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# IS THIS VERB A WORD? A PHILOLOGICAL STUDY OF THE DISTRIBUTION OF PHONOLOGICAL AND MORPHOLOGICAL DOMAINS IN THE MIDDLE WELSH VERB

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## ABSTRACT

The—for European languages—large amount of bound elements in the older Insular Celtic languages and the array of phonological interactions within morphological and phrasal structures have led several researchers to conclude that individual words play a lesser role in the grammars of those languages. Based on current typological research on wordhood and a thorough discussion of the problems and limitations of studying wordhood in corpus languages, this article gives an in-depth investigation of the morphological and phonological word-like domains in the Middle Welsh verbal complex. There are several structures that could be labelled ‘word’ on the basis of the findings presented here, which leads to the conclusion that the term is not very useful for the synchronic description of this language.

Die für indogermanische Sprachen große Menge gebundener Elemente in den älteren inselkeltischen Sprachen und die Prävalenz morphologischer und phonologischer Interaktion in morphologischen und syntaktischen Strukturen haben einige Forscher zu der Schlussfolgerung gebracht, dass die einzelnen Wörter in den Grammatiken dieser Sprachen eine untergeordnete Rolle spielen. Auf der Grundlage aktueller typologischer Forschung zu *wordhood* und einer Diskussion der Schwierigkeiten bei der Untersuchung von *wordhood* in Korpus-sprachen bietet dieser Artikel eine detaillierte Untersuchung der wortartigen Domänen im mittelmwrischen Verbalkomplex. Da es mehrere Strukturen gibt, die auf der Basis dieser Untersuchung als ‘Wort’ bezeichnet werden können, erscheint dieser Begriff für die synchrone Beschreibung dieser Sprache wenig hilfreich.

## 1. INTRODUCTION

The Insular Celtic languages have often been described as having a ‘sentence word’ (Wehr 1998: 350, 2005: 356), having a strong group accent which leads to individual word losing their ‘phonological autonomy’<sup>1</sup> (Ternes 1993: 303), or even ‘weakly polysynthetic’ (Wehr 2005: 359; Borgström 1968: 20). All these characterisations relate to the fact that, compared with other European languages, the (early) Insular Celtic languages sport a rather large set of phonologically and morphologically bound formatives—including, among others, incorporated adjectives or adverbs (García Castillero 2014)—and a lot of phonological and morpho-phonological interaction between the elements of a phrase.

What these broad descriptions usually lack is a set of criteria that define ‘wordhood’ or ‘phonological autonomy’, and a detailed study of the morphological and phonological boundaries, interdependencies and processes that could define a form of ‘word’ in the respective

languages. In this, they concur with contemporary native grammars which do not give a definition of wordhood. Early Irish grammars had no concept corresponding to the modern ‘word’, the basic unit of description being the *focal* which refers to any kind of syntactic group (Poppe 2016). The Middle Welsh grammars have even less to say about words: the unit usually equated with the modern concept, a *geir*, ‘is made out of syllables’ and *geireu* ‘are the parts of a correct utterance’ (Jesus 111: 279v, c. 1120, 35–38; cf. Matonis 1981: 136).

The last decades of typological research on wordhood have shown that languages may lack a unified word domain, that is a single phonological, morphological and syntactic entity that could unambiguously be called a word—having no or several conflicting domains is possible. Based on current work (van Gijn & Zúñiga 2014; Bickel & Zúñiga 2017; Widmer et al. 2021), this study will provide a detailed investigation of the potential word-like properties of the verbal complex of Middle Welsh prose, focusing on the manuscripts of the fourteenth and early fifteenth centuries. Poetry will be used to illustrate interesting differences between the two genres or to gain additional insights that cannot be found in prose.

The restriction to finite verbal structures is based on Dixon and Aikhenvald's (2002: 14) observation that wordhood patterns may vary between different parts of speech within the same language. The Middle Welsh verbal complex, defined for the purposes of this study as the finite verb and its satellites, as exemplified in (1)<sup>2</sup> can contain a variety of more or less grammatical markers, including conjunctions, polarity markers and P- and T-markers. In his particular example, the verbal complex consists of eight markers, starting with a subordinating conjunction *can-*, followed by a negative marker *ny-*, an object marker *-y-* and a resultative marker *ry-*. The lexical root *wel-* ‘to see’ is then followed by elements familiar from most Indo-European languages, such as a TAM marker *-s-* and an agreement and TAM marker *-ei*. The final slot is occupied by a bound pronoun *-ef*. All of these markers will be discussed in more detail in Section 3.

- (1) *ca-ni-s-ry-wel-s-ei-ef*  
 since-NEG-3.P-RES-see-PST-IPF.3SG-3SG.M  
 ‘since he had not seen them’ (Peniarth 4: 3r, c. 9, 20)

The study is organised into three main parts: Section 2 explains the approach taken in this study, Section 3 discusses the morphological structuring of the verbal complex, and Section 4 discusses the phonological and prosodic processes that operate inside the verbal complex and how they map onto the morphological structure outlined in Section 3. The final Section 5, sums up and discusses the findings and discusses further possible avenues of study.

## 2. APPROACH

In the following, I will first set out the problems surrounding the question of wordhood as they present themselves in the current linguistic discourse before detailing the typology-based emergent approach employed in this study and the difficulties surrounding studies of wordhood in corpus languages.

<sup>2</sup> The abbreviations in the glosses and figures follow the Leipzig Glossing Rules. Additional abbreviations: <sup>h</sup> = aspiration, <sup>l</sup> = lenition, <sup>n</sup> = nasalisation, <sup>s</sup> = spirantisation, AFF = affirmative, con. = coordinating conjunction, CONT = continuous aspect, G = third argument of a three-place predicate, IMPERS = impersonal, IPF = imperfect, NPST = non-past, P = 2nd argument of a two-place predicate, PLUP = pluperfect, POL = polarity marker, POT = potential, prep. = preposition, pron. = bound pronoun, PTCL = particle, PUNC = punctual aspect, PV = preverb, REC = reciprocal, REP = repetitive, sub. = subordinating conjunction, SUP = superlative, T = the most patient-like argument of a three-place predicate, TAM = tense, aspect and mood marker, TEL = telic, VBLZ = verbaliser, VN = verbal noun. Hyphens are used throughout for every morphologically or phonologically bound item because the only distinction made is between morphologically and phonologically free items vs. all items that are bound in one way or another; see Section 2.

### 2.1. *A problematic concept*

To answer the question raised in the title—whether the verbal structures we encounter in Middle Welsh could be considered ‘words’—the notion of wordhood needs to be addressed. Despite ‘everybody know[ing] what a word is’ (Hockett 1987: 3), the current debate about the nature of words has been ongoing for half a century.

Since Dixon's (1977) description of phonological rules in Yidiñ where it emerged that the domain of application for some of those rules was smaller than what would emerge as a word on the basis of morphological and syntactic tests (thus establishing the distinction between phonological and morphological words),<sup>3</sup> evidence from a large body of languages has been adduced to attack, defend and refine the concepts of wordhood, some of which will be discussed below.

The criteria used to distinguish wordhood can be divided into five: intuitive, orthographic, semantic, morphological and syntactic and phonological (Haspelmath 2011a: 34). For the purposes of this study, we will focus on the morphological, syntactic and phonological criteria, although orthographic evidence will be used to determine the phonological reality behind the written transmission. The use of native speaker intuition is ruled out by the obvious lack of native speakers.

Haspelmath (2011a: 38) lists ten morphosyntactic criteria usually used to define morphological wordhood, none of which on its own stands the test of reliably distinguishing between what is usually considered to be an element of a word and a word in its own right. This leads to the conclusion that we currently lack any justification to treat (phrasal) syntax and morphology as two—cross-linguistically—completely distinct phenomena (Haspelmath 2011a; see also Bruening 2018). Therefore, I will not assume an *a priori* difference between the types of formants that are used to build the verbal complex of Middle Welsh. In the examples, I will use hyphens between any elements that are part of the structure.

The phonological word is usually thought of as the smallest domain of phonological processes, phonotactic constraints and prosodic structures that makes reference to grammatical structure. In most varieties of prosodic theories (e.g. Nespor & Vogel 2007; Selkirk 2011), it is placed between the syllable and the foot, which both are supposed to be blind towards grammatical structure, on one side and the phrase, which makes reference to syntactic structure, on the other side.

The postulated universality of the phonological word domain has been questioned in numerous studies on the basis that there are languages without any evidence of processes targeting any chunk of an utterance between syllables or feet and phonological phrases (see, e.g. the discussion of Vietnamese in Schiering et al. 2010: 670–8).<sup>4</sup> In other cases, we find not one but several phonological domains that could be considered the phonological word domain of that language. An example of this is Limbu, a Sino-Tibetan language of Nepal and India, which has (at least) two-word domains (Schiering et al. 2010: 684–93).

The evidence sketched above leads to the conclusion that there is no universal, cross-linguistically valid category ‘phonological word’ and that there can be zero to *n* phonological domains in a language that could be called a phonological word (Schiering et al. 2010: 701). Researchers dealt with these problems in several ways, for example by introducing new labels into the prosodic hierarchy (e.g. Nespor & Vogel 2007; Vogel 2009), by abandoning fixed domain labels and allowing for recursion in phonological domains (e.g. Wagner 2010), by adopting a parsimony approach only using those parts of the hierarchy that are necessary for

<sup>3</sup> Meillet (1908: 109–10) already uses a similar distinction in the context of Proto-Indo-European.

<sup>4</sup> Similar observations have been made for feet (e.g. Schiering et al. 2010: 677–8 for Vietnamese, Mansfield 2023 for Bininj Gun-Wok) and even syllables (e.g. Hyman 1983, 2011 for Gokana).

the description of a language (e.g. Mansfield 2023) or by defining word-like domains as emergent properties of a language with no cross-linguistic reality (e.g. Schiering et al. 2010).

## 2.2. *Studying emergent word-like domains*

Given all the issues with concepts of wordhood discussed above, this study will not presuppose the existence of any phonological or morphological domains or other related entities; whatever domains may exist in Middle Welsh will emerge from the investigation of the data. I will also refrain from making any claims about the mental representations of the structures under discussion and their production and interpretation, discussing only the speaker-external language as the sum of its attested utterances.

The approach towards the description of word-like domains is based on the multivariate model developed by Bickel and Zúñiga (2017: 160–8) and van Gijn and Zúñiga (2014) and applied by Widmer et al. (2021). This model starts from individual morphological elements of the verb, determining for each the variables SELECTION and INFLECTION, thus establishing the types of morphological items a language has, before going on to determine the cohesion of these elements.

The variable SELECTION covers the general dependency of an element X on another element Y, that is whether the item under investigation needs a specific other item to occur irrespective of context. Nominal case markers in German, for example always need the presence of a nominal stem to occur. The item that is selected needs not be adjacent to the selecting item—since auxiliaries can be separated from the main verb, they are selecting in many languages. This means that selection is blind to syntactic structure. In some cases, the presence of the selected item need only be implied. Selection can be further divided along the complexity of the selected item (root, stem, and phrase) and its category (noun, verb and pronoun).

INFLECTION in turn covers which item(s) Y an element X depends on to occur in a specific syntactic context. A noun might for example depend on the addition of a case marker to fill the P-role of a transitive verb, while no case marker is required when filling the A-role. Inflection does not cover any form of phonological or (morpho)syntactic information.

In most cases, selection and inflection will be mutually exclusive, that is items that inflect will not select and vice versa, although there are examples of verbs that inflect and select (e.g. secondary verbs or V2s in Sino-Tibetan languages).

The third variable, COHESION, captures the grammatical and phonological relations between the elements established by the other two variables. There are a few common types of grammatical cohesion, that is the morphological and syntactic rules and constraints that bind morphological elements together, the most important of which is probably linear ordering, the minimum of which is two items always following each other in the same order, while the maximum is an overarching templatic structure with fixed slots for each item. Other types of grammatical cohesion relevant to this study are uninterruptibility (a string of morphological items cannot be interrupted by elements that do not select the same host) and cross-slot dependency (the availability of a certain morphological slot is dependent on the filling of a different slot). Most of the criteria for morphological wordhood discussed in Haspelmath (2011a) could be reformulated as types of grammatical cohesion.

