The syntactic uncoupling of voice and aspect in Modern English[*]

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1   Introduction

This paper proposes a unified account of several changes that took place in English at the end of the eighteenth century, arguing that all of them follow from a single change in the way interpretable formal features of Aspect and Voice are mapped to syntactic structure. We claim that what had been a single syntactic head carrying features of both Voice and Aspect was divided into two projections, with Aspect projecting above Voice. We hypothesize that this syntactic change resulted from the reanalysis of the participial suffix *-en,* which went from spelling out the aspectual feature RESULT to spelling out the voice feature PASSIVE. Section 2 sets forth the phenomena to be accounted for, and the proposed account is presented and argued for in section 3. In section 4, we provide some thoughts on what might have triggered the change.

2   What happened on the surface

2.1   The passival and the progressive passive

In Early Modern English, the normal way of forming the passive of a progressive clause was the construction illustrated in (1),[1] which is referred to as the passival by Visser (1973), and which is identical in form to an active intransitive progressive.[2]

(1) ☾ *Whereas a Brass Foundery is now building at Wool-*
      wich...
      (*London Gazette,* 10 July 1716, quoted in OED s.v. *brass*)

This construction survives in a few restricted contexts, as in (2), but for the most part has been lost.[3]

(2) *These books need taking back to the library.*

Until about the end of the eighteenth century, there was no progressive passive in English. Forms like (3) are completely absent from the Penn Historical Corpora of Early Modern English, and the earliest one in the Penn Corpus of Modern British English is from 1814.

(3) ☽ *...like a fellow whose uttermost upper grinder is being*
      torn out...
      (R. Southey, letter of 9 Oct. 1795, quoted in OED s.v. *be*)

Prescriptive grammarians resisted this innovation, and continued to deride it well into the 19th century, as in the following comment from March (1870: 465), quoted in Visser (1973):

> Upon the whole, then, we may say, that the construction 'the house is building' is sustained by the authority of usage, and by many analogies in the English and cognate languages. Nor is it objectionable as an equivocal phrase, because it is very seldom used when the subject is of such a nature that it can be the agent, and always with a context, or under circumstances which show that the participle must be taken in a passive sense. To reject it, therefore, is to violate the laws of language by an arbitrary change; and, in this particular case, the proposed substitute ['is being built'] is at war with the genius of the English tongue.

The vehemence of this objection strongly suggests that the progressive passive was in fairly common use by the mid-19th century.

While it is natural to see the replacement of the passival by the progressive passive as a single change, this change presents the diachronic syntactician with two potentially separate questions: How did it become impossible, in most contexts, for a progressive clause to be interpreted as passive in the absence of overt passive morphology, and how did it become possible to construct progressive passives of the *be being* type, which were

previously unattested? We will argue that these two questions do indeed have a single answer—that both the demise of the passival and the emergence of the progressive passive resulted from a single change in the mapping of voice and aspect features to syntactic projections.

Furthermore, we will show that this same structural reconfiguration can account for three other changes in late 18th-century English. Of these, the one that is most obviously connected with the disappearance of the passival is the decline of the 'intransitive for passive' construction. It is really not at all surprising that non-progressive morphologically unmarked passives declined in tandem with progressive ones, but the two have not traditionally been discussed as a unified phenomenon in the historical literature (perhaps because the constructions that supplanted the intransitive for passive already existed in the language, unlike the progressive passive). The two other changes are the disappearance of the *be*-perfect (which had previously coexisted with the *have*-perfect) and the shift in the interpretation of the simple present tense from an aspectually neutral reading to an obligatorily perfective one. All five changes, we will argue, follow from the splitting of a single syntactic Voice/Aspect head into two separate projections, with concomitant changes in the morphological spell-out and the semantic scope of the features involved, as depicted in Figure 1.

[Figure 1 about here.]

2.2 The intransitive for passive

Visser (1973: 154) discusses an intransitive use of transitive verbs illustrated in (4), which is distinct from the dispositional middle shown in (5). He states that this construction 'is restricted to traditional idiom, and can no longer be freely extended: it is e.g. impossible to say: 'the house builds', 'the shoe fastens', 'the cream whips', 'the clock winds'.'

(4)   a. *'Tis a play that shall **read** and **act** with any play that ever was born.*
           (T. Shadwell, *The Sullen Lovers,* III, 1668, quoted in OED s.v. *read*)

        b. *One desperate greefe **cures** with an others languish.*
           (W. Shakespeare, *Romeo and Juliet,* I.ii.47, *ca.* 1604–05, quoted in Rissanen 1999)

(5)   *They'll* [the rabbits] *eat much better smothered with onions.*
        (G. Farquhar, *The Beaux' Stratagem* I.i.367, 1706, quoted in Visser 1973)

While it is easy enough to distinguish this use from the dispositional middle, it is difficult to distinguish it from the purely intransitive use of a verb that participates in the causative–unaccusative alternation. This alternation became common by the time of Middle English, when corresponding transitive and intransitive verbs had become homophonous due to the loss of various morphological markings of transitivity that had been present in Old English. Many of the intransitive-for-passive examples cited by Visser (1973) involve verbs that have unaccusative uses in present-day English, but there are some, like the two given in (4), that have an implicit or explicit agent or causer. A full discussion of the development of transitivity alternations in Middle English would take us well beyond the scope of this paper; what is interesting for us is that the intransitive-for-passive construction illustrated in (4) seems, from what Visser reports, to have disappeared at the same time as the passival. Any surviving forms are simply unaccusative, without a syntactically active implicit agent, as in (6).

