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A Diachronic Account of τ–Features and of Their Output as Vocabulary Items: On the Limits to the Vocabulary Item Ø

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Assuming basic tenets of *Distributed Morphology* and likewise the minimalist framework of *Agree*, it is argued that the segmentation into *Vocabulary Items* (VIs) of the Past forms of verbs in Present Day English is as in e.g. *deem-ed* rather than *deem-ed-Ø*. The generalized position in the literature is for the Ø-VI to be subject to the *Elsewhere condition*, which entails that the proper form is *deem-ed*, that is the form with non-exponence after *-ed*. The main purpose of the discussion is to give evidence of the *Elsewhere condition*, and I propose to do so by taking a diachronic perspective and tracking down the relevant changes affecting verbal morphology in the language. It is argued that there are three types of τ–features in Old English and that the specific τ–feature that has as output the VI´s that are commonly referred to as *subject agreement endings*, which are those among which the Ø-VI steadily imposes itself from the end of the Old English period, is a τ–feature that combines φ– and τ–interpretation. The feature is labelled here *[+/–past]AgrT* and its τ–interpretation is identified as *[morphological distinctiveness between Present and Past relative to Agreement]*. The progressive imposition of the Ø-VI entails that the specific content of the cited *[morphological distinctiveness…]* varies in time, which variation is given diverse formulations throughout the discussion with the help of the *Subset Principle requirements*. The ultimate formulation is reached after analyzing the differences and similarities between English and Danish–Swedish being another case in point–as regards morpho-phonological loss and the connection with V-to-T movement. The cited formulation entails that the Ø-VI is not available if it is the only VI realizing a given formal feature (note the *Elsewhere condition*). A corollary of the account is for Present Day English, or rather from the English language

from the eighteenth century onwards, not to rely on one binary feature like [+/–past] but on two privative features, each of a different type .

Keywords: τ–features; Ø-Vocabulary Item vs. non-exponence; *Elsewhere condition*; morphological distinctiveness between Present and Past relative to Agreement; diachronic perspective

1. Introduction

In the present paper I endorse the (minimalist) *Agree* framework relative to the licensing on verbal forms of *tense features*–or the same, τ–features like [+/–past]–and *agreement features*–that is, φ–features like [person] and/or [number]–(Chomsky 2000, 2001; Pesetsky and Torrego 2007) and the rationale and core assumptions relative to the division between morpho-syntax and morpho-phonology as in *Distributed Morphology* (DM) (Halle and Marantz 1993 et seq.), and I aim to answer the question whether the Past forms of verbs in Present Day English (PDE) realize a *Vocabulary Item* (VI) *Ø* to the right of (the likewise VI) *-ed*–note e.g. *deem-ed-Ø*–or whether there is no VI at all in that position and it is therefore a situation of non-exponence–note *deem-ed*. This way, two forms are proposed for each person cell under *Past Indicative* in Table 1 below,[1] where each form is meant to identify a different segmentation into VIs as just suggested: the question posed is which of the two is the proper segmentation. A phonemic transcription within slashes (*//*) has been added to highlight how controversial a question like this is since, for one, in none of the two segmentations (for the Past) is there a VI to the right of *-ed* that is pronounced. In effect, the issue of Ø-exponence is a controversial one in the morpho-syntactic literature in general, and in the DM framework in particular, where there is a varied typology of the phenomenon in question: the reader is referred in this sense to TrØmmer (2012, 330). The choice of segments (for the Past) shown in Table 1, which will be referred to in the paper as Ø-VI and non-exponence respectively, are indeed two types postulated within DM. By Ø-VI (that in *deem-ed-Ø*) is meant the output of a given (abstract) morpheme–which is available at all because of some previously computed feature at core syntax–and is an output that has no phonetic content or realization: that is, it is a VI just like *deem-* or *-ed* but without phonetic content. By contrast, non-exponence or lack of exponence (see *deem-ed*) consists in the

1 See at the end of the section in connection with the Subjunctive.

absence of any VI at all for the reason that there is just no corresponding feature computed at core syntax.

Table 1. Verbal Forms in PDE

Present Indicative			Past Indicative				
1	deem-Ø	/di:m/	1	deem-ed	OR	deem-ed-Ø	? /di:md/
2	deem-Ø	/di:m/	2	deem-ed	OR	deem-ed-Ø	? /di:md/
3	deem-s	/di:mz/	3	deem-ed	OR	deem-ed-Ø	? /di:md/
Pl	deem-Ø	/di:m/	Pl	deem-ed	OR	deem-ed-Ø	? /di:md/

The Ø-VI is generally agreed in DM as an *elsewhere* form for the Present in PDE–exactly as in Table 1 above–and basing upon the same mechanism, it is generally assumed that there is no Ø-VI for the Past (Embick [2015, 97], Bobaljik (2017, 5-6]). Originally, Halle and Marantz (1993, 123ff.) posit symmetric forms as compared to the Present (note deem-ed-0, deem-ed-s) which become deem-ed after Fusion.

Briefly put, DM assumes from minimalism that core syntax is the component of grammar where formal features are computed and it postulates that morphology mediates between syntax and phonology. Further, rather than referring to three components–namely, syntax, morphology and phonology–it is standard in the recent literature to refer to morpho-syntax on the one hand, and morpho-phonology on the other. Now, feature-computation is followed by *Vocabulary Insertion*, by means of which features themselves are realized or, the same, exhibit as output the above-cited VI´s. *Vocabulary Insertion* is properly understood as a competition process guided by the *Subset Principle*–which is stated in a formal way in Section 1.1 below. The *Subset Principle*, which came to be inspired by rules and principles from the phonological theory of the 1970´s, and which is found in different versions in manifold frameworks of linguistic analysis, revolves around the key notion *elsewhere*. The version or definition in (1) of the *Elsewhere condition* or *principle* can be found in Halle and Marantz (1993, 162), who cite the classical work of Anderson (1982, 132).

(1) Application of a more specific rule blocks that of a later more general one

The *Elsewhere condition*, applied to the above-cited VI´s, means that a VI that is more specific, or the same less *underspecified* than another VI in the set or paradigm of VI´s that (can) serve as output of the same feature(s) has preference

over the latter VI. Since the Ø-VI is trivially the most underspecified of VI´s regarding phonetic content, it is typically an *elsewhere* VI. This can be expressed by means of the characterization in (2) below, which is taken to entail that if there is no non-Ø-VI in a given paradigm or set of forms–that is no VI with phonetic content–then there is no Ø-VI in that paradigm: hence the observation above that the standard view in DM is for the Ø-VI to be available for the Present in PDE but not for the Past.

(2) A Ø-VI is in paradigmatic contrast with a non-Ø-VI

However, it appears to be legitimate to wonder whether a Ø-VI could be an option at all for the Past in PDE–that is, a VI that, as such is the output of some given feature though the VI itself lacks a phonetic matrix: even more so if the Past forms for Old English (OE) are considered. As is widely known, the Past forms for an OE verb like *dēman* 'deem, judge' do exhibit a VI to the righ of *-d:*[2] see Table 2 below.

Table 2. Verbal Forms in OE

Present Indicative		Past Indicative	
1	dēm-e	1	dēm-d-e
2	dēm-e(st)	2	dēm-d-est
3	dēm-eþ	3	dēm-d-e
Pl	dēm-aþ	Pl	dēm-d-on

I argue in this paper on historical grounds that it is non-exponence, that is the item without Ø (*deem-ed*) that corresponds to PDE in Table 1: in other words, I aim to provide evidence for the *elsewhere* corollary in (2). In order to do so, it is first necessary to identify the specific feature that licenses at core syntax the VI´s to the right-most position in all the OE forms in Table 2 and then analyze the way in which such a feature changes from the end of OE up to some given period in the eighteenth century, when the output of the feature in question corresponds with the situation depicted in Table 1–which is the one to decipher. As will be argued, the core syntax–feature in question is a τ–feature interpreted by a T(ense) head, though the cited interpretation is importantly both τ– and φ–

2 Reference is sometimes to the VI *-ed* and other times to the VI *-d*, though both are to play the same role or occupy the same slot in the verbal system of PDE and OE, respectively. Actually, as is well known, there are other VI-counterparts for both *-ed* and *-d*–traditionally referred to as allomorphic realizations–but this issue is not relevant for the discussion.

interpretation. The VI´s that act as the output of this feature, those to the right-most position in Table 2, are traditionally referred to as *subject agreement endings* or *suffixes*, a widely-known term that will also be used here. Lastly, the relevant τ–feature is originally a *binary* feature but becomes *privative* in the course of time.