The possible values the subvariable of phonological cohesion can assume result from the language's inventory of phonological domains. For the purposes of this study, a phonological domain is defined as a consecutive chunk of an utterance that serves as the basis for application of a phonological process, the realisation of prosodic structures or the implementation of phonotactic constraints (henceforth summarised under the label of 'phonological process'). The general practice in generative prosodic theory is to include only those processes that adhere to the generality principle, that is those processes that apply

without reference to properties of a specific item (Nespor & Vogel 2007: 18; Selkirk 2011: 436–7; Hildebrandt 2015: 226–7). Although the validity of this principle has been questioned (Schiering et al. 2010: 702), I will adhere to the practice, shortly discussing how the additional evidence from lexically conditioned processes might impact our domains.

Phonological processes can be further subcategorised into the following two categories which all have implications on their utility in identifying the exact extent of phonological cohesion domains (Bennett & Elfner 2019: 156–7):

- **edge:** A prosodic or phonological process that only operates at the boundary of a domain, thus defining only the domain edge. An example of this can be found in Old Irish, where vowels are lengthened in a stressed, open and final syllable: *ad-cí* [að'ki:] 's/he sees' vs. *ad-ci-at* [að'ki.əd] 'they see' (Breatnach 2003; Thurneysen 1946: § 44b; McCone 1997: 5).
- **domain-span:** A prosodic or phonological process that affects every suitable element within the domain. A good example of this is Turkish vowel harmony, in the most basic manifestation of which the vowel(s) of a lexical item adjust the position of any vowel within the same domain: *kuş* 'bird' has a back vowel, so plural and genitive markers added to it in *kuş-lar-in* 'of birds' will also have back vowels, while *el* 'hand' has a front vowel, so the plural and genitive marker in *el-ler-in* 'of hands' have front vowels (Ketrez 2012: 8–9).

In the following, I will first discuss all morphological elements that are part of the verbal complex (i.e. that grammatically or phonologically cohere with the verbal root), before assessing them in terms of selection, inflection, and morphological coherence. After this, I will discuss all possible domain defining phonological processes, prosodic structures and phonotactic constraints to establish the phonological cohesion domains present in the verbal complex.

### 2.3. Assessing wordhood in corpus languages

Like most linguistic questions (especially those dealing with phonology), the study of wordhood in corpus languages is limited in several ways due to the lack of living native speakers, the limited amount of available data, the limitations of the methods used to record the language and our incomplete knowledge about the origin and development of the extant material.

The first problem, the lack of native speakers, and the second, the finite nature of the corpus, considerably impede verification and falsification of our hypotheses. As experiments with native speakers are impossible, judging the grammaticality of a phenomenon becomes an argument of frequency: if something occurs several times in different philological contexts, it can be assumed to be grammatical. The opposite argument, that is that the absence of a theoretically possible phenomenon indicates that it should not be considered grammatical, cannot be upheld as easily. As the preservation of linguistic artefacts is governed by chance as well as political, religious, cultural and climatic factors, we cannot consider the extant corpus of a language to be an adequate representation of the language as a whole. Arguing for the absence of a certain structure thus becomes an argument of probability: given the size and diversity of the corpus, how probable is it that we would find evidence of the phenomenon if it were part of the linguistic system?

The third problem, the limitations of the methods used to record the language, is at first glance a reduction of information. The aim of the scribes was not to record the language as detailed as possible but to convey meaning to other literate speakers of the language in a more or less efficient way. This means that a lot of the features of the language—especially prosodic structures and processes—are not or not reliably encoded in the extant material. In many cases, indirect evidence (e.g. interactions with other structures or processes or developments in



later stages of the language) is the only thing to go by. Some features might be missed entirely as there is no written evidence of them at all.

But things are more complicated: languages that have been written down for some time tend to develop some form of a stable orthographic praxis that does not keep up with the ongoing development of the language. An illustrative example of this is the Old High German umlaut (i.e. the raising or fronting of a vowel if the following syllable contains /i, i:/ or /j/): while it is clearly a productive phonological alternation in the language at the time, it first appears in writing when it is well on its way towards grammaticalisation and its original triggers have been obscured by other phonological processes (Braune 2018: 82–5). Thus, the method of recording might not only strip away information, but actively obscure some features.

While the bulk of extant Middle Welsh manuscripts stems from the late thirteenth to early fifteenth centuries, the earliest attempts at writing Welsh (which was by the time still Brythonic) stem from Roman times. From the Old Welsh period onwards, several writing systems have been in use. This variation is primarily attributed to different regional orthographic schools or even personal orthographies of individual scribes and only secondarily as a temporal stratification. In some cases—especially in the thirteenth century—the great variation in the spelling of one phoneme in the hand of a single scribe (hand A of the Black Book of Chirk for example uses <th, t, dh, d, s, h> to write /θ/; cf. Russell 1995: 137–41) indicates that many scribes did not have a fixed orthography, which contrasts with the quite regular orthography of other scribes such as that of Hywel Fychan, the main scribe of the Red Book of Hergest, the Red Book of Talgarth and several other manuscripts. If we want to get a glimpse at the phonetic reality behind the extant texts, we need to focus on the occasional lapses of inattentive or inexperienced scribes (Charles-Edwards & Russell 1994: 419–21; Russell 1995, 1999; Sims-Williams 1991).

The fourth problem, our incomplete knowledge of the origin and development of the extant material, is rooted in the textual fluidity and geographical mobility of texts in the insular Middle Ages. Texts were copied from manuscript to manuscript in a chain of transmission of unknown length along which scribes changed the text through mistakes, modernisations, archaisations, dialectal and orthographic adaptations or even complete reworkings of entire passages or of the whole text.<sup>5</sup> While the dating of individual manuscripts is rather secure, the dating of the texts contained therein is more problematic. Additionally, the Middle Welsh period spans several centuries during which several linguistic changes have occurred, which makes it possible that there was change in the structure of the morphological or phonological word domains as well.

Thomas (1992, 1993)<sup>6</sup> has shown that Middle Welsh was divided into at least two, if not three dialectal areas, which opens up the question whether there are also dialectal differences in the structures of phonological or morphological words. Unfortunately, texts crossed dialectal boundaries during their transmission and manuscripts often cannot be readily assigned to a dialect area. This means that the question of the dialectal dimension of word domains in Middle Welsh must wait until we know more about Middle Welsh dialectology.

A final limiting factor comes in the form of the fallibility of modern scholars: as this study relies primarily on diplomatic editions on contemporary manuscripts (comparing digital facsimile of the manuscripts where feasible), any mistake or implicit choice that has been made during the process will influence the conclusions drawn from the material. As Bronner

<sup>5</sup> An example of extensive modernisations and orthographic adaptation can be found in the Red Book of Hergest version of the tale *Culhwch ac Olwen* (Rodway 2004).

<sup>6</sup> See also the more thorough reassessment of one of Thomas's dialectal features, the distribution of /j/ in post-tonic syllables, in Willis (2005).

and Busch (2015: 527–9) found out with a survey among palaeographers, there is considerable inter-person variation with respect to which gaps between letters are regarded as spaces as opposed to meaningless distances between letters, the judgement most probably being influenced by cultural knowledge and preconditioning.

### 3. THE MORPHOLOGICAL SHAPE OF THE VERBAL COMPLEX

#### 3.1. *The verbal core: Stem, TAM and person morphology*

In Middle Welsh, a verb minimally consists of the verbal stem, for example the suppletive imperfect stem of the verb *bod* ‘to be’ *oed* in (2a). This stem is often—especially outside the third singular—accompanied by a marker specifying tense, aspect and mood as well as expressing the A- or s-role of the verb (2b). To these markers also belong those expressing what is usually called an ‘impersonal’: a form not specified for person whose use demotes the s- or A-role of a verb (2c) (Schumacher 2011: 156).

- (2) a. *a-seith*    *meib*    *oed*    *idaw*  
 and -seven son.PL be.IPF.3SG to.3SG.M  
 ‘and he had seven sons’ (Peniarth 4: 30r, c. 117, 2)
- b. *G6el-sant*    *niuer*    *otgar*    *eu-meint*  
 see-PST.3PL host O.    POSS.3PL-number  
 ‘Otgar’s host saw their number’ (Jesus 111: 208r, c. 837 E, 28–29)
- c. *fforest*    *a-elw-it*    *fforestant*  
 forest    AFF-call-IPF.IMPERS Ff.  
 ‘The forest that was called Fforestant.’ (Jesus 111: 103r, c. 428, 45–46)

Some verbal forms—especially the pluperfect, but also the subjunctive—seem to be formed by an additional TAM marker between the verbal root and the person marking suffix, that is *-(V)s-* in the case of the pluperfect (3a) or *-h-* in the case of the subjunctive (3b). These are constant throughout the paradigm of the respective TAM-combinations and the person marking formants attached to them can largely be used without these markers to form other TAM forms. Most preterite forms do have an *-s-* as well, but as the case of the first person singular and plural shows (1SG *-eis* vs. 1PL *-assam*), it is by no means as regular as the pluperfect (1SG *-as-wn* vs. 1PL *-as-em*) and the person marking formants used in combination with the *-s-* are not used in any other TAM combination. Additionally, in the third person singular of the preterite, a new marker *-awd* becomes the default in verbs, replacing older markers of the shape *-Vs* (e.g. *-wys*, *-es*, *-as*). This breaks the symmetry of the paradigm even more, thus making it harder to analyse the *-s-* as a marker independent of the person markers (Isaac 1996: 337–9; Schumacher 1999: 221–7; Thomas 1993: 31–5; Rodway 2013: 128–65).

- (3) a. *yn-lle*    *ny-6el-s-ynt*    *na*    *maen na*    *gueith*    *eiry6et*.  
 in-place NEG-see-PST-IPF.3PL neither stone nor fortification ever  
 ‘in a place where they had never seen stones or fortifications’ (Peniarth 4: 18r, c. 69, 13–14)
- b. *pei-a-s-myn-h-ut*  
 if-AFF-3.P-want-SUBJ-IPF.2SG  
 ‘if you wanted it’ (Jesus 111: 166r, c. 673, 28)

In addition to the concatenative morphology at work, the Middle Welsh verb also has a non-linear formant, namely vowel affection. While vowel affection occurs in conjunction with a variety of concatenative formants such as the second plural indicative present marker *-weh* (4a), it can occur on its own as the sole marker of the second person singular imperative and



the third singular indicative present (4b), exemplified here with the verbal root *arch-* ‘ask, seek’. Note the difference in vowel affection patterns between the single and multiple exponence forms—if a marker inducing vowel affection is added, the vowel changes from [a] to [e], while if the vowel affection is the single exponent of the grammatical category, the change is [a] to [ei] (Evans 1964: 129–40; Schumacher 2011: 157–67; Willis 2009: 138–9). In addition, there are also some vestigial past tense formations such as *ablaut* or reduplication (Evans 1964: §133c).

- (4) a. *yr-hynn*                      *a-erch-6ch-ch6i*                      *y-m-i*  
 ART-DEM.N.SG                      AFF-ask-PRS.2PL-2PL                      to-1SG-1SG  
 ‘that which you ask from me’ (Llanstephan 27: 68r, 21)
- b. *ys-mi*                                      *a-e-heirch.*  
 COP-1SG                                      AFF-3.P-seeK.PRS.3SG  
 ‘‘It is I who seeks her.’’ (Peniarth 4: 68v, c. 479, 29–30)

These three elements, that is the root, an optional TAM marker and the element marking TAM and the A/S-role, form the nucleus of the verbal complex in Middle Welsh. This nucleus is usually accompanied by a left periphery containing a range of bound markers, and a right periphery containing bound pronominals, as seen in (5a) (in this example, the nucleus is separated from the left and the right periphery by a vertical line). The imperative presents a, in some ways, special case: while, as seen in (5b), both the left and right periphery can be filled, the choice of formants that may appear in the left periphery is limited. The exact contents of the left and the right periphery will be discussed in the following subsections.