(6)   *The building burned (*in order to collect the insurance, *by the arsonist).*

2.3   The resultative perfect with *be*

Following McFadden and Alexiadou (2006, 2010), we assume that in the pre-Old English period, there was no "true" perfect. Rather, there were resultative constructions with both *be* (used with unaccusatives) and *have* (used with transitives).[4] These are illustrated in (7).

(7)   a. *Hie wæron cumen Leoniðan   to fultume*
           they were   come to-Leonidas as help

           'They had come to Leonidas to help him.'

        b. *þa þa   ge hiene gebundenne hæfdon*
           then when you him   bound   had

           'then when you {had bound him / had him in the state of being bound}'
        (Alfred's translation of Orosius, ca. 893, quoted in Traugott 1992)

By the time of Old English, there was also a true perfect construction with *have*. McFadden and Alexiadou (2010) argue that this construction carried the meaning of temporal anteriority, which allowed it to be used in counterfactual constructions and other contexts where the perfect is found. They claim that the

resultative perfect construction is headed by the resultative aspectual head (Embick 2004), while the true perfect is headed by a higher syntactic head, Perf, which contributes temporal anteriority.

This situation persisted until the late 18th Century, with the resultative *be*-perfect used only with unaccusative verbs, and the true perfect in *have* used with all verbs including unaccusatives.

(8)   Resultative perfect clauses:

    a. *He **was** therefore no sooner **got** to his apartment, but he sent the royal veil to Imoinda...*
(A. Behn, *Oroonoko,* 1688; PPCEME[5])

    b. *Indeed they **are arrived** to a great perfection in their worke so fine and thinn and glossy.*
(C. Fiennes, *The journeys of Celia Fiennes,* 1698; PPCEME)

    c. *I **am** just now **returned** from Eggerton...*
(J. Austen, letter of 17 June 1808; PPCMBE)

(9)   Temporal perfect clauses:

    a. *However, it is evident from the Instances I **have given**, and from the Reason of the thing, that Latin may be learn'd after this Method.*

    b. *He quickly forgot those few French Words, he **had learn'd** from his Mother and his Nurse...*
(Anon., *An essay upon education,* 1711; PPCMBE)

Unaccusative verbs like *come* thus appeared in both constructions, as shown in (10).

(10)   a. Resultative perfect:
I am come as ʒe bade me.
'I have come as you asked me.'

    b. Temporal perfect:
. . . and if they had come sooner, they could haue holpen them.
(McFadden and Alexiadou 2006, 2010)

The distinctness of the two perfect constructions is demonstrated by the fact that they can occur together, as shown in (11). As predicted by McFadden and Alexiadou (2010), the temporal Perf head appears higher in the structure than the resultative aspectual head, and the auxiliary *have* thus precedes the auxiliary *be.*

(11)   *He has been come over about ten days.*
(J. Swift, *Journal to Stella,* 1710–13, quoted in Rissanen 1999)

The temporal perfect and the resultative perfect thus coexisted for several hundred years. Then, around 1800, the situation changed. While the resultative *be*-perfect appeared with a wide variety of unaccusative verbs through the 1600s and 1700s, by the mid-1800s it was used with only a small number of verbs. Of the cases that appear in the Penn Corpora after 1850, many of the examples are arguably adjectival (*is gone*), and the vast majority of the others are in an 1881 translation of the Bible, which also includes forms like *he cometh*. Setting aside the Bible, and the clearly stative cases, there are only five post-1850 examples of the resultative *be*-perfect in the corpus, and four of them involve the verb *come*. All five examples are shown in (12).

(12) a. *There **is** a new beautiful creature **come**, and I shall call her Colinette...*
          (C.M. Yonge, *The clever woman of the family,* 1865; PPCMBE)

      b. *You **are** hardly **come** to the time of life for liking to hear that your looks deceived us.*
          (ibid.)

      c. *...for they all thought that the time **was arrived** for safely accomplishing what they wished.*
          (G. Long, *The decline of the Roman republic,* 1866; PPCMBE)

      d. *Dear little William... is come for sea bathing and change of air.*
          (Queen Victoria, letter of 14 July 1864; PPCMBE)

      e. *...that strange compound of cleverness, vanity, lies, lust, blood, and robbery **is come** to an end.*
          (E. Thring, *Life, diary and letters,* 1870–72; PPCMBE)

It thus appears that the resultative perfect disappeared around the same time as did the passival and the intransitive for passive.

2.4 The aspectually neutral simple present

Before 1800, the simple present tense could be used to refer to events that were going on at the moment of speech, as in (13).

