

On Secondary Stress in Old Irish¹

1. Introduction

Old Irish² is described as having a heavy primary stress on the first syllable of a word, as is the pattern found in Modern Irish³. There are numerous exceptions to this in Old Irish, mainly in the form of words created by the fusion of a preposition and another word (Thurneysen 1961:30) and in verbs. In light of these exceptions, Old Irish stress is described in *A Grammar of Old Irish* (Thurneysen 1961) as follows:

"Words susceptible of full stress take this on the first syllable.... The stress is expiratory and very intense, as may be seen from the reduction of unstressed syllables. It is this reduction that enables us to infer the position of the stress in Old Irish; further evidence is supplied by the pronunciation of the modern dialects..." (Thurneysen 1961:27)

The position of the main stress in Old Irish, as determined by the above methods, has not been contested, but the details of stress assignment in the verbal system has been debated. The small number of compounds beginning with a preposition described above can easily be set aside as lexicalized exceptions to the stress pattern, but the verbal system is much too productive and extensive to overlook. It is also problematic as explained by the traditional description of stress. According to this, certain preverbal particles that appear before the main stress of the verb are described as unstressed, due to the presence of a reduced vowel, but these particles are able to act as a host to enclitics subject to Wackernagel's Law, which

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2 Old Irish was the language of Ireland in the 8th and 9th centuries CE. It is the precursor to Middle and Modern Irish, Scottish Gaelic, and Manx. These languages all have VSO as default word order.

3 For more on Modern Irish stress, see Ó Siadhail (1989:26). On Old Irish stress, see Thurneysen (1961:27).

suggests they are stressed. It is because of these problems that previous discussions of Old Irish stress have centered here, and I focus on this area as well in the present paper.

In his chapter on stress, Thurneysen (1961) describes stress assignment in verbs as:

"Where one or more prepositions are compounded with a finite verb the stress normally falls on the second element, i.e. in simple compounds on the verb itself (on the first syllable), in multiple compounds on the second preposition. The first preposition, in fact, does not form a close compound with the second element, and may be separated from it by a personal pronoun." (Thurneysen 1961:27)

From this description, the basic rule is that compound verbs are stressed on the second syllable rather than the first. However, the personal pronouns mentioned above are among the factors that can cause the stress to fall instead on the third or fourth syllable of the verbal compound.

1.1 Old Irish Syntax

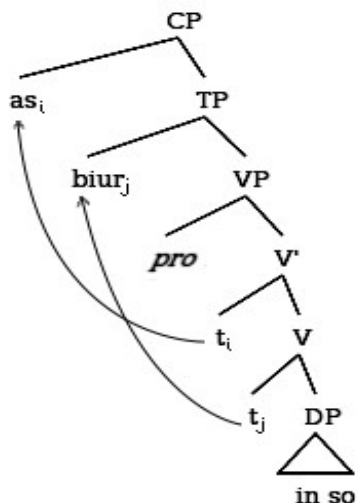
The syntax of the Old Irish system of compound verbs is easier to explain than the phonology, and helps illustrate the location of the primary stress. The structure of the Old Irish compound verb has been examined by McCloskey (1978), Eska (1996), Carnie et al. (2000), Adger (2000 and 2006) Newton (2006), and Kern (2009). Carnie et al. (2000) treats the problem as a "filled C°" requirement, which means that the first preposition would appear in C, while any additional prepositions and the verb itself would appear in T. This is why the two do "not form a close compound," as Thurneysen noticed (1961:27).

The following example, adapted from Carnie et al. (2000:49) illustrates this⁴:

4 In (1a) and in other examples in this paper, I use a colon to separate the parts of the verb which appear in C from those which appear in T. This follows the convention of previous philological and linguistic research in which these two parts of the verb are separated either by a colon or a single dot, and morphemes within these two parts are separated by hyphen. I use bold italic font to denote the main stress.

(1)a. As :*biur* in so.
 out-of :carry.1SG this
 'I say this.'

b.



In (1b), the first (and in this case, the only) preposition moves to C, while the verb moves to T. Any additional prepositions (in cases where the verb is compounded with more than one) appear in T before the verb. The main stress of the compound verb falls on the first syllable in T, be it a preposition or verb, which causes them to merge phonologically. An enclitic object pronoun would follow the first preposition and merge with it in C.

