Markedness-Based Analysis of Englyn Meter

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Abstract

This research aims to examine the Englyn meter in the poetry of Celtic language (Medieval Welsh) that requires the poetic texts to conform to an abstract prosodic template. This counting meter regulates the phonological constituency on the same metric level of the prosodic hierarchy rather than on the metrical hierarchy in verse (the line). In the main types of Englyn meters, Englyn milwr and Englyn penfyr, phonological units of each line are constrained with a certain number of syllables and rhyme with the final syllable of most lines. This research offers a markedness-based analysis that generates the well-formedness meter of Celtic language Welsh poetry. The Optimality Theoretical analysis derives the constraint on the phonological constituency over a certain metric level of the prosodic hierarchy (the line) with markedness constraints. Further coping constraints that are normally used for reduplication are needed to account for the rhyme of the final syllable in Englyn meter. The analysis offered supports the Development hypothesis, which is fundamental to generative metrics indicating that meter is evidently related to general language phonology. These results could help analyse other counting meters with restricted phonological constituency.

Keywords: optimality theory; generative metrics, meter, syllable

1. Introduction

Any text of a verbal art form, whether poetry or songs or chants, has an abstract prosodic template identified as meter; the meter is imposed on one constituent and cannot be based phonologically on another constituent in the text (Blumenfeld, 2016). This fundamental aspect of structured verse is mainly noticeable from prosodic regularities in poetic texts, namely quantity, rhythm, and phrasing (Hayes, 1988). Several linguistic research studies posit two categories of meter: rhythmic meter that controls the phonological constituency, and phonological strength (prominence), or non-rhythmic (counting), which controls the phonological constituency in the absence rhythm (Fabb, 2016: 449).

The current research, studies Englyn meters that constrain the phonological units of a line in a verse to a certain number of syllables in Celtic language Welsh poetry. Poetic text was chosen for analysis as it clearly has a syllable-counting meter that is found in other languages such as Soqotri Poetry (Aloufi, 2021b). These poetic texts show a counting meter that restricts the quantity of syllables per line. Based on the works of Fabb (1997), the current study aims to provide a new account of the meter in these texts in the light of an Optimality-Theoretic framework (OT) (Prince and Smolensky, 1993) by addressed two questions:

1- How can the syllable-counting meter in Celtic texts be generated using OT?

2- How does the syllable-counting meter in Celtic texts relate to general language phonology?

After a brief initial discussion of counting meter in the Celtic language in section 2, this research provides a general overview of the generative theory and the Development Hypothesis, along with the poetic meter in section 3. Then, it proposes an OT analysis in terms of markedness and relates it to the general phonology of language in section 4. Ultimately, it ends with a brief conclusion in section 5.

2. Englyn Meters

All meter count constituents, as well as most meters, also constrain strength (rhythm) which in turn might be based on stress, syllable weight, or one syllable tone (Fabb, 2015). Some meters constrain the prosodic size of one or more phonological constituents in the texts by counting the number of syllables, or morae, but do not constrain the rhythm of the line (Skilton, 2021). In counting meters, there are two essential constraints: identifying the prosodic phonological constituent they count and the prosodic constituent they constrain; for instance, the Japanese meters count morae, Indo-European meters count syllables and tom yaya count phonological words (Skilton, 2021). In this section, two Celtic texts in which the metricality of these texts relates to the number of prosodic phonological constituents in each line, which are syllables, controlled by a meter are known as Englyn (Fabb, 1997).

The earliest work of Welsh poets in Medieval Welsh revealed the Englyn meter, which is a traditional Welsh short poem form, with a clearly counting meter (Rowland, 1990). It is a set stanza-meter, which found in the early Welsh poetic corpus where Englynion metrical rules are eventually based on counting syllables (Rowland, 1990). The origin of these poems is arguably based on short poems in Latin poetry and hymns; nevertheless, they are regarded as an advancement within the Brittonic poetic tradition (Rowland, 1990). The

earliest englynion are found in the Juvencus Manuscript, which is one of the main surviving sources of Old Welsh from around the second half of the ninth century (Rowland, 2014). Most of these poems are lyric, religious meditations and laments, or survey heroic tradition (Rowland, 2014). The main types of Englynion are Englyn milwr and Englyn penfyr (Rowland, 1990: 305).