(13) a. *What **do** you **read**, my Lord?*
          (W. Shakespeare, *Hamlet* II.ii.190, *ca.* 1604, quoted in Visser 1973)

      b. *Eubulus seems to intimate that Things **go** well.*
          (R. Steele, *Spectator* I, no. 49, 1711, quoted in Visser 1973)

    c. *What **do** you **laugh** for, Mrs. Jervis?*
       (S. Richardson, *Pamela* I, 1741, quoted in Visser 1973)

This use of the simple present seems to die out around 1800, according to the descriptions in Visser (1973: 661–665) and Rissanen (1999: 216–217; 221), with progressive forms like those in (14) subsequently required to describe events ongoing at the moment of speech. Eventive sentences in the simple present now receive a habitual, scheduled, or reportive reading, as in (15) (Cowper 1998).

(14)   a. *What **are** you **reading**, my Lord?*

        b. *Eubulus seems to be saying that things **are going** well.*

        c. *Why **are** you **laughing**, Mrs. Jervis?*

(15)   a. *His Lordship **reads** the newspaper every day.*

        b. *Eubulus **goes** to London next week.*

        c. *Mrs. Jervis **walks** into the room, **sees** the children, and **laughs** despite herself.*

2.5   Summary

There thus seem to have been several simultaneous changes in the morphosyntax of the English verbal system around the end of the 18th Century, as summarized in (16).

(16)   a. The passival fell out of use.

        b. The previously ungrammatical progressive passive became grammatical.

        c. The resultative *be*-perfect was lost.

        d. The intransitive-for-passive was lost.

        e. The simple present lost its imperfective interpretation.

Rather than viewing these as five separate developments, we believe that they can all be understood as the consequences of a single change to the morphosyntactic configuration of Voice and Aspect features. Although the change itself was a small one, it significantly altered not only the range of possible surface structures, but also the underlying system of contrasts.

Before the late 18th century, the system of Voice and Aspect in English was characterized by a three-way contrast in aspect, cross-classified with a two-way voice contrast. This gave six possible constructions, as laid out in (17), and exemplified in (18)–(23).

(17)

		Plain	Processual		Resultative	
Active	—	(18)	*be + -ing*	(20)	*be + -en*	(22)
Passive	—	(19)	*be + -ing*	(21)	*be + -en*	(23)

(18)   Plain active clause, neutral with respect to viewpoint aspect:

   a. *He **knows** the answer.*

   b. *He **wrote** a letter.*

   c. *What **do** you **read**, my Lord?*

(19)   Plain passive clause (intransitive for passive):
   *. . . Like the brooch and the tooth-pick, which **wear** not now.*
   (W. Shakespeare, *All's well that ends well,* I.i.47)

(20)   Active clause with *be+ing:*
   *. . . and while I **was dressing** she came to me with another letter in her hand, in great perplexity.*
   (J. Austen, letter of 27 August 1805; PPCMBE)

(21)   Passive clause with *be+ing* (passival):
   *A new Oath **was** now **fabricating**, for all the Cleargy to take. . .*
   (J. Evelyn, *Diary,* 1688–89; PPCEME)

(22)   Active clause with *be+en* (resultative *be*-perfect:
   *He **is** now **become** a miserable spectacle.*
   (S.A. Bardsley, *Medical reports of cases and experiments,* 1807; PPCMBE)

(23)   Passive clause with *be+en* (resultative passive):
   *A barber **was sent for** from the market towne hard by, who searcht his mouth. . .*
   (R. Armin, *A nest of ninnies,* 1608; PPCEME)

When the sentence-types are organized this way, what is particularly salient is that there is no overt morphology that characterizes passive clauses. Every surface form can be interpreted as either active or passive, and the affixal morphology *(-ing, -en)* is entirely aspectual. In particular, it is quite clear, from the ungrammaticality at this stage of progressive passive clauses like (24), that *-en* is not used purely as a marker of passive voice.

(24)   *The letter is being written.*

After the changes under discussion here, the English Voice-Aspect system took on a quite different structure, with a two-way aspectual contrast cross-classified with a two-way voice contrast. This gave not six, but four possible constructions, shown in (25) and exemplified in (26)–(29).

(25)

	Active		Passive		
Plain	—	(26)		*be* + *-en*	(28)
Imperfective	*be* + *-ing*	(27)	*be* + *-ing*	*be* + *-en*	(29)

(26)   Plain active clause, either stative or perfective viewpoint aspect:

    a. *He **knows** the answer.*

    b. *He **wrote** a letter.*

(27)   Active clause with *be* + *-ing* (imperfective viewpoint aspect):
*What **are** you **reading**?*

(28)   Passive clause with *be* + *-en* (stative or perfective viewpoint aspect):
*The letter **was written**.*

(29)   Passive clause with *be* + *-ing* **and** *be* + *-en* (imperfective viewpoint aspect):
*The letter **was being written**.*

This system is superficially very different from the earlier one. Here, both the voice contrast and the aspectual contrast are marked by characteristic inflectional morphology. The *-ing* participle is an obligatory marker of imperfective viewpoint aspect, while the *-en* participle has shifted from being a marker of resultative aspect to marking passive voice. There is no longer an aspectually neutral form; eventive clauses without *-ing* are now interpreted as having perfective viewpoint aspect.

