An Auto-Segmental Analysis of English Poetry; Milton's Poem "When I Consider how My Light is Spent" as a Sample

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This paper applies the auto-segmental approach in the field of poetry for the first time according to the researcher's knowledge. Milton's sonnet is used as a sample in this paper. The main aim is to investigate how the lines of verse in the sonnet poem can be examined according to the auto-segmental representations. It is based on the hypothesis that unconsciously Milton's poem is built hierarchically through different tiers. In this paper, two sections have been presented. Section one is devoted to the theoretical background of this study, whereas section two is devoted to the practical side with the conclusion of the paper.

Key words: *Milton, auto-segmental, poetry, sonnet.*

Introduction

Auto-segmental phonology is a theory of non-linear phonological representation. Initially, this theory has been established in accordance with a suitable tone theory. The main source of inspiration for this theory was Williams (1976) in addition to Leben (1973). Within the area of English poetry, this theory attempts to present structures that are non-linear with treatment to the system of tone. Phonologically and within models that are non-linear, speech can be described as multidimensional. Syllables, word structure, intonation, and rhythmical factors may influence control segment conditions. This study examines the sonnet poem. McRae (1998:142) states that a sonnet poem usually consists of fourteen lines with regular rhythm and

rhyme, usually with a single theme. Sonnets are often divided into an octet, the first eight lines which present the theme and a sestet, lines (9-14) which come to a resolution or conclusion. Milton's sonnets typically finish with a couplet.

The auto-segmental approach in the field of poetry is based on the hypothesis that a segmental tier connects with a tonal tier through associated line in an indirect way. According to Goldsmith (1976), innovation of auto-segmental phonology can be defined as the ideas that one cannot merge tonally and segmental representations to the tone mapping rules, yet they can associate their elements through using association's lines. This will be shown through the analysis of each line of Milten's sonnet as in the following example:

When I consider how my light is spent.
/'Wen aɪ kən'sɪdə   'hau mai 'lait s 'spent / .

The auto-segmental phonology of this poetic line can be described as:

Segmental Tier	CVC	V	CVCCVCV		CV	CV	CVC	C	CCV
Associated line	|	|	|	| |	|	|	|		|
Tonal Tiers	L	L	L	H L	L	H	L		H

Poetry & Phonological Weight

Al-Shamary , Mohand (2018:22) affirms the fact that poetry is a flood of feelings that the soul reveals in moments of being alone. These feelings are embodied in the form of symbols, as the symbol is the closest form to the image in which these feelings are stored in the poet's mind. The poet uses what is called a poetic equivalent to express what is shaping his ideas, and the poetic language used by the poet differs from usual language. McRae (1998:30pp) states that the main unit in measuring the weight of English poetry is the (activated) foot and each activation consists of syllables that are stressed (High:H) and unstressed (Low:L) audio clips. There are five main types of metrical foot activation. Iambic foot consists of an uncomplicated audio track followed by a stressed syllable as is the case in the word: repeat, and it can be said that this activation consists of a short syllable followed by a long syllable as in the word alive'. The word "iambic" is derived from the Greek word "iambus". Tro foot trochaic or trochee activation consists of an accentuated syllable followed by an uncomplicated phoneme, in other words, the activation of the trochaic consists of a long syllable followed by a short phoneme as in the word never and apple. An activation of the foot anapestic or anapest foot consists of two non-stressed syllables followed by a strict syllable as in the word interrupt. It can be said that this activation consists of two short syllables followed by a long syllable. The word "anapest"

is derived from the Latin word "anapaestus", which in turn is derived from the Greek word "anapaistos". Act dactylic foot or dactyl activation consists of a strict syllable followed by two non-stressed syllables or in clearer terms, this activation consists of a long syllable followed by two short syllables as in the words: possible, Washington and carefully '.This word is derived from the Latin word "dactylus" and means "finger". Onda activates the spondaic foot or activates the spondee. This activation consists of two successive two syllables, meaning that the activation of the spondayk consists of two long syllables as in the word heartbreak. Activating the pyrrhic foot consists of two consecutive non-stressed syllables, meaning that the activation of the peric consists of two consecutive short syllables. The word "peric" is derived from the Greek word "pyrrhichios", which is a type of dance. But we must pay attention to the fact that the "berek" and "spondy" activations are two non-standard ones and therefore they are rarely used. (Thornborrow and Wareing, 2005:29)