2.1 Englyn Milwr

The warrior's englyn is a short poetic text of three lines, with seven syllables each. The last syllable of each line in these poetic texts generally rhymes with each other. For instance, the following stanza with Englyn milwr clearly reveals three lines with seven-line syllables and rhymes with the final syllable /es/, as shown by the English translation (Parry, 1962):

Otid,	eiry,	gwyn y	cnes;
Or	snowy	white the	snow
Nid	*â*	*ced wyr i'w*	*neg**es**;*
Not with	keepers	to his	message;
Oer	*llynnau,*	*eu lliw heb*	*d**es**.*
Cold	strands,	their colour	without.

2.2 Englyn Penfyr

Englyn penfyr or the short-ended englyn, is comprised of a stanza of three lines of varying line lengths. The first line has ten syllables, whereas the second and the last each have have seven lines (Williams, 1953). Unlike the *Englyn milwr,* the rhyme in the *Englyn penfyr* is on the last syllable of the last two lines (with seven syllables) only, but not the first line (Fabb, 1997). The following stanza in this poetry which contains three lines of ten, seven and seven syllables each, with the last syllable of the seven-syllable lines rhyming with the /awd/ in the poem illustrates these characteristics (Parry, 1962):

Oer	*gwly*	*pysgawd yng*	*nghysgawd*	*iäen;*
Cold	wet	fish in	shadow	iron;
Cul	*hydd,*	*cawn*	*barf**awd;***	
Narrow stag,		we get	dead;	
Byr	*diwedydd,*	*gwŷdd*	*gwyr**awd***	
Short	end,	deviating	loom	

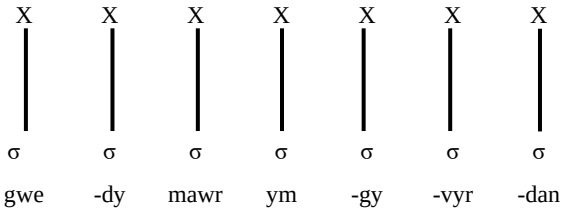
The next stanza is from The Red Book of Hergest (Williams, 1953: 233), it contains three lines, with ten, seven and seven syllables each. The last syllable of the seven-syllable lines rhyme with the /*an*/ in this text:

Sta-vell.	*Gyn-dy-lan*	*am er-wan-*	*pob awr*
(the) hall	(of) Cynddylan	pains-me-	every hour
gwe-dy	*mawr*	*ym-gy-vyr-d**an***	
after	great	conversing	
a	*we-lais*	*ar dy*	*ben-t**an**.*
which	I-saw	on your	hearthside

The *Englyn milwr* meter is 7 + 7 + 7 syllables, whereas the *Englyn penfyr* is 10 + 7 + 7 syllables. The *Englyn milwr* can be represented by one single template denoting the seven-syllable lines. For the *Englyn penfyr*, linguists opted for a single long metrical template for the whole stanza (or two metrical templates) to address the the variability line lengths in the stanza (Fabb, 2015). Thus, the seven-syllable lines would be as shown below:

X X X X X X X

In this metrical template, each metrical position corresponds to a constituent (syllable) in the line of text. The second line would scan as shown below (the letter y represents a vowel in Welsh orthography). On this account, the meter matches syllables to metrical positions (Fabb, 2015):



However, the above accountdoes not suffice to represent both the *Englyn milwr* and *Englyn penfyr* in Medieval Welsh poetry. Therefore, it is necessary to identify for a more unified analysis that can adequately generate the *Englyn* meter and capture generalisations in *Englyn milwr* and *Englyn penfyr*.

3. Literarture Review

Metrical text of any verbal art form, whether poetry, songs, or chants, is considered "a text whose phonological form is governed by a set of metrical rules" in language versification (Fabb, 2016: 449). Metrical rules, also can be called meter, are concerned with two phonological aspects are concerned: phonological constituency, and phonological strength (Fabb, 2016: 449). Many linguists classify metrical rules into rhythmic meters that regulate the phonological constituency and phonological strength, and non-rhythmic meters which regulate only the phonological constituency, without creating rhythm (Fabb, 2016: 449). In rhythmic meter, phonological constituency, such as syllable or mora, are regulated over the same metrical constituent (for example, line) (Fabb, 2016; Skilton, 2021). This study assumes that the *Englyn penfyr* and *Englyn milwr* meters in Celtic language Welsh regulate the phonological constituency at the line level: an assumption is based mainly on various overviews indicating that the *Englyn* meter is purely a syllable-counting meter (Williams, 1953; Parry, 1962; Fabb, 2016).