1.2 The Problem

In their paper, Carnie et al. cite the placement of these enclitics (Thurneysen's personal pronouns) as evidence for their analysis, but mention that "the somewhat convoluted facts of enclitic placement do not lend themselves obviously to a phonological analysis" (2000:51). Watkins (1963) made the same observation and posited "at least a secondary stress" (1963:39) for the first preposition. This proposal was criticized by Sims-Williams (1984) on the basis of stress contours and McCone (1981) based on his observations of consonant voicing in contact

with unstressed vowels.

I propose that Watkins' secondary stress be reconsidered and that the compound verb in Old Irish be treated as two prosodic words. I provide evidence for secondary stress through the placement of object enclitics and through counter-examples to Sims-Williams' criticism. Using Optimality Theory, I show that the descriptions of stress assignment found in the traditional Old Irish grammars are insufficient for predicting the location of main stress in compound verbs. I use examples of tmesis and enclitic placement as evidence for the division of the verbal compound into two prosodic words, and I show that this secondary stress must have applied to prepositions appearing before nouns as well as to those appearing before verbs.

2 The Old Irish verbal system

2.1 Absolute and Conjunct

Old Irish is perhaps unique among Indo-European languages for its double system of verbal inflection.⁵ According to this system, when a verb appears in (absolute) initial position, it takes its absolute form, as in (2):

- (2) *Beirid in fer in claideb.*
carry.3SG the man the sword
'The man carries the sword.'

However, the verb can be preceded by a conjunct particle, such as the negative particle *ní*, the interrogative *in*, wh-words such as *co* 'how' and *cecha* 'whatsoever', and various complementizers, all of which are listed in Thurneysen (1963:28). In this position, the verb appears in its conjunct form. This form is slightly shorter than the absolute, owing historically

⁵ There is evidence of a similar, but less productive, system, discussed by Sims-Williams (1984:146) in the 3SG of Old Breton and Old Welsh, which was also preserved in some Middle Welsh proverbs.

to the early loss of an †-i(-)⁶ in a final syllable, which caused the preceding syllable to be subject to apocope. (Sims-Williams 1984:142)

- (3) Ní :*beir*/**beirid* in fer in *claideb*⁷
 NEG :carry.3SG the man the sword
 'The man does not carry the sword.'

This system of verbal alternations between absolute and conjunct inflection occurred in every person, tense, and verb. The following examples demonstrate some of the variations, all of which can be regularly derived from a hypothetical form, which would have retained the final †-i(-) in the absolute forms on the left and lost it in the conjunct verbs on the right. This final †-i(-) is also responsible for the palatalized final consonants that often appear in the absolute forms, though this is by no means a hard and fast rule.

<u>Absolute</u>	<u>Conjunct</u>	
(4) <i>aigithe</i> 'a'ɣʲiθʲə drive.PRES.2PL	ní : <i>aigid</i> nʲi: 'a'ɣʲiðʲ NEG:drive.PRES.2PL	(Green 1995:8)
(5) <i>silsea</i> 'sʲilʲsʲeə fell.FUT.1SG	ní : <i>silius</i> nʲi: 'sʲilʲus NEG:fell.FUT.1SG	(1995:94)
(6) <i>essimir</i> 'esʲ:imʲirʲ eat.PRES.SUBJ.1PL	ní : <i>essamar</i> nʲi: 'es:amar NEG:eat.PRES.SUBJ.1PL	(1995:70)
(7) <i>guidit</i> 'gu'ðʲidʲ pray.PRES.3PL	ní : <i>guidet</i> nʲi: 'gu'ðʲed NEG:pray.3PL	(1995:64)

For the remainder of this paper, I limit examples when possible to 3SG present indicative for simplicity and clarity, though the generalizations I make about stress apply to all

⁶ To avoid confusion with a starred ungrammatical form, I use the dagger (†) to indicate a hypothetical, historical form.

⁷ Accents in Old Irish, as on *Ní*, indicate a long vowel, just as in Modern Irish.

forms.

2.2 Compound verbs

Many Indo-European languages created new verbs by combining them with prepositions to alter their meaning. This is common in Latin (8), German (9), and English (10):

(8) scribere write 'To write'	con-scribere with-write 'To enlist'	(Latin)
(9) sehen see 'To see'	aus-sehen out-see 'To appear'	(German)
(10) give	for-give	(English)

This method of creating verbs was extremely productive in Old Irish, and such verbs are referred to in the grammars as compound verbs, as opposed to the simple verbs in 2.1. Because the verb is not in initial position when it follows a preposition, it appears in its conjunct form. The starred form in the examples below is the absolute form of the simple verb, which is not grammatical in this position.

(11) do :*beir*/**beirid*
to :carry.3SG
'He or she gives.'

(12) as :*beir*/**beirid*
out :carry.3SG
'He or she says.'