- (5) a. *ca-ni-s-ry|wel-s-ei|ef*  
 since-NEG-3.P-RES|see-PST-IPF.3SG|3SG.M  
 ‘since he had not seen them’ (Peniarth 4: 3r, c. 9, 20)
- b. *na|led-6ch|vi*  
 NEG-kill-IMP.2PL-1SG  
 ‘do not kill me’ (Jesus 111: 110v, c. 459, 45)

Alongside this morphological template, the remnants of an older template are still in use in early Middle Welsh poetry, namely the so-called ‘absolute’ verbal forms. These usually consist of a verbal root and a marker indicating person and TAM following the verb (6a), sometimes with a TAM marker added between the two (6b). As the evidence from Old Irish and, less clear, Old Welsh shows, this template was originally only used with simple verbs in clause initial position without morphological or other material preceding the verb. By the time of Middle Welsh, the only examples found are third person singular non-past and the probably newly formed third person singular past forms. The morphological and syntactic environments in which they can be used seems to have widened slightly: in the extant poetry, ‘absolute’ forms are for example used in clause final position to meet the requirements of metre or rhyme (*rynawd* in (6c) rhymes with *gwascawd* ‘shade’ and *tlawd* ‘poor’ in the following two lines) or can be used with compound verbs if the need arises (e.g. *gosgupid* ‘sweeps’, consisting of the preverb *go-* ‘rather, somewhat’ and the simple verb *yscubaw* ‘sweep’). The use of this template declines sharply during the late twelfth century and will thus not be discussed further.<sup>7</sup>

- (6) a. *coll-yt*                                      *hen*                                      *y-fabolaeth*  
 lose-NPST.3SG                                      old                                      3SG.M-youth  
 ‘an old one loses his youth’ (EWGNP: II.13b)

<sup>7</sup> For a detailed discussion of these forms and their usage, see Schumacher (1995); Rodway (2002, 2013, 2021); Evans (1964: § 119 (d)); Dedio (2015). For a discussion of the Old Irish evidence and the historical developments, see, e.g., Sims-Williams (1984); McCone (2006): 97–174.

- b. *pryn-ess-id Mab Duw mad gerennhyt*  
 buy-PST-3SG son God good atonement  
 ‘God’s son bought good atonement’ (GMB: 14.47)
- c. *ryn ryn-awd*  
 frost freeze-NPST.3SG  
 ‘frost freezes’ (EWGNP: VI.7a)

### 3.2. The internal structure of the verbal stem

The term ‘stem’ in the preceding section is actually a cover term for simplex verbal roots, denominal and deadjectival verbs, and compounds. I will discuss the latter two in the following.

There is a small group of markers—most prominently *-(h)a*<sup>8</sup> (7a), but also *-ych-* (7b), *-yg-*, and *-ho-*—that derives verbs from nouns and adjectives (Evans 1964: § 129 c; Morris-Jones 1913: 383–5). These formants always precede any TAM and A/S-markers that may be added to the bare verbal stem. This is exemplified by (7a) in which the adjectival stem *llawen* ‘happy, glad’ is turned into a verbal stem *llawenha-* which is followed by a past and A/S-marker marker *-ssant*.

- (7) a. *a-labên-ha-ssant*  
 AFF-happy-VBLZ-PST.3PL  
 ‘they rejoiced’ (Jesus 119: 97r, 2)
- b. *Ac-a-wled-ych-a can mlyned*  
 and-AFF-COUNTRY-VBLZ-NPST.3SG 100 year.PL  
 ‘and he reigned a hundred years’ (Peniarth 5: 13v, 33)

Compound verbs in the more narrow sense of combining a verb with another independent lexical item into a new verb (like German *Staub* ‘dust’ + *saugen* ‘to suck’ → *staubsaugen* ‘to Hoover’, *ich staubsaugte* ‘I hoovered’) are apparently absent from the extant Middle Welsh material. Even derivations from nominal compounds like *pen-elin-yaw* (head-elbow-VN) ‘to recline (on the elbow(s)); elbow someone’ prevalently occur in verbal noun phrases and not as finite verbal forms.<sup>9</sup>

The earlier Insular Celtic languages made wide use of another type of verbal compounding, combining a verb with up to five lexical preverbs that can alter meaning and valency of the verb they attach to. A series of recursively compounded verbs in Old Irish may look like this: *\*icc* ‘reaches’ → *con-icc* ‘is able’ → *ad-cumaing* ‘extends to’ → *do-acmaing* ‘reaches’ → *imm-tacmaing* ‘surrounds’. The various sound changes happening in the pre-Old Irish periods obscured the boundaries between the various preverbs and the original simplex, but there remained a morphological slot between the first preverb and the rest of the verbal string where P- and T-marking pronominal elements (8a) and an aspectual marker *-ro-* (8b) could be inserted (Thurneysen 1946: 255–69; McCone 2006: 177–244; Rossiter 2004).

<sup>8</sup> The /h/ of this derivational marker is often dropped, causing provection (i.e. a devoicing of the preceding consonant, cf. Section 4.9) to a preceding stop. The /a/ of this derivational suffix came to be reanalysed as a third person A/S-marker in the course of Middle Welsh, explaining the third person singular ending *-a* in (8b) (Evans 1964: §129 c; Schumacher 2011: 159).

<sup>9</sup> Zimmer (2000) does not list any clear examples of proper verbal compounds that are attested in the Middle Welsh period. This does not mean, however, that this type of compounding is absent from earlier or later stages of the language. As an anonymous reviewer pointed out, the verbaliser *-(h)a-* resulted from this type of compounding (cf. Joseph 1987).

- (8) a. *do-m-ben-ai*  
 PV-1SG.hit-PRS.1SG  
 ‘You hit me.’  
 b. *do-ro-sluind-s-et*  
 PV-RES.deny-PST-3PL  
 ‘they have denied’

This compounding strategy is found with similar properties in Old Welsh, although the use of multiple preverbs on one verb is not as widespread as it is in Old Irish. The border between the first preverb and the rest of the verb could still host P- and T-markers (9a), as well as *-ri-* (9b), the cognate of Old Irish *-ro-* (Falileyev 2008: 66–7).<sup>10</sup>

- (9) a. *immi-s-lin-e*  
 PV-3-smear-IPF.3SG  
 ‘s/he besmeared him/her(self)’ (MC: 394–5)  
 b. *di-r-gat-iss-e*  
 PV-RES-let\_go-PST-IPF  
 ‘had let go’ (MC: 395)

During the Middle Welsh period, this type of compounding remained productive (see, e.g. the compound of negative *a-N* and *cof-* ‘remember’ in (10a)), although the set of available preverbs probably was slightly reduced (J. Morris-Jones 1913: §§ 156, 207). The morphological slot between the first preverbs was, however, lost—the latest secure source of it being filled with a pronominal element is contained in a poem that can be dated to c. 1222 CE (10b), which still predates most if not all of the extant manuscript versions of the Middle Welsh prose texts. This slot was thus only vestigial in early Middle Welsh and there is no need to include it in the description of the verbal complex proper (Rodway 2013: 110–1; Meid 1963: 78–9).

- (10) a. *Ac-nac-a-nghoff-ewch(-)chwitheu y-dysc hwnnw.*  
 and-NEG-NEG.PV-remember-IMP.2PL(-)2PL ART-lesson DEM  
 ‘And do not you forget this lesson!’ (Peniarth 21: 31v, c. 1, 2–4)  
 b. *gor-yth-yol-af*  
 PV-2SG-praise-NPST.1SG  
 ‘I will praise you’ (GDB: 16.1)

The slot occupied by the preverbs can also be filled by the reflexive, reciprocal and antipassive marker *ym-*.<sup>11</sup> None of the material preceding the verbal core (such as the polarity markers *a-*, *y(d)-* and *ny(t)-* (11a) and the aspectual marker *ry-* (11b)) can intervene between *ym-* and the verbal root.

- (11) a. *Ban-uei ubjaf yd-ym-ger-ynt*  
 when-be.IPF.3SG good.SUP AFF-REC-love-IPF.3PL  
 ‘when it were better they loved each other’ (Peniarth 4: 10r, c. 38, 32)  
 b. *góbedy ry-ym-barato-ych*  
 after RES-REFL-prepare-SUBJ.NPST.2SG  
 ‘after you would prepare yourself’ (Llanstephan 27: 39v, 24)

There are no attestations of a co-occurrence of *ym-* with infixed pronouns in Middle Welsh which is at odds with the behaviour of its Middle Breton and Old Irish cognates *em-* and *imm-* (*a-N*), which clearly show a tendency to co-occur with pronominal P- and T-markers (Hemon 1984: 271–3; Dedio & Widmer 2017).

<sup>10</sup> The Middle Welsh form of this formant, *-ry-*, will be discussed in section 3.5 below.

<sup>11</sup> For a detailed discussion of the semantics and use of *ym-*, see Vendryes (1927); Irslinger (2017).

### 3.3. Polarity markers

In most cases, the verbal stem is preceded by a so-called ‘preverbal particle’ like *a-* in (12a). The most frequent formants in this group are the affirmative markers *a-* /*a*/ and *y(d)-* /*ə*(*ð*)/,<sup>12</sup> and the negative markers *ny(t)-* /*ni*(*ð*)/ and *na(t)-* /*na*(*ð*)/, *na(c)-* /*na*(*g*)/ with imperatives, in (12b), but the semantic range of these particles is broader, including interrogative and consecutive markers.<sup>13</sup> In the following discussion, I will use ‘polarity markers’ or ‘polarity slot’ as a convenient shorthand for these formants and their position in the verbal complex.

- (12) a. *A-seith*      *meib*      *a-oed*      *idaw*  
 and-seven    son.PL    AFF-be.IPF.3SG    to.3SG.M  
 ‘and he had seven sons’ (Jesus 111: 161v, c. 655, 11)
- b. *ny-chred-6n-ni*  
 NEG-believe.NPST.1PL-1PL  
 ‘we do not believe’ (Peniarth 5: 150v, c. 366, 28)

For Middle Welsh prose, it seems that all of these markers are mutually exclusive, i.e. they occupy the same slot. In early poetry (13a), the particle *neu(t)*—originally meaning ‘now’ but semantically bleached to a somewhat vague affirmative meaning—could co-occur with the negation. The same seems to be true for *hu* which co-occurs with the negation in the work of Llyfelyn Fardd I (13b). I take this as an indication that poetry for some reason—maybe preserving an archaism or meeting the requirements of the rather strict metrical system—had more freedom in the placement and ordering of these morphological elements than prose.

- (13) a. *nv*      *neu-na-chysc-af*  
 now      neu-NEG-sleep-NPST.1SG  
 ‘now I do not sleep’ (LIDC: 16.62)
- b. *ni-hu-wyf*      *lawen* *o-lawer*      *achaws*  
 NEG-thus-be.NPST.1SG glad because\_of-many reason.SG  
 ‘I am thus not happy for many reasons’ (GLIF: 4.37)

In Middle Welsh, the independent pronouns—especially 1SG *mi* and 3SG *ef*—are used as preverbal expletive subjects in certain contexts (14a), from which they spread until they begin to grammaticalise as preverbal affirmative markers in early Modern Welsh (Willis 1998: 149–80; Borsley et al. 2007: 297–8; Evans 1964: § 191), leading to verbal forms of the type represented in (14b). I could not find any evidence in the corpora of Middle Welsh that would indicate that these expletive pronouns diverge morphosyntactically and phonologically from normal preverbal pronominal arguments.

In early poetry, there are some examples of the pronouns used in a—at least superficially—similar manner (14c). In these instances, however, the initial mutation of the verb characteristic of the Middle Welsh expletive construction and the Modern Welsh particles is missing. Additionally, they only occur in early poetic texts much older than those that contain the expletive construction proper. This suggests that these two phenomena are not part of the same line of development and should thus not be considered to be the same phenomenon as the early Modern Welsh affirmative markers.

- (14) a. *ef*      *a-doeth*      *taran-eu*      *a-mellt*  
 3SG.M    AFF-come.PST.3SG    thunder-PL    and-lightning.PL  
 ‘there came thunder and lightning’ (Llanstephan 27: 64r, 4)

<sup>12</sup> Their occurrence is conditioned by whether an argument precedes the verb. For a detailed discussion of Middle Welsh constituent order and its interaction with the polarity markers, see Poppe (2009); Schumacher (2011: 200–203).

<sup>13</sup> For a more thorough collection and discussion of the functions and semantics of ‘preverbal particles’, see Evans (1964: §§ 185–197); Williams (1976). For a discussion of the use and origin of the affirmative markers *y(d)-* and *yt<sup>-l</sup>*, see Schumacher (2013–2014).

