

## A Study of Computational Semantics in the Interpretation of Poems

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This study justifies the need for the application of computational semantics in the interpretation of poems. Computational semantics is a discipline of natural language expressions of how to model, represent, and reason with them. Computational semantics is a cross-disciplinary study that draws on linguistics, logic, computer science, and artificial intelligence. However, for the purpose of this study, this study concern will be limited to the use of WordNet in the interpretation of poems. WordNet is a Semantic tool that uses a large database of English, where nouns, verbs, adjectives and adverbs are grouped into sets of cognitive synonyms (synsets), each expressing a distinct concept. Synsets are interlinked by means of conceptual semantics and lexical relations, which results in network of meaningfully related words and concepts that can be navigated with the browser. Consequently, this tool is used in the analysis and interpretation of the poems; “Crossing the Bar”, by Alfred Lord Tennyson and “The Pulley” by George Herbert. Both poems are metaphysical in nature, and metaphysical poems are known for their intriguing cognitive dimensions which usually poses interpretative challenge to an average reader. Basically because, metaphysical poems are characterized by metaphysical wits and conceits. Subsequently, this study is anchored on the E-Learning Theory, which emphasizes how technologies can be used and designed to create new learning opportunities and to promote effective learning. Finally, the study discovers that the application of WordNet in the interpretation of these poems enhanced a better understanding of the poems because the tool (WordNet), simplified the mystical undertone associated with the poems.

**Keywords:** Computation, E-Learning, Interpretation, Poems, Semantics, WordNet.

### Introduction

The interpretation of poems has been a long-time trajectory among poets, scholars, readers of poems and lovers of poetic aesthetics for centuries. This has been so because of the creative aesthetics that is associated with poetry. This is why poetry is defined as “the language of the imagination and the passions” (Hazlitt in Doki, 5). This definition could easily be tied to the fact that the interpretation of any poem is intricate, cognized and very subtle in nature. This is fact about poetry has been there for centuries and has made the analysis and the interpretations of poems a challenging and a compelling subject among literary scholars. However, as we progress into an era of digital technology and artificial intelligence, a compelling synergy emerges between traditional literary analysis and computational techniques. Computational linguistics, a multidisciplinary field that melds computer science with

language expertise offers novel avenues to approach and enrich our understanding of literary texts (Luo, 1). Subjective views have always been a long age tool in the interpretation and analysis of poetic texts. This technique involves a systematic and detailed survey of a poem’s structure, the rhyme structure and meter to its stanzaic design, and how these forms enhance the poetic meaning. This analyses usually examines sound patterns like alliteration, assonance, and onomatopoeia to establish a poem’s rhythm. It could furthermore, look at devices like metaphors, similes, symbolism and hyperboles to determine the figurative language used by a poet to show how the poet draws comparisons or exaggeration for focus or emphasis (Clark,116). Poets, examine these elements so that readers can gain a deeper understanding of poems.

As simple as this may look, there has never been standard interpretations to any

poetic text because of various subjective views that any person could hold with regard to any poem. Basically because, poetic interpretations are mostly inspired by historical, cultural and agencies that are mostly influenced by an individual's background. This explains why Taiwo states that treating any poetic text "as an ... insights into how we may account for historical change in the type of human society depicted in a poem" (emphasis mine,100). This challenge and many more in the interpretation of poetic texts has led researchers and scholars to the use of technology in the analysis and interpretation of poetic texts. In the words of Diala-Ogamba:

technology is an instrument used in a variety of ways to our benefit. Technology is used in our everyday lives such as in school, at work, and at our leisure. Everybody uses one form of technology or the another -from word processing to using the telephone, to teaching and taking classes online.... Technology is a tool that can assist us and our students in a variety of ways ... in schools (27).

This posits why in recent times scholars and researchers have suggested the need for the use of technology in the teaching and analysis of poetic texts or poems. Computational linguistic analysis of poetry is a relatively recent field of study, leveraging the power of ... machines learning models to interpret, generate, and understand poetic texts (Luo, 12). This approach underpins the need to apply computational tools in the analysis of poems focusing on the structure, form, sound, figurative language, imagery, tone, mood, theme, and context.