(13) fo :*gaib*/**gaibid*
under :take.3SG
'He or she finds.'

In Old Irish, multiple prepositions could be stacked up before the simple verb to create

even more ranges of meaning. There appears to be a hierarchy of prepositions that determined the order in which they appear (McCone 1987:94). Exceptions to this hierarchy do appear in calques on Latin verbs, as in (14), but this method of creating new verbs was likely not otherwise productive in the Old Irish period. This is no doubt due to the drastic phonological differences between the surface representation and underlying representation, as seen in the following examples:

(14) imm :**t**a**b**a**i**r (McCone 1987:94)
imm(b) :**d**o-beir⁸
around :to-carry.3SG
'He or she surrounds.'

(15) fo :**á**caib (1987:93)
fo :**a**d -gaib
under :towards -take.3SG
'He or she leaves (something to someone).'

(16) ind :**á**rben (1987:93)
in(de):**a**d -ro -uss -ben
into :towards -excessively -off -strike.3SG
'He or she expels.'

2.3 Prototonic and Deuterotonic

In the above examples, the primary stress falls on the first syllable of the verb in its absolute form, but when the verb is in conjunct form, the primary stress follows one unstressed syllable. That is, the stress falls on the verb itself after a conjunct particle or a single preposition, but it falls on the second preposition when more than one of them appear before the verb. Due to this distinction and to the drastic phonological changes that accompany a shift in primary stress, Old Irish compound verbs are further divided into *prototonic* and

⁸ This is a calque on Latin circum-dat (around-give) 'surround'. (McCone 1987:94)

deuterotonic forms. The examples (11) - (16) above are all *deuterotonic*, with the primary stress falling on the second syllable, as the name suggests. The *prototonic* forms are used when compound verbs follow a conjunct particle, as for negation:

(17) ní :*tabair*
NEG :*do-beir*.3SG
'He or she does not give.'

(18) ní :*epir*
NEG :*as-beir*.3SG
'He or she does not say.'

(19) ní :*fagaib*
NEG :*fo-gaib*.3SG
'He or she does not find.'

In the *prototonic* form, the stress falls on the first preposition, but an overall *deuterotonic* contour is preserved, as if the conjunct particle were just another preposition being stacked before the verb. In terms of stress assignment, conjunct particles 'count' just the same as prepositions, though conjunct particles must appear in first position:

(20) *do: ní-beir

For this reason, and to avoid confusion with the prepositions which appear before nouns, I refer to both conjunct particles and verbal prepositions as *preverbs*, following McCone (1987) for the remainder of this paper.

2.4 Object Enclitics

Object enclitics are object pronouns which attach to the first preverb, before the main stress of the verb. There are three classes of object enclitics⁹ (for details, see Strachan 1998:26,

⁹ There are also enclitic pronouns which occur when there is no preverb, after a simple verb in its absolute form, which have yet another form. On these, see Thurneysen (1961:270). There was also a 'dummy' preverb *no-* which could optionally be used to hold object enclitics before a simple verb.

Thurneysen 1961:255, or McCone 1987:11). Class A pronouns follow prepositions which originally ended in vowels. They take the form (generally) of a single consonant and do not affect the pretonic syllable count. Class B pronouns are used after prepositions which ended in a consonant. They are syllabic, such as first person singular *-dom*, or second person singular *-tot*. Class C are used in relative clauses, and also add an extra syllable before the main stress. The following examples, (21) and (22), are both Class B infix pronouns. Both are 1SG, despite the orthographic variance.

(21) for -dom :ch^omaither (Thurneysen 1961:261)
over -1SG :preserved.PASS
'I am preserved.'

(22) fri -tamm :orcat (1961:261)
against -1SG :offend.3PL
'They offend me.'

These could attach either to a preposition, as in (21) - (23), or to a conjunct particle, as in (24) and (25), which is another piece of evidence for treating the two preverbs as equal.

The object enclitic in these examples is the Class A 1SG enclitic *-m*.

(23) do -m :beir
to -1SG :carry.3SG
'He or she gives me.'

(24) ní -m :beir
NEG -1SG :carry.3SG
'He or she does not carry me.'

(25) ní -m :tabair
NEG -1SG :give.3SG
'He or she does not give me.'

2.5 Summary

We may summarize the structure of the Old Irish compound verb using Watkins' (1963)

notation in (26).

(26) #P₁ (E) '(P₂)(P₃...)V (...)#

Here, P stands for a preverb and may include either prepositions or conjunct particles (in P₁ only). E represents an optional enclitic object pronoun, and V represents the verb in its conjunct form. A subject or non-enclitic object would follow the verb, as would any other phrases. The # represent the beginning and end of the clause.