In order to give evidence of the limitations that the *Elsewhere condition* puts on the Ø-VI, it is proposed in the second half of the paper to invoke the phenomenon of V-to-T movement and to make use of cross-linguistic variation. The diachronic development of another Germanic language like Danish–Swedish being also a case in point–will be resorted to, since the attrition suffered by subject agreement endings in Mainland Scandinavian and the way such a process of loss influences upon the movement of the finite verb has lots of things in common with the situation in English and, at the same time, no case of Ø-VI or non-exponence affects the Mainland Scandinavian process.

Due to space limitations, a phrase or similar that will be used frequently in the paper, many issues that belong either to work in preparation or to research in the very close future must be left completely out of the discussion. For one, with the exception of Section 2, the analysis centers on the historical class of weak verbs–note also in this sense that Table 1 illustrates a regular verb in PDE. It is important, however, to highlight that the core analysis implemented in the paper, that of the development of subject agreement endings, applies to weak and strong verbs alike.[3] Also, here I deal exclusively with Indicative forms, since the feature responsible for the computation of Subjunctive forms (in either OE or ME) is not one as combines τ– and φ–interpretation, as is argued on the present account for Indicative forms. The reader is also referred to footnote 7 below.

The paper is organized as follows. In Section 1.1 basic assumptions from the literature about the computation of tense and agreement on verbs are specified and the two conditions of the *Subset Principle* are listed. In order to elicit the set of (binary) τ–features that have as output the VI´s to the right-most position in the verbal forms in Table 2 for OE, so-called subject agreement endings, it is necessary to deal first with the computation of the τ–feature that has as output the VI *-d* for weak verbs and also with that of the τ–feature that has as output the VI identified as an ablauting vowel for strong verbs. I then argue in Section 2.1 that the genuine property of the τ–feature at the centre of the discussion, that which combines φ– and τ–interpretation and has as output subject agreement

3 In connection with this, the analysis of the morpho-phonology that must be in place after the morpho-syntax falls out the scope of the present discussion–see at the beginning of Section 1.1 in relation to Transfer. This is indeed the object of a fruitful debate in the current DM literature, particularly for irregular verbs in PDE. I am referring to the derivation and the full Vocabulary Insertion process of a form as e.g. *sang*, the Past of *sing*, for which DM relies on such mechanisms as impoverishment or readjustment rules.

endings, is that this feature identifies *[morphological distinctiveness between Present and Past relative to Agreement]*. The task in Sections 3–3.2 consists in analyzing, by means of the *Subset Principle requirements*, the way in which the cited interpretation *[morphological distinctiveness…]* changes in time: the change is due to the fact that the Ø-VI extends itself progressively all over the paradigm of subject agreement endings. The ultimate formulation of the *Subset Principle requirements*, which leads to the rejection of *deem-ed-Ø* in favour of *deem-ed*, is reached by invoking the phenomenon of V-to-T movement and cross-linguistic variation between English on the one hand and Danish on the other. Section 4 is the Conclusion.

1.1. Assumptions from the Literature

The analysis that is proposed in the paper relies on the processing or computation of formal features at core or narrow syntax and on the *Vocabulary Insertion* process that applies subsequently and renders VI´s as their output. I would like to observe, however, that no detailed rendering of *Transfer* between morpho-syntax and morpho-phonology is provided in the discussion. In this sense, the verbal forms illustrated, both in OE and in PDE, are quite simple or transparent with regard to the cited transition or, the same, the verbal forms chosen lend themselves to a quite straightforward VI-segmentation.

Now, derivations are generally postulated to proceed through *Merge*, which is an operation combining two syntactic units from the Lexicon in order to form a new syntactic unit, and above-cited *Transfer*, which sends the structure that has been built at core or narrow syntax to the interfaces–one of these being the morpho-phonology. More specifically, the derivation or computation of verbal forms at core syntax is typically argued to proceed according to the licensing of formal features as are τ–features–generally characterized as [+/–past]–and φ–features–typically identified with such values as [person] and/or [number]. Such licensing is to take place through an *Agree* relation (Chomsky 2000, 2001) between T and *v*, though the nominal to become Subject has a crucial role to play as regards φ–features–for which see below.

In *Agree*, T is typically the *Probe*–that is, the head that initiates the process of licensing of a given feature–and *v* acts generally as the c-commanded *Goal*–that is, the head (or phrase) targeted by the Probe in order for the cited feature-licensing to be completed. For their part, τ–features and φ–features attend to a two-fold characterization and a big part of the literature assumes, as is widely known, that each works independently from the other (Pesetsky and Torrego 2007): *interpretable* [iF] vs. *uninterpretable* [*u*F] features on the one hand and *valued* [F: *val*] vs. *unvalued* [F: __] features on the other. Feature-*interpretability* is relative to the semantic content or contribution of a feature, and feature-*valuation*

means that the relevant feature is ensured to appear on a specific item. In a more specific way, there seems to be generalized consensus that τ–features in PDE–and in Indo-European languages in general–are *interpretable* and *unvalued* on T and *uninterpretable* but *unvalued* on *v*. As for φ–features, these would be similarly *unvalued* on T and *valued* on *v*, but they are *uninterpretable* on both T and *v*, it being the nominal to become subject the source of *interpretation*: in other words, φ–features are both *valued* and *interpretable* on the nominal. The issue of how exactly *v* comes to value φ–features is of course a controversial one in the literature, a widely-extended theory being that *Agree* between T and the nominal applies whereby the nominal gets Case licensed and T gets φ–features. I assume in my research in general the characterization of the so-called *Checking* operation as in the recent work of Bjorkman and Zeijlstra (2019), where it is emphasized that, in contrast to *Agree*, *Checking* does not need to result necessarily in the licensing of any feature. *Checking* between T and the nominal would thus ensure that T borrows corresponding φ–features, which would then be ready for T to have them valued against *v* in the corresponding *Agree* connection.[4]

The description immediately above of the licensing of features is to act as a guide for the derivation of verbs presented in Sections 2, 2.1 and 2.2. With regard to *Vocabularly Insertion*, the two conditions imposed by the so-called *Subset Principle* as defined by Halle (1997, 428) are those in (3). As observed in Section 1, the content of the *Subset Principle* hinges upon the *Elsewhere condition*–let us remember (1) and also (2), the latter exclusively on the Ø-VI. In connection with the *Specificity requirement* below, in case two or more VI´s contain the same number of features, the so-called feature hierarchy that is generally applied is: *Tense* > *Number* > *Person*.

(3) Subset Principle
A vocabulary item V is inserted into a functional head H iff (i) and (ii) hold:
(i) Compatibility requirement:
The morphosyntactic features of V are a subset of the morphosyntactic features of H.
(ii) Specificity requirement:
V is the most specific vocabulary item that satisfies (i).
(Specificity: A vocabulary item V_1 is more specific than a vocabulary item V_2 iff V_1 contais more morphosyntactic features than V_2.)

4 Checking between T and the nominal is no obstacle for an Agree relation between the two whereby the nominal would get Case licensed and T would possibly get the so-called Edge-feature likewise in place. Incidentally, though I endorse this kind of approach, I do not assume probing to take place in upward direction, as in Bjorkman and Zeijlstra (2019) but take the connection between the Probe and the Goal to result from a downward operation, as in many standard accounts. See also note 9 for T´s potentialities.

2. τ–Features In OE as Interpreted by [T] and by [v] and Their VI Outputs

It is widely known that the vast majority of verbs in OE belong to one of two big groups, the group of weak verbs on the one hand–which are those forming their Past through the addition of a *-d*-segment to the stem–and the group of strong verbs on the other–which form their Past through *ablaut* or *apophony*, that is, through vowel-alternation of the stem. The *-d*-segment is considered in the literature to be an innovation in Primitive Germanic (PGmc)–see e.g. Bammesberger (1986, 36ff.); Lahiri (2003, 91ff.)–whereas *ablaut* is related directly to distinctions of *Aktionsart* (lexical aspect) for roots in Proto-Indoeuropean (PIE) and, more significantly, to aspectual distinctions implemented on roots in order to build up stems on a widely-attested three-fold system of *imperfective*, *perfective*, and *aorist* or *perfect*–see Hewson and Bubenik (1997); Mailhammer (2007); Fulk (2018).