To this study, the study will be applying a technological tool known as WordNet, an aspect of Computational Semantics in the interpretation of our chosen poetic texts with interest in interpreting the dictions in the poems: "Crossing the Bar" by Alfred Lord Tennyson and "The Pulley" by George Herbert. Computational Semantics is the field of natural language expressions and how to model, represent and reason with them. It is an interdisciplinary field that draws on linguistics, logic, computer science and artificial intelligence. "Semantics deals with the literal meaning of words and the meaning of the way they are combined, which taken together form the core of meaning, or the starting point from which the whole meaning of a particular utterance is connected" (Kearns,1). On the other hand, a poem has been defined as the "the sum total of the use of certain devices such as rhyme, rhythm, metre, figures of speech, stanza, subject matter, the poet's feeling, his/her attitude to the subject matter, etc. This use is expressed in a manner of language application which attracts attention to it, especially when words are found/used in unusual places or settings" (Nwachukwu-Agbada et al, 5). The above definition of poetry strengthens the argument that words are the molding blocks of poetic components. In a nut shell, words are the alarm bells of poetic aesthetics. Consequently, this study will use one of the devices of Computational Semantics in the analysis of this study's chosen poems. Some of the tools of Computational Semantics range from Frame Net, Semantic Parser, Semantic role labelers and WordNet. However, for the

purpose of this study, this study will use WordNet in the analysis of our chosen poems. In using this tool (WordNet), emphasis will be on how to use the tool in interpreting the diction used in the poems.

## Theoretical Frame Work

The research is based on the E-Learning Theory, which is found on cognitive science. E-learning creators usually test different combinations of teaching techniques and media and the way educational technology may be used to promote effective learning. This theory relies on the cognitive load theory, which depends on developing an effective teaching environment that exploits and makes the most out of the finite working memory capacity. The principle looks at the presence of the target audience with learners having no knowledge of the subject matter, some knowledge as well as advanced knowledge. Moreover, it is anticipated that instructional objectives are to be examined to understand whether it is simple or complex. The guidelines of cognitive load theory must be adapted based on the complexity of the content and on the experience of the learners (Nguyen and Clark, 2-3).

## Methodology

This study uses WordNet and Close Reading methods. WordNet is a semantic net or lexical database of semantic relations between words which connects words in semantic relation such as synonyms, hyponym and meronyms. The synonyms are put under synsets with brief definitions and examples of usage. It can be thus regarded as a blend and

expansion of a dictionary and thesaurus. The WordNet is categorized by concept and meaning unlike the dictionary, which is categorized in alphabetical order. Close Reading on the other hand is a form of literary analysis, and it involves taking a closer look at the details of a passage or piece of writing in a bid to identify some underlying meaning within the passage. And the meaning of the close reading is the way which the reader interprets the passage or the text.

## Data Presentation and Analysis

Crossing the Bar  
Sunset and evening star  
And one clear call for me:  
And may there be no moaning of the bar,  
When I put out to sea,

But such a tide as moving seems asleep,  
Too full for sound and foam,  
When that which drew from out the boundless deep  
Turns again home.

Twilight and evening bell,  
And after that the dark!  
And may there be no sadness of farewell,  
When I embark;

For through from out bourne of Time and Place  
The flood may bear me far,  
I hope to see my Pilot face to face  
When I have crossed the bar.

This poem is a reflection on death. It opens with the poetic-persona making a reflection on what he talks about as one clear call to me! (L2), one evening, when he sees that it is his time to go to the sea. He mentions that he is going to a far and distant place, but he is

sure it would be profitable as he would have a chance to meet his Pilot (creator). The journey is in fact death, metaphorically speaking. Thus, the preoccupation of the poetic persona in the poem with the arrival of death, the inevitable phenomenon, is connected in Crossing the Bar. The poetic persona takes death calmly; instead of the fright and anxiety many people exhibit when death is near. There is no fear or distress in the tone of the poem. In literal sense, the bar here is a nautical term of a ridge of sand created in the shore, through movement of tides. At the metaphorical level, the bar is the pass into another world of experience, which may be immortality, crossing the boundary of mortality. It must be stated that the analysis of these poems will only be concerned with only words that might be adjudged as difficult or tricky in each line of the poems:

## Stanza 1

Line 1: Sunset: sundown, disappearance of sun, termination, the sun sinking below the energy  
Evening star: hesperus, vesper

Line 2: Clear: a standard for judging  
Call: a special disposition (from a divine source), to pursue a particular course, a method of contacting a demand, claim

Line 3: moan: groan, indicate pain, discomfort, displeasure

Line 4: bar: barroom, ginmill, exclude, block off, relegable, secure with

Line 5: put out: retire, release, douse, sea: ocean, turbulent water, water

## Stanza 2

Line 1: tide: surge, surging wave, rise, move forward, cause to float moving: arousing, capable of arousing deep emotions seems: appear, look, to be true, apparent, provable  
asleep: in the state of death, deceased, at rest, departed, gone, lacking sensation, numb