3 The Myth of the Deuterotonic Contour

One of the major arguments against Watkins' proposal of secondary stress for preverbs comes from Sims-Williams (1984:156-8) who argues that it is unnecessary. Although he agrees that verbs with enclitic object pronouns contain more than one semantic word, he considers the fact that Old Irish scribes often wrote compound verbs without spaces or hyphens (e.g. *dombeir* 'he or she gives me') to be evidence that the scribes regarded them as single phonological words. Sims-Williams states that it is not necessary that these 'words' should receive stress on the first syllable, comparing them to compounds of preposition+noun, as in (27).

(27) do -m chatt (Sims-Williams 1984:156)
 To -1SG cat
 'To my cat.'

He considers the above example to be similarly composed of two semantic words, with an undisputed deuterotonic stress. The only difference between *dombeir* and *dom chatt*, he says, is the scribal tendency to insert a space in the latter. Because of the prevalence of this deuterotonic contour both in combinations of preverb+verb and preposition+noun, he thinks

it should be considered "regular from the point of view of the sound pattern of Old Irish"

(1984:157). He also cites the following examples of the same deuterotonic contour:

(28) mo chatt (1984:157)
'My cat.'

(29) Is catt¹⁰. (1984:157)
COP cat
'It is a cat.'

(30) Ní catt. (1984:157)
NEG cat
'It is not a cat.'

This combination of one unstressed syllable before the main stress is very common, as in the following sentence:

(31) Do:beir | in fer | in claidéb | do-n macc.
gives the man the sword to-the boy
'The man gives the sword to the boy.'

However, there are also some exceptions, which I argue make the 'deuterotonic contour' explanation insufficient.

3.1 Compound Conjuncts

In addition to the conjunct particles mentioned in section 2.1, there are also compound conjuncts, which contain a subordinating conjunction and a negative particle¹¹. These appear together before the main stress of the verb as in (32)-(34).

(32) ma -ní :beir
if -NEG :carry.3SG
'If he or she does not carry.'

10 In the Celtic languages, initial consonants may mutate in certain positions, such as after certain prepositions. Here, the base form /kat/ changes to /xat/ following *mo* and *do*.

11 See Thurneysen 1961:28 for a more complete list.

(33) ce -ní :beir
though -NEG :carry.3SG
'Though he or she does not carry.'

(34) ar -ná :beir
so -NEG :carry.3SG
'In order that he or she does not carry. '

3.2 Syllabic Enclitics

As explained in 2.4, object pronouns attach after the first preverb, thus appearing before the main stress of the verb. They can be syllabic in the case of Class B pronouns, shown in examples (35) and (36) below, as well as in (21) and (22) previously.

(35) For -don :cain (Thurneysen 1961:262)
Over -1PL :sing.3SG
'He or she teaches us.'

(36) Co -ta :ucbat (1961:262)
Until -3PL :raise
'They raise themselves.'

There are also enclitic relative markers. These appear in the form of an *-a* or *-sa* following a preverb and may cause a mutation of a following consonant.

(37) Fu -a :tabarr (Thurneysen 1961:28)
under -REL :brought.PASS
'Under which is brought.'

(38) Di -a :ndílgid (1961:28)
to -REL :forgive.2SG
'To whom you forgive.'

3.3 Summary

By combining these exceptions, it is possible to find as many as three syllables before the main stress of the verb:

(39) Ar -nach -a :ímráda (Thurneysen 1961:256)
that -NEG -3PL :may.think.3SG
'That he may not think them...'

(40) etar -dam :díbitis-se (1961:261)
among -1SG :can.destroy.3PL-EMPH
'...they might destroy me.'

In (39) the compound conjunct contains two syllables, and the object enclitic adds a third, all of which would be described as unstressed by Thurneysen. In (40) also, the combination of a disyllabic preverb plus an object enclitic makes three syllables appearing before the main stress of the verb.

Examples such as these make it difficult to support a description of Old Irish stress in which a single primary stress alternates between prototonic and deuterotonic patterns. Even if one were to argue that enclitics are overlooked in syllable counts for stress assignment, compound conjuncts and disyllabic prepositions remain a problem, and cannot be explained away in this fashion.