In Table 3 below is the set of forms for the Present and the Past of the OE verb *scīnan* 'shine', which belongs to class I of the seven classes generally distinguished within strong verbs, and to its right is the set of forms for the Present and the Past of the OE verb *dēman* 'deem, judge', which belongs to one of the two major classes of weak verbs and is repeated here from Table 2 above.

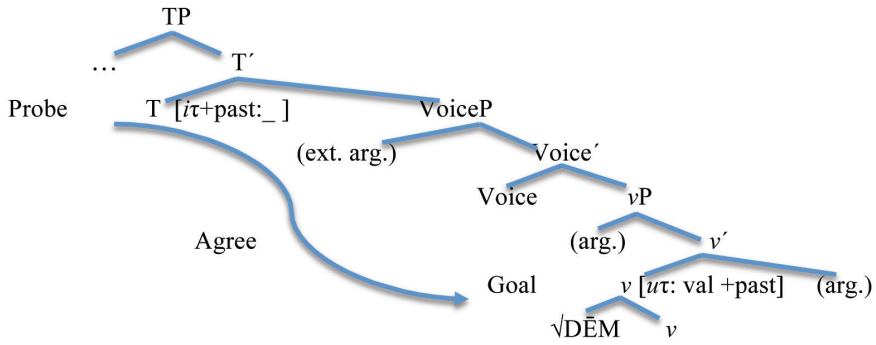
Table 3. Strong and Weak Verbs in OE

	scīnan			***dēman***	
	Present	**Past**		**Present**	**Past**
1	sc-ī-n-e	sc-ā-n-Ø	1	dēm-e	dēm-d-e
2	sc-ī-n-st	sc-i-n-e	2	dēm-est	dēm-d-est
3	sc-ī-n-þ	sc-ā-n-Ø	3	dēm-eþ	dēm-d-e
Pl	sc-ī-n-aþ	sc-i-n-on	Pl	dēm-aþ	dēm-d-on

Starting with those features in the Past of weak verbs whose VI is *-d*, and given the straightforward similarity with so-called regular or weak verbs in PDE, which also exhibit *-d*–or rather *-ed*: see footnote 2–as the corresponding VI, it appears legitimate to suggest that OE T (in a similar fashion to PDE T) is in charge of *interpreting* the relevant features against *v*. The features in question are characterized in a provisional way as [+past] τ–features, though this will be modified in an important way in Section 2.2. The tree-diagram in Figure 1 shows the *Agree* relation that is established between T and *v*.[5]

5 TP stands for Tense Phrase; Voice Phrase is the projection where external arguments, that is elements with the thematic role of agent or experiencer, merge in the derivation directly from the Lexicon; *v*P, that is the Phrase headed by little *v*, is the projection where internal

Figure 1. Partial derivation of features for Past forms of weak verbs



The root of a form like e.g. *dēmde* 'I/you/he/she/it judged' (note √*DĒM* in Figure 1) merges in a phonological form–as assumed by an important part of the current literature–with a categorizing head *v* and the head *v* that results–which is the stem–is to become eventually the Goal of the T Probe. As described briefly in Section 1.1 in connection with PDE, the head T has *interpretable* τ–features that are *unvalued*–note the specification [*i*τ+past:_] to the immediate right of T in Figure 1–and, for its part, *v* has *uninterpretable* τ–features, but ones to be *valued* on the site it itself occupies–note [*u*τ:val+past]. Incidentally, various *arguments* are shown in Figure 1 with the potential to merge in the derivation: an *external argument*, which is projected in the Specifier of a Voice head–the typical position of an element that is to become Subject and therefore is later to raise to the Spec of T–and *internal arguments* in lower positions, that is Object positions, depending logically upon the thematic properties of the verb.

Passing on now to the derivation or computation of [+past] τ–features of strong or ablaut verbs, these exhibit two Pasts, referred to in the literature as *Preterite 1* and *Preterite 2*. More generally, the stem-alternation of these verbs is as follows: ablaut vowel number 1 corresponds to the Present, the Infinitive and the Present Participle; ablaut vowel number 2 corresponds to the first and third person singular of the Past (the above-cited Preterite 1); ablaut vowel number 3, to the second person singular and all persons in the plural (the above-cited Preterite 2); and ablaut vowel number 4 corresponds to the Past Participle.

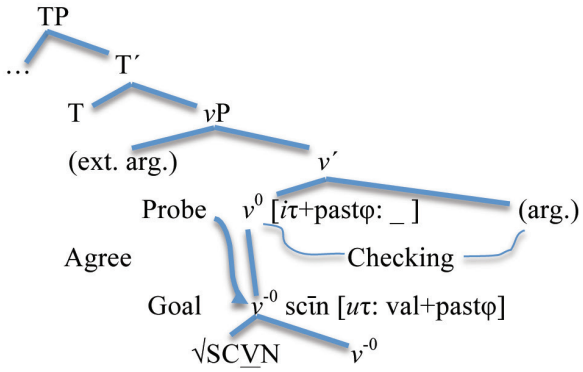
Now, for the computation of one or the other Preterite to depend on the relevant nominal (in the verb phrase) that is to become Subject as being first or third person singular, or otherwise second person singular or any person in the

arguments–namely, non-agents and/or experiencers–merge from the Lexicon and it is also the projection whose head (*v*) is identified as the verbal stem after merging with the root element. Further, in connection with the τ–feature: i=interpretable; u=uninterpretable; val=valued; _=unvalued (see also Section 1.1).

plural, as just described, is indeed a circumstance that is not to be found in the computation of the Past of weak verbs as licensed by T–see immediately above. In effect, the VI-*d* associated with the *interpretation* of τ–features on the part of T does not co-vary with person or number. This way, although one thing is the formal feature in question that is *interpreted* at core syntax and another thing is the output of the relevant feature in the form of a given VI, it is the case that the *interpretation* of [+past] τ–features of strong verbs is sensitive to φ, that is to *agreement*. The proposal that I defend and that appears described in more detail in Castillo (2022) is then that the relevant head in charge of *interpreting* [+past] τ–features for strong or ablaut verbs is not T but *v*, that is the stem-segment itself. The proposed analysis would match with the mechanism of ablaut in a system or grammar lacking (as yet) the mechanism of a supra-sentential T head, possibly the most relevant trait of languages as configured after PIE. In effect, as argued in the specialized literature–see the references at the beginning of the section–ablaut would be a direct descendant of the aspect-based system available in PIE, whereas T emerges itself as a node c-commanding all other nodes in later periods.

I thus contend that OE *v* has the ability to act as the Probe that *interprets* the τ–features on strong or ablaut verbs, which in turn entails that the *v*-area of a tree-diagram like that in Figure 1 must be made bigger: note in this sense the two *v* heads in the tree-diagram in Figure 2 below, v^0 and v^{-0}, one acting as Probe and the other as Goal, and note also the notation in brackets to the immediate left of v^0 and v^{-0}, which incorporates information relative to τ–interpretation and to φ–interpretation. There are further differences as compared to the tree-diagram in Figure 1, which follow from *v* being the relevant Probe on this occasion, namely the lack of a Voice head and the vowel in the root not being specified. A full account of these contrasts can be found in Castillo (2022).

Figure 2. Partial derivation of features for Past forms of strong verbs



In a similar fashion to [+past] τ–features on strong verbs, [–past] τ–features on these same elements are likewise expected to be interpreted by *v*, since ablaut-alternation applies in the Past as opposed to the Present, though no person distinction applies in the Present–note Present *scīne* vs. Past *scān/scinon*. The relevant tree-diagram then would be one as in Figure 2 above, but with the notation between brackets to the immediate right of v^0 being [*i*τ –past: __] and that to the immediate right of v^{-0} being [*u*τ: val–past]. As can be noted, no φ-symbol has been incorporated on this occasion.

