behaviour in the causative, suffice to show that these constructions are distinct from those we are interested in here. In Classical Latin, there was no perfect use of *habeo*; the perfect was expressed synthetically by a special set of verb paradigms (*amavi* "I have loved" etc.). There was, however, a causative/resultative construction with *habeo*, which is typically seen as the source of the Romance perfect with HAVE. This is illustrated in (1a), repeated here:

(1a) Habeo epistulas scriptas.
I-have letters-ACC.PL written-ACC.PL
'I've got the letters written.'

Here the participle *scriptas* is passive, and agrees in case, number and gender with *epistulas*. We can analyse this construction exactly as we analysed its English counterpart in §3 (here I leave aside the question of the tendentially head-final word order of Latin; see §4.3 on this):

(36) a. .. habeo [$_{\text{VoiceP}}$ Voice [$_{\text{vP}}$ EA v ([$_{\text{PrtP}}$ Prt) VP]]]]

b.



Here *habeo* probes the DP *epistulas* ("letters") which agrees for its φ-features feminine, accusative, plural with the participle *scriptas* ("written"); following Collins (2005), I assume that past-participle agreement takes place between a DP in SpecPrtP and a verb in Prt; Prt must be probing for a subset of those features, perhaps gender and number (as in Modern Romance), with case-agreement a purely morphological reflex of *epistulas* being accusative in virtue of Agreeing with *habeo* for all φ-features, including abstract person.

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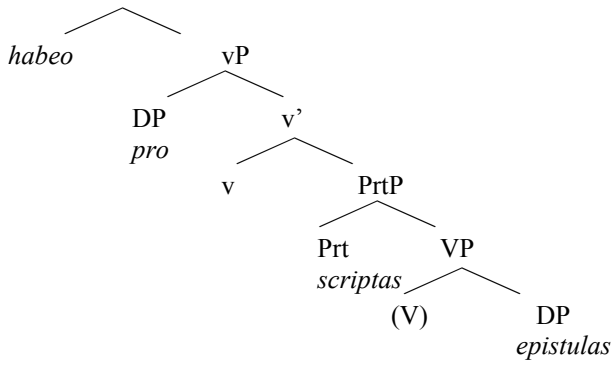
Voice is "passive", i.e. it triggers the indirect, smuggling derivation. The external argument here is that of the lower clause, hence *pro* here is an implicit external argument of *scribere* "write". Of course, Latin was a null-subject language, and so a distinct *pro* may also be licenced by the matrix T.

4.3. *Changes from Latin to Romance*

If we assume that, questions of auxiliary-selection aside, the Modern Romance perfect is the same as the English one, then the diachronic change from the causative/ resultative in Latin to the Romance perfect involved a reanalysis of the construction in (36b) as (31) which, fundamentally, involved the reanalysis of *habeo* from V to Voice.

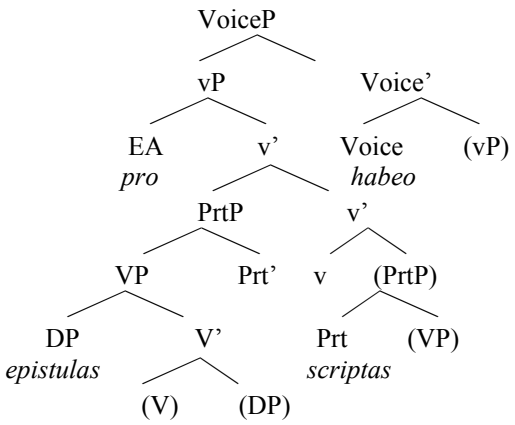
If we compare the two structures, we can see that the novel perfect structure is simpler than the causative/resultative one. Compare (31), repeated here with Latin terminals, with (36b):

(31)



However, (31) is of course inaccurate. Assuming that Latin tended to show head-final word order (Devine & Stephens 2006, Ledgeway 2012, and the references given there), and that head-final orders are derived by successive leftward movements of complements to specifiers ("roll-up" derivations; see *inter alia* Kayne 1994, Biberauer, Holmberg & Roberts to appear), the Latin structure corresponding to (31) was (37):