The musical weight

Thornborrow (2005: 12) indicates that the musical weight of the poem is determined by a process called the scansion process. Intense sound clips or long syllables are referred to by the word Ictus (musical stroke). These long hard syllables are indicated by a signal. Short syllables are referred to as (remiss), whereby short syllables not aggravated with a small arc mark are placed over that syllable.

The Aesthetic of the Phonological Musical level

There is no doubt that musical level is important in revealing Milton's poetry, its creative influences, and his poetic methods. This level lies in the poet's creative ability through his systemic ingenuity in formation and composition. The poet's creativity is not only due to words, but to the systems of words, their arrangement, and the exploitation of their phonological and morphological properties in order to coordinate them in homogeneous structures to which the poet presents many of his feelings. It is here that the aesthetic of the phonological systems is achieved through the coherence between creative composition and the special feeling, that is, between the artistic means and the inner vision of the poet. In building the poem on selecting specific vocabularies with intentional vowel sounds, and choosing the appropriate grammatical methods as it focuses on the technical aspect, intellectual suggestions, and the musical signature of words. There are vocabularies that coincide with vocabulary and not others, and there are linguistic methods that go beyond the common custom to special creativity. The language of poetry is richer and deeper, not only in words, but also in the

phonological formulations and methods of composition. Every linguistic element in poetry is used to develop a degree. The other element, hence the language of poetry is based on an organisational basis in which the poetic form shares the poetic meaning in harmony with those who do not have it outside of poetry ". (See Al-Shamary, 2018:22)

Most notably what indicates the aesthetic of the poem is Pierrehumbert, (1990:378):

1) The rhythm of the sentence

2) The rhythm of the syllable

3) The aesthetic of the sentence

There is no doubt that the poetic sentence has its creative aesthetics - in the creative poetic text, and the way it is built is important in the aesthetic excitement of the poetic arrangement. This means that the phonology is "who reveals the poet's genius", and shows its uniqueness and privilege. The individual poet has to find their way through the tremendous amount of vocabulary used by hundreds of poets before them. Through limited phonological systems the poet must choose it, which makes them unique, and gives them a visa for the journey through ages and generations. How many words are used by a good number of poets? But in some poetry, they are shining, joyful, charged with connotations, because they come across a delicate structure and a healthy phonological location. In some other poems, they themselves are dark, extinguished, non-suggestive, or windowless, because they have not encountered their proper location, nor their proper phonological construction. The value in the vocabulary is not in itself; it is where that is. Neither in the grammatical system itself, and in terms of it is, but it is in the careful selection between the selected phonology of the poets chosen vocabularies and the grammatical system. (Leben, 1978:117).

Whoever looks at the experience of the distinguished sonnet poet and Milton realises that the poet is engineering his sentences with a captivating art. He works on the poetic sentence in sonnet poem, and the eloquent meaning and creative vision, to the extent that the poetic verses go in his poems, coherent casting, strong meaning, poetic in their rhythm and music, as it varies in the forms of sentences to highlight its poetry, and to demonstrate this aesthetic value in formation we take his saying from the poem.

Auto-Segmental Phonology

In any poem, the phonological representations can be drawn as a parallel tier of phonological segments and tonal one associated with line between them and. auto-segmental phonology can be defined as the elements of each layer (Goldsmith, 1976:68). These elements are arranged

successively. Further, the elements that are put next to others, they can be described as coinciding if they are connected via association lines. According to the presented model, most of the layers are independent by derivations (Kreidler, 2004:286).

In auto-segmental phonology, development is allocated to the efficiency of its problem-solving. In other words, it has succeeded in presenting solutions for various problems. Here, in the parallel tier are the phonological representations of phonological segment (Matthews, 2011:33).