3   What happened in the grammar

We propose that the restructuring of the English Voice-Aspect system just described is the result of a single change in the way grammatical features of Voice and Aspect are mapped to syntactic structure, along with a change in the feature spelled out by a single morphological exponent. We first give synchronic analyses of the systems that existed before and after the change, and then turn to a discussion of how the change might have come about.

3.1   Before

In the earlier stage, a single syntactic head, which we call VAsp, encoded both the voicing contrast (active vs. passive) and the aspectual contrast (process vs. result vs. plain). We implement these contrasts with the privative features [PASSIVE], [PROCESS],

and [RESULT], with active voice and plain aspect being the default interpretations in the absence of marked features. [PROCESS] and [RESULT] are semantically incompatible, and thus in complementary distribution.

Two of the marked features—[PROCESS] and [RESULT]—were associated with morphological exponents, as shown in (30).

(30) [PROCESS] $\Longleftrightarrow$ *-ing*
      [RESULT] $\Longleftrightarrow$ *-en*

The third marked feature, [VOICE], had no morphological exponence. Syntactically, however, its effect was the same as in present-day English; it suppressed, or made implicit, the external argument that would otherwise merge in the specifier of the Voice (here VAsp) projection.

Following Cowper (2010) and Bjorkman (2011), we assume that the auxiliary verb *be,* when present, is inserted in a functional head to support stranded verbal morphology.

This account gives six possible instantiations of VAsp, as shown in (31).

(31)   a.   VAsp   b.   VAsp
                                              |
                                          [PASSIVE]

       c.   VAsp   d.   VAsp
                  | ╱   ╲
              [PROCESS]   [PROCESS]   [PASSIVE]

       e.   VAsp   f.   VAsp
                  | ╱   ╲
              [RESULT]   [RESULT]   [PASSIVE]

These six VAsp heads account for the six clause-types schematized in (17). While the distinction between an active and a corresponding passive clause is not marked morphologically, it is evident in the syntactic structure, as shown in (32). In the active clause (32a), VAsp projects a specifier containing the external argument, while in the passive clause (32b), VAsp lacks an external argument, leaving the internal argument to move to the TP-specifier.

(32)　a.　Structure for an active progressive:
　　　　I was dressing.

```
                    TP
            ┌────────┴────────┐
           DP                 T′
            │          ┌──────┴──────┐
            I          T            VAspP
                       │        ┌────┴────┐
                      was      DP        VAsp′
                                │     ┌───┴───┐
                               ⟨I⟩   VAsp    VP
                                      │       △
                                  [PROCESS]  dress
                                      │
                                    -ing
```
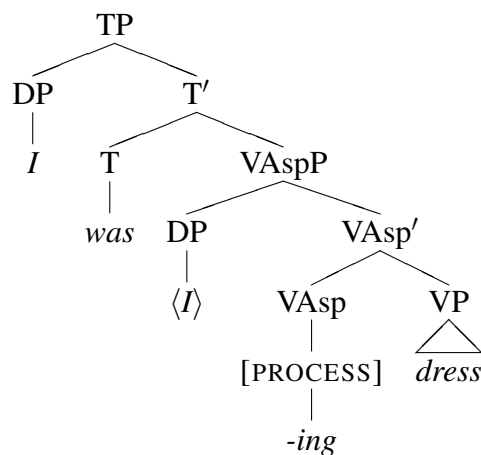
　　　　b.　Structure for a passival:
　　　　A new oath was fabricating.

```
                      TP
           ┌──────────┴──────────┐
          DP                     T′
           △            ┌────────┴────────┐
      a new oath        T               VAspP
                        │         ┌────────┴────────┐
                       was      VAsp               VP
                             ┌────┴────┐        ┌────┴────┐
                        [PROCESS] [PASSIVE]     V        DP
                             │                  │        △
                           -ing             fabricate ⟨a new oath⟩
```
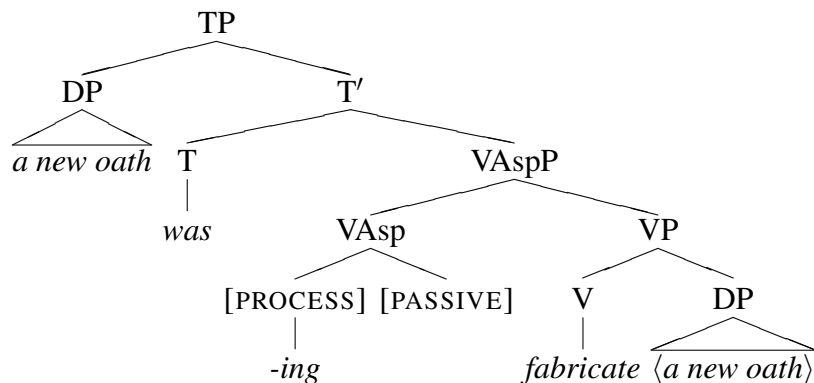
The ungrammaticality of the progressive passive at this stage follows from the fact that the participle in *-en* spells out, not [PASSIVE], but the aspectual feature [RESULT]. Since the participle in *-ing* spells out the different, and incompatible, aspectual feature [PROCESS], the two participles were necessarily in complementary distribution, just like present and past tense, or modals and finite tense marking, as in (33).