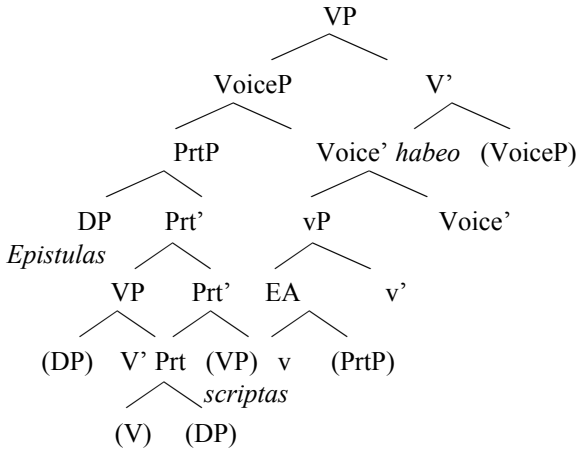
(37)



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The Latin structure corresponding to (36b), assuming general "roll-up" throughout the derivation, was (38):

(38)



The change from (38) to (37) involves a structural simplification, since the highest layer of structure in (38) is a VP whose head, *habeo*, takes a VoiceP complement, while in (37) the highest level is VoiceP whose head, the reanalysed *habeo*, takes vP as its complement. The details of the roll-up derivations need not concern us unduly, although they are identical in the two structures. The importance of the OV order is that smuggling does not change order in the rolled-up derivation, while it does in a non-roll-up ("head-initial") derivation; compare the surface word orders of (37) and (38), which are identical, with those of (31) and (36b), which are not. Hence we can suppose that, at some point in the later Classical Latin period, (38) was reanalysed as (37) (Harris 1978:157, Notes 6 and 7, dates the change as having taken place by the 4th century AD).

The most important difference between (37) and (38) concerns the nature of the derivation inside VoiceP. (38) has an indirect derivation inside VoiceP, with PrtP raising to SpecVoiceP, the internal argument *epistulas* probed by *habeo*, and the EA being licensed in situ in SpecvP as a *by*-phrase/implicit argument (in Latin this was associated with a special case, the ablative)[16]. On the other hand, (37) is a direct derivation: *epistulas* is probed by v (it appears in SpecvP owing to roll-up) and the EA, which c-commands *epistulas*, is licensed from outside VoiceP, presumably by T since *habeo* is a raising trigger here. Thus the formerly passive complement of *habeo* became active. To the extent that the indirect derivation must involve smuggling while direct derivations do not, and to the extent that

[16] In fact, there is a complication involving raising PrtP in the roll-up derivation, not indicated in the structure in (38). PrtP should first move to the specifier of the head that selects it, vP, and then, in a separate step, be smuggled to SpecVoiceP. However, it is unclear whether PrtP in SpecvP really counts as far enough away from Voice to be smuggled (recall the discussion of anti-locality in §1). An alternative would be to suspend the roll-up at the vP level, but this seems rather arbitrary. In general, there is a tension between A-movement, particularly that driven by/connected to smuggling, and roll-up derivations. Thanks to Alastair Appleton for discussion of these issues.

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indirect derivations can be thought of as inherently more complex than direct ones since they involve smuggling movement in addition to A-movement, this change be seen as a simplification. Thus the reanalysis of the causative/resultative construction in *habeo* as a perfect was a simplification in two senses: it involved the loss of a layer of structure (the VP headed by *habeo* selecting VoiceP) and the loss of the smuggling operation inside VoiceP. The change from (38) to (37) involved the reanalysis of *habeo* in this context as a functional head (Voice) from its earlier status as a lexical head. As such, we should expect to find of different properties for *habeo* in the two constructions parallel to what we observed for English causative and perfect *have* in (34) (with the obvious exception of the distinction between main-verb and auxiliary syntax as this is not defined for Latin). In fact, Ledgeway (2012: 133, Table 4.2) provides a similar list of differences between lexical and auxiliary *habeo*, notably in that lexical, resultative *habeo* is +θ, and auxiliary, perfect *habeo* is –θ.

The development of the periphrastic perfect was of course also indirectly connected to semantic changes affecting the original synthetic perfect, which took on a simple past-tense interpretation (see Harris 1978: 132ff. for discussion); see Roberts (2012) for an account of this development too in terms of grammar simplification.