Well-Formedness Conditions are a set of universal principles that can be considered as another innovation of auto-segmental theory. These principles such as WFC, govern the structures of the representation that are multi-tiered. Katamba (1992:153-61) states that development is allocated to the efficiency of its problem-solving. In other words, it has succeeded in presenting solutions for various problems.

Additionally, phonology is seen as including many layers according to the auto-segmental approach. Each layer has an arrangement of elements that is linear. Association lines technique is used to link them together. In other words, a simultaneous way is involved in which more than one point in the vocal tract occurs (Roach2001:53). Originally, it was invented to control tonal phenomena. Recently, this approach has been developed to have a relation to other characteristics of several segments, like vowel and consonant harmony (Crystal, 2008:82).

Necessity of the Contour Principle

At the melodic level of each line in the sonnet, any two adjacent auto-segments must be distinctive. Thus HHL is not a potential melodic pattern; it spontaneously shortens to HL. Although nonlinear models like auto-segmental phonology signify a major advance on the linear model of SPE in the area of explanatory adequacy, it has sometimes been pointed out that the formal explicitness of the SPE model has not been harmonised by these more recent proposals (Bird and Klein,1990: 80). Before we can begin to compute with auto-segmental representations and rules, they need to be given a formal semantics which has extended common acceptance in auto-segmental phonology. Under this temporal semantics, phonological properties are attached to intervals that are related using precedence (an asymmetric, transitive relation) and overlap (a reflexive, symmetric relation). Bird and Ellison (1992: 115) indicated how a phonological description language can be shown by such event structures, where the precedence relation models the linear ordering of tiers, and the overlap relation models association lines.

Tone and Auto-segmental phonology

Roach (2001:25) states that a tone is a distinctive pitch level or pitch movement found on syllables. In the field of poetry, the poet typically uses the rise and fall of the tone of the voice when saying the poem, to achieve musical effects on the listeners. Those tones or pitches are usually of three levels: high, normal, and low. A high tone or pitch means more or less increase in the variations of the vocal cords which produce more loudness. According to Roach (2001:26) normal and low pitch involve less vibrations and consequently less loudness (See also Bauer, 2112:125).

The tone of a sentence depends a great deal on sentence stress, because the height of pitch is also dependent upon the degree of stress found in the verse line or in each poetic stanza as a whole. High pitch is usually found on stressed words. To make clear how pitch levels rise and fall, phoneticians use lines to describe intonation contours (Carr, 2008:117).

It is important to know that the various articulatory parameters like voicing, aspiration, tone and nasalisation are autonomous, and the articulations that result from them are in principle independent. One of the main tasks of phonological theory is to establish the language specific, which can be achieved through the hierarchically of high and low tone in the articulation of the poem, as well as universal principles which regulate the linking of these autonomous parameters which Goldsmith (1976) called auto segmental phonology.

The Application

In non-linear models of phonology, a stream of speech is represented as multidimensional, not simply as a linear sequence of sound segments. Stress, syllable, word structure, intonation, metrical and rhythmical factors may influence control segment conditions. All these appear as a hierarchy of influencing factors. It assumed to avoid linear representation of the phonological structure of a word, and tends instead to tackle it in terms of a series of segments showing representations and constraints rather than rules and processes. (McCarthy, 1989:80)

Studying stress in the field of poetry specifically and in the context of literary language in general, states that the term stress usually refers to the way a syllable is said (Thornborrow and Wareing, 1998:33). However, in poetry there are some syllables in some words or lines that pronounced with more force, or stress, than others. Through stressed and unstressed syllables, patterns can be innovated. These patterns are considered as the foundation of what is called metre. In other words, metre is the pattern that is stressed in verse or prose. Further, the smallest unit of any sequence of sound is known as a syllable and these syllables can form a unit of

rhythm. Structurally, these syllables have a single vowel sound, which preceded by a consonant sound, followed or both. A word in each poetic line in Shakespeare's sonnet poem, at least consists of one syllable (Schane, 1973:104).