I turn in Section 2.1 immediately below to the last set of τ–features that, as I defend in the proposal, can be found in the verbal system of OE–and more generally of languages descending from PIE–which features, together with their VI outputs, constitute the core of the discussion. The derivations in the tree-diagrams in Figure 1 and 2 will be completed with this further set of τ–features.

2.1. The τ–Feature in OE with Both φ– and τ–Interpretation and Its VI Output: Distinctiveness Within and Across Tenses

As shown in Figure 1 above, [+past] τ–features on weak verbs, those that have the VI *-d* as output, have been argued to be *interpreted* by the [T] head or Probe. On the other hand, [+/–past] τ–features on strong verbs, those that correlate with an ablauting vowel acting as their VI, have been argued to be *interpreted* by the [*v*] head or Probe–let us recall Figure 2. A logical question to ask is of course what about [–past] τ–features on weak verbs.

Now, the weak forms under the column *Present* in Table 3 exhibit one VI aside from the stem, whereas those under the column *Past* exhibit two. The features that are the input to the VI´s in end position for all forms clearly convey agreement–or the same φ–interpretation, more specifically [person] and [number]–which is of course why they are traditionally referred to as *subject agreement endings*. For the sake of clarity, the cited VI´s or endings are shown in isolation in Table 4 below: the forms correspond specifically to the (standard) West Saxon dialect and are borrowed from Lass (1992, 134). The VI´s appear formally listed in (4) according to the *Specificity requirement* of the *Subset Principle*–see (3) above.[6]

6 It goes without saying that all VI´s generally speaking abide by the Subset Principle: this way, the ablauting vowes ā, i satisfy Specificity as regards [person] and [number] for strong verbs of Class II, etc. I mention in the main text exclusively the Subset Principle Requirements affecting subject agreement endings in order to save space.

Table 4. (Standard) Subject Agreement Endings in OE

	Present			Past	
	Strong	Weak		Strong	Weak
1	-e	-e	1	-Ø	-e
2	-(e)st	-e(st)	2	-e	-(e)st
3	-eþ	-eþ	3	-Ø	-e
Pl	-aþ	-aþ	Pl	-on	-on

(4) a.Vocabulary Items for Agreement (weak verbs)

[-1,+2,-pl,-past] ↔ -e(st)
[-1,-2,-pl,-past] ↔ -eþ
[-1,+2,-pl,+past] ↔ -(e)st
[+pl,-past] ↔ -aþ
[+pl,+past] ↔ -on
[-2] ↔ -e

b. Vocabulary Items for Agreement (strong verbs)

[+2,-1,-pl,-past] ↔ -(e)st
[-1,-2,-pl,-past] ↔ -eþ
[-2,-pl,+past] ↔ -Ø
[+pl,+past] ↔ -on
[+1,+2] ↔ -e

In a relevant way, though the *Compatibility requirement* that the VI´s in Table 4 fulfil is identified as Agreement in (4)–in other words, though all the VI´s in (4a) or (4b), depending on whether it is the set of weak verbs or strong verbs, realize the φ–interpretation of corresponding features as originating in the relevant functional head (arguably, T)–there applies one other *Compatibility requirement*. As I contend in my research, the VI´s in Table 4 are the expression of *co-variation between tense and agreement*, since the forms under *Present* do *not* coincide with those under *Past*,[7] except for the (syncretic) case of the first person singular for weak verbs–see *-e*.[8] As observed above, the subject agreement segments or VI´s in Table 4 are the only VI´s available for Present forms (aside from the stem), which means that the feature that is computed at core syntax must be a τ–feature.

7 The cited mechanism of co-variation is a property of the Indicative but not of the Subjunctive. I argue why this is so in current research. As observed in Section 1 then, Subjunctive forms are out of the scope of the present discussion.

8 I take second person *-e(st)* and *–(e)st* as distinct, that is as non-syncretic as non-syncretic, since the material between parentheses is taken as the more frequent variant in each case (in the West Saxon dialect).

This τ–feature is a kind of *portmanteau* feature since it combines φ–interpretation and τ–interpretation. I would like to refer to the feature as *[+/–past] Agr(eeing) T(ense)*–feature and to argue that it is a second T head or Probe that is in charge of *interpreting* the latter: more specifically, a *[$_T$AgrT]* head or Probe, as distinct from the *[$_T$T]* head or Probe in charge of *interpreting* the τ–feature that expones as the *-d*-segment (Section 2 above). The φ–interpretation of [+/–past]-AgrT means [person] and [number], and has as output the VI´s as formalized in (4) above. As for τ–interpretation, this is [present] and [past]. But the (overall) portmanteau interpretation is bound to be *[morphological distinctiveness between Present and Past relative to Agreement]*.

(5) below then identifies the VI´s from Table 4 that realize the cited interpretation of *[morphological distinctiveness between Present and Past relative to Agreement]*. At this point, I would like to note that, in order to save space, and since strong verbs are to be assimilated to weak verbs as regards subject agreement endings, the analysis both here and in the historical process in Sections 3.1 and 3.2 focuses on weak verbs. In Section 2.2, however, the derivation in tree-diagrams will be completed for both weak and strong verbs in OE, and similarly a brief reference is made in Section 3 to the loss affecting strong verbs from ME onwards, and strong verbs appear illustrated likewise in a paradigm in Section 3.1.

(5) Vocabulary Items for Items for the interpretation [morphological distinctiveness...] in OE

-e(st)	-(e)st
-eþ	-e
-aþ	-on

Now, in contrast to the interpretation of Agreement proper in (4), the interpretation *[morphological distinctiveness between Present and Past relative to Agreement]* is one that corresponds to a set of VI´s as a whole and not as individual elements, the disposition of VI´s in (5) is different from that in (4) three VI´s from the *Present* column in Table 4 appear on the left in (5) and three other VI´s from *Past* appear on the right, and this is enough to acknowledge their morphological distinctiveness. The paradigm of forms in Table 4 would then fulfil the *Compatibility requirement* that is imposed by the formal feature (namely, [+/–past]-AgrT) but this does not mean that the morphological distinctiveness or variation in question is *specified* on all forms: note in this sense that the first person in the Present and in the Past in Table 4 have been left out from (5), trivially because of their syncretism–that is, their lack of morphological distinctiveness.

It is the case that the paradigm of forms in Table 4 is one where more and more non-Ø-VI´s are replaced by Ø-VI´s with the passing of time (until the PDE paradigm is reached) and it is the case that Ø-VI´s lack phonetic content, exactly the same as in a situation of non-exponence. Without appealing as yet to the central question proposed in Section 1 of the paper, namely the way in which a Ø-VI will be distinguished on the present account from the pure lack or absence of a VI–that is from a situation of non-exponence–what must be highlighted at this moment is that for the presence of the Ø-VI and/or non-exponence to increase in time trivially entails the loss of morphological distinctiveness. It is therefore indispensable to lay the foundations that will help us later establish the quality and quantity required by the very interpretation *[morphological distinctiveness between Present and Past relative to Agreement]*. That is, is it the case that there must be distinctiveness, that is variation, within the Present independently of the Past, and then, in addition, distinctiveness between the Present and the Past, or is it the case that the distinctiveness or variation within the Present or within the Past can be relaxed as long as distinctiveness between the Present and the Past is maintained? And in each of the described situations, how much amount of distinctiveness is required? In other words, how many VI´s must show the required morphological distinctiveness or variation?

The proposal is then to suggest at this stage a more precise definition of *Compatibility/Specificity*, but one that fits the contents of Table 4 and of (5) above for OE. The relevant definition, which appears in (6) below, will be refined all along Section 3.1 until it suits the situation in PDE, which in turn is expected to solve the core issue of the paper around the Ø-VI vs. non-exponence: in other words, the issue of the imposition of the *Elsewhere condition* on the Ø-VI as expressed in (2). Incidentally, note that the *Compatibility requirement* and the *Specificity requirement* from the *Subset Principle* in (3) are mingled together as one requirement if it is the output of a feature interpretation like *[morphological distinctiveness…]* that is at stake, give that suh a feature interpretation corresponds to a whole set and not to individual elements.