As mentioned above, OV order facilitated the reanalysis of (38) as (37). So we predict that the change in word order between Latin and Romance took place later than this change. This appears correct at first sight, to judge by the dating of this change to earlier than the 4th century in Harris (1978: 157) mentioned above, and the remarks in Ledgeway (2012: 64f.) to the effect that the word-order change was largely post-Latin. However, Ledgeway also points out that the word-order change was already underway in the Classical Latin period, with attested OV order in Classical Latin reflecting a conservative literary register. On the other hand, there is evidence that a resultative construction with order *Aux O Prt* survived into Romance, at least into Old French (Buridant 2000). The survival of *Aux O Prt* into a VO grammar (which Old French pretty clearly was) suggests in fact that the word-order change may have preceded the reanalysis of (38) as (37), thereby leaving a residual possibility of the former resultative construction with the original word order, now resisting reanalysis as a perfect as no longer ambiguous with it. Given the absence of periphrastic perfects with *habeo* in Latin (Adam Ledgeway, p.c.), it seems then that we should view the changes as overlapping, with word-order change starting first, then, before that change is completed, the reanalysis of (38) as (37) taking place. Once word-order change is completed the residue of superficially OV resultatives remains; note that these OF constructions are no more indicative of an overall OV grammar for OF than are their English counterparts for English. The word-order change had the effect of "undoing" the roll-up derivations, giving an unambiguously VO structure for Romance perfects comparable to that for English seen in (31).

5. HAVE/BE ALTERNATIONS

Here I will develop certain aspects of the general characterisation of HAVE/BE alternation put forward by D'Alessandro & Roberts (2010), developing it in the direction of

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the incorporation analysis of HAVE-auxiliaries proposed in Freeze (1992) and Kayne (1993).

First, following what was said above, and updating Ross (1969), I assume that aspectual auxiliaries select a vP which in turns selects a PrtP headed by a participle of the relevant kind. For example, the structure of a simple English perfect *v*P would be as follows:

(39) a. John has spoken.
b. [$_{\text{VoiceP}}$ [$_{\text{Voice}}$ has] [$_{\text{vP}}$ John v [$_{\text{PrtP}}$ [$_{\text{Prt}}$ spoken] [$_{\text{VP}}$ (speak)]]]]

As (39b) shows, the external argument of the main predicate is merged in Spec,*v*P; this amounts to treating aspectual auxiliaries as a kind of raising predicate, again following Ross. The auxiliary selects a *v* specified as perfect (or whatever more primitive features the properties of perfects may derive from; see the papers in Alexiadou, Rathert & von Stechow 2003, Pancheva & von Stechow 2004), which in turn selects PrtP. Movement of the verbal root to Prt results in the root acquiring participial features and the eventual realisation of this feature bundle as a past participle. These three properties of compound tenses (the fact that the auxiliary is a raising predicate, first merge of the external argument in the specifier of the lower *v*P, and incorporation of the verbal root V with Prt to form a past participle) we take to be common to all the compound tenses we will discuss here.

The auxiliary can be realised either as HAVE or BE, depending on a range of factors. Here we treat the realisation of the auxiliary as a question of the spell-out of features of Voice in the structure in (39b). In particular, following the basic idea in Freeze (1992) and Kayne (1993), I assume that HAVE arises where *v* incorporates into Voice[17].

We can state the basic cross-linguistic environments for the realization of the auxiliary *v* as HAVE or BE as follows, where *v** denotes a non-defective *v*, one capable of Agreeing with the direct object's Case and assigning an external thematic role to the subject (see Chomsky 2001: 43):

(40) a. v^*_{Perfect} = have; v_{Perfect} = be (Standard Italian, German, etc.)
b. v_{Perfect} = have; v_{Passive} = be (Spanish, English, Sicilian dialects, etc.)
c. v_{Perfect}[3pers] = have; v_{Perfect}[1,2pers] = be (Central-Southern Italo-Romance)

(40a) says that auxiliary *v* is realised as HAVE when it is non-defective, i.e. when it Agrees with the direct object, and assigns an external θ-role. So HAVE appears with transitives and unergative intransitives, assuming following Hale & Keyser (2000) the general presence of a cognate object here. BE appears in all other cases where the predicate