Linguistic approaches to verbal art are either blends of linguistic anthropology (ethnopoetics), or generative metrics (or more precisely generative phonology) that are thoroughly allied with linguistic theory (Skilton, 2021). Generative metrics is an "approach to the theory and typology of versification that takes linguistics both as a methodological model and as a source of explanatory principles" (Kiparsky, 2020: 659). Generative metrics seek to model meters in terms of phonology and account for their diversity through a solely phonological theory (Skilton, 2021). The fundamental notion of generative metrics is that metrical texts are based on similar principles as general language. The Development Hypothesis equally treats the poetic meter and the prosody of language (Fabb, 2010).

This Development Hypothesis approach evolves from the broad generative principles of minimalism, which essentially favour the smallest number of constraints. According to Development Hypothesis, Meter is based merely on language prosodic hierarchy rather than on verse metrical hierarchy, Figure 1 (Fabb, 2010).

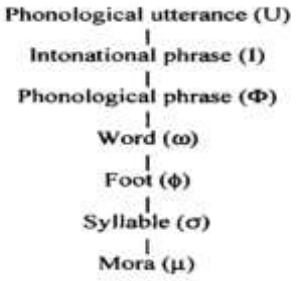


Figure 1. Prosodic Hierarchy

Building on this perspective, the current research will examine the *Englyn* meter, mainly *Englyn penfyr* and *Englyn milwr,* in Celtic language Welsh within a markedness analysis, in the light of Optimality Theory framework (Prince and Smolensky, 1993; Aloufi, 2021a; Aloufi, 2021b).

4. Markedness Analyses of Englyn Meters

This research offers an accurate analysis of the *Englyn* meter using an OT approach to derive metricality via markedness constraints requiring lexical faithfulness to the text, rather than the meter. The study derives meter (Prince and Smolensky, 1993) with constraint tableaus that evaluate potential candidate outputs considering a number of universal constraints that are violable. The universal constraints hierarchy is a language-specific ranking that manages conflicting demands between constraints. Thus, the optimal output fulfils the higher-ranked constraint regardless of whether it violates other constraints. In Celtic language Welsh, the *Englyn penfyr* and *Englyn milwr* meters constrain the phonological constituency (the line size) and ignore the constituency of other prosodic constituents under the line. This study will consider the line to be a metrical primitive, since the meter lacks any constituents resembling poetic feet, by building on Skilton's (2021: 33) proposal which indicates general size constraints that can adequately explain poetic meter. In Skilton's proposal, the

size molecule parameter defines which phonological constituent is controlled for size, the size atom parameter, and which constituent is considered to measure the size molecule (Skilton, 2021: 34).

MinMolecule: Assign one violation for every SIZE ATOM by which the SIZE MOLECULE falls short of n SIZE ATOMS.

MaxMolecule: Assign one violation for every SIZE ATOM by which the SIZE MOLECULE exceeds n SIZE ATOMS.

One pair of these constraints merely operates to ensure that the constraints count every atom in the poetic text; this will construct a single metrical norm in the text and no permissible variance from it (Skilton, 2021: 34). However, only the regular pattern of variance should be captured with this parameter. In fact, the two constraints are generalised from the broadly used constraints **MinWord** and **MaxWord** that are used to derive phonological word size limitations to entail minimality and maximality demands in general language phonology (Broselow, 1982; DeLacy, 2008).

These constraints are necessary to describe size demands in the *Englyn penfyr* and *Englyn milwr* meters and set the same goal for the line size of the stanza by **MinLine** and **MaxLine.** Although the *Englyn penfyr* meter regulates the line size in a ten, seven and seven syllables stanza, this variance in the lines of stanza can be captured by varying the metrical target across molecules, more precisely by increasing the variance of the meter size through imposing different target sizes on different constituent tokens in the text. Furthermore, the ten-syllable lines in *Englyn penfyr* meter are not rhymed, unlike the two seven-syllable lines in the stanza, whereas the seven-syllable lines in *Englyn milwr* rhymed. Thus two sets of markedness constraints **MinLine** and **MaxLine** are needed to posit the variability of the lines in the two meters. The first set, $\mathbf{MinLine_1}$ and $\mathbf{MaxLine_1}$, is only evaluated for the seven-syllable lines in both meters, while the second set, $\mathbf{MinLine_2}$ and $\mathbf{MaxLine_2}$, is only evaluated for any ten-syllable lines where rhyme is illicit, as shown by Skilton (2021):

$\mathbf{MinLine_1}$: Assign one violation for every syllable by which the line falls short of seven syllables.