(6) distinct subject agreement endings within each tense and across tenses

Before putting an end to the discussion of the feature-licensing and the corresponding VI-segmentation of forms in OE, it is necessary to observe that the asymmetry between the Present and the Past forms of weak verbs defended in the present account entails that the τ–feature that is the input to the VI *-d* cannot be

a binary feature, but must be privative, since it has no corresponding counterpart in Present forms: the only feature that is present in the computation of Present forms of weak verbs–though it is only one of the features in the computation of Past forms and likewise in the computation of strong verbs–is the feature that has been identifed as [+/–past] AgrT and that contains both φ– and τ–*interpretation*. The binary notation *[+past]* in the tree-diagram in Figure 1 above will thus be modified to *[past]* in the tree-diagram to be provided in Section 2.2 immediately below.

Also in connection with the present account of the Present forms of weak verbs as exhibiting just two VI´s, which entails for the VI in end position to be the output of a τ–feature proper–albeit one that also incorporates φ–interpretation–I would like to note that I reject an analysis like e.g. *dēm-Ø-e*, *dēm-Ø-est*,… which is postulated initially in the theory in works like Bobaljik and Thráinsson (1998) and Bobaljik (2003) in relation to Icelandic and which would have the advantage of a uniform VI-segmentation for: the Present forms of weak verbs, the Past forms of weak verbs and also the Present and Past of strong verbs. The Ø-item signalled in the forms immediately above could be actually thought of in DM terms as the result of a rule of *impoverishment* which would delete a feature arguably corresponding to [–past] τ–interpretation prior to *Vocabulary Insertion* and that would be, this way, the counterpart of the [+past] τ–feature that correlates with the VI *-d*. Despite the formally impeccable analysis of the works cited, I would like to argue that evidence in the form of some pronounced VI in this position would appear to be needed, which would later have entered in competition with the Ø-VI and which would have lost to the latter. Otherwise, the risk that a mechanism of *impoverishment* in the form of Ø becomes a pure theoretical artifact with little explanatory power seems to be great. There are indeed verbs in OE that exhibit in the Present (or also in the Past) a segment in between the stem and the subject agreement ending: note the glide in the first person singular and in the plural of a verb like *herian* 'ravage' (*her-i-e*). But this segment has its origin in a kind of thematic vowel that served a morpho-phonological purpose, and that happened to get lost for some verbs but not for others. It does not seem then to be identified as the output of a feature computed at core syntax.

2.2. Full Derivation of OE Verbs According to the Proposed τ–Feature Typology

Summing up the main traits of the three-fold typology of OE τ–features that have been proposed in Section 2 and Section 2.1, these would go as follows:

(7) a. [past] τ–features on weak verbs: these are *interpreted* by [$_{T}$T] and have as output
the VI *-d*

b. [+/–past] τ–features on strong verbs: these are *interpreted* by [*v*] and have an
ablauting vowel as their VI output

c. [+/–past] AgrT–features on all verbs in general: these are *interpreted* by [$_{T}$AgrT]
and have so-called subject-agreement endings as VI outputs

The purpose of this brief section is to go back to the derivations in Figure 1 and Figure 2 and, in a logical way, complete these with the incorporation of the set of features in (7c), that is [+/–past] AgrT–features. Those derivations correspond now, respectively, with the tree-diagrams in Figure 3 and Figure 4. Likewise, the derivation of a Present form of a weak verb, where only the cited [+/–past] AgrT–features compute, is provided. This is the tree-diagram in Figure 5.

FIGURE 3. Derivation of features for Past forms of weak verbs

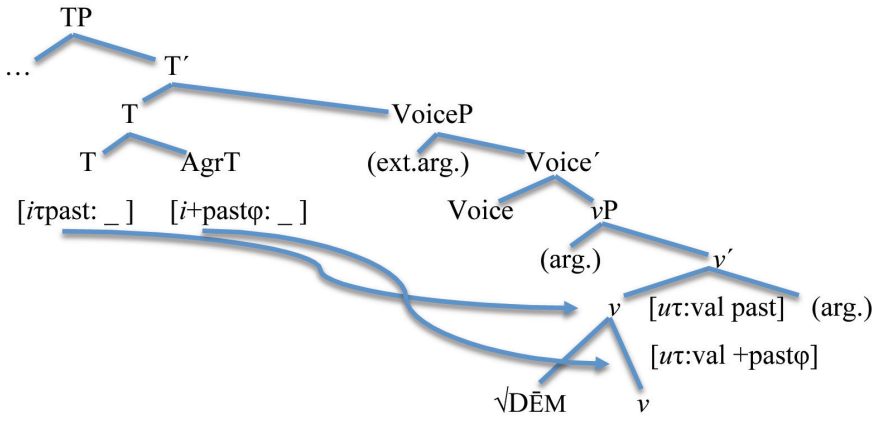


Figure 4. Derivation of features for Past forms of strong verbs

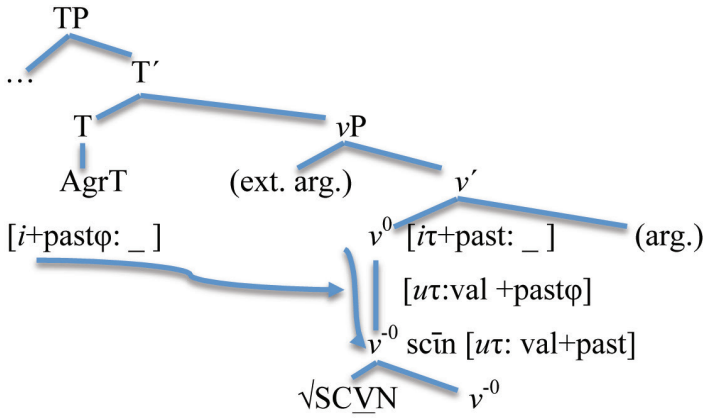
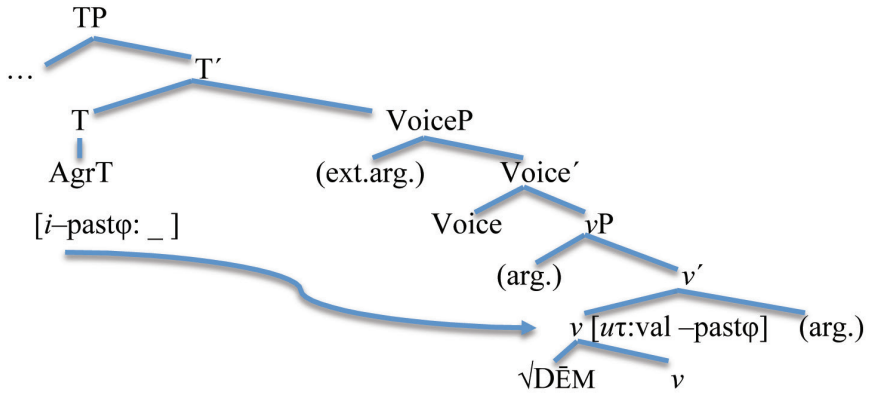


Figure 5. Derivation of features for Present forms of weak verbs



3. The Evolution of τ–Features After OE

It is widely known from the philological and the diachronic literature that ME and Early Modern English (EMnE) are periods where the verbal system of the language is affected by changes of the utmost importance that relate to: loss of morpho-phonological substance of subject agreement endings for all verbs and specifically of ablaut distinctions for strong verbs; loss of categorial distinctions, between weak verbs and strong verbs and likewise within strong verbs; lexicalization of T as the result of the recategorization of modals and later of the emergence of periphrastic *do*; loss of V-to-T movement. The discussion

must centre from now onwards on the changes or the evolution undergone by the specific τ–feature discussed in Section 2.1 and listed as (7c), together with its VI. In these brief lines, I would like to refer to the other two sets of features, namely those in (7a) and (7b).

[past] τ–features on weak verbs, those *interpreted* by the [$_{T}$T] Probe and having as output the VI *-d*, remain unchanged in the system, the only major change that applies being the diversification of the allomorphic variants for *-d*, and therefore a diversification of VIs. In reality, this is the result of only one class of weak verbs remaining by the second half of ME, and also of the conversion of many strong verbs to the weak or regular group–for which see immediately below. What matters though from the perspective of the discussion is that, as just observed, the morpho-syntactic computation of these [past] τ–features as interpreted by [$_{T}$T] does not get altered. The features in question will be cited again at the end of the discussion in the sense that, after the demise of the feature in (7c) with [past] interpretation, they will be the only features left in the system with such a value.