- b. *Mi-oedd-o-n*                      *cicio fel asyn.*  
 PTCL-be.IPF.3SG-3SG.M-PROG kick.VN like donkey  
 ‘He kicked like a donkey.’ (Thomas 1996: 87)
- c. *ef gwne-if*                      *beird byt yn-llawen*  
*ef* make-NPST.1SG bard.PL world PRED-glad  
 ‘I will make the bards of the world glad’ (PT: VIII.47)

Schumacher (2017: 329–37) adds two additional affirmative markers that also have the forms *a* and *y* (called ‘host particles’ by him) to explain forms found in the earliest poetry which do not adhere to the common rules of the system, i.e. they occur in clause-initial position and co-occur with an unexpected allomorph of third-person pronominal *p*- and *t*-markers. As they are a rather marginal poetic phenomenon, they will not be considered for further analysis here.

### 3.4. Pronominal *p*- and *t*-markers

Middle Welsh has a group of verbal markers that encode *p*, *t* and sometimes *G* roles<sup>14</sup> on the verb, labelled ‘infixed pronouns’ in the traditional grammatical descriptions. They are dependent on the presence of a polarity marker or a conjunction, that is there is a cross-slot dependency blocking the use of verbal *p*/*t*/*G*- markers if neither of the subjunction or polarity slots are filled. They are not used with imperatives.

These markers usually consist of a single consonant or vowel (see the paradigm in Table 1 and (15a)) but syllabic forms occasionally occur (15b). Which variant is chosen depends on the immediately preceding preverbal element (Evans 1964: §§ 58–59; Schumacher 2011: 140–3).

- (15) a. *ef a-th-lad-o-di*  
 3SG.M AFF-P.3SG-kill-SUBJ.NPST.3SG-2SG  
 ‘he will kill you’ (Peniarth 5: 79v, c. 85, 1)
- b. *yr pan-yth-wel-eis gyntaf*  
 since-P.2SG-see-PST.1SG first  
 ‘since I first saw you’ (Jesus 111: 166v, c. 676, 25)

As they occasionally co-occur with nominal (16a) and pronominal (16b) objects (Parina 2006; Evans 1964: § 60), it can be assumed that they had started their way down a grammaticalisation path towards proper agreement markers—a path that was later abandoned.

TABLE 1. Paradigm of the Middle Welsh ‘infixed pronouns’

	SG	PL
1	<i>-m-</i>	<i>-n-</i>
2	<i>-th-</i>	<i>-ch-, -wch-</i>
3	<i>-e/y-, -s-</i>	

<sup>14</sup> The labels *p*, *t* and *G* indicate arguments of mono- and ditransitive verbs. *p* stands for the more patient-like argument of a monotransitive verb (e.g. the vase in *I break the vase.*), *t* stands for the more theme-like argument of a ditransitive verb (e.g. the cake in *The baker gives the customer her cake.*) and *G* stands for the goal or recipient of a ditransitive verb (e.g. the customer in the previous example). For a more detailed discussion, see Haspelmath (2011b). The indication of *G* arguments with these preverbal markers as seen below is rare and seems to be a remnant from earlier stages of the language which is disappearing during the thirteenth century (Höijer 2014: 81–93; Evans 1964: § 61). *y-gwr a-m-rod-es y-gwin*ART-man AFF-1SG-give-PST.3SG ART-wine ‘the man who gave me the wine’ (BT: 40.15–16)

- (16) a. *Mi<sub>i</sub> a-e<sub>k</sub>-dywed-af<sub>i</sub> itt<sub>j</sub> yr-ystyr<sub>k</sub>*  
 ISG AFF-3.T-say-NPST.1SG to.2SG ART-meaning  
 ‘I will tell it to you the meaning.’ ~ ‘I will tell the meaning to you.’  
 (Jesus 111: 135v, c. 558, 21)
- b. *y-th<sub>i</sub>-gar-af<sub>j</sub>-i<sub>j</sub> ti<sub>i</sub>*  
 AFF-2SG-love-NPST.1SG-1SG 2SG  
 ‘I love you’ (Cardiff 1.362: 13v, 15)

### 3.5. Resultative and potential *ry*

Middle Welsh has an aspectual particle *-ry-* cognate to Old Irish *ro* which mainly expresses resultative and potential functions. If no other preverbal marker is present, it is placed right in front of the verb (17a). It can co-occur with the polarity markers (17b–c), in which case it is preceded by them.

- (17) a. *coet ry-wel-som ar-y-weilgi.*  
 forest RES-see-PST.1PL on-ART-sea  
 ‘We saw a forest on the sea’ (Jesus 111: 181r, c. 733, 39)
- b. *Ef a-ry-eill ych-necau*  
 3SG.M AFF-POT-be\_able.NPST.3SG POSS.2PL-refuse.VN  
 ‘he may refuse you’ (Peniarth 4: 21v, c. 83, 23–24)
- c. *ny-ry-giglef-i eirmoet dim*  
 NEG-PST-hear.PST.1SG-1SG ever nothing  
 ‘I have not heard anything (...)’ (Jesus 111: 203r, c. 820, 30)

If a preverbal *p*-marker is present, it is inserted between the polarity marker and *-ry-*, be it affirmative as in (18a) or negative as in (18b). This means that *-ry-* cannot fill the slot of a polarity marker or conjunction and thus not satisfy the cross-slot dependency between polarity markers and infixes. In terms of formant ordering, *-ry-* occupies its own slot between the verbal *p*-markers to its left and the reflexive and reciprocal marker to its right.

- (18) a. *A-m-ry-dyall-as yg-gordby*  
 AFF/REL-P.1SG-RES-carry\_off-PST.3SG in-violence  
 ‘who carried me away with violence’ (Peniarth 4: 80r, c. 453, 31–32)
- b. *ca-ni-s-ry-wel-s-ei-ef*  
 since-NEG-3.P-RES-see-PST-IPF.3SG-3SG.M  
 ‘since he had not seen them’ (Peniarth 4: 3r, c. 9, 20)
- c. *na-ry-ym-wel-ss-ynt*  
 NEG-RES-REC-see-PST-IPF.3SG  
 ‘they had not seen each other’ (Llanstephan 1: 147)

In earlier poetry, the above rules may be broken. Most prominently, there are examples of *-ry-* preceding an infixes pronoun like in (19a–b), in the latter of which, the third person pronoun fuses with the vowel of *-ry-* into a diphthong /ui/ (Evans 1964: §§ 58 n; LPBT2: 197).

- (19) a. *Ry-m-gedir y-gadeir ymrysson*  
 RES-P.1SG-leave.PRS.IMPERS ART-chair contested  
 ‘I am given the/his contested chair’ (GCBM: 2, 6.237)
- b. *rwy-digon-s-ei*  
 RES.3SG-make-PST-IPF.3SG  
 ‘who had made them’ (LPBT<sup>2</sup>: 5.50)





- b. *pan-dyngh-ont annudoneu neu-pan-letratta-ont y-chward-ant.*  
 when-swear-SUBJ.NPST.3PL false\_oath-PL or-when-steal-SUBJ.NPST.3PL AFF-laugh-NPST.3PL  
 ‘Whenever they would swear false oaths or when they would steal, they laugh.’  
 (Peniarth 12ii: 42v, 13–14)

### 3.7. Headless relatives

There are two strategies to form headless or antecedentless relatives in Middle Welsh: using a plain verbal form minimally containing a root and a polarity marker (23a–b) or adding a complementizer *a(r)/y(r)* (called a ‘demonstrative’ in traditional grammars) cognate with the article to the left edge of the phrase (23c–d). Both types can be preceded by prosodically dependent prepositions (24b,d), most often *y* ‘to’ and *o(c)* ‘of’, and *yn* ‘in’ (Evans 1964: §§ 75–77; Morris-Jones 1913: 198).

- (23) a. *ny-bu yn-y-llŷs ny-s-guŷp-ei.*  
 NEG-be.PST.3SG in-ART-COURT NEG-3.P-KNOW-SUBJ.IPF.3SG  
 ‘there was not [anyone] in the court who did not know it’ (Peniarth 4: 23r, c. 89, 35)
- b. *cael attep am-a-erch-eis*  
 get.VN answer to-AFF-ask\_for-PST.1SG  
 ‘to get an answer to what I asked’ (Peniarth 4: 6r, c. 22, 19–20)
- c. *Ac-ar-ny-s-mynn-ŷys a-lad-a6d*  
 and-COMP-NEG-3.P-want-PST.3SG AFF-kill-PST.3SG  
 ‘And he killed whoever refused it’ (Jesus 111: 91r, c. 382, 45)
- d. *bawp o-r-a-e-gwel-es*  
 everyone of-COMP-AFF-3.P-see-PST.3SG  
 ‘everyone who saw it’ (Peniarth 14: 181, 19)

The marker does not co-occur with subordinating conjunctions and thus seems to occupy the same slot, while it can co-occur after the coordinating conjunction *a(c)* (23c).

### 3.8. Bound pronouns

Turning to the rather shorter right periphery of the Middle Welsh verbal complex, we find the so-called ‘affixed’ pronouns, bound pronouns that (usually) agree in person and number with another pronominal element in the verbal complex—except for the imperative, they need the presence of either a verbal ending specified for person (24a) or a bound P/T-marker (24b) to occur.

These forms mirror two of the three sets of independent pronouns (simple, reduplicated, and ‘conjunctive’, see Table 2) but seem to be phonologically weakened to some degree, that is they are probably unstressed and the forms of the first and second person singular undergo initial mutations with the subsequent loss of the fricative in the first person singular (independent *mi*, affixed *fi*, *i*) (Evans 1964: § 62; Schumacher 2011: 139–40; e.g. Borsley et al. 2007: 321; Morris-Jones 1913: 280–2).<sup>17</sup>

The occurrence of two postverbal pronouns with one verbal form, one encoding an A-participant, the other a P-participant, seems to be rather rare. If a second pronoun occurs directly after the verb, it usually does not double an infixed pronoun. There seems to be some

<sup>17</sup> The morphosyntactic and phonological status of the ‘conjunctive’ set of bound pronouns is characterised as ‘truly enclitic’ by Shisha-Halevy (1995: 153) because they are, in his words, ‘following strictly closed prosodic units’. We will discuss their phonological status in Section 4.1 below.

TABLE 2. Three sets of independent pronouns

		Simple	Reduplicated	Conjunctive	
sg	1	<i>mi</i>	<i>myui</i>	<i>minnheu</i>	
	2	<i>ti</i>	<i>tydi</i>	<i>titheu</i>	
	3	<i>ef</i>	<i>efo</i>	<i>ynteu</i>	
pl					
		M	<i>hi</i>	<i>hihi</i>	<i>hitheu</i>
		F	<i>ni</i>	<i>nini</i>	<i>nynheu</i>
	1		<i>chwi</i>	<i>chwichwi</i>	<i>chwithheu</i>
	2		<i>wy, wynt</i>	<i>wynteu</i>	
	3				

regularity in the ordering of two postverbal pronouns: the second of the two generally refers to the P- or T-argument of a verb, and can take more forms than the usual ‘affixed position’, e.g. non-lenited forms as in (24c) or reduplicated forms as in (24d) (cf. also Morris-Jones 1931: 85–6; Griffith 2016: 20–1).

- (24) a. *yr-auon*                      *a-bel-sabch-chði*  
 ART-river                      AFF-see-PST.2PL-2PL  
 ‘the river that you saw’ (Peniarth 5: 96v, c. 149, 13–14)
- b. *mij*                      *a-th<sub>i</sub>-gar-wn<sub>i</sub>-di<sub>i</sub>*  
 1SG                      AFF-2SG-love-IPF.1SG-2SG  
 ‘I love you’ (Peniarth 7: 10r, c. 26, 17)
- c. *y-th-gar-af-i(-)ti*  
 AFF-2SG-love-NPST.1SG-1SG(-)2SG  
 ‘I love you’ (Cardiff 1.362: 13v, 15)
- d. *Pan-geiss-ych-di(-)vyui*  
 when-see-SUBJ.NPST.2SG-2SG-1SG  
 ‘When you search for me’ (Jesus 111: 168r, c. 682, 34)

The question whether the second of two postverbal pronouns is actually part of the verbal complex needs some further discussion. The use of weakened forms of the pronouns such as lenited *vyui* instead of unlenited *myui* in (24d) or *vi* in (25a) would suggest that these pronouns are to some extent dependent elements of the complex. On the other hand, the possibility of other arguments (25b–c) and adverbials (25d) occurring between the verb and a second postverbal pronoun seems to indicate an independent nature of these pronouns. It may well be that we are dealing with two different constructions: in the first, the pronoun is actually a phonologically bound part of the verbal complex, while in the other we are dealing with an independent pronoun expressing a P/T-role which underwent an early form of ‘object lenition’.<sup>18</sup> This question merits a more detailed investigation than can be provided here.