[17] It is unclear how this proposal would allow us to express the relation between auxiliary HAVE and possessive and other occurrences (existential, modal, psychological) of HAVE. Here I will limit attention to the formation of compound tenses. The natural move would be to treat the complement of Voice as something other than *v*P and to key auxiliary selection to the category of this complement (see again Kayne 1993)

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is perfect.[18] This is the situation in Standard Italian, and, for example, in Dutch and German. In terms of our adaptation of Collins' analysis of the passive presented in §1, what we call „*v**" in (40a) is the *v* which we described there as inheriting the probing features of Voice. But if *v* incorporates with Voice to give HAVE, then we can treat inheritance as a reflex of incorporation, so the mechanism which allows the direct object to be probed by is incorporation of *v* into Voice. In this way, the chain (Voice, *v*) formed by head-movement becomes a complex probe. And this probe is realised as HAVE, following our postulate above.

(40b) arises where *v* always incorporates with Voice, even where Voice lacks the capacity to probe the direct object, as in unaccusatives. Thus here there is no auxiliary selection in active compound tenses: the perfect auxiliary is always HAVE. This is the situation in Spanish and English, for example. If we take it that each position in a compound chain of the kind formed by incorporation of *v* into Voice must c-command the goal, then smuggling bleeds *v*-to-V incorporation since it takes object out of the c-command domain of (Voice, *v*): hence HAVE can never be the passive auxiliary. In fact, HAVE is never, to our knowledge, the basic passive auxiliary (see Keenan (1985:257-261) for a discussion of the varieties of passive auxiliaries attested in the world's languages, which notably does not include HAVE). On the other hand, there are languages, including many Slavonic and all Celtic languages, as well as certain Central-Southern Italo-Romance varieties (see Manzini & Savoia 2005, II:728, for a summary of the variation in this respect), where BE appears in the perfect in all tense-person-number combinations and with all verbs. In these varieties *v* does not incorporate with Voice; instead Voice's probing features are inherited in direct derivations along the lines described in §1.

(40c) is the case found in many Central and Southern Italian dialects, where auxiliary selection in perfects is determined – at least in part – by the person and number of the subject; see D'Alessandro & Roberts (2010) for an analysis of Eastern Abruzzesse in terms broadly compatible with the current analysis.

In fact, there are several reasons to think that HAVE is the marked perfect auxiliary. First, HAVE-auxiliaries are cross-linguistically rather rare; in Indo-European they are not found in Celtic or Slavonic (with the exception of Macedonian (David Willis, personal communication)), or in Hindi (Mahajan 1994), for example. Second, any context where HAVE is found corresponds to one where BE can be found in some other language, but not vice-versa as the case of passives just mentioned demonstrates. We might therefore consider BE to be the default perfect auxiliary.

[18] Mediopassive, impersonal and reflexive *si* must be treated as "passive" in the relevant sense, as BE is obligatory in these cases in Standard Italian:

(i) Si sono mangiati gli spaghetti.
SI are eaten the spaghetti
'The spaghetti has been eaten.'

(ii) Si è lavorato molto.
SI is worked much
'One has worked a lot.'

(iii) Gianni si è guardato allo specchio.
Gianni SI is looked-at at-the mirror
'Gianni looked at himself in the mirror.'

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In this section, we have suggested, very much in the spirit of Kayne (1993) but with different, and somewhat simpler, technical details, that HAVE auxiliaries arise through incorporation (of *v* to Voice), while BE auxiliaries are the default, arising where no such incorporation takes place.

6. ERGATIVITY

Here I first sketch a smuggling-based account of ergativity, and then suggest an account of the passive-to-ergative change which is thought to have taken place in the history of Indo-Iranian (see Harris & Campbell 1995, Ch 9, Garrett 1990, and the references given there)[19]. We will see that there is an interesting sense in which this is "opposite" change to the passive-to-perfect development of HAVE as analysed above, while at the same time both changes involve structural simplification.

The basic idea behind the smuggling approach to ergativity can be seen by comparing (41) and (42):

(41) $T_{[u\varphi\text{^}]}$ [$_{VoiceP}$ $Voice_{[u\varphi\text{^}]}$ [$_{vP}$ $EA_{[i\varphi]}$ v [$_{VP}$ V $OBJ_{[i\varphi]}$]]]

Here we have the Nominative-Accusative pattern: the external argument EA raises to Spec,TP and is probed by T, Voice's [uφ] is inherited by the lower *v*, and licenses the direct object.