(33)　a.　⟑ *A new oath was being fabricated.*
　　　　　　(VAsp [PROCESS] and VAsp [RESULT])

　　　　b.　* *Does the train left on time?*
　　　　　　(T [PAST] and T [PRESENT])

　　　　c.　* *The students must handed their homework to the*
　　　　　　T.A.
　　　　　　(T [MODAL] and T [PAST])

Note that the participle in *-en* also spells out the higher functional head, Perf, that characterizes the temporal perfect. As a spellout

of Perf, the *-en* participle co-occurs with either of the aspectual heads under discussion here, as shown in (34).
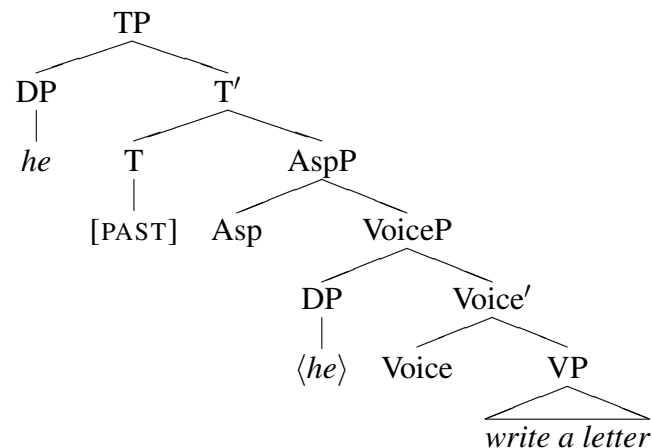
(34)   a. *he had been preparing his Notes for his Sermon*
       (G. Burnet, *Some passages of the life and death of the Right Honourable John, Earl of Rochester,* 1680; PPCEME)

       b. *The tea has been drawing five minutes*
       (R.G. White, *Words and their uses,* 1871; quoted in Denison 1998: 157–8)

       c. *he did not write to me since he had been come*
       (J. Strype, letter, 1662; PPCEME)

       d. *Sir James Mountague has been made Attorney General*
       (R. Spencer, letter, 1687–88; PPCEME)
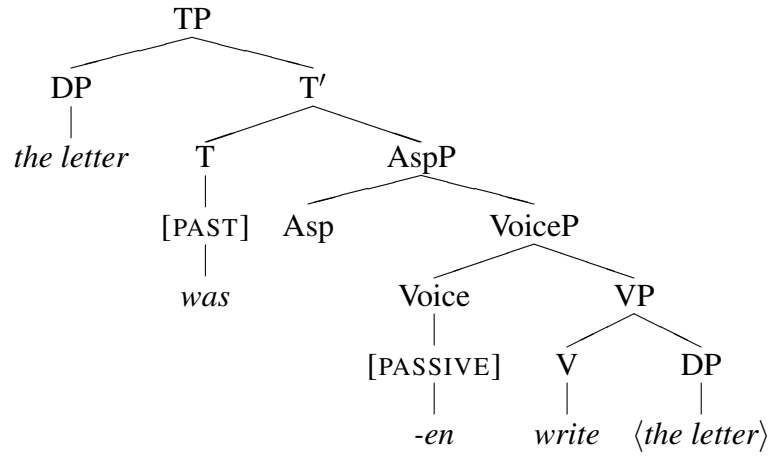
3.2   After

At the later stage, this single syntactic head had split into two, with Aspect projecting above Voice. The two morphological exponents associated with VAsp had also split up. *-ing* remained in Aspect, while *-en* had become associated with Voice, spelling out [PASSIVE]. The feature [RESULT] is thus no longer morphologically marked, and seems no longer to be playing a role in the system.

  Each syntactic head now carries a binary distinction. In Aspect, the distinction is between a marked [IMPERFECTIVE] (*-ing;* formerly [PROCESS]), and an unmarked perfective aspect. In Voice, the distinction is between a marked [PASSIVE] *(-en)*, and an unmarked active. This gives the four possibilities schematized in (25), with the structures shown in (35)–(38).