- (25) a. *ac-etto ny-wel-eist-di(-)vi*                      *yn-gðbyl*.  
 and-again NEG-see-PST.2SG-2SG(-)2SG                      at\_all  
 ‘And again you do not see me at all.’ (Llanstephan 27: 38r, 5)
- b. *Góiffret pedyt y-geiló y-ffreinc a-r-saesson ef*.  
 G.                      footman AFF-call.PRS.3SG ART-French and-ART-English 3SG  
 ‘The French and the English called him Gwiffret the footman.’ (Peniarth 6iv: 35, 26–27)
- c. *a-mynheu a-e-tal-af etty euo*  
 and-1SG AFF-3.P-pay-1SG to.2SG 3SG.M  
 ‘And I will pay it to you’ (CT D II: 20r)

<sup>18</sup> During the Middle Welsh period, the mutation of initial consonants after certain verbal forms started to become grammaticalised as a general marker of P- and T-roles (Borsley et al. 2007: 313–5).

- d. *kyt-ffyckr-er*                              *yno*      *ef*.  
 although-rot.SUBJ-SUBJ.PRS.IMPERS      there      3SG.M  
 ‘Although it becomes rotten there’ (Peniarth 32: 161, 10–11)

### 3.9. Morphological domains

Summing up the evidence above, we can determine the values of the variables SELECTION and INFLECTION for all morphological elements of the Middle Welsh verbal complex (Table 3). The variable selection reveals a layeredness of the verbal complex: the smallest entity elements select is the root, followed by the stem (PV+ROOT+VBLZ), the verbal core (stem+TAM+TAM/AGR). Some elements (coordinating and subordinating conjunctions, as well as prepositions) do not select an element of the verb but are phonologically bound to the verb. The selection of polarity markers by the P/T-markers, as well as the selection of TAM/AGR markers or P/T-markers by the bound pronouns, are evidence of a more complicated internal hierarchical structure. The only element inflecting for anything is the verbal stem (PV+ROOT+VBLZ).

From this, we can establish a linear verbal template summed up below, which we can use to define morphological and phonological cohesion domains. All in all, we find 11 slots in the verb which cannot all be filled at the same time. The theoretical maximum of elements phonologically or morphologically bound to the verb is 10.

con.	sub.	POL	P/T	RES/POT	PV	ROOT	VBLZ	TAM	TAM/AGR	pron.
	prep.	COMP			REFL/REC					

Within this template, we find three morphological cohesion domains:

- **linear ordering [full complex]** This is the largest morphological cohesion domain in Middle Welsh. All elements that are morphologically or phonologically part of the verbal complex appear in a fixed order that is consistent in Middle Welsh prose. Deviations found in poetry are probably due to metrical requirements and do not reflect contemporary use.
- **insertion potential [COMP-POL-P/T-RES/POT-PV-ROOT-VBLZ-TAM-TAM/AGR-pron]** This domain comprises all elements that select the verb as their host. No additional morphological or syntactic material may be inserted.
- **cross-slot dependency [P/T↔REFL/REC]** The smallest morphological cohesion domain is defined by the mutual exclusivity of P/T- and REFL/REC-markers: if one of the two is present, the other may not occur. This domain is special in that its members are non-adjacent.

TABLE 3. Types of morphological elements in Middle Welsh

Type	SELECTION	INFLECTION	Example
stem	—	TAM, TAM/AGR	<i>gwel-</i> ‘see’
PV	root (N, V)	—	<i>a</i> <sup>N</sup> NEG
VBLZ	root (N)	—	<i>-(h)a-</i>
TAM	verb	—	<i>-h-</i> SUBJ
TAM/AGR	verb	—	<i>-af</i> 1SG
POL	verbal core	—	<i>ny-</i> NEG
P/T	POL, sub.	—	<i>-m-</i> 1SG
RES/POT	verbal core	—	<i>ry-</i>
sub.	clause	—	<i>pan</i> ‘when’
COMP	verbal core	—	<i>a(r)-</i>
con.	clause	—	<i>a(c)-</i> ‘and’
prep.	clause	—	<i>y</i> ‘to’
pron.	TAM/AGR, P/T	—	<i>-i</i> 1SG

## 4. PHONOLOGICAL AND PROSODIC PROCESSES

Having established the morphological elements of the Middle Welsh verbal complex, I will now turn to the study of phonological cohesion domains. In the following, I will discuss the philological evidence for phonological processes that have been described for Middle Welsh to assess their synchronic productivity, their generality and the extent of their domains over the verbal complex.

4.1. *Stress*

As Middle Welsh manuscripts do not mark stress and the native grammars from the time do not remark on the position and type of stress, we must rely on indirect evidence to determine where stress was realised in Middle Welsh. From the weakening of non-final /i/ and /u/ to /ə/ we can deduce that the primary accent must have been on the ultima in pre-Middle Welsh times. Processes that occur during the Middle Welsh period, such as the monophthongisation of ultimate diphthongs in bi- and polysyllabic verbal and nominal cores, show, however, that the primary stress accent of Middle Welsh must—except for a few words with lexicalised ultimate stress,<sup>19</sup>—have lain on the penultimate syllable. The ultimate syllable probably bore a secondary pitch accent that did not shift together with the stress accent (Willis 2009: 122–3; Schumacher 2011: 105–6).

Orthography may give a hint on how far the domain of one main stress extended: it has been shown that (early) Medieval Irish, early Medieval German and early Medieval Welsh scribes tended to write the elements sharing a single main stress as one orthographical group (Bronner & Busch 2015; Busch & Fleischer 2015; Bronner et al. 2018; Jenkins & Owen 1984:115–117). Applying this approach in the present study is somewhat complicated by the reliance on the diplomatic editions of Isaac et al. (2010) and Luft et al. (2013) for two reasons. First, both editions make a binary distinction space/no space instead of reproducing the more finegrained distinctions made in the manuscripts. Second, as already mentioned above, different palaeographers will differ on which gap between letters to read as a space (Bronner & Busch 2015: 527–9). Although there is much variation between individual scribes in Middle Welsh,<sup>20</sup> averaging over a large number of manuscripts and scribes, we find a tendency to write the elements of the left periphery and the nuclear group as one orthographic unit as evidenced in (26a–b). The bound pronouns of the right periphery are also written without a space between them and the nuclear group, although this tendency seems to be less clear.

- (26) a. <Mi aedangossaf itt>  
*Mi a-e-dangoss-af itt*  
 1SG AFF-3.T-show-NPST.1SG to.2SG  
 ‘I will show it to you.’ (Peniarth 11: 5r, 13)
- b. <ac malydeuth yno>  
*ac-mal-y-deuth yno*  
 and-when-AFF-come.PST.3SG there  
 ‘and when he came there’ (Jesus 111: 208r, c. 837, 35–36)

<sup>19</sup> These overwhelmingly resulted from hiatus reduction between the penult and ultima, e.g. *kymraec* /kəm.ˈra.eg/ > /kəm.ˈraig/ ‘Welsh’; *a-arwydockaant* /a.ar.wə.ðo.ˈka.ant/ > *a-arwydockant* /a.ar.wə.ðo.ˈka:nt/ ‘they symbolise’ (Schumacher 2011: 105–6).

<sup>20</sup> For the development of and relationship between Medieval Welsh writing systems as well as studies of individual scribes’ orthographies, cf. Charles-Edwards & Russell (1994); Russell (1995, 1999); Sims-Williams (1991); Schumacher (2011: 85–86, 96–100).

- c. <ydaethef>  
*yd-aeth-ef*  
 AFF-go.PST.3SG-3SG.M  
 ‘he went’ (Jesus 111: 218v, c. 879, 5)

The presence of bound pronouns, that is a filled right periphery, does not seem to affect the placement of primary stress—there are no examples that would indicate that any stress-related phonological rule would reference a syllable other than the last of the nuclear group (unless, of course, the last syllable arises from the insertion of a prosthetic vowel; see Section 4.3).

Whether or not stress may be placed on the reflexive and reciprocal marker *ym-* is hard to determine with certainty as it does not undergo any changes associated with the placement of stress. The evidence from Old Welsh and Old Irish suggests that stress on *ym-* would definitely be a Middle Welsh innovation and as even in Modern Welsh a rather large groups of disyllabic compounds with (then unproductive) *ym-* are stressed on the ultima (e.g. *ymweld* ‘to visit’, *ymhel* ‘to be involved’, cf. Williams 1980: 5), it is probably safest to assume that this marker was regularly unstressed in Middle Welsh. Whether or not preverbs could bear stress cannot be deduced from the extant data.

Whether main stress could be placed on any elements of the left periphery proper is only relevant in the case of monosyllabic nuclear groups (i.e. third person singular non-past indicative and second singular imperative verb forms) as these are the only cases in which any element of the left periphery could form the penultimate of the verbal complex. Evidence against an extension of the domain of stress-placement into the left periphery comes from the loss of preverbal markers after the Middle Welsh period: in early Modern Welsh, we see a phonological reduction of the polarity markers that had probably started during the Middle Welsh period (cf. Willis 1998: 138–43, 188–9). If those markers had regularly borne stress—as would have been the case with forms of the frequent verbs *bot* ‘be’, *mynet* ‘go’, *dyuot* ‘come’, etc.—this reduction would probably not have taken place.

Based on the evidence of the elision of vowels in bisyllabic structures in the left periphery (e.g. *onyt* to *ond*, *kanys* to *kans*, *yny* to *ny*; see Section 4.4 below) and within nuclear groups (e.g. tetrasyllabic *tywyssogyon* vs. trisyllabic *tywssogyon* (Jesus 111: 46r, c. 183, 16) ‘princes, lords’) it is often assumed that there was a secondary stress accent on every second syllable before the main stress—a pattern that still persists in most modern Welsh dialects (Morris-Jones 1913: 54–6; Sims-Williams 2018: 104).

Another indicator for a secondary accent again comes from orthography: the left periphery of a verb is often written as one unit followed by a space before the nuclear group.<sup>21</sup>

- (27) <Ac onysgallant>  
*Ac-o-ny-s-gall-ant*  
 and-if-NEG-3.P-be\_able-NPST.3PL  
 ‘And if they cannot do it’ (Jesus 111: 152v, c. 620, 6)

The stress domain, that is the string of concatenative formants that together have one main stress most probably covers the whole of the verbal complex, including the right and left peripheries. Stress placement (i.e. the assignment of stress and the syllables that can receive stress) seems to be limited to the nuclear group.

<sup>21</sup> Russell (2015: 80) and Schumacher (2012) have also argued that the elements that evolved into the Middle Welsh prepositions, preverbs and, in some cases, adverbs could have borne varying degrees of stress depending on their morphosyntactic environment.

<sup>22</sup> Contrary to Luft et al. (2013), I do not read a space between <onys> and <gallant> (<https://digital.bodleian.ox.ac.uk/inquire/p/7a1fd670-dde9-41e7-af39-eac0c03892df>).



#### 4.2. Syllabification, epenthesis and deletion

As there is no indication of syllable boundaries in Middle Welsh manuscripts, we have to rely on indirect evidence from three related phenomena. The first is the insertion of prosthetic vowels to break up consonant clusters, the second is the deletion of identical consonants, and the third is the lack of deletion of vowels between the left periphery and the nuclear group as well as between the nuclear group and the right periphery.

Sonority sequencing violations, that is the non-monotonous rising or falling of sonority from or towards a syllable peak, is usually resolved by moving the last consonant of a problematic cluster into the next syllable (e.g. the compound verb *kyfr-ad-wyt* in (28a) is syllabified as [kəv.ra.duɪd], with the /r/ from the preverb being moved into one syllable with the verbal root). If this is not possible because the cluster is followed by another consonant with lower sonority (e.g. the cluster /vrg/ in the compound verb *kyfyr-goll-assant* in (30b)) or it is on the edge of a syllabification domain (e.g. the final cluster /θr/ in *ysgithyr* in (30c)), an epenthetic vowel [ə] is inserted. This usually happens in clusters of a plosive or fricative + /r, l, n/, in the clusters /rm, rv, lm, lv, ðv/ and, more rarely, /rχ, lχ/. If the syllabification domain contains only one syllable, the epenthetic vowels tend to get assimilated to the other vowel present, for example *gᵛrᵛf* vs. *gᵛryf* ‘beer’ (Jesus 111: 237v, c.955, 34; 283v, c. 1135, 39). In the poetry of the time, this epenthetic vowel did not scan as a syllable (Schumacher 2011: 119–22; Evans 1964: § 16; Willis 2009: 125–6).