Observing non-linear phonological representation theory, its development comes in agreement with the expansion of tonal theory. The founder of this theory is Williams (1976) and Leben (1973). They have the favour to present non-linear structures in different treatments for the languages of tone systems in West Africa

In summary, the auto-segmental phonology principle gives us the rule that tonal and segmental representations are not merged by tone mapping, yet they can associate through a technique called association lines.

Auto-Segmental Analysis of the Poem

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/'Wen aI    kən'sɪdə  'hau  mai  'lait  S  'spent /
Segmental Tier   CVC  V  CVCCVCV    CV  CV  CVC  C  CCVCC
Associated line      |     |    |       |   |      |    |    |          |
Tonal Tiers        H    L    L      H   L      L    H    L        H
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/ɪr 'ha:f  mai  deiz  in  ðɪs   da:k  wə:ld    and  waid/
Segmental Tier  VC   CVC   CV  CVC  VC    CVC  CVC  CVCC  VCC  CVC
Associated line    |      |      |     |     |       |      |      |        |       |
Tonal Tiers   L      H      L    H    L       L     H     H       L      H
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/ænd   ðæt   wən   to:lənt     wɪtʃ   ɪz  dɛθ   tu  haid/
Segmental Tier  VCC   CVC    CVC   CVCVCC    CVC  CV  CVC  VC  CVC
Associated line   |         |       |      |   |         |     |     |     |     |
Tonal Tiers      H        L      L     H   L        H    L    H     L    H
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         /lodʒd   wɪð     mi  ju:  zlIs    θəut mai  soul  mə:  bɛnt/
Segmental  Tier CVCC  CVC     CVCVCCVC     CVC  CV  CVC  CV  CVCC
Associated line     |          |        |  |  | |       |     |     |      |    |
Tonal Tiers        H          L         L  H  L H       L    H    L     H    H
         /tu     sə:v  ðə̃  wɪð mai  meikə  ænd  prezən/
Segmental Tier  CV    CVC  CV  CCVCV    CV  CV  CVC  VC  CCV
 Associated line     |      |    |       |    |     |    |    |     |      |
Tonal Tiers    L     H    L     L   H    L   H    L   H      L
         /mai   tru     əkaunt    lest hi ritə:niŋ tʃaid /
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Segmental Tier  CV   CCV    VCVCC    CV CC  CV    CVCV  CVC  CVC
Associated line  |    |      |    |  |       |     |    |     |    |
Tonal Tiers      H    L      L    H  L       H     L    H     L
                /doθ  gæd    ɪgzækt     dei  leibə  lait  dinaid /
Segmental Tier  CVC  CVC  VCCVCC    CV CVCV   CVC    CVCVC
Associated line  |    |    |    |    |   |      |       |
Tonal Tiers      H    L    L    H L  H   L      H   L   H
                /ðæt   mə:mə   iz   ʌn  riplaiz gad doθ nat nid /
 Segmental Tier  CVC CVCV  VC  VC  CVCCVC  CVC  CVC
 Associated line  |    | |      |     |  |    |    |     |
 Tonal Tiers      H    H L     L   L   L  H    H    H    H
                 aiðə  man'z    wə:k ɔ: hɪz oun  gifts  hu best]
Segmental Tier  VCV    CVCC    CVC  V CVC  VC    CVCCC  CV  CVCC
Associated line  |      |       |    |  |   |      |        |    |
TonalTiers       H      L       H    H  H   L      H        L    H

                /'biə hɪz 'maild ðe 'sə:v hɪm 'bɛst hɪz 'steit/
Segmental Tier  CVC  V   CVCCVCV    CV CV  CVC  VC  CCVC
Associated line  |   |   |    |  |   |   |   |    |
  Tonal Tiers    H   L   L    H  L   H   L   H    L      H
                /'kiŋli 'θauz∂ndz   æt  hɪz 'bidiŋ 'spid/
Segmental Tier  CVCCV   CVCVCCC    CV CVC  CVCVC  CCVC
Associated line  |    |   |    |    |   |    |     |     |
  Tonal Tiers    H    L   H    L    L   H    L     L     H