4 Optimality Theory Analysis

The facts as described above are problematic for analysis in Optimality Theory (Prince & Smolensky, 1993) as well. Because the shift between prototonic and deuterotonic verbs involves previously unstressed preverbs taking stress in order to preserve the prosodic contour, this should involve a simple system of ranked and interacting constraints, but the situation is complicated by the phenomena described above. I propose the following constraints to govern stress assignment according to the observations that have been made in the grammars.

Proposed constraints:

- *STRESS-P - A preverb cannot bear stress
- 1STRESS-L - Stress goes on the first syllable from the left
- *2LAPSE-L - No more than one unstressed syllable from the left
- STRESS-V - Stress goes on the verbal root
- STRESS-NEAR-V-L - Stress must be as near the root as possible, from the left

In the following tableaux¹², the stressed syllable is preceded by an apostrophe. In the input, preverbs are separated by hyphens, and there is no stress assigned.

(41)	do-beir 'gives'	*2LAPSE-L	STRESS-V	STRESS-NEAR-V-L	*STRESS-P	1STRESS-L
a.	'do-beir		*!		*	
b.	do-beir	*!	*	*		*
c.	☞ do-'beir			*		*

In (41), the completely unstressed candidate (41b) violates *2LAPSE-L by having more than one unstressed syllable at the beginning of the word. Because this candidate has neither a prototonic nor a deuterotonic contour, it is immediately ruled out (setting aside concerns that every word should have stress).

STRESS-V is based on the fact that absolute verbs (e.g. (2) *Beirid...* 'carries') receive initial stress and *STRESS-P dictates that preverbs, because they are homophonous with prepositions, are more similar to function words, and should not receive stress. A similar effect could be achieved by assigning stress to the verbal root in the input and using a correspondence constraint. STRESS-NEAR-V-L expresses the preference for the main stress to fall as close as possible to the left of the verb (if not on the verb itself), and allows multiple violations for each syllable away from this position.

¹² I use grey lines here instead of the standard dotted lines to represent noncrucially ranked constraints.

(42)	ní-do-beir 'does not carry'	*2LAPSE-L	STRESS-V	STRESS-NEAR- V-L	1STRESS-L	*STRESS-P
a.	'ní-do-beir		*	*!		*
b.	☞ ní-do-beir		*		*	*
c.	ní-do-'beir	*!		*	**	

Candidate (42c) shows dominance of *2LAPSE-L over STRESS-V. (42a) and (42b) show that the more optimal candidate will have its main stress as close to the verbal root as possible, while maintaining the contour required by *2LAPSE-L.

(43)	ar-fo-uss-gáir 'proclaims'	*2LAPSE-L	STRESS-V	STRESS-NEAR- V-L	1STRESS-L	*STRESS-P
a.	'ar-fo-uss-gáir		*	**!		*
b.	☞ ar-'fo-uss-gáir		*	*	*	*
c.	ar-fo-'uss-gáir	*!	*		**	*
d.	ar-fo-uss-'gáir	**!		*	***	

In (43a) and (43b) we see again a preference for main stress being near the verbal root, at the expense of violating 1STRESS-L, and not choosing the first-syllable stress pattern that Thurneysen (1961:27) describes as typical. This is also consistent with Sims-Williams' (1984:156-8) statements that initial stress for Old Irish words is not as complete a description as it seems. So, by adding another preverb to the verb to negate it in (44), we see that this ranking of constraints is sufficient for stacking as many preverbs as one likes:

(44)	ní:ar-fo-uss-gáir 'does not proclaim'	*2LAPSE-L	STRESS-V	STRESS-NEAR-V-L	1STRESS-L	*STRESS-P
a.	☞ ní-'ar-fo-uss-gair		*	***	*	*
b.	ní-ar-fo-uss-gair		*	****!		*
c.	ní-ar-'fo-uss-gair	*!	*	**	**	*
d.	ní-ar-fo-'uss-gair	*!*	*		***	*
e.	ní-ar-fo-uss-'gair	*!**		*	****	

The difficulty arises when we attempt to evaluate some of the examples from section 3, where more than one syllable can appear before the main stress. This can be seen in tableau (45) which takes example (35) *For-don:cain* 'He or she teaches us' as input. The object enclitic creates a problem for the current set of constraints which previously have been assigning stress to the second syllable.