- (28) a. *Ac-en-e-lle e-kyfr-ad-wyt lleng o-wyr arvavc ᵛdvnt*  
 and-in-ART-place AFF-PV-let-PST.IMPERS legion of-man.PL armed to.3PL  
 ‘And in that place, they were immediately given the command of a legion of armed men’.  
 (Cardiff 1.363: 87r, 13–14)
- b. *wrth-y-kyuyr-goll-assant-wy yno*  
 because-AFF-PV-forget-PST.3PL-3PL then  
 ‘because they completely forgot then’ (Peniarth 5: 8v, 39)
- c. *Hud-ysgithyr y-esgar yn-dilen.*  
 as-cut.NPST.3SG 3SG.M-foe in-death  
 ‘thus he cuts down his foes in battle’ (GCBM: 2, 6.37)

Whether the presence of bound pronouns in the right periphery blocks the insertion of epenthetic vowels is difficult to determine as this context (i.e. a nucleus-final sonority sequencing violation followed by a vowel-initial bound pronoun) barely ever arises. The imperative *hidyl* [hidəl] ‘strain!’ in (29a) might be the best example in the corpus. The presence of the epenthetic vowel in this case shows that the pronoun is not part of the same syllabification domain as the verbal nucleus—otherwise the final /l/ would form the onset of the following syllable, thus resolving the sonority sequencing violation. Additional evidence comes from nominal structures: if a noun is preceded by a possessive marker such as the third person masculine *y<sup>l</sup>* in (29b), the same bound pronouns can attach to nouns (Evans 1964: § 62). Their presence does not have any influence on the insertion of epenthetic vowels in nouns either.

- (29) a. *a-hidyl-ef drᵛy liein.*  
 and-strain.IMP.2SG-3SG.M through linen  
 ‘and strain it through linen’ (Cardiff 3.242: 21, 27)
- b. *abertheu dros y-bobyl-ef y-apoᵛllo*  
 sacrifice.VN through POSS.3SG.M-people-3SG.M to-A.  
 ‘his people sacrificed to Apollo’ (Jesus 111: 3v, c. 11, 36)

The deletion of a consonant between the nuclear group and second singular affixed pronouns in the right periphery where the two dental plosives of the verbal ending and the affixed pronoun are simplified to one (30) could be considered to be evidence that syllabification operates across the boundary between the two parts of the verb, but it might as well be the outcome of a consonant assimilation process which turns two homorganic stops into a single aspirated stop (Schumacher 2011: 113–6; Willis 2009: 132; Section 4.9 below).<sup>23</sup>

- (30) a. *ny-wel-eist-(t)i*  
 NEG-see-PST.2SG-2SG  
 ‘you did not see’ (Shrewsbury 11: 140, 2)
- b. *Os beichygi a-geu-eist-(t)itheu*  
 if become\_pregnant.VN AFF-get-PST.2SG-2SG  
 ‘if you had become pregnant’ (Peniarth 14: 161, 21)

Lastly, the lack of vowel elision between vowel-final elements in the left periphery and vowel-initial nuclear groups (31a–b)—a process that operates both inside the left periphery and inside the nuclear group (see Section 4.4 below) indicate that syllabification does not run across this boundary.

- (31) a. *ef a-a*  
 3SG.M AFF-go.NPST.3SG  
 ‘he goes’ (Peniarth 6iv: 48, 13)
- b. *gŵedy ry-ym-barato-ych*  
 after RES-REFL-prepare-SUBJ.NPST.2SG  
 ‘after you would prepare yourself’ (Llanstephan 27: 39v, 24)

### 4.3. Prosthetic vowels

In Old Welsh, initial *s*-clusters gain a prosthetic vowel [ə], e.g. OW *istlinnit* [əstlən:ið] ‘proclaims’ vs. OI *sluindid* ‘id.’, which is at this point probably allophonic and only written optionally. By the Middle Welsh period, the vowel is written regularly, can bear stress, and scans as a regular syllable nucleus in poetry at least from the eleventh century onwards, as can be seen from the line in (32): the expected line length is nine syllables, which can only be achieved if [ə], represented by <y>, is counted as syllabic (Schrijver 2011: 40; Willis 2009: 123; Schumacher 2011: 118–9).

- (32) *Llu maelgun bu yscun y-doethan*  
 host M. be.PST.3SG ready AFF-come.PST.3PL  
 ‘Maelgwn’s host, who was swift, came’ (LIDC: 1.21)

Occasional forms written without the prosthetic vowel occur in manuscripts up until the late fourteenth century, e.g. *scwyt* (CA: 1148; c. XIII) ~ *yscwyt* ‘shield’, *scriuenedic* (BL Harley MS. 958, 26r, 20; saec. XIV<sup>med</sup>) ~ *yscriuenedic* ‘written’, *stafellaŵc* (Peniarth 38: 32r, 20; saec. XIV/XV) ~ *ystauellawc* ‘having a room’. Except for the first example (a metrical text probably centuries older than the manuscript containing it) this is probably an orthographic archaism (Schumacher 2011: 119). Occasional forms of non-Welsh names with a deleted initial vowel such as *iudas scarioth* (Peniarth 5: 6r, 32) seem to indicate that several scribes were aware of this phenomenon and in an archaising attempt deleted the vowel they felt to be intrusive. In addition, the extensive variation with regard to presence of this vowel in place

<sup>23</sup> The brackets in the following examples indicate that on a morphological level, the form of the pronouns start with a /t/ which is not written, as it fuses with the final /t/ of the preceding marker.

names in contemporary Anglo-Norman sources may hint at another factor that might determine the occasional absence of this vowel in the Middle Welsh prose corpora, namely the elision of unstressed pretonic vowels (Russell 1992: 388–9; see also Section 4.4 below).

Although Willis (2009: 123)—on the basis of Anglo-Norman and Middle English loans—contends that this process was still active in the Middle Welsh period, the actual evidence is less than clear: a similar process was operative in Anglo-Norman during the respective time, but no evidence for such a mechanism can be found in Middle English. This means that any loan in Welsh occurring with a prosthetic vowel could have been borrowed from Anglo-Norman with that vowel already attached (e.g. *ystondard* ‘standard’ from Anglo-Norman *estondard* ‘id.’), while any loan without the respective vowel—if not due to archaising scribes—could have found its way into the Welsh language via Middle English (e.g. *stondard* ‘id.’ from Middle English *standard*, *stondard* ‘id.’). The existence of loan words with two forms (one with and one without the prosthetic vowel) might hint at multiple borrowings from both Anglo-Norman and Middle English sources. It is thus safest to assume that this type of vowel prosthesis is no longer an active phonological process in Middle Welsh.

Occasionally, a prosthetic vowel /ə/ (usually spelled <y> or <e>, in cases <a><sup>24</sup>) occurs before initial /n/. The reason for the occurrence of this vowel is unclear—there is no cluster to break up as in the cases discussed above, there is no rationale with respect to the final sound of the preceding element, it is not a form of the article as can be seen from example (33) where the article in the form *-r* directly precedes the form with the prosthetic vowel. This process does only occur with a small set of words (*niuer* ‘host, retinue’, *neud* ‘hall’ and *nadred* ‘snakes’), it does not survive after the Middle Welsh period, and its rare appearance does not facilitate making any well-grounded decisions regarding its synchronic phonological status (Jackson 1983).

- (33) *ar-hynny*    *a-gyuod-es*                      *a-r-teulu*                      *a-r-yniuer-oed*.  
 then            AFF-raise-PST.3SG    with-ART-company    and-ART-retinue-PL  
 ‘then he arose with company and retinue’ (Peniarth 4: 8r, c. 29, 31–32)

#### 4.4. Vowel elision

In the left periphery, vowels may be elided if they do not bear stress—be it primary or secondary (see Section 4.1 above). In (34a), we see the quite common elision of /ə/ in the resultative and potential marker *ry-yr-*, while in (34b) we see the (to my knowledge) only graphic representation of /i/ from *canys* ‘since’ in the left periphery of a finite verbal form in the corpus of Middle Welsh prose. The next attestation is in the fifteenth or sixteenth century manuscript Peniarth 23 (*kans-kaff-at* ‘since it was gotten’ 67v). The rest of the occurrences of <cans> in Middle Welsh are limited to Cardiff MS. 1.362 and Oxford Rawlinson MS. B 467 and are all combinations of the subordinating conjunction *can* and the copula *ys*.

- (34) a. *ny-r-darff-o*  
 NEG-POT-disturb-SUBJ.NPST.3SG  
 ‘he would not disturb’ (Peniarth 4: 50r, c. 230, 30)  
 b. *cans-oed*                      *gerd*                      *gantha6*  
 since-be.IPF.3SG            craft                      with.3SG.M  
 ‘since he has a craft’ (Peniarth 4: 88v, c. 487, 11)

<sup>24</sup> The alternation of /ə/ and /a/ before nasals is discussed in Section 4.7 below.

- c. *Kanys Ef a-n-goruc ac-a-n-gberyt*  
 since 3SG.M AFF-1PL-DO.PST.3SG and-AFF-1PL-deliver.NPST.3SG  
 ‘since he has made us and will deliver us’ (GMB: 33.79)

(34c) is taken from a poem that was—if the doubtful attribution to a certain poet is correct—composed in the first half of the thirteenth century. The line is part of a poem with a line length of nine syllables but has 10. If the actual form of *kanys* in this case were /kans/, this would yield the correct line length and the first attestation of *cans* would come from early Middle Welsh. Unfortunately, the dating of the poem is insecure—a century earlier or later is possible—as the attribution to the author is doubtful (GMB: 353).

Another possible elision is that of the vowel of the preposition *yn* when it is used to introduce antecedentless relatives (see Section 3.7): the sequence of preposition and affirmative particle *yn-y(d)-* is reduced to [nə] in (35), the elision process thus probably stretching the whole of the left periphery.

- (35) *ac-nȳ-ca-ei graf ar-ȳr-amranneu*  
 and-in.AFF-get-IPF.3SG grip on-ART-eyelid.PL  
 ‘And where he got a grip on the eyelids’ (Peniarth 4: 11r, c. 41, 31–32)

Although there are examples of vowel elision in nouns (e.g. *tywysogyon* ~ *tywŷssogyon* (Jesus 111: 46v, c. 183, 16) ‘princes, lords’), I could not find any clear examples of vowel elision inside of the nuclear group of finite verbs.

#### 4.5. Vowel mutation

As a result of Old Welsh ultimate stress, /i/ and /u/ in penultimate syllables were reduced to /ə/ respectively, which led to a regular alternation between /i/ and /u/ in ultimate and /ə/ in all other syllables as in (36a–b). While the alternation of /u/ is quite easily deducible from the orthography (/u/ being written mainly with <w, ū>, more rarely <u, v>, /ə/ with <y>, more rarely <e>), the alternation of /i/ can only be established on the basis of the modern dialects and early modern grammatical descriptions (/ə/ and /i/ being both written <y>, more rarely <e>).

- (36) a. *cwsc* /kusk/ ‘sleep.NPST.3SG’ ~ *kysc-wys* /kəskuis/ ‘sleep.PST.3SG’  
 b. *bys* /bis/ ‘finger’ ~ *bys-ed* /bəseð/ ‘finger.PL’

After the main stress shifted onto the penultimate syllable, the trigger for this alternation was lost, but it seems to have persisted for a rather long time (the modern dialects still show this alternation and it is often described as an active phonological process of Modern Welsh; e.g. Hannahs 2013: 55–78), but their status as a purely phonological phenomenon may be questioned already for Middle Welsh.

Schumacher (2011: 108) cites the form *kwppl-a-v* [kuplau] ‘complete-VBLZ-VN’ from the mid-fourteenth century Oxford Jesus College MS. 119 as evidence for the demise of this phonological process in late Middle Welsh. The same form does however already occur in a century older NLW MS. Peniarth 44 (p. 8) and there is not any form of this verb—be it finite or infinite—with a mutated /u/ in non-final syllables anywhere in the prose corpora for the thirteenth and fourteenth centuries.