                /ænd 'post ouv∂ 'lænd ænd 'ouʃn wɪðaut 'rɛst/

 Segmental Tier  CVC  V    CVCCVCV    CV CV  CVC  VC  CCVC
Associated line  |    |    |    |  |   |   |   |    |      |
Tonal Tiers      H    L    L    H  L   H   L   H    L      H

                /ðeɪ   ɔlso    'sə:v   hu     onli  'stænd  ∂nd  'wet/

Segmental Tier   CV  VCCV  CVC  CV    VCCV  CCVCC  VCC  CVC
Associated line   |   |    |    |      |     |      |     |    |
Tonal Tiers       H   H    L    H      L     H    L  H   L    H
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Table (No. 1) Distribution of Types of Tonal Tier (T.T.) of the poem

L. No. / Type of Tonal Tiers (top → bottom)	T.H	T.L
1- T.T : L L L H L L H L H L H	4	7
2- T.T. : L H L H L H L H L H	5	5
3- T.T. : H H L H L H L L H	5	4
4- T.T. : H H L H L H L H L H	5	5
5- T.T. : H L L H L H L H L H L	5	6
6- T.T : H L L H L H L H L H	5	5
7- T.T : H H L H H L H H L	6	3
8- T.T. : H H L L L L H H H H H	7	4
9- T.T. : H L H H H L H L H H	7	3
10- T.T : H L L H L H L L H H	5	5
12- T.T. : H L H L H L H L L	4	5
13- T.T. : H L H L H L H L H L	5	5
14- T.T. : L L H L L H L H L L H	4	7

(Octet = lines 1–8; Sestet = lines 9–14)

Octet	Sestet
H.42	H.31
L.39	L.29

The Results of Analysis

The above table (2.1) states that the results of the analysis according to the auto-segmental model whereby tonal tier of the first part of the sonnet poem, the octet, records (51%), whereas the low tonal tier records 48%. In the second part of the sonnet poem, the sestet part, the high tonal tier records (51%) whereas the low tonal tier records (48%).

Conclusion

According to the above results, one can conclude that the elements of octet and sestet are balanced in the mind of the poet from the moment the poet begins organising a poem. The percentages of high and low tonal tiers in the poem are also equal in steadiness and this proves that the organisation of Melton's sonnet poem, is subjected to particular systems. This varies

from other types of poems, although the auto-segmental model can be applied and gives the same results through the structure or the form of the poem. Moreover, the results reveal that the auto-segmental modal is the greatest design to study the variations of the pitch of the poet during expressing or bringing forth the poem. Through the analysis, it has shown that the relation between the segmental tier and the tone tier is indirect. In other words, according to auto-segmental phonology the relation between the two tiers must be a knot to link the two. Therefore, it has been suggested that the related lines to link the two tiers. The segmental tier of each line in the poem exists abstractly in the poet's mind. Thus, it is phonetically abstract, whereas the tone tier represents the concrete level of representation according to the auto-segmental theory; but the concrete level cannot be achieved unless there is a certain stratum linking the two levels.

On the spoken level, the poet needs both segmental and supra-segmental features beside the auto-segmental features to link the musical aspects of the poem, and the poet's emotions that can be conveyed within the structure of the poem.

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Appendix

-When I consider how my light is spent .
- Ere half my days in this dark world and wide .
- And that one talent which is death to hide .
- Lodged with my useless , though my soul more bent .
- To serve there which my maker , and present .
- My true account , lest he returning chide .
- Doth god exact day-labor , light denied .
- That murmur , soon replies "god doth not need" .
- Either man's work or his own gifts :who best .
-Bear his mild yoke , they serve him best .his state .
- Kingly : thousands at his bidding speed .
- And post o'er land and ocean ocean without rest .
- They also serve who only stand and wait.
-When I consider how my light is spent