(35)   Structure for a perfective active clause:
       He wrote a letter.

```
                    TP
              ┌─────┴─────┐
             DP           T′
              │      ┌─────┴─────┐
             he      T          AspP
                     │      ┌─────┴─────┐
                  [PAST]   Asp        VoiceP
                                ┌──────┴──────┐
                               DP           Voice′
                                │      ┌──────┴──────┐
                              ⟨he⟩   Voice          VP
                                              ┌──────┴──────┐
                                              write a letter
```

(36) Structure for a perfective passive clause:
The letter was written.

```
                    TP
          ┌──────────┴──────────┐
         DP                     T′
          │            ┌─────────┴─────────┐
     the letter        T                  AspP
                       │          ┌─────────┴─────────┐
                    [PAST]      Asp                 VoiceP
                       │              ┌──────────────┴──────────────┐
                      was          Voice                           VP
                                     │                    ┌─────────┴─────────┐
                                [PASSIVE]                 V                   DP
                                     │                    │                    │
                                    -en                 write            ⟨the letter⟩
```
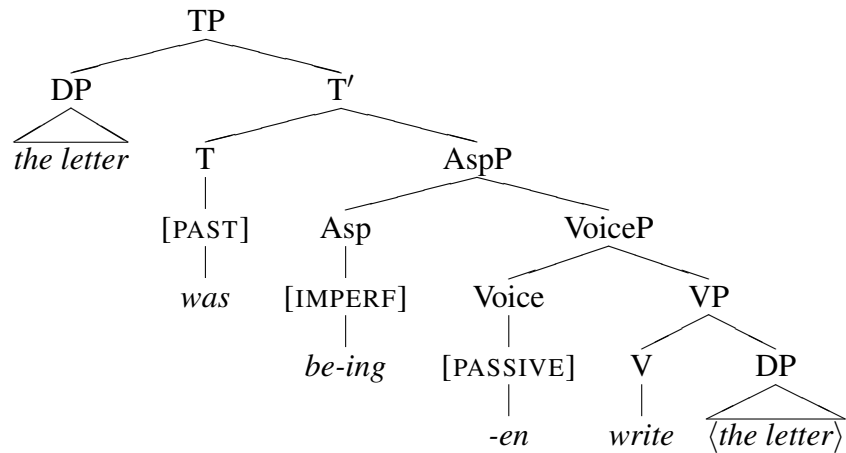
(37) Structure for an imperfective active clause:
He was writing a letter.

```
                  TP
        ┌──────────┴──────────┐
       DP                     T′
        │            ┌─────────┴─────────┐
       he            T                  AspP
                     │          ┌─────────┴─────────┐
                  [PAST]      Asp                 VoiceP
                     │          │          ┌────────┴────────┐
                    was     [IMPERF]       DP              Voice′
                                │           │        ┌───────┴───────┐
                               -ing       ⟨he⟩     Voice            VP
                                                            ▵
                                                      write a letter
```
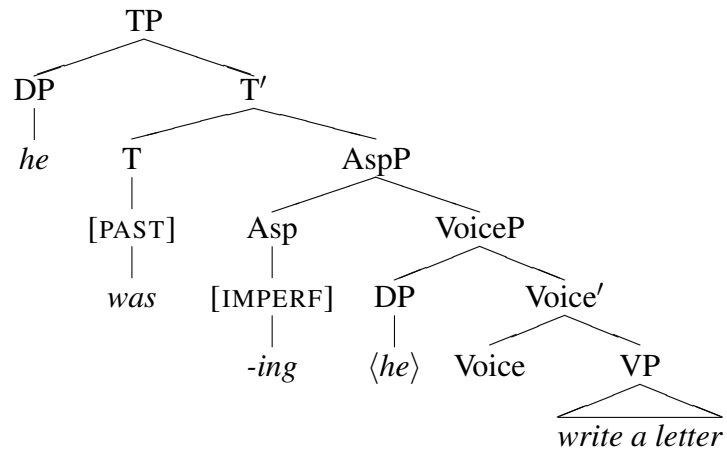
(38) Structure for an imperfective passive clause:
The letter was being written.

```
                    TP
          ┌──────────┴──────────┐
         DP                     T′
          ▵             ┌─────────┴─────────┐
     the letter         T                  AspP
                        │          ┌─────────┴─────────┐
                     [PAST]      Asp                 VoiceP
                        │          │          ┌────────┴────────┐
                       was     [IMPERF]     Voice              VP
                                   │          │          ┌──────┴──────┐
                                 be-ing    [PASSIVE]     V            DP
                                              │          │             ▵
                                             -en       write     ⟨the letter⟩
```

3.3 Effects of the restructuring of Voice and Aspect

All of the changes described in section 2 follow from the separation of Voice and Aspect into two projections, and the reanalysis of *-en* as an exponent of [PASSIVE] rather than [RESULT]. The passival and the intransitive for passive were eliminated because with *-en* now marking [PASSIVE], every passive clause must now include that suffix. Clauses whose verbal sequences consist of tense marking plus *be V-ing*, or tense marking plus *V* alone, can now only be active, not passive.

The emergence of the progressive passive, previously impossible as described above, follows automatically. Whereas the two participles previously spelled out two incompatible versions of VAsp, they now each spell out a different functional head. They are thus independent of each other, as shown in the structures in (35)–(38) above.

The disappearance of the resultative perfect with *be* is also accounted for. With the reanalysis of *-en* as a marker of passive voice, the resultative aspect disappeared as a morphologically marked construction. The combination of auxiliary *be* and the *-en* participle now arises only when the clause contains a passive Voice head.