In addition to this, there are several other derivational formations that exhibit unmutated [u] in non-final syllables instead of the expected /ə/ while examples with mutation are virtually nonexistent, for example the verb *gwr-ha-* ‘man-VBLZ’ (i.e. ‘to marry’), and the

<sup>25</sup> I am indebted to Simon Rodway for bringing this example to my attention.

nouns *mil-wr-iaeth* ‘warfare’, *her-wr-iaeth* ‘outlawry’, *hel-wr-iaeth* ‘huntsmanship’. The verb *bwrw* ‘throw, cast’ which is not a derivative but was a simple verb already in Proto-Celtic times, also shows unmutated /u/ in non-final syllables at least in the fourteenth century (37).

- (37) *mi*            *a-th-v6ry-af*                      *yn-ffos*            *y-seirff*  
 1SG          AFF-throw-NPST.1SG            in-pit            ART-snake.PL  
 ‘I will throw you into the snake pit’ (Peniarth 11: 267v, 16–17)

As the original phonetic conditioning factor of the vowel mutation, the strong ultimate stress accent, was lost at the transition from Old to Middle Welsh, the persistence of vowel mutation must be explained differently. One possibility is a phonological ban on [i] and [u] in all syllables but the ultima, which still is at odds with the existence of non-final [u] described above. With the merger of /i/ and /u/ beginning in late Middle Welsh (Evans 1964: § 2; Willis 2009: 125), positing this ban would require the assumption of two distinct phonemes /i<sub>1</sub>/ and /i<sub>2</sub>/, one of which is affected by the ban while the other is not. Another is that vowel mutation has been lexicalised and newer forms following this pattern have been formed in analogy with the vast number of inherited mutating forms.

I take the evidence discussed above to indicate that vowel mutation should be seen as non-general at best and that there is a high probability that it was no longer an active phonological process in Middle Welsh.

Another mutation process is, however, active in Middle Welsh: the diphthongs /ei/ and /eu/ become [ai] and [au] in final syllables. The evidence for this change is sparse as scribes usually write these diphthongs as <ei, eu> regardless of their phonetic realisation (Evans 1964: § 6 N. 3; Schumacher 2011: 99; Willis 2009: 123; Jackson 1953: 685–7). In the example in (38), we see the third singular imperfect marker *-ei* /ei/ realised as <ai> [ai]. The presence of bound pronouns like *ef* (38) apparently has no effect on this process.

- (38) *kany*s        *trannoth*    *y-darpar-ai-ef*                      *eu-plannu*            *yn-ry6-le*  
 since.COP    next\_day    AFF-plan-IPF.3SG-3SG.M        POSS.3PL-plant.VN    in-some-place  
 ‘since it was the next day that he had planned to plant them somewhere’  
 (Peniarth 32: 247, 4–5)

#### 4.6. Vowel assimilations

There are several vowel assimilation phenomena that should not be confused with the non-linear marker vowel affection (Section 3.1). The frequency with which these assimilations are expressed in the orthography varies greatly, indicating that some were probably optional while others like /i ... u/ ~ [u ... u] were quite strict. Possible examples in the verbal domain include the regressive assimilations of /ə/ (41a–b), /i/ (41c–d) and /i/ (39 e), as well as the progressive assimilation of /ə/ (39f). There are examples for progressive assimilations of /i/ and /i/ in nouns (Schumacher 2011: 109–110), but I was not able to find clear examples in finite verbal forms.

- (39) a. *dyro* [dəro] ‘give.IMP.2SG’ (Peniarth 4: 86r, c. 478, 3)  
       ~ *doro* [doro] ‘id.’ (Peniarth 4: 88v, c. 488, 26)  
 b. *gyfrifer* [gəvriver] ‘sum (up).SUBJ.NPST.IMPERS’ (Peniarth 38: 14r, 2)  
       ~ *gifriuer* [givriver] ‘id.’ (CC B V.ii: 222r, 18)  
 c. *doethum* [doiθum] ‘come.NPST.1SG’ (Llanstephan 27: 64r, 27)  
       ~ *douthum* [douθum] ‘id.’ (LIDC: 9.85)

- d. *ny-bu* [ni bʊ] ‘NEG-be.PST.3SG’ (Peniarth 7: 51r, c. 186, 34)  
 ~ *nv-bu* [nʌ bʊ] ‘id.’ (Peniarth 8i: 84, 25)
- e. *y-dihunassant* [ədihunasant] ‘AFF-awake.PST.3PL’ (Peniarth 19: 73v, c. 299, 19)  
 ~ *a-duhunassant* [aɔ̯hunasant] ‘id.’ (Peniarth 20: 177, 25)
- f. *a-adolygassant* [aadoləgəsant] ‘AFF-request.PST.3PL’ (Peniarth 19: 110v, c. 488, 17)  
 ~ *a-adologyssant* [aadologəsant] ‘id.’ (Jesus 111: 4v, c. 16, 10)

The assimilations occur inside the verbal core and, as example (39d) indicates, probably into the left periphery. I was, however, not able to find any examples to affect the augment *-y-* or any conjunctions. The right periphery seems to be unaffected by vowel assimilation.

#### 4.7. Unstable /a/

Before nasals, /a/ and /ə/ are interchangeable outside of the final syllable of the nucleus (Evans 1964: § 3; Schumacher 2011: 111). Thus, we get pairs like *a-amdiffynn-a6d* [a.əmðifənoð] ‘AFF-defend-PST.3SG’ (Peniarth 19: 104v, c. 463, 17) ~ *a-ymdiffynn-a6d* [a.əmðifənoð] ‘id.’ (Peniarth 19: 8r, c. 30, 24), or *a-ymrysson-ynt* [a.əmɾəsonint] ‘AFF-strive-IPF.3PL’ (Llanstephan 27: 109v, 1) ~ *a-amrysson-ynt* [a.əmɾəsonint] ‘id.’ (Peniarth 5: 31r, 15). This change also affects the reflexive and reciprocal marker *ym-* as can be seen in (40).

- (40) *Odyna yd-am-lad-ant y-dreig-eu*  
 then AFF-REC-fight-NPST.3PL ART-dragon-PL  
 ‘Then the dragons fought.’ (Cardiff 1.363: 117r, 6–7)

There are hardly any elements in the left periphery that could be subject to this process. There are two syllabic forms of the pronominal *p-* and *t-* markers with a nasal (i.e. 1SG *-ym-* ~ *-am-*, 1PL *-yn-* ~ *-an-*), but as all of the syllabic forms show the alternation of [a] and [ə], they cannot be taken as evidence (Evans 1964: § 59; Morris-Jones 1913: 279). All we can thus say is that this process operates inside the verbal core.

#### 4.8. Ultimate monophthongisation and vowel changes

The diphthongs /au, ai, oi, ui, ei/ and /eʊ/ in final unstressed syllables are monophthongised to /o, e, o, u, e/ and /e/, respectively. Again, the results of this process are only rarely written (Evans 1964: § 6; Schumacher 2011: 108, 110–1; Willis 2009: 124; Russell 1992: 387–8). The most common instance of this change in the verb is the third singular past ending *-awd*, realised as <od> [oð] in (41). The presence of bound pronouns has no effect on the application of this process.<sup>27</sup>

- (41) *a-llidia6c vu la6nslot y-nos honno 6rth-y-vor6yn a-e-keryd-od-ef*  
 and-angry be.PST.3SG L. ART-night DEM at-ART-maiden AFF-3.P-rebuke-PST.3SG-3SG.M  
 ‘And that night, Lancelot was angry at the maiden who had rebuked him’  
 (Peniarth 11: 165r, 15–16)

<sup>26</sup> The variation of the vowel in the first syllable of the plural endings of the past tense <y> ~ <a> is a common phenomenon (Schumacher 2011: 163–4).

<sup>27</sup> Schumacher (2011: 110) includes the alternation between the third singular past endings *-wys* and *-ws* as an example of this phonological process (e.g. *y-g6isg-6ys* [əgwiskuis] ‘AFF-wear-PST.3SG’ (Peniarth 5: 69r, c. 44, 23) ~ *y-gwisg-ws* [əgwiskuis] ‘id.’ (CC B V.i: 52v, 21)), but, as Rodway (2013: 128–44) has shown, things are more complicated here because both forms might have separate etymologies and their distribution in the corpora of Old and Middle Welsh does not allow for a conclusion which of the two forms is actually older.



#### 4.9. Provection and consonant assimilation processes

The voiced plosives /b, d, g/ and the voiced fricatives /v, ð/ are devoiced if they come into close conjunction to a following /h/, yielding [p, t, k, f, θ]. Intervening /l, n, r, j, w/ do not block this assimilation process. This phenomenon occurs most often with equatives and superlatives, denominal verbs in *-ha-* or *-ho-* (Section 3.2), and in conjunction with verbal endings containing an /h/, that is the subjunctive, the imperative and the so-called third singular absolute endings (Schumacher 2011: 113–4; Willis 2009: 132).

- (42) a. *gwyb-* + *-ho-* → *gwyppo*  
 gwīb ho gwəpo  
 know SUBJ.NPST.3SG know.SUBJ.PRS.3SG
- b. *kwbl-* + *-ha-* → *kwppla-*  
 kubl ha kupla  
 complete VBLZ to\_complete

Whether or not provection operates across the boundary into the left periphery is difficult to determine because of two reasons: first, the contexts in which it could occur are rather limited, as the only two elements that could trigger the process are the bound third singular feminine pronouns *hi* and *hitheu* that would need to occur after the respective consonants. Second, the consonant signs <p, t, c, f> can signify both /p, t, k, f/ and /b, d, g, v/ (Schumacher 2011: 101–4), which means that provection could only be recognised if scribes used double consonant signs and in the case of /ð/ (written as <d>, turning to [θ] <th>), none of which occurs in the corpora.

The number of candidates in the left periphery that might undergo provection is rather limited (the affirmative marker *y(d)-*, the negative markers *ny(t)-* and *na(t)-* and the conjunctions *kyt* ‘although’ and *o(t)* ‘if’) and there are no examples that could be interpreted as the trace of provection in the corpora.

On the basis of the above evidence, the only safe assumption that can be made about the domain in which this type of provection applies is that it operates inside the nuclear group. However, there are examples where it operates between adjectives and nouns inside nominal phrases. There is one example that might indicate that provection has an even wider domain of application: if <ff> in *araff hirdyd* (LPBT2: 3, 35) actually stands for [f] and we opt to analyse it as a copula phrase with the meaning ‘slow/pleasant [is] the long day’ instead of a single nominal phrase ‘long still day’, provection might as well operate across phrase boundaries.

Another type that may be subsumed under the heading ‘provection’ is the aspiration of consonants that is triggered by a preceding fricative (Evans 1964: § 17; Schumacher 2011: 116, 118)—in the case of (43a), the provection is not indicated orthographically while, only a few lines later in the same construction (43b), it is. It operates across the boundary between left periphery and nuclear group, and inside the nuclear group. Whether or not it also operates across the boundary between nuclear group and the right periphery cannot be determined as there are no suitable contexts.

- (43) a. *ka-nÿ-s-gollÿng-ÿ* *ÿr-hÿnnÿ*  
 since-NEG-3.P-set\_free-NPST.2SG because\_of-DEM.SG.N  
 ‘since you will not set them free because of that’ (Peniarth 4: 20r, c. 78, 29–30)
- b. *Ca-nÿ-s-collÿgh-ÿ* *ÿr-hÿnnÿ*  
 since-NEG-3.P-set\_free-NPST.2SG because\_of-DEM.SG.N  
 ‘since you will not set them free because of that’

There are a couple of consonant assimilation phenomena that affect combinations of plosives and fricatives which tend to yield single (mostly aspirated) plosives or unvoiced fricatives. The contexts of these seem to be similar to those of the two projections described above (Schumacher 2011: 113–8).

#### 4.10. Loss of consonants

The voiced fricative /v/ is usually lost in final syllables as exemplified by the first singular non-past ending in (44): instead of the usual ending *-af*, we find <a>. Only in a few cases (the verbal noun marker *-i* < OW *-im* /-iv/ and some toponyms), this process is regularly reflected by the orthography (Evans 1964: § 9; Schumacher 2011: 124–5; Willis 2009: 132). Whether the presence of a bound pronoun prevents the application of this process cannot be determined due to the scarcity of examples.