Line 2: full: normal, extent, completely, entirely  
Sound: appear in a certain way, strait, complete, thorough, free from moral defect, force  
foam: form bubbles, sparkle, froth, fizz, effervesce

Line 3: drew from: pull, attracter, attraction, reap, get out, pull out  
deep: profound part, to a great depth, literary term for an ocean, intense or extreme, mysterious, mystifying  
boundless: limitless, unbounded, extent

Line 4: turns: bend, twist, undergo a transformation, a change of position or action, change state, reverse, pass to the other side  
home: place, where you live at a particular time, abode, domicile, dwelling, habitation, to the fullest extent; to the heart

## Stanza 3

Line 1: twilight: the time of day immediately following sunset, dusk, evenfall, nightfall, fall, gloam,  
bell: contact, toll, gong, clime

Line 2: dark: absence of light or illumination, darkness, shadowed or black, shadow, night, nighttime, gloomy,

Line 3: sadness: unhappiness, sorrow, sorrowfulness, gloominess, excessive mournfulness, lugubriousness, uncheerfulness

farewell: goodwill at parting, the act of departing politely, leave

Line 4: embark: go on board, set out, enter, proceed somewhere, venture

#### Stanza 4

Line 1: bourne: boundary, location, a goal, destination

time: duration, an instance, occasion, regulate, a suitable moment

Line 2: flood: the rising body of water, overflowing, fill quickly beyond capacity, torrent, outpouring, overflow

bear: supporting, turn out, carry, hold, deport

Line 3: hope: desire, expect, be optimistic, promise

pilot: a person qualified to guide

face: confront, the side upon which the use of a thing depends, often with respect to another reference point, status in the eyes of others

Line 4: crossed: no relevant entry

#### The Pulley

When God at first made man,  
Having a glass of blessings standing by,  
“Let us,” said he, “pour on him all we can.  
Let the world’s riches, which dispersed lie,  
Line 5: Contract into a span.”  
So strength first made a way;  
Then beauty flowed, then wisdom, honour,  
pleasure.

When almost all was out, God made a stay,  
Perceiving that, alone of all his treasure,  
10 Rest in the bottom lay.

“For if I should,” said he,  
“Bestow this jewel also on my creature,  
He would adore my gifts instead of me,  
And rest in Nature, not the God of Nature;  
15 So both should losers be.

“Yet let him keep the rest,  
But keep them with repining restlessness;  
Let him be rich and weary, that at least,  
If goodness lead him not, yet weariness

20 May toss him to my breast.”

The Pulley is based on the connection between God and man. In this poem, Herbert is referring to the pulley where he uses the metaphor to discuss how a man relies on God and without God man is nothing. The argument here that has been emphasized by this poem is that God did not give man all the good things after he created him to ensure that man would come to him seeking his needs and salvation. What this means is that the desire of man towards those things that he does not have in his life would eventually lead him back to God. In this way, the pulley can be used as a metaphor stating the helplessness and reliance of man towards God to feed him and help him. The poem is written in a structure of syllogism (3 parts) as it was a popular method in metaphysical poetry. The former typically poses a question or a problem, which must be addressed. The second section labors on the problem, the final one on the solution. In the context of the Pulley, the first section is the story of the creation, and the second section is that which talks about the gift of man of virtues such as riches, honour etc. In the third section God devises a method of keeping man interested in Him by giving him all but rest. He manages to develop a plan on how to keep on attracting men to Him.

#### Stanza 1

Line 1 God: omniscient, omnipotent, ruler of the universe, immortal, supreme being  
man: human, human being, adult male

Line 2 glass: a glass container, a container made of glass

blessing: approval, approving, grace, boon

standing by: stick, stick by, be available, ready for

Line 3 pour: rain heavily, supply in large amounts or quantities

Line 4 world: global, earth, world-wide, domain

riches: plenteous, plentiful, pleasantly full, spread out

Line 5 contract: undertake, declaration, compress, compact, constrict, shrink, condense, narrow, shorten, cut, reduce, abridge, abbreviate, press, squeeze, compact, press together

span: yoke, pair, couplet, brace, twosome, duad, twain, distich, duo, duet,

## Stanza 2

Line 1 strength: strong point, force, capability, forte, potency, way: means, direction, path, journey, passage