$\mathbf{MaxLine_1}$: Assign one violation for every syllable by which the line exceeds seven syllables

$\mathbf{MinLine_2}$: If the last syllable of the line is not rhymed with the other lines in poem, assign one violation for every syllable by which the line falls short of ten syllables.

$\mathbf{MaxLine_2}$: If the last syllable of the line is not rhymed with the other lines in poem, assign one violation for every syllable by which the line exceeds ten syllables.

In addition, a further faithfulness constraint, **Faith**, is necessary to avoid any amendments to the stanza lines (McCarthy and Prince, 1993):

FAITH: The output is identical to the input, and one violation is assigned per segment or tone that is different in the output and input.

The constraint hierarchy in the *Englyn penfyr* meter indicates that all the markedness constraints are unviolated. There are two sets of constraints, $\mathbf{MinLine_1}$ $\mathbf{MaxLine_1}$, and $\mathbf{MinLine_2}$ $\mathbf{MaxLine_2}$, which conflict with the higher ranked **Faith** constraint to ensure that no alteration occurs in the stanza. Table 1 represents the evaluation of the *Englyn penfyr* meter of the whole stanza, signifying the interaction between the line-size markedness and faithfulness constraints.

Table 1. OT evaluation of the whole stanza

	Faith	**$\mathbf{MinLine_1}$**	**$\mathbf{MaxLine_1}$**	**$\mathbf{MinLine_2}$**	**$\mathbf{MaxLine_2}$**
a) Sta-vell Gyn-dy-lan am er-wan- pob awr gwe-dy mawr ym-gy-vyr-dan a we-lais ar dy ben-tan.					
b) Sta-vell Gyn-dy-lan am er-wan- pob gwe-dy mawr ym-gy-vyr-dan a we-lais ar dy ben-tan.	*!			*	
c) Sta-vell Gyn-dy-lan am er-wan- pob awr gwe-dy mawr ym-gy-vyr-dan a we-lais ar dy ben-tan.	*!*	*	*		

In this table, three potential candidates are suggested to evaluate various patterns of line length in the whole stanza with the *Englyn penfyr* meter. A candidate version of the three-line stanza, with no violation of any of the markedness and faithfulness constraints, is optimal; hence, the *Englyn penfyr* meter thoroughly fulfils the markedness and faithfulness constraints (candidate a). Candidate (b) is eliminated due to two violations: one for the fatal violation of the faithfulness constraint **FAITH**, because of the deleted final syllable (awr) in line 1, and certainly for the **MinLine2** constraint since the line falls short of ten syllables. A similar candidate (c) is excluded due to the deleted first syllable (*a*) of line 3 and the insertion of the same syllable in line 2. This candidate violates the two-markedness line-constraints $\mathbf{MinLine_1}$ since line 3 falls short of seven syllables due to the deletion of the first syllable, and $\mathbf{MaxLine_1}$ as line 2 exceeds the

seven-syllable line requirement. It also fatally violates **FAITH** due to these alterations in lines 2 and 3.

Since there is no regular rhythmic pattern identified in *Englyn penfyr* and *Englyn milwr* meters, the two sets of minimality and maximality markedness constraints will be used. Although the final syllable in the lines of *Englyn milwr* rhymed and the 2nd and 3rd line in the *Englyn penfyr* rhymed, there is a need for coping constraints to capture these generalisations generated from the reduplication constraints, where R stands for Rhyme and B which stands for Base is defined as follows (McCarthy and Prince, 1993), (Holtman, 1994):

Base in rhyme: The left edge of the Base is defined as the left edge of the rightmost syllable in a line of verse which bears lexical stress, i.e., stress assigned in the lexicon.