Finally, the loss of neutral viewpoint aspect in clauses with simple tense forms is also predicted. Since Aspect projects above Voice, Aspect takes scope over the external argument. This is the position of outer, or viewpoint, aspect rather than inner aspect, which takes scope only over internal arguments (Travis 2010: 5). This new Outer Aspect head carries a binary opposition between a marked imperfective aspect, and an unmarked aspect, interpreted by contrast as perfective. The possibility of neutral viewpoint aspect has disappeared, and clauses referring to events ongoing at the moment of speech now require (overtly marked) imperfective viewpoint aspect.

If this account is on the right track, then all five of the superficial changes in English clausal inflection can be attributed to a single change in the mapping of features of Aspect and Voice to syntactic structure. If this change took place around 1780-1800, it explains how all of these constructions changed at about the same time.

4 Towards an explanation

The account proposed above consists primarily of the claim that what had been one syntactic projection—VAsp—became two

projections—Aspect and Voice. For this to be correct, both syntactic configurations of these features must be permitted by Universal Grammar. We assume, following Chomsky (2000) among others, that the organization of features into syntactic heads varies parametrically from one language—or stage of a language—to another. This is in contrast to the strictest version of the cartographic approach to syntax, in which each feature universally heads its own projection, and "if some language provides evidence for [. . .] a particular functional head [. . .], then that head [. . .] must be present in every other language, whether the language offers overt evidence for it or not" (Cinque and Rizzi 2008: 45). Typological evidence for the parametric approach is presented by Bobaljik and Thráinsson (1998), who argue that several correlated typological properties of Germanic languages follow from differences in the number of projections in the INFL system. If our analysis of the changes that took place in the English Voice and Aspect system is correct, then these changes offer a diachronic counterpart to Bobaljik and Thráinsson's (1998) synchronic evidence.

However, a full accounting of the developments in the Voice and Aspect system requires an explanation not only of what changed, but also of why it changed when it did. For us, as for Lightfoot and Westergaard (2007), a question of this sort is ultimately a question about language acquisition. Pratt and Denison (2000) argue that the Southey–Coleridge circle of writers played a key sociolinguistic role in propagating the progressive passive, and indeed many of the early examples of the construction come from these writers' correspondence. Before it can be propagated, however, a historically novel construction must first be generated by the grammar of some speaker or speakers. If UG allows Voice and Aspect to appear either on the same syntactic head or on two separate heads, what is it in the primary linguistic data that learners are exposed to that leads them to posit one of these structures or the other? And, most specifically, what properties of the speech produced by speakers whose grammar contained a single VAsp head might cause a learner to acquire a grammar with two heads?

Suppose that a syntactic functional head cannot be posited unless at least one instantiation of that head is associated with an overt morphological exponent. A requirement of this sort would make it impossible for Voice alone to form a syntactic projection in the earlier of the two stages discussed above, since neither [PASSIVE] nor [VOICE] had any overt spellout. Under this view, the existence of a separate Voice projection would have been possible only after the reanalysis of -en as the spellout of [PASSIVE].

The reanalysis of *-en* would thus have been a permitting factor in, rather than a consequence of, the change in the syntactic structure.

Pursuing this line of thought, let us consider whether the reanalysis of *-en* might not only have permitted, but perhaps also triggered, the separation of Aspect and Voice into two projections. Is there any reason to think that Voice and Aspect could not have continued to share a single syntactic projection after *-en* came to spell out [PASSIVE]?

Prior to the reanalysis, *-en* and *-ing* were in complementary distribution, since they spelled out two contrasting features of Aspect. Afterwards, they came to spell out two independent features, which could appear simultaneously on VAsp, and could thus have been in competition as possible realizations of the VAsp head. Each affix spells out a single feature, and neither is thus obviously more specific than the other; the subset principle (Noyer 1997) would therefore not decide between them.

If fission were to apply after one of the affixes had been inserted, then in principle both could end up being spelled out. However, this approach would have difficulty accounting for the fact that the resulting structure also has two instances of auxiliary *be,* and that adverbials may appear both between the two auxiliaries, as in (39), and between the two participles, as in (40).

(39)   Adverbial before *-ing,* between the two instances of *be:*

    a.   . . . *and all this calcareous matter* **is continually being deposited** *by its waters* when they enter their resting place in the calm lake of Geneva.
(J. Ruskin, *Diaries,* 1835; PPCMBE)

    b.   *Large baskets of fruit* **were at the same time being embarked**
(J. Montefiore, *Private journal of a visit to Egypt and Palestine,* 1836; PPCMBE)

(40)   Adverbial between *-ing* and *-en:*

    a.   . . . *the bed of the river* **is being gradually raised** *above the level of the country on either side.*
(A. MacKay, *The Western World,* 1850)

Data like these strongly suggest that there are two syntactic projections between *v*P and T, and that both can be adverbially modified.

Under a fission account, it is also not at all obvious why *-en* invariably appears below *-ing*. If the two affixes spell out features from the same head, one might expect them to appear in either

order, as illustrated in (41). However, no examples like (41b) appear in the corpus.