- (44) a. *Mi a-dilyn-a vy-arglgyd yn-llaben*  
 1SG AFF-follow-NPST.1SG POSS.1SG-lord PRED-happy  
 ‘I will follow my lord gladly’ (Shrewsbury 11: 70v, 9–10)
- b. *mi a-atteb-a*  
 1SG AFF-answer-NPST.1SG  
 ‘I will answer’ (Shrewsbury 11: 71, 16)

After the stressed syllable, /h/ is lost between vowels and between /r, l/ and a vowel. See for example the alternation between the first singular non-past *arho-af* [ar'ho.a(v)] ‘I wait’ (Peniarth 11: 11v, 26) and the second singular imperative *aro* [‘aro] ‘Wait!’. In a similar process, the aspiration of nasals is lost after the main stress (Schumacher 2011: 126–7; Willis 2009: 124).

In final syllables, clusters of nasal plus homorganic plosive are often simplified by dropping the plosive: *pan-doeth-ant* ~ *pan-doeth-an* (Jesus 111: 172v, c. 700, 43) ‘when they came’ (Schumacher 2011: 127). Again, the evidence is not sufficient to ascertain whether the presence of bound pronouns has any effects on this process.

#### 4.11. Liaison

Several preverbal markers such as the negative *ny(t)-*, *na(t)-*, the affirmative *neu(t)-*, *y(d)-*, *hu(d)-*, as well as the coordinating conjunction *a(c)-*, the subordinating conjunction *o(t)-* ‘if, when’, and the prepositions *a(c)-* ‘with’, *o(c)-* ‘of’ and *tra(c)-* ‘over, across’ have a special form ending in a consonant that is only used if the following element begins with a vowel (45).<sup>28</sup> As the trigger for liaison and the liaison consonant is clearly lexically conditioned, this process cannot be regarded as general.

- (45) a. *nyt-ym-didan-6n-inheu ac-efo*  
 NEG-REC-entertain-IPF.1SG-1SG with-3SG.M  
 ‘I would not converse with him’ (Peniarth 6iv: 17, 24)
- b. *Megys ot-ym-dengys dyn dr6y-ffenestyr.*  
 Like when-REFL-show.NPST.3SG man through-window  
 ‘Like when a man shows himself/appears in a window’ (Jesus 119: 34v, 20)

<sup>28</sup> The conjunction and preposition *a(c)-* are special in that they also show liaison in front of nasals: *ac-ny-cherd-assant m6y no-d6yvilltir* and-NEG-walk-PST.3PL more than-2 mile ‘And they did not walk more than two miles’ (Peniarth 5: 105v, c. 186, 5–6)

The important thing to note here is that this liaison consonant is never inserted before other members of the left periphery: all of these markers require consonant-initial allomorphs of the infixed pronouns (46a),<sup>29</sup> the resultative and potential marker *ry-*, *yr-* occurs only as the allomorph *ry-* or undergoes the process of pretonal vowel elision (46b) (see Section 4.4). If the complementiser *a(r)-* is preceded by a preposition like *o-* in (46b), it is reduced to *-r*. The reflexive and reciprocal marker *ym-*, belonging to the verbal core, triggers liaison (45c).

- (46) a. *ac-o-ny-s-angkreiffy-a6d*  
and-if-NEG-3.P-chide-PST.3SG  
'and if he has not chided them' (Peniarth 190: 255, 6–7)
- b. *bawp o-r-a-e-gwel-es*  
everyone of-COMP-AFF-3.P-see-PST.3SG  
'everyone who saw it' (Peniarth 14: 181, 19)
- c. *neu-r-goll-es y mab*  
AFF-RES-be\_lost-PST.3SG ART child  
'the child is lost' (Peniarth 4: 7v, c. 28, 27)

The one exception to this rule is the particle *hu-* which co-occurs with the syllabic forms of the infixed pronouns in early poetry (47).

- (47) *Bart llewelyn hael hud-ym-gelw-ir*  
bard Ll. Generous thus-1SG-call-NPST.IMPERS  
'the bard of Llewelyn the generous I am thus called' (LIH: 125, 11)

Aspiration, a process usually lumped together with the initial mutations (see below), causes an [h] to appear between lexically defined markers and following vowel initial items. It probably originated from nominal constructions with possessive pronouns and spreads throughout the Middle Welsh period (Sims-Williams 2010; Evans 1964: § 26; Morgan 1952: 153–6; Evans 1964: § 26; Schumacher 2011: 113). Within the verb, it mainly occurs between the left periphery and the verbal core (48).

- (48) *Mi a-e<sup>h</sup>heirch*  
1SG AFF-3.P-request.NPST.3SG  
'It is I who asks' (Peniarth 4: 86v, c. 479, 24)

#### 4.12. Initial mutations

Middle Welsh has three sets of initial mutations (lenition/soft mutation, nasalisation, and spirantisation) that affect the initial consonant of the following item. They are triggered by a preceding item pertaining to the same phrase, by the process of compounding, or by syntactical processes. Which phonemes are affected in which way by which type of initial mutation can be seen in Table 4. Lenition is the most grammaticalised of the three sets (Evans 1964: §§ 18–26; Schumacher 2011: 112–3; Willis 2009: 127–30; Morgan 1952). Just like liaison, the occurrence of initial mutations is conditioned lexically in most cases and can thus not be considered to be a general process.

Lenition primarily occurs in three places in the verb: first, and most importantly, between the left periphery and the nuclear group if the last element of the left periphery triggers this type of mutation. Compare, for example, the non-leniting affirmative particle *y(d)-* in (49a),

<sup>29</sup> The third person marker *-y-*, *-s-* does not co-occur with the affirmative particle *y(d)-* at all. Evans (1964: § 58) calls this a 'contraction' of the particle *y* and the pronominal marker *y* to *y*. The same is true for the conjunction *ymy* 'until'.

TABLE 4. Effects of initial mutations

Radical	Lenition	Nasalisation	Spirantisation
p	b	m <sup>h</sup>	f
t	d	n <sup>h</sup>	θ
k	gg	ŋ <sup>h</sup>	χ
b	v	m	
d	◊	n	
g	∅	ŋ	
m	v		
h	l		
r <sup>h</sup>	r		

the leniting affirmative particle *a-* in (49b), and the case of (49c), where the leniting effect of *a-* is blocked by the intervening pronominal P- and T-marker *-e-*.

Second, the reflexive and reciprocal marker *ym-* as well as several preverbs occupying the same slot (e.g. *di*<sup>L</sup>, *go*<sup>L</sup>) also trigger lenition of the following consonant (49d).

- (49) a. *y-gónaeth* ‘AFF-DO.PST.3SG’ (Llanstephan 27: 83v, 2)  
 b. *a<sup>L</sup>-ónaeth* ‘AFF-DO.PST.3SG’ (Peniarth 5: 60r, c. 10, 31)  
 c. *a-e-gónaeth* ‘AFF-3.P-DO.PST.3SG’ (Peniarth 190: 241, 13)  
 d. *y-porthei* ‘AFF-feed.IPF.3SG’ (Llanstephan 27: 84v, 24)  
 ~ *yd-ym<sup>L</sup>-borthai* ‘AFF-REFL-feed.IPF.3SG’ (Jesus 111: 161v, c. 655, 13)

Third, and last, several verbal endings cause the lenition of directly following nominals, that is *-ei*, the third person past of the verb *bod* ‘to be’ *bu* and its compounds, and some other forms of *bod* (Borsley et al. 2007: 313–5).

The spirant mutation (50) also occurs at the boundary between the left periphery and the nuclear group, but the markers triggering them are fewer than those triggering lenition.

- (50) *ny<sup>S</sup>-chyvodei* ‘NEG-rise.IPF.3SG’ (Peniarth 7: 61r, c. 226, 8)

The nasal mutation is only triggered by a rather small set of formants (most prominently the preposition *yn*<sup>N</sup> ‘in’ and the possessive pronoun *vy*<sup>N</sup> ‘my’), and is thus not of interest to this investigation.

#### 4.13. Phonological domains

Having discussed all the above phonological processes, we can plot the domains of application for each of those processes over the maximal verbal form established in the last section. In Figure 1, the processes above the dividing line are those that can be considered general, while those below the dividing line are lexically conditioned or, in the case of vowel mutation, whose status as a productive phonological process is doubtful.

In accordance with the findings of Bickel et al. (2009) that stress domains tend to be larger than other phonological cohesion domains, the largest domain is a stress domain. Most of the processes are domain spanning or domain internal, while those that indicate domain boundaries (i.e. final monophthongisation and final consonant loss) tend to define the right edge of domains. Collapsing the isomorphic domains of the individual processes, we get five or six domains that are nested within each other, the domain labelled A in Figure 2 spans the whole verbal complex, domain D only comprises the bound pronouns. The existence of domain F hinges on the interpretation of stress assignment: if preverbs and the reflexive and reciprocal marker *ym-* can bear primary stress, then this domain would merge with domain E.

If we allow non-general processes as evidence for phonological cohesion domains, the boundary between the left periphery and the nuclear group would be strengthened, we would

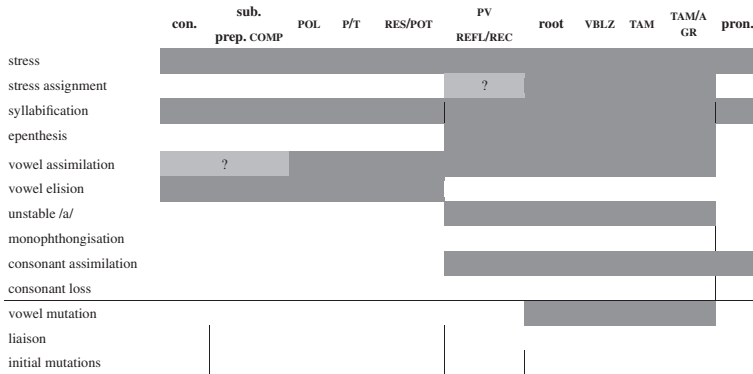


FIGURE 1. Phonological cohesion domains in the Middle Welsh verbal complex. Dark grey bars indicate the secure extent of domains, light grey bars indicate the suspected extent of domains, and vertical bars indicate domain boundaries.

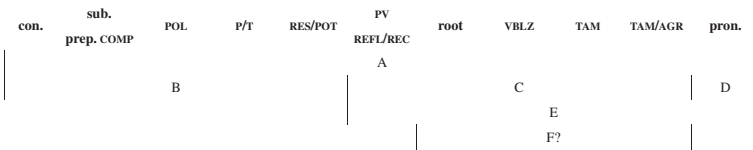


FIGURE 2. Summary of phonological cohesion domains in Middle Welsh.

gain a new boundary within the left periphery between the preposition/coordinating conjunction slot and the rest, and the assumption of domain F would be additionally justified by the boundary between the preverbal slot and the verbal root.

### 5. CONCLUSIONS

In the preceding two sections I have investigated the elements that make up the verbal complex in Middle Welsh and their morphological interdependencies as well as the phonological and prosodic processes that operate within the boundaries of the verbal complex or subcomponents.

All in all, I found evidence of 13 types of morphological elements that are either selecting parts of the verb as their host, inflecting with verbal morphology or form part of the verb's morphological or phonological cohesion domains. The dependencies between the morphological elements are nested and hierarchical: the structure selected by certain morphological elements is slowly built from the root outwards, a verbal root and a preverb forming a stem, that is then selected by TAM and agreement morphology to form the verbal core, which is in turn selected by the polarity markers.

There are three morphological (linear ordering, insertion potential and a cross-slot dependency) and five or six phonological cohesion domains. All of the domains are nested within each other, meaning that except for the largest domain, each domain is contained within a larger domain, not crossing any of its boundaries. The morphological domains are not entirely isomorphic with phonological domains: while the morphological linear ordering domain has the same extent as the largest phonological domain, the other two morphological domains cannot be matched to any phonological domain.

At the end of this detailed study of the Middle Welsh verbal complex, we must return to the question asked in the title: is this verb a word? As can be seen from all the above, there is not one clear candidate we could easily assign the label phonological or morphological word. It would be possible to arbitrarily pick one of the morphological cohesion domains to bear the respective labels—looking at morphological cohesion, this would leave us with two domains that are larger than the individual morphological item and smaller than phrases; in the case of phonological cohesion domains, we would still have four or five domains larger than syllables and feet and smaller than phonological phrases. Apparently, the concept ‘word’ is not too useful when it comes to Middle Welsh verbal structures, which might also be the reason why the Middle Welsh grammarians did not have much to say about them.

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