Coping constraints for the rhyme based on reduplication constraints are shown below (Holtman, 1994):

CONTIGUITY: All elements of R that lie between elements with phonologically identical correspondents in B must themselves have phonologically identical correspondents in B.
ANCHORING-R: The final element of R should be identical to the final element in B;
TOTALITY: Every element in R must have a phonologically identical correspondent in B.
MAX: All elements in the B should have correspondents in R.

Further constraints are needed, including the **ECHO**-constraint **ONSETDIS**, to deal with end-rhyme (indicating that the first syllable in the Base must not be similar to its equivalent in the Rhyme), and **NUCLEUSID** that demands the nuclei of Base and Rhyme to be phonologically identical as given below (Holtman 1994):

ONSETDIS: The onsets (of the initial syllable) in R and B should be dissimilar.

NUCLEUSID: The nuclei of B and R should be phonologically identical

CONTIGUITY, ANCHORING-R, **ONSETDIS** and **NUCLEUSID** are unviolated and ranked higher than **TOTALITY** which is less dominant. This hierarchy can be shown as: **NUCLEUSID, ONSETDIS**, **CONTIGUITY, ANCHORING-R** >> **TOTALITY**. Consider Table 2 presents the evaluation of the rhyme in the *Englyn penfyr* meter on the Welsh word *cn**es*** (snow):

Table 2. OT evaluation of rhyme pair /*cnes* xR/

Input /*cn**es*** xR/	**NUCLEUSID**	**ONSETDIS**	**CONTIGUITY**	**ANCHORING-R**	**TOTALITY**
a) *cn**es*** x *da**s***	*!				
b) *cn**es*** x *cn**es***		*!			
c) *cn**es*** x *d**els***			*!		
d) *cn**es*** x *dan*				*!	
e) *cn**es*** x *d**es***					*

In this OT grammar, the rhyming pair (/*cn**es***/ x /*cn**es*** /) in (b) is ruled out since it fatally violates **ONSETDIS,** with identical onset, but satisfies **TOTALITY**. The next rhyme pair (/*cn**es**/* x */das***/) in (a), satisfies **ONSETDIS** but fatally violates **NUCLEUSID** because of the different nuclei. The rhyming pair (/*cn**es**/* x */dan*/) in (d) fulfils **NUCLEUSID** as well as **ONSETDIS** but is not acceptable since **ANCHORING-R** is crucially violated as the coda consonants (/s/ and /n/) are not the same. The rhyming pair (/*cnes/* x */dels*/) in (c) satisfies **ANCHORING-R, NUCLEUSID** and **ONSETDIS** but is ruled out as it violates **CONTIGUITY**. Thus, the rhyming pair (e) *(/cn**es**/* x /*d**es***/) is optimal as it meets all the higher ranked constraint requirements, even though it violates **TOTALITY.**

Ultimately, the offered optimality-theoretic analysis supports the crucial assumption of generative metrics, which indicates the strong relation between poetic meter and general phonology. Indeed, the crucial constraint hierarchy that can derive the meter in *Englyn penfyr* and *Englyn milwr*, is shown by: **FAITH >> MinLine1, MaxLine1, MinLine2, MaxLine2, NUCLEUSID, ONSETDIS, CONTIGUITY, ANCHORING-R >>TOTALITY**

5. Conclusion

This research offers a preliminary analysis within the optimality theory framework using a set of constraints that can efficiently predict the well-formedness of the *Englyn penfyr* meter in Celtic language Welsh poetry. The markedness-based analysis sufficiently captures generalisations revealed in Celtic poetry and derives the *Englyn penfyr* meter, suggesting parametric constraints. This *Englyn penfyr* meter can constrain the phonological constituency (syllable) at the level of the line and deal with the variability in the lines of the stanza which fulfil the study aim. Also, on supports of the Development Hypothesis, , the current study uses constraints already found in general language phonology and takes into consideration resemblances between poetic meter and non-poetic language. In summary, two sets of constraints are needed to maintain the minimality and maximality demand in the meter and manage the variability of each stanza line. Further coping constraints are required to capture these rhyme generalisations produced from the reduplication constraints. The evaluation of candidate outputs in OT generates desirable realistic results regarding *Englyn penfyr* meter. The analysis presented by the current research could offer an insight into similar counting meters that confine the phonological constituency at the precise metrical level, for instance into Avestan texts.

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