As for the features listed as (7b), that is [+/–past] τ–features on strong verbs which have been argued to be *interpreted* by [*v*] and which have an ablauting vowel as their VI output, it is defended in Castillo (2022) that these features disappear around 1450, a point in time that is borrowed from Lass (1992, 132). Now, as described very briefly above in this section, strong verbs suffer a process of loss that attends to various circumstances: the mixing up of verbs from one ablaut class to another, the conversion of many verbs to the weak group–though conversions are quite frequent initially in the ME period in both directions–and, in a very significant way, the loss of the Preterite1-Preterite2 distinction–the reader is referred to Mossé (1952, 69), the above-cited Lass (1992, 131ff.) or Lass (1997, 166ff.) for a detailed rendering of these changes. The special relevance that the cited loss of the Preterite1-Preterite2 would have lies in that it reveals the loss of the capacity of *v* to act as a Probe and *interpret* corresponding features. Lass (1992, 132) attests the cited loss of the Preterite1-Preterite2 distinction around 1450, and such would then be then be on the present account the time period the time period when strong verbs turn to being computed by T, in a similar way to weak verbs.

3.1. The Evolution of he τ–Feature in OE with Both φ– and τ–Interpretation: Determining the Compatibility/Specificity Requirement

By way of emphasizing the beginning of Section 3 above, it is of course possible to find in any textbook of the history of English a description of the process of loss or attrition of subject agreement endings that starts to affect the language

already at the end of OE and all through ME and EMnE. This process of loss consists in the weakening of vowels to *-e-* (/ə/) and their total demise in certain dialects, and likewise in the disappearance of the consonantal segment *-n*, also subject greatly to dialectal variation. The process goes on until the only subject agreement segment coupled with phonetic content–that is, the only subject agreement segment that is pronounced–is of course the *-s* for the third person singular in the Present, which segment spreads originally from the Northern dialect.

From the point of view of syntactic theory, the cited loss of endings is to be viewed as there being progressively more and more VI´s lacking a phonological matrix, that is as the Ø-VI competing and winning over VI´s that are pronounced. In Table 4 above for OE, there are two instances of the Ø-VI–namely, the first and third person singular of strong verbs–and in Table 1 for PDE, the Ø-VI figures under *Present* for all persons except the third person singular. The question posed at the beginning of the paper is whether the segmentation into VI´s of the Past forms for a verb like *deem* is as in *deem-ed* or otherwise as in *deem-ed-Ø* and this is a question that is in a logical way part of the bigger issue whether [+/–past] AgrT–features, which are the specific τ–features argued in Section 2.1 above to be the input of these VI´s, are still the case in PDE. As advanced in Section 2.1, the methodology that I propose in order to answer the issue above consists in verifying whether (6) is satisfied in the system after OE.

(6) distinct subject agreement endings within each tense and across tenses

Now, no number of distinct endings is specified in (6) as a relevant search guide or metric. That number is higher than one for the Table in 4 for OE, but it is to become smaller as time goes by, given the attrition or loss referred to above in the section. I propose then to have available as working methodologies both (6) and the modified version in (8), and to start by verifying whether it is (6) or (8) that is satisfied for the paradigms of ME and EMnE.

(8) one (or more) distinct subject agreement endings within each tense and across
tenses

The paradigm of ME forms in Table 5 has been concocted from the table in Lass (1997, 160) and from the fine-grained description that follows (Lass 1997, 162-165). The third column corresponds to the Past of strong verbs, which is still somewhat different from that of weak verbs, and it has been borrowed from

Lass (1992, 138). As observed above, dialectal variation is a major trait of the English language from the end of OE and all through ME. The forms in Table 5 are to be identified with the endings available by Late ME (c.1400) in the standard of London. Fernández (1982, 329) can be also looked up for paradigms of dialectal typology of ME weak verbs and likewise Fernández (1982, 321) for the corresponding paradigm of strong verbs.

Table 5. Subject Agreement Endings in Late ME (c.1400)

Present		Past for weak verbs		Past for strong verbs	
1	-Ø (East Midland & Southern)	1	-e / -Ø	1	-Ø
	-e (Northern)				
2	-st	2	-st	2	-est / -Ø
3	-th (East Midland)	3	-e / -Ø	3	-Ø
	-s (Northern)				
Pl	-n (Midland)	Pl	-e(n)	Pl	-e(n)
	-s (Northern)				
	-th (Southern)				

Now, though the Ø-symbol figuring in Table 5 is borrowed from the original source where it is used as a descriptive notation, I defend the view that it is properly the Ø-VI–and not e.g. non-exponence–that is available in the paradigm in question. I aim to justify this view in Section 3.2, where I invoke a mechanism like V-to-T. This way then, though morpho-phonological loss–that is, the presence of the Ø-VI–is stronger within the Past than within the Present, distinctions within each tense can be clearly verified from Table 5. As regards distinctions across the tenses, the following observations apply. On the one hand, the Present and the Past vary from each other for the third person singular, irrespective of dialectal differentiation, though there is a tendency for the VI *-e* for the Past (of weak verbs) to be replaced by the Ø-VI–which contrasts with the solid opposition *-(e)* þvs. *-e* in Table 4 for OE. On the other hand, the VI´s for the plural show co-variation though subject to dialectal distinctions: thus, the Present and the Past co-vary whenever the VI for the former is *-s* or *-th*, but co-variation is not the case in the system of a speaker that processes *-n* for the Present and *-en* for the Past. Incidentally, the reader is referred to Lass (1997, 162) or Fernández (1982, 329) for allomorphs for the second and third person singular, and for the plural, where a vowel precedes the consonant.

Summing up this necessarily brief overview, there is less amount of *[morphological distinctiveness…]* in the verbal system of ME as compared to OE,

but the characterization of the *Compatibility/Specificity Requirement* for ME VIs can be maintained as in (6).

Things change in a major way as regards the EMnE period, for which see Table 6 below. The Table has been built borrowing the data and observations in Lass (1997, 161, 164-5). As above, Fernández (1982, 389) is another well-known source in the literature.

Table 6. Subject Agreement Endings From EMnE (c.1500) Up To c. 1700

Present		Past	
1	-Ø	1	-Ø
2	-st	2	-st
3	-s (Northern)	3	-Ø
	-th (East Midland)		
Pl	-Ø	Pl	-Ø
	- - - - - - - - - - - -		
	-s (Northern, East Midland		
	-th (Southern)		
	-n (Midland)		

In effect, the spread of the Ø-VI is a fact, with the result that *[morphological distinctiveness between Present and Past relative to Agreement]* is kept but on a characterization as in (8). The elements for the Present plural that appear below the dotted line in Table 6 are dialectal forms that are available at the beginning of the sixteenth century, but the majority option is Ø. Taking then Ø as the VI for the plural in the Present, there applies indeed co-variation between the Present and the Past though, as suggested immediately above, it is just one instance of this: specifically, *-s/-th* for the Present vs. Ø for the Past. As for variations or distinctions within each tense, those for the Present are clearly the case though, very importantly, variation within the Past is restricted to just one VI, namely *-st* for the second person singular, all other VI´s being identified as Ø.

Now, the importance of this latter VI *-st* lies in that, without it, there would be no distinct VI´s within the Past, which takes us to the successor of the paradigm in Table 6. In effect, as the heading in the cited Table 6 indicates, that paradigm is not just one for EMnE, but also the paradigm that is available for approximately the following two hundred years. The long presence of *-st* appears indeed highlighted in manifold philological works on the (Early) Modern period: the reader is referred to e.g. Nevalainen (2006, 89-90) or a little before to Beal (2004, 66) where it is observed that "The only inflection lost after the seventeenth century is the second person singular *-st*".

The paradigm token then to be found after the one in Table 6 is actually the one available for PDE, that is a paradigm where only /s/ is pronounced after the stem in the Present and where no segment is pronounced after /*d*/ in the Past. It is this latter circumstance that the question posed at the beginning of the paper revolves around. I aim to offer an answer to this question in Section 3.2 immediately below. Towards that end I replicate in Table 7 the paradigm in Table 1 of the paper, though this time only the phonemic realization is specified under the column for Past.