(45)	for-don-cain 'teaches us'	*2LAPSE-L	STRESS-V	STRESS-NEAR-V-L	1STRESS-L	*STRESS-P
a.	⊗ for-don-'cain	*!		*	**	
b.	☞ for-'don-cain		*		*	
c.	'for-don-cain		*	*!		*

If we remove the constraint *STRESS-P, which has not played an active role in the ranking of candidates, and replace it with *STRESS-E, which forbids enclitics from taking stress, then (46c) with initial stress emerges as the optimal candidate:

(46)	for-don-cain 'teaches us'	*STRESS-E	*2LAPSE-L	STRESS-V	STRESS-NEAR-V-L	1STRESS-L
a.	⊗ for-don-'cain		*!		*	**
b.	for-'don-cain	*!		*		*
c.	☞ 'for-don-cain			*	*	

Redefining the constraint *STRESS-E to say that enclitics are not even counted as syllables in terms of stress would select the correct candidate in (46) and for other inputs consisting of a single preverb and enclitic pronoun, but this does not solve the problem of the compound conjuncts introduced in section 3.1. Here, the verb from example (39) has a compound conjunct and an enclitic pronoun:

(47)	ar-nach-a-im-ráda 'that he may not think them'	*STRESS-E	*2LAPSE-L	STRESS-V	STRESS-NEAR- V-L	1STRESS-L
a.	'ar-nach-a-im-ráda			*	***!	
b.	☞ ar-'nach-a-im-ráda			*	**	*
c.	ar-nach-'a-im-ráda	*!	*	*	*	**
d.	⊕ ar-nach-a-'im-ráda		*!*	*		***
e.	ar-nach-a-im-'ráda		*!**		*	****

An attractive solution would be to make constraints which bar both enclitics and conjunct particles from being counted at all in terms of stress. In section 2.3 and particularly in example (20), I mentioned that the only difference between conjunct particles and verbal prepositions was that conjuncts must always appear in clause initial position. This means that they never receive main stress, although prepositions may do so following a conjunct particle or another preposition. However, this solution is not very elegant in that it relies heavily on lexical information to determine prosodic contours. It is also not without its problems. In (48), *STRESS-E and *STRESS-C prevent enclitics and conjuncts, respectively, from receiving stress. *STRESS-P pertains only to prepositions.

(48)	ar-nach-a-im-ráda C -C -E-P -V 'that he may not think them'	*STRESS -E	*STRESS- C	*2LAPSE-L	STRESS- V	STRESS- NEAR-V- L	*STRESS -P
a.	'ar-nach-a-im-ráda		*!		*	***	
b.	ar-'nach-a-im-ráda		*!		*	**	
c.	ar-nach-'a-im-ráda	*!		*	*	*	
d.	⊗ ar-nach-a-'im-ráda			*	*!		*
e.	☞ ar-nach-a-im-'ráda			*		*	

Based on the failure of (48) (and remembering that domination of STRESS-NEAR-V-L by STRESS-V was demonstrated in (41)) and on the facts laid out in 2.3 and 2.4 for the equal treatment of conjunct and prepositional preverbal particles, I return to using preverb to refer to both prepositions and conjuncts.

In the following sections, I also take a new approach to addressing this problem. Instead of assuming unstressed preverbs before a stressed verb, I incorporate Watkins' (1963) suggestion of a secondary stress for preverbs. Because this would divide the Old Irish compound verb into two prosodic words, each receiving stress on the first syllable, the problem becomes too regular to be well-suited to Optimality Theory.

5 For Secondary Stress

This division of the compound verb into two prosodic words is further supported by evidence from the placement of enclitics, tmesis, and the phonological changes that occur with the shift in stress.

5.1 Enclitics

Object enclitics, as introduced in section 2.4, are described in the Indo-Europeanist

tradition as subject to Wackernagel's Law¹³, which does explain their placement, but lacks the phonological reasoning behind the law, namely that clitics move to second position (i.e. immediately after the first stress-bearing word) in order to attach themselves there. The fact that enclitics in Old Irish move to this position suggests both that the first preverb bears some amount of stress and also that it should be considered a word. The topic was covered by Watkins (1963:7-12) in detail: he suggests that although enclitics fill the inherited Indo-European second position described by Wackernagel, this positioning was no longer governed by stress in Old Irish.

5.2 Tmesis

In archaic Old Irish, there is a construction called tmesis, in which the first preverb appears in clause initial position along with any enclitics attached to it, while the rest of the verb (along with any additional preverbs which precede it) appears at the end of the clause. Watkins (1963:39) cites this construction as an aberrant stress pattern where a "P[reverb] since it came first in the sentence and was followed by unstressed E[nclitic], may be presumed to have had at least a secondary stress." In these examples, I have underlined the two parts of the verb for clarity.

(49) Ní hairged finn :foichmen (Watkins 1963:32)
NEG silver bright :can.tarnish.3SG
'It cannot tarnish bright silver.'