The ergative pattern, on the other hand, involves smuggling: VP raises to Spec,VoiceP and Voice withholds its uφ, licensing the *in situ* EA (this is the "EA Case" identified in §2 above, morphologically realised as ergative in ergative languages), T probes the OBJ, whose structural Case is realised as absolutive:

(42) $OBJ_{[i\varphi]}T_{[u\varphi]}$ [$_{VoiceP}$ [$_{VP}$ V ($OBJ_{[i\varphi]}$)] $Voice_{[u\varphi]}$ [$_{vP}$ $EA_{[i\varphi]}$ v ([$_{VP}$ V $OBJ_{[i\varphi]}$])]]

We can illustrate the passive-to-ergative shift in Indo-Iranian following Garrett (1990 :263), who says "Middle Indo-Iranian successors of transitive clauses like the invented Sanskrit one in [(43)], once interpreted as in [(43a)], were reanalyzed as in [(43b)]":

(43) ahi-r indr-eṇa ha-ta-ḥ
a. Serpent-NOM.SG Indra-INST.SG kill-PTCPL-NOM.SG
'the serpent has been killed by Indra'
b. Serpent-ABS-SG Indra-ERG.SG kill-PF-NOM.SG
'Indra has killed the serpent'

(43b) shows the checking relations described for (42), while (41) is a passive of the kind seen in §2 above, whose structure is given in (5). The basic difference between (5) and

[19] See also Hale (1970) who proposes that ergative alignment in many Australian languages may originate from passives.

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(43) lies in the identity of the smuggled category: in (5) it is PrtP, while in (43) it is VP. Thus the passive-to-ergative change involves loss of PartP layer from the passive, i.e. the former participle becomes the ergative-marking verb[20]. So this change, like the causative-to-perfect change discussed in §4, involved structural simplification. To quote Garrett again: "throughout Middle Indic and Iranian, sequences of (often null) copula plus perfective *ta*-participle were reinterpreted as active verbs" (Garrett 1990: 263). The availability of a null copula (i.e. the passive BE auxiliary) clearly facilitated this reanalysis, as Garrett seems to hint here. What is crucial, though, is that the auxiliary could not have been HAVE, since, first, HAVE auxiliaries, unlike copulas (i.e. BE), are much less prone to a null realisation and (b) there can be no Voice-*v* relation in the ergative alignment in (43): the EA must be probed by Voice. As we saw in the previous section, HAVE-auxiliaries always imply a Voice-*v* relation. In this sense, HAVE can be thought of as the "anti-ergative" auxiliary. Further, as Harris & Campbell (1995:245) observe "[t]he correlation of perfective aspect and ergativity is a natural outcome".

As Garrett points out, the change from passive to ergative has no real effect on unaccusatives ("intransitive clauses like the invented one in [(44)], once interpreted as in [(44a)], were not subject to any change of voice when reanalyzed as [(44b)]"):

(44) indr-o ga-ta-ḥ
a. Indra-NOM.SG go-PTCPL-NOM.SG
'Indra has gone'
b. Indra-ABS.SG go-PF-NOM.SG
'Indra has gone' (Garrett 1990: 263)

In unaccusatives there is no external argument, and so Voice must lack uninterpretable features or there will be too many probes for the available arguments (note that this is just a way of stating part of Burzio's generalisation). Since T's uninterpretable features depend on finiteness and not on argument structure (perhaps being inherited from C ; see Chomsky 2008), it must be Voice that becomes defective. Hence no ergative case is available with unaccusatives. Unaccusative clauses in ergative systems have the Agree relations shown in (45):

(45) $T_{[u\varphi^{\wedge}]}$ [$_{VoiceP}$ Voice [$_{vP}$ v [$_{VP}$ V OBJ$_{[i\varphi]}$]]]

Here the OBJ can only be NOM=ABS, probed by T. This is necessary for convergence (T's uφ must be valued), as we have just seen, and possible because there is no intervening active probe between T and OBJ, Voice being defective.