Table 7. The Issue About PDE

Present Indicative			Past Indicative		
1	deem-Ø	/di:m/	1	_____	/di:md/
2	deem-Ø	/di:m/	2	_____	/di:md/
3	deem-s	/di:mz/	3	_____	/di:md/
Pl	deem-Ø	/di:m/	Pl	_____	/di:md/

3.2. The Present Proposal for the Compatibility/Specificity Requirement and the Limits On the Ø-VI

The conclusion from Section 3.1 above is that a paradigm like the one in Table 6 fits a *Compatibility/Specificity Requirement* for VI´s as in (8), which is repeated below for the sake of clarity and where the absolute minimum of one instance of *distinct VI* is established.

(8) one (or more) distinct subject agreement endings within each tense and across
Tenses

In contrast with the paradigm in Table 6, that found after the eighteenth century and all the way down to PDE–see Table 7 above–does not include any distinct ending for the Past, and therefore (8) does not appear to be fulfilled. However, in an important way, for Table 7 not to comply with (8) matches both with positing a Ø-VI (note *deem-ed-Ø*) for all Past forms and with positing a situation of non-exponence (note *deem-ed*), the latter of which would result from the limitations imposed by the *Elsewhere condition* as expressed in (2).

I would like to invoke at this point the phenomenon or mechanism known as *V-to-T movement* since this makes it possible to compare the grammar of two

or more languages–in the case at hand, English on the one hand and Danish on the other–that undergo a strong process of morpho-phonological loss, though the cited loss differs in an interesting way. In effect, the syncretism or lack of distinctiveness marking the English process revolves around the Ø-VI but not so in Danish, or neither actually in Swedish, which illustrates a very similar case to Danish but is left out of the discussion for space limitations: in these Mainland Scandinavian languages syncretism consists in the realization of the same VI *with* phonetic content.

Now, V-to-T is the kind of movement postulated within the generative framework roughly since the end of the 1970´s according to which the verb that is to appear in a finite form in the spoken sequence raises in the syntax to the T head in order to compute corresponding τ–features and/or φ–features. To cite just a few of the highly-influential works within the vast literature on V-to-T, these could be e.g. Kroch (1989), Roberts (1993), Rohrbacher (1994) or, more recently, Haeberli and Ihsane (2016). As is widely known, the presence or absence of V-to-T is held by an important number of works as a central locus of parametric contrast both cross-linguistically and also from a diachronic perspective, and two well-known diagnostic tests used to acknowledge a language either as V-to-T or, the opposite, as V-in situ, are the position of medial adverbs with respect to the verb and likewise the position of negation with respect to the verb. The example in (9a) illustrates a sequence from ME where negation (*not*) appears to the right of the finite verb, which should entail that the latter has moved over to T: see the line with an arrow in (9a´). Similarly, the position of negation relative to the finite verb in the Early Modern Danish example in (9b) is taken in the literature as indicating that the language is V-to-T at this time (see also Vikner 1997).

(9) a. Wepyng and teres counforteth not dissolute laghers
weeping and tears comfort not dissolute laughers
(from Roberts 1993, 250)

a.´ [$_{TP}$ [T] [NegP] [$_{vP}$ [v] …]]

V-to-T

b. om vy for icke de suar
if we get not the answers
'If we do not get the answers'
(from Sundquist 2003, 238)

A controversial issue regarding V-to-T is the very trigger of this mechanism. A widely-extended view is that it is richness of subject agreement endings that

is responsible for V-to-T–note the so-called *Rich Agreement Hypothesis*–and this is a view that I actually endorse in work in preparation on the phenomenon in question in the Germanic family and in the Romance family. More precisely, I contend in the cited study that it is the [+/–past] AgrT–feature that has been postulated in Section 2.1 above as the input of subject agreement endings that is responsible for V-to-T.[9] My purpose in invoking V-to-T on the present occasion is constrained, as observed above, to comparing the end result of the process of morphological attrition suffered by two (Germanic) languages that are V-to-T languages in their former periods and pass on to being V-in situ.

More specifically, assuming the data in Haeberli and Ihsane (2016, 521), according to which the order SV*not* is the majority option around 1650 and the sequence with periphrastic *do* (SDO*not*V) is only the general case once the eighteenth century has started,[10] the paradigm of VI´s in Table 6 corresponds to a period where English is V-to-T (that is a period where the only sequence or the dominant one is SV*not*). English is V-in situ at the time immediately following that signalled at the top of Table 6. As observed at the beginning of the Section, the *Compatibility/Specificity Requirement* in (8) is in accord with these facts about Table 6 vs. Table 7, though the problem with this from the perspective of the present paper is that the situation is actually compatible with Past forms in Table 7 exhibiting a Ø-VI or otherwise presenting a case of *non-exponence*.

Focusing now on Danish, the paradigm in Table 8 corresponds to the verb *hØre* 'hear' in Present Day Danish, which is a V-in situ language, whereas in Table 9 immediately below are listed the paradigms that correspond to subject agreement endings in Middle Danish and Early Modern Danish: these have been borrowed from Sundquist (2003, 244), another relevant source to look up being MØrck (2005, 1143-1144). The latter adds to those in Sundquist (2003) the VI´s or endings *-(s)t* and *-e/-um* for the second person singular and first person plural, respectively, in the case of strong verbs, all of which are included in Table 9. Incidentally, the forms in Present Day Danish (Table 8) appear segmented, it

9 More specifically, I argue that it is the binary status of the relevant portmanteau feature that is to be associated with V-to-T. The analysis leads me to positing that T itself interprets agreement features in V-to-T languages. Further in connection with V-to-T, it must be emphasized that the controversy or lack of consensus in the literature is not only due to the trigger factor but also to (the related circumstance of) the timing. In the cited work in preparation, I defend the view that there is no *diachronic gap* between loss of (relevant) morphology and loss of V-to-T, either in English or in Danish.

10 Prior to Haeberli and Ihsane (2016), who carry out an impressive corpora search, Schäufele (1994) highlights the fact that periphrastic *do* is, in effect, absent from many seventeenth-century negative sequences, where it should be expected if V-to-T were no longer the case in the language.

being the second segment in the Present and the third segment in the Past that correspond to subject agreement endings, in identical fashion to the historical periods described for English in the first half of the paper.

Table 8. Verbal Forms in Present Day Danish

Present		Past	
1sg	hØr-er	1sg	hØr-t-e
2sg	hØr-er	2sg	hØr-t-e
3sg	hØr-er	3sg	hØr-t-e
1pl	hØr-er	1pl	hØr-t-e
2pl	hØr-er	2pl	hØr-t-e
3pl	hØr-er	3pl	hØr-t-e

Table 9. Subject Agreement Endings Anteceding Present Day Danish

Middle Danish (1300)			Early Modern Danish (1500)		
Present		Past	Present		Past
1sg	-e(r)	-e	1sg	-er	-e
2sg	-er	-e // -(s)t	2sg	-er	-e
3sg	-er	-e	3sg	-er	-e
1pl	-e/-um	-e // -e/um	1pl	-e	-e
2pl	-e	-e	2pl	-e	-e
3pl	-e	-e	3pl	-e	-e

The time period that extends from 1500 (Early Modern period) up to 1600, or even the second half of the seventeenth century, is one where Danish exhibits V-to-T. Sundquist (2003, 242) cites 1689 as the date when V-to-T can very probably be attested for the last time in the language. The relevant question at this point is whether the paradigm to the right in Table 9 above is one where Danish VI´s abide by (8), and it is the case that the answer to that question must be negative since there is no variation within the Past–the same, incidentally, as in the situation in Table 7 for PDE. However, on closer inspection, there applies variation on the two relevant axes in Early Modern Danish (and before, in Middle Danish): more specifically, there is co-variation between the Present and the Past–though this be restricted to the singular–and there is also variation within the Present. In an important way, this entails that the interpretation *[morphological distinctiveness between Present and Past relative to Agreement]* must be made to correspond not with (8) but with the new *Compatibility/Specificity Requirement* in (10).

(10) one (or more) distinct subject agreement endings for the Present and as compared
to the Past

For (10) to be the relevant *Compatibility/Specificity Requirement* on VIs that are the output of [+/–past] AgrT–features does match the Present Day Danish paradigm in Table 8, since there is no variation within the Present: Present Day Danish would not have therefore τ–features that interpret *[morphological distinctiveness between Present and Past relative to Agreement]*, which matches the language lacking V-to-T movement. But of course, the major relevance of (10) for the present discussion lies in that it can be used as evidence of the *Elsewhere condition* as holding on the Ø-VI, which is explained immediately below.