(50) comarba liag im-a lanna :lig (1963:32)
heir.NOM stone.GEN around-REL lands.ACC :lies
'...the heir of a (grave)stone which lies about lands.'

13 Particles and clitics occupy second position in Indo-European languages. (Wackernagel, 1892)

- (51) *im-a* Elge :*airbhe* (1963:32)
around-REL Ireland :fence.FUT
'...which will fence around Ireland.'

To make use once again of Watkins' (1963) notation, as in (26), the Old Irish sentence of the tmesis type may be written as follows:

- (52) #P₁(E) ... '(P₂)(P₃...)V#

Although the construction is archaic and even somewhat poetic, the fact that the two parts of the verb can be separated in this way is evidence for a division of the compound verb into two parts, with the split occurring right before the primary stress.

This construction has mirrors in Latin and German in the verbs formed by the compound of a preposition+verb, as in (8) and (9) above. There are a few archaic examples of a splitting of this type of verb in Latin, as in (53), and the German separable prefix in (54) is well-known.

- (53) Ob uos sacro (Festus, 190)¹⁴
En- you treat
'I entreat you.' (Classical word order: *ob-sacro uos*)

- (54) Sie sehen gut aus.
You see good out.
'You look well.' (Non-finite word order: *gut aus-sehen*)

5.3 Phonological merging

In addition to the above examples, the vowel elision that occurs in combinations of preverb+enclitic is another reason to treat them as one word, and the remainder of the verb as another. The sometimes dramatic phonological changes that take place in the switch from deuterotonic (*do:beir* [də'beⁱrⁱ]) to prototonic (:*tabair* ['taβaⁱrⁱ]) are completely predictable

¹⁴ As cited in Watkins (1963:38).

and represent the regular sound changes that occurred between Common Celtic and Old Irish. Because the position of stress determines which vowels retain their full quality and which are reduced or deleted, the boundaries of a prosodic word are important in determining the changes that occur. While the simple absolute verb can be clearly defined as containing one semantic word which is also one prosodic word, the deuterotonic verb presents a fuzzier situation. However, the part of the verb which follows the main stress is clearly one prosodic word, and the vowel elision between preverb and enclitic represents a similar amount of phonological unity. Here /oa/ → [a] but /i:a/ → [i:].

(55) Do -a :beir → [da bεⁱrⁱ]
to -3SGm :carry.3SG
'He or she gives him.'

(56) Ní -a :tabair → [nⁱ:taβa^ri^r]
NEG -3SGm :give.3SG
'He or she does not give him.'

Enclitic pronouns can also preserve a final vowel which would otherwise have been subject to syncope, as in the preverbs *imm*(be)- 'around' and *ar*(e)- 'for'.

(57)a. Imm :rádi (Thurneysen 1961:257)
for :think.3SG
'He or she thinks.'

b. Imma -t :rádi¹⁵ (1961:257)
for -2SG :think.3SG
'He or she thinks you.'

While the elision of vowels in (55) and (56) could be a synchronic process, the preservation of the vowel in (57) is clearer evidence that these compounds were treated as a

¹⁵ Old Irish vowels also represent the quality (palatalized or not) of flanking consonants, so <a> here between two non-palatalized consonants for an unstressed †/e/ is not problematic.

word diachronically as well¹⁶.

Similarly, the compound conjuncts show evidence of being treated as one phonological word. *Co-ni* 'that not' could also appear as *conná* or *cona* (Thurneysen 1961:28).

5.4 Why Secondary Stress?

Another criticism of Watkin's idea comes from McCone (1981:42) who discusses the alternations between /t/ and /d/ in contact with stressed and unstressed vowels in both Old and modern Irish. This is noticeable in the preverb *do-* 'to'.

(58) *do:beir :tabair*
də'beɪrʲ tʰaβaɪrʲ
 'He or she gives.'

The vowel itself is also reduced to a schwa (or at least a somewhat centralized /o/) in a preverb, but has its full quality when it falls under the main stress:

Deutero. Proto.

(59) *do:fuissim :tuissim* (Green 1995:42)
dəfuɪsʲ:imʲ tuɪsʲ:imʲ
 'He or she creates.'

(60) *do:gní :dénai* (1995:44)
də gʲnʲi: dʲe:nai
 'He or she does.'

(61) *do:goa :toga* (1995:46)
də goa toga
 'He or she chooses.'

(62) *do:icc :ticc* (1995:47)
də ɪkʲ tɪkʲ
 'He or she comes.'

¹⁶ Epenthetic vowels in Old Irish were inserted between liquids and nasals (Thurneysen 1961:70) but the vowel in (57b) cannot be explained as such.