[20] Garrett's article is mainly taken up with a very detailed discussion of the reanalysis of instrumental case as ergative case; in the terms adopted here, this would involve a reanalysis of an oblique internal argument as the external argument. As Garrett (1990: 265, and Note 5) points out, two preconditions for such a reanalysis are (a) null subjects, since the "true" external argument must be ambiguously present for a new external argument to be abduced, and (b) relatively free word order, at least of obliques and external arguments, for a case of the former to be reanalysed as the latter. Both of these preconditions were met at the relevant stages of Indo-Iranian.

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Butt & Deo (2005) point out that unaccusatives generally do not allow ergative case in Hindi/Urdu:[21]

(46) ram*(ne) ga-ya
Ram*(ERG) go-perf-msg
'Ram went'

In fact there can be no diachronic passive source for clauses like (44) since unaccusative passives do not exist (as stated by the 1-Advancement Exclusiveness Law of Relational Grammar: see Perlmutter & Postal 1984, Marantz 1984, Baker, Johnson & Roberts 1989). Since on the analysis presented in §2 the passive is defined by Voice witholding its φ-features from *v*, licensing the EA as a *by*-phrase or implicit argument and thereby causing smuggling of VP/PrtP, Voice must be a probe in a passive clause, and therefore, if unaccusatives are defined as having a non-probing defective Voice, passives of unaccusatives are impossible. So the 1AEX generalisation follows from this analysis, ultimately from the need to value T's uninterpretable features[22]. Unergative clauses in ergative systems must either be the same as unaccusatives or the same as transitives (i.e. in having a null cognate object).

From the above it is possible to see the contrast between the passive-to-ergative shift and the development of HAVE perfects described in §4 above. The two changes are in a sense opposites: the passive-to-ergative change involves a reanalysis of one kind of indirect derivation as another (in passives, PrtP is smuggled, in ergatives, just VP). Given the general characterisation of indirect derivations in §1, Voice does not communicate with *v* in these cases. On the other hand, as we saw in §6, HAVE perfects involve incorporation of *v* to Voice, and so the reanalysis of passives as perfects involves the loss of smuggling. Since, in the Indo-Iranian type of split-ergative system, ergative alignment is typically found only in perfective tenses, we see two different outcomes of passives comparing Latin/Romance with Indo-Iranian, which can be schematised as follows:

(47) a. Passive (PrtP smuggling) > perfect (loss of smuggling, reanalysis of causative HAVE as auxiliary)
b. Passive (PrtP smuggling) > ergative perfectives (reanalysis of PrtP smuggling as VP-smuggling)

[21] The "higher agentivity" associated with ergative case-marking in languages like Hindi/Urdu results from the transitive derivation in which EA must be agentive since IA is the cognate object; "low agentivity" is a hidden unaccusative (with verbs like "run", "cough", etc).

[22] Various alleged counterexamples to this generalisation can be found in the literature. Many of them can be treated as impersonal constructions (see Blevins 2003 for discussion). In fact, many of these constructions show the typical signs of what Cinque (1988) calls "quasi-universal arbitrary reference", a hallmark of impersonal constructions of many kinds, as Cinque shows for Italian *si*-impersonals, 2sg and 3pl impersonals and French *on*. It can also be shown for arbitrary PRO and English impersonal *you* and *one*. The Turkish impersonal passives discussed in Öskaragöz (1981) and Nakipoğlu-Demiralp (2001) seem to fall fairly clearly into this class. The Icelandic "new passive" (see Maling & Sigurjónsdóttir (to appear)), is, as Maling & Sigurjónsdóttir argue, not a passive but an impersonal; its emergence may be connected to the fact that Icelandic is a partial null-subject languages in the sense of Holmberg (2010), and as such freely allows "arbitrary *pro*" with no special clitic or agreement marker. It is unclear whether the same can said of the Polish *-no/-to* impersonal discussed in Maling & Sigurjónsdóttir (2002).

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The outcomes are similar but not identical, since perfects and perfectives are somewhat different aspectual entities (although, as pointed out in Note 2, the perfect has turned into the simple punctual perfective past in several Romance varieties, including notably French). Both changes, however, involve structural simplification in that a layer of functional structure is lost in each case; in the case of (47a) smuggling is additionally lost.