(41)　　a.　*The house was being built.*

　　　　b.　* *The house was been building.*

Setting aside these technical issues, it is conceivable that, if a fission-based account arose as a result of the reanalysis of *-en*, it would have led very quickly to learners positing independent syntactic projections for Aspect and Voice, thus arriving at a grammar in which Aspect and Voice headed independent projections. On the other hand, it is also plausible that the reassignment of *-en* to [VOICE] itself triggered the separation of the two heads. Cowper and Hall (2011) suggest that Cinque and Rizzi's (2008) cartographic principle, quoted above, might play a role in language acquisition even if it does not determine syntactic structure cross-linguistically. Perhaps, if a given formal feature has an overt morphological exponent for at least one of its values in a given language, it will be taken to head its own projection in that language unless there is empirical evidence to the contrary.

In light of the possible scenarios just sketched, we propose that the trigger for the change in the syntactic structure of Aspect and Voice was the reanalysis of the vocabulary item *-en* from spelling out [RESULT] to spelling out [PASSIVE]. But this only leads to a new question: what caused the reanalysis? What led language learners to interpret the participle in *-en* as a marker of passive voice, rather than as a marker of resultative aspect? Here, it seems that frequency may have been a factor. An examination of the Penn Parsed Historical Corpora reveals that the resultative *be*-perfect was in decline throughout the late 18th Century, occurring with a smaller and smaller number of verbs as time went on. It also appears that the resultative passive was very much more frequent than either the passival or the intransitive for passive. The fact that the intransitive for passive is morphologically identical to a simple unaccusative construction, and that the set of verbs participating in the causative–unaccusative alternation seems to have been relatively fluid, would reduce the robustness of the intransitive for passive in the data. At the same time, the decreasing use of the resultative *be*-perfect would increase the frequency of passive, relative to active, sentences containing the *-en* participle.

5 Conclusion

We have proposed a single change in the mapping of interpretive formal features to syntactic projections, that accounts for several superficial changes in the manifestation of Voice and Aspect in English, all of which took place around the end of the 18th Century. While the contemporaneity of some of these changes has been previously mentioned in the literature (e.g., Denison 1998), to our knowledge the connection between the loss of the passival and the advent of the progressive passive on the one hand, and the loss of the intransitive for passive and the aspectually neutral simple tenses on the other, has not previously been made.

In addition to providing an elegant account of the superficial changes described, the analysis presented here also bears on the question of whether syntactic structure is crosslinguistically identical, as proposed most forcefully by Cinque and Rizzi (2008), or subject to parametric variation. As argued in more detail in Cowper and Hall (2011), our account supports the parametric view. Here, we have tried to sketch how the reanalysis of a single affix might have led to a major change in the mapping of features of Aspect and Voice to syntactic structure.

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Notes

[1]We set aside the question of the historical source of this construction, and its relation to constructions like *The house is a-building*.

[2]We use the symbol ☾ , a waning moon, to indicate a construction whose use was declining, and ☽, a waxing moon, to mark constructions that were becoming more prevalent.

[3]Erades (1951) reports that sentences like (42) are commonplace in the variety of English spoken in Sheffield.

(42)   a.   Would you like these letters posting?

   b.   I want this homework doing on paper, not in your books.

[4]A full discussion of the subsequent history of the *have*-perfect is beyond the scope of this paper, and we will set it aside in the following discussion. Our account of the changes in the aspectual system predicts that this construction must have been reanalyzed as passive rather than resultative (which is consistent with the possibility of an agentive *by*-phrase, as in *You had him bound by the sentries*); a fuller exploration of this prediction awaits future work.

[5]Examples from the Penn–Helsinki Parsed Corpus of Early Modern English are labelled with the abbreviation PPCEME; the label PPCMBE indicates the Penn Parsed Corpus of Modern British English.

Figures

$$\left[\left(\left\{\begin{array}{l}\text{PROCESS}\\\text{RESULT}\end{array}\right\}\right),\left(\text{ PASSIVE }\right)\right]$$

Voice/Aspect

Aspect

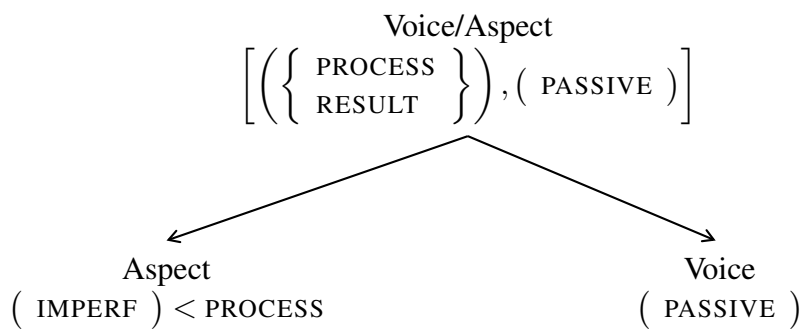$$\left(\text{ IMPERF }\right) < \text{PROCESS}$$

Voice

$$\left(\text{ PASSIVE }\right)$$

Figure 1: The separation of Voice and Aspect