(63) do:moínethar :toímnethar (1995:48)
 də mo'ɪn'ɛθar to'm'ɪn'ɛθar
 'He or she thinks.'

(64) do:tét :táet (1995:50)
 də t'e:d ta:'d
 'He or she comes.'

These changes indicate the vowel is more prominently stressed in its prototonic form than in the deuterotonic. This rules out primary stress for preverbs, but the fact that they can hold enclitics means they cannot be unstressed. Positing a secondary stress creates a middle ground which allows for flexibility in the behavior of the preverbs, depending on their stress relative to adjacent syllables.

5.5 Summary

By assigning a secondary stress to preverbs, the compound verb would be stressed as follows:

(65) #,P₁ (E) '(P₂)(P₃...)V (...)#

P₁, in this case, can stand for compound conjuncts as well as simple preverbs. Here, we can revisit some earlier examples, with a compound conjunct in (67) and a disyllabic preverb in (68):

(66) ,Ní-m 'ta-bair
 ,P-E 'P-V
 'He or she does not give me.'

(67) ,Ar-nach-a 'im-ráda (Thurneysen 1961:256)
 ,P-P-E 'P-V
 'That he does not think them.'

(68) ,Etar-dam 'dibitis-se (1961:261)
,P-E 'V-EMPH
'They might destroy me.'

In the above examples, the enclitics are attaching after stressed elements, and each phonological word receives stress on the first syllable, making it completely regular in terms of the stress rules of Old Irish.

6 Prepositions

Having posited a secondary stress in preverbal particles and split the complex verb into two prosodic words, the next step is to reexamine the preposition+noun combinations that were used in section 3 as evidence for an unstressed preverb and a deuterotonic stress contour. There are a number of reasons to treat prepositions and preverbs as equal in terms of stress assignment:

(a) Prepositions and preverbal particles are homophonous:

(69) do :*beir*
to :carries
'He or she gives.'

(70) do *chatt*
to cat
'to a cat.'

In (69) and (70), *do* can be combined with a verb or a noun. Whether or not one wishes to consider preverbs to be prepositions, as Thurneysen does (1961:27), the particles are clearly homophonous and semantically similar.

(b) Both can hold pronouns:

(71) Do -m :beir
to -1SG :carry.3SG
'He or she gives me.'

(72) Do -m chatt
to -1SG cat
'To my cat.'

The above examples suggest that preverbs and prepositions are equal in terms of stress to be able to hold the *-m* pronoun. It is possible that the *-m* in (72) is an affix rather than an enclitic, but as I show in (74) below, these enclitics/affixes are also capable of throwing off the deuterotonic stress pattern.

(c) Both can be multi-syllabic when combined with enclitics:

(73) Fri -tamm :orcat (Thurneysen 1961:261)
against -1SG :offend.3PL
'They offend me.'

(74) érsná súthaib (Thesaurus Palaeohibernicus i 5.33¹⁷)
after.the offspring.DAT.PL
'After the offspring.'

In the above examples, there are two unstressed syllables before the main stress of the phrase, which shows the deuterotonic stress contour is not an adequate description for combinations of either preposition+noun or preverb+verb.

Positing a secondary stress on prepositions as well as on preverbs solves the problem of having multiple unstressed syllables before the first stress of a prosodic domain, which preserves the parallel contours in combinations of preverb+verb and preposition+noun that were noticed by Sims-Williams (1984:156).

17 Source: *Dictionary of the Irish Language*, letter I, column 15, line 65.

7 Conclusion

I have provided evidence through compound verbs and prepositions for a reanalysis of the stress pattern of Old Irish as consisting of a three-way distinction between unstressed syllables, primary, and secondary stress, instead of the two-way distinction that is described in the grammars. Based on the placement of enclitics and examples of tmesis, I have suggested the complex verb be treated as two prosodic words, and I have shown through Optimality Theory that to do otherwise creates a phonological system that is difficult to explain. This new stress system offers numerous possibilities for future research. Some of the earliest Old Irish poetry, called *retoiric*, is described as having rhythm that varies greatly, while poems written slightly later, which were also called *retoiric* by the scribes, are "composed in short lines of almost identical rhythm" (Murphy, 1961). A second look at these poems, with a new perspective on the stress patterns of Old Irish, may prove fruitful. It is likely this secondary stress became less prominent throughout the Middle Irish period, and it has certainly been lost in Modern Irish. It may be that the later *retoiric* poems appear to have a more regular rhythm simply because they match more closely the stress patterns of the modern language.

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