In effect, if the Ø-VI is considered to be the segment in final position of Past forms for PDE (Table 7), then it will be the case that the cited paradigm in Table 7 fulfils (10): as shown, the VI *-s* is opposed both to the Ø-VI within the Present and to the Ø-VI in the Past. But of course if (10) is fulfilled, then PDE, or more properly the English language ever after the eighteenth century, would be expected to exhibit V-to-T, which is not the case at all. The conclusion must then be that the VI *-s* cannot be considered to be distinct from any VI in the Past–which entails that (10) is not complied with–given that there is simply no such VI (let us recall the term *non-exponence*). Incidentally, there is of course a VI *-d* or *-ed*, but this is the output of a separate feature, namely of the τ–feature that is licensed by a(n ordinary) T head and not the [+/–past] AgrTl τ–feature licensed by the [AgrT] T head.

The *Elsewhere condition* as expressed in (2) is then to apply ever since the paradigm of Past forms in English is one where no segment is pronounced after the VI *-d* or *-ed*. The answer to the question posed in the Introduction is thus on the present account that the VI-segmentation for a Past form like *deemed* is *deem-ed* rather than *deem-ed-Ø*–see Table 10–since the Ø-VI the 0-VI should be in contrast in contrast with a non-Ø-VI within the set of Past of Past forms, and this is not the case.

Table 10. Verbal Forms in PDE (Present Proposal)

Present Indicative	Past Indicative
1 deem-Ø	1 deem-ed
2 deem-Ø	2 deem-ed
3 deem-s	3 deem-ed
Pl deem-Ø	Pl deem-ed

For the features as interpreted by the [AgrT] head that have [past] interpretation to disappear entails in a trivial way that the English VI´s under *Present* in Table 10 are privative [AgrT] τ–features–more specifically, English would have exhibited such features since the eighteenth century.[11] As for the VI´s under *Past* in Table 10, these are the τ–features which are privative ever since OE, whose Probe is a(n ordinary) [T] head and which have *-d/-ed*–as their output.

In (11) and (12) below are specified in schematic form the privative or non-binary features that, according to the present account, would be computed for the Present and the Past in English and in Danish, respectively.[12] Centring exclusively on English, in (13a) and (13b) are listed the VI´s according to the *Subset Principle*, and further the tree-diagrams in Figures 6 and 7 represent the relevant derivation.

(11)	Present	Past	(English)
	[AgrT] τ–features	[T] τ–features	

(12)	Present	Past	(Danish)
	[AgrT] τ–features	[T] τ–features-[AgrT] τ–features	

(13) a. Vocabulary Items for [AgrT] in PDE

[-1,-2,-pl,present] ↔ -s

[present] ↔ Ø

b. Vocabulary Items for [T] in PDE

[past] ↔ -ed

11 It must be noted that, if the characterization or definition in (10) is on the right track, then the *present* value within [+/–past] AgrT τ–features is the marked value and the *past* value would be the unmarked one. This is actually a relevant aspect of my research on Germanic vs. Romance. Note though that, strictly speaking, the notation [*i*+pastφ:] below [AgrT] in the tree-diagrams in Figures 3 and 5 is expected now to be [*i*–presentφ:] and the notation [*i*–pastφ:] similarly below [AgrT] in the tree-diagram in Figure 4 is expected to be [*i*+presentφ:].

12 The issue of the Fusion operation between the dental marker and -e in Danish is dealt with in the above-cited work in preparation on V-to-T.

Figure 6. Derivation of features for Present forms of verbs in PDE

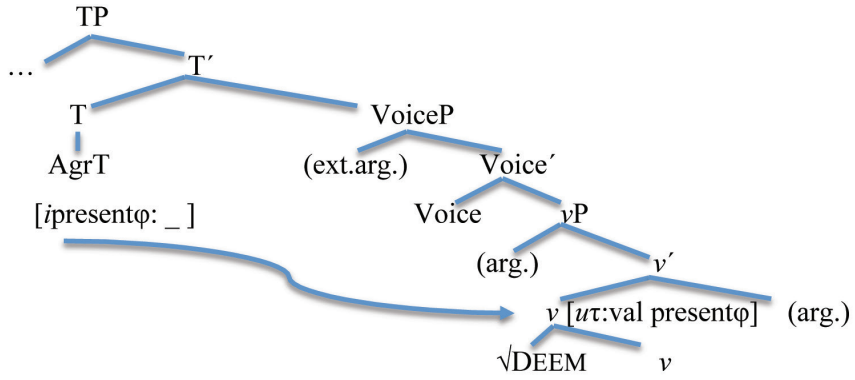
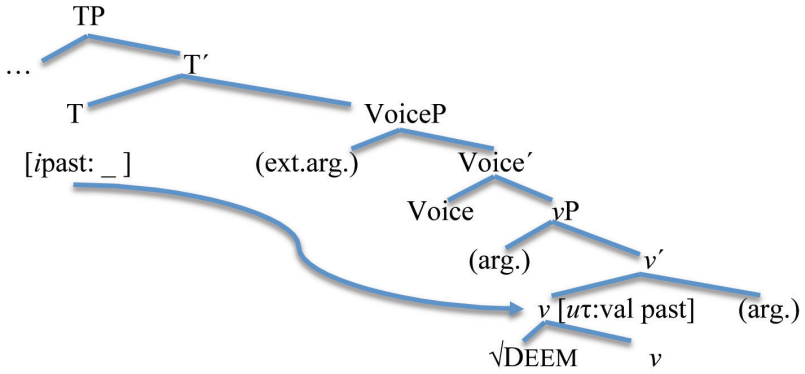


Figure 7. Derivation of features for Past forms of verbs in PDE



4. Conclusion

It has been argued that the VI-segmentation of a Past form of a verb in PDE is as in *deem-ed* and not as in *deem-ed-Ø*. The latter form does not comply with the *Elsewhere condition* but it could in principle be argued to on historical grounds. My aim has been to prove from the historical perspective that the Ø-VI is indeed subject to the *Elsewhere condition*.

I started by identifying three kinds of τ–features in OE: a [past] τ–feature on weak verbs, which has as output the VI *-d* and is still part of the system in PDE; a [+/–past] τ–feature on strong verbs, which disappears aroud 1450 because its [*v*] Probe ceases to act as such; finally, a [+/–past] AgrT–feature, which is one licensed for all verbs in the language generally speaking and has been argued to provide both φ– and τ–interpretation. The output of this feature is the set of so-called subject agreement endings and these are precisely the ones

among which the Ø-VI starts a strong competition from the ME period onwards. The interpretation of the cited [+/–past] AgrT τ–feature has been identified as *[morphological distinctiveness between Present and Past relative to Agreement]* and the big task has consisted in searching for the exact characterization of the *Compatibility/Specificity Requirement* of the VIs that realize the cited *[morphological distinctiveness…]*. After concocting various definitions, I have made use of the shared traits and the differences between English and Danish in the context of V-to-T movement in order to arrive at what appears to be the most explanatory definition possible, which is the one in (10).

(10) one (or more) distinct subject agreement endings for the Present and as compared
to the Past

Implementing the definition in (10) on both English and Danish–Swedish being a case similar to Danish–makes it possible to give evidence of the *Elsewhere condition* as a limitation holding on the Ø-VI: the Ø-VI would not to be available for English Past forms after the eighteenth century, which is when no non-Ø-VI is to be found within such a set or paradigm of Past forms.

The present account of τ–features and their VI-outputs has another consequence, namely for the τ–features computing the Present and the Past in PDE being privative features rather than binary features. Those for the Present turn out to be ultimately [AgrT] τ–features and have as VI-outputs *-s* and -Ø, and those for the Past are (ordinary) [T] τ–features and have *-ed* as their VI-output.

For the Ø-VI to win the competition over non-Ø-VI´s in the period that goes from ME up to approximately the beginning of the eighteenth century and for the Ø-VI to lose to non-exponency after that period does not mean that morphology drives syntax. Rather, the system allows the (original binary) feature to disappear in a situation where it (that is, the system) still counts on the τ–feature that has *-d* as its VI-output for the interpretation [past].

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