Finally, we should mention that the kind of change that is usually posited for Indo-Iranian is probably not the only diachronic source for ergative alignment. It has frequently been proposed that nominalisation is a source for ergative alignment (see among others Gildea 1992, Harris & Campbell 1995, Ch 9, Aldridge 2012). This development could be related to the foregoing along roughly the following lines: if "passive in NP" is derived by smuggling of NP to SpecVoiceP, then ergative alignment arises from categorial reanalysis of the lower phase from nP to vP, with the consequence that a formerly nominal complement is reanalysed as part of a monoclausal structure. A full-fledged version of this account, along with perhaps a principled distinction between the different types of ergative system, as well as a full discussion of the very interesting proposals in Harris & Campbell (1995, Ch 9), must be left for future work, however[23].

[23] The smuggling approach to ergative alignment sketched here seems rather different from recent approaches by Aldridge (2012), Coon and Preminger (2011) and others (see Sheehan 2012 for fuller references and overview). Such approaches do not assume VoiceP, and take ergative to be a θ-related case assigned under spec-head agreement to the EA in SpecvP. Absolutive case can be assigned either inside vP, or in a "high" position by T (a parametric choice). Where absolutive is "high" the internal argument raises to or through the edge of vP, thereby creating a minimality barrier for extraction of the ergative EA (this captures the widespread observation that ergative EAs generally cannot relativise). There is a further distinction between syntactic and morphological ergativity connected to, but not exhausted by, the "high" vs "low" absolutive distinction: essentially, only high absolutive languages with no alternative lower realisation for the absolutive argument show the full range of syntactic ergativity properties.

This is not the place for a thorough comparison of the smuggling approach with this kind of approach. However, we can note that ergative-case assignment to SpecvP by Voice avoids the special stipulations regarding case-assignment under spec-head agreement that are required by the other account. To the extent that ergative case is assigned to a true external argument (rather than being restricted to Agents), it is in fact not in any clear sense θ-related; see the discussion of the EA of passives in §2. The ban on A'-movement of ergative EAs can be captured if the smuggled category counts as a minimality barrier; note that extraction of the overt argument of *by* is degraded when this element is in non-final position in English (??*John, who it was proved by that the world is round; ??John, who flowers were sent by to Mary*) and that wide-scope readings for existential arbitrary implicit arguments in "short" passives are impossible (*Nobody was killed ≠ someone didn't kill anyone*). Clearly the smuggling approach predicts that absolutives are always "high"; but a further mechanism of Case-licensing can always be added in order to allow "low" absolutives, as in the other approach. The biggest apparent difficulty for the smuggling approach lies in the fact that it appears to predict syntactic ergativity very generally. However, this depends on the nature of the diagnostics for syntactic ergativity; if these involve primarily reflexivisation and control, to the extent that these phenomena are Agree-driven, and to the extent that Agree may function along "accusative" lines (i.e. independently of smuggling) in ergative systems, which must be allowed to account for common ergative "splits", then the prediction of the smuggling analysis is weaker than it first seems, which is more in accord with what we observe. In its favour, the smuggling approach makes both the synchronic (theoretical) and diachronic (empirical) connection between ergative alignment and passives clear, as we have seen, and it is able, in conjunction with the Final Over Final Constraint, to predict that there are no truly ergative SVO languages (on the latter, see Roberts (forthcoming, b)). But clearly there is much more to say about these complex topics.

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7. CONCLUSION

In this paper I have put forward an analysis of the development of the Romance periphrastic perfect from the Latin causative-resultative construction seen in (1), using the derivational mechanism of smuggling. In the process of developing and motivating this analysis, I have proposed an analysis of certain English causative constructions, notably the *have*-causative. I also suggested a general formal characterisation of HAVE-auxiliaries, as arising from v-to-Voice incorporation. Finally, I compared and contrasted the development of Romance perfects with the development of ergative perfectives in Indo-Iranian, summarised by the schema in (47). The two changes are opposites in that the development of HAVE necessitates v-to-Voice incorporation, and is thereby incompatible with smuggling. On the other hand, they are alike in that both involve the loss of a layer of functional structure. In this latter respect, they are consistent with the general characterisation of change as involving structural simplification, given in Roberts (2007).

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