Line 2 beauty: an outstanding example, sweetheart, peach, stunner, lulu, ravisher, a very attractive woman, the qualities that give pleasure to the senses

wisdom: wiseness, enlightenment, erudition, soundness,

honour: laurels, reward, approval, distinction, award

pleasure: pleasance, delight, joy, activity that affords enjoyment

Line 3 out: come out, reveal, being out

stay: remain, rest, remaining in a place, stick

Line 4 perceiving: comprehend, become conscious of

alone: isolated from others, solely, solo, lonely, solitary,

treasure: gem, hold dear, prize

Line 5 rest: not move, relaxation, repose, take a breather, respite

bottom: lowest position, undersurface, underside

lay: place, pose, position

## Stanza 3

Line 2 bestow: confer, bring, impart, lend, add, give a gift, contribute

jewel: gem, adorn or decorate with precious stones, precious stone

creature: a living being, animal, a person who is controlled by others

Line 3 adore: love intensely

gifts: present, natural endowment, endowment, empower, endow, natural abilities, something acquired without compensation

Line 4 nature: a causal agent creating and controlling things in the universe, the natural physical world including plants and animals and landscape etc.

Line 5 losers: failures, nonstarters, unsuccessful persons

## Stanza 5

Line 1 keep: hold, maintain, support, go on

Line 2 repining: mature, good, right, most suitable, right for a particular purpose

restlessness: impatience, a lack of patience, uneasiness

Line 3 weary: fatigued, jade, mentally fatigued, tired

Line 4 goodness: that which is pleasing or valuable or useful, admirable

Line 5 breast: bosom, chest, boob, front

## Discussion

We have been able to establish the fact that both poems are woven around subject of metaphor. The poem “Crossing the Bar” is a meditation on death, while “The Pulley” talks about man’s dependency on God. With this explained, the conversation turns to the interpretation and analysis of poems. Most times than not, the interpretation of poems is subjective; because it is very rare for two people to give the same interpretations to any poem. This is because “the universal appeal of any poem is enhanced by the poet’s preoccupation with extending the reader’s moral insight and sympathy. Which is one of the prime functions of art, which strove to force the reader to abandon dogmas and preconceived notions, to take every aspect of a poet’s conduct into consideration, to show understanding for a poet’s motives and sympathy for their predicament, rather than eagerness to condemn them. This kind of moral insight is necessary and important in judging any poem” (Palmer, 88) emphasis mine. But with the use of WordNet as seen in the analysis of the two poems, meanings and interpretations are directly the same. Because, the meanings and interpretations are directly sourced from the WordNet. Technology according to Furstenburg “is useful not just in language learning but in the study of literature, culture ... as well. ... years ago, it would have been difficult to connect words to technology and literature or to find synergy between these fields. Interesting enough technology may end up being the medium that binds together ... language, literature, culture and films” (21-25). This is why technology helps students to understand the linguistic, cultural, historical

and socio-political and economic aspects of the literary pieces they are studying (Diala-Ogamba, 37). This is what WordNet does in the interpretations of poems, as justified in the analysis of the above poems. This study could therefore draw the following conclusions based on the use of WordNet as follows:

-It could help students and teachers to simplify the process of teaching and learning of poems

-It could assist the students with more innovative ideas because of the synergy of the words in WordNet and poetic dictions

-It will also encourage the students to learn and practice the study of more poems, because of the way WordNet simplifies difficult words

-It could help to foster authentic interactions and exchanges among students and teachers in the cause of the study or teaching of poems

-It will help students to create and construct their individual presentations based on the interpretations of WordNet in the course of the study of poems

-It will easily help students to study individually without the assistance of their teachers, since WordNet will become a handy instrument of learning

-It will also help students to work collaboratively putting their plans together for class presentations

-At the end of each group’s presentation, any inconsistency or wrong assumption could be corrected and students from other groups provide the answers to questions posed by other groups with the assistance of WordNet

-It could also give students the opportunity to be as creative as they can be, when they are doing their presentations

-It will also afford students the opportunity to read ahead of their class or teacher, because WordNet will always help to simplify the dictions of recommended poems

-It will also help students to respond to wrong criticisms of poems as discussions on the poems are going on

-With the use of WordNet in the teaching and learning of poems, the vocabularies of both students and the teachers will improve has shown in the analysis of “Crossing the Bar” and “The Pulley”

-Finally, and most importantly, technology as exemplified with the use of WordNet in this study, will assist both teachers and students to be more efficient in both teaching and learning because the use of WordNet will help both the teachers and the students to effectively manage their time in the course of their learning, since the use of technology as shown in this study, will always assist in simplifying any grey area in the course of any lesson.

### **The Danger of Using Technology in Teaching**

In the recent concluded international conference of the Association of Phoneticians and Phonologist in Nigeria held at the University of Jos, from Tuesday the 13th-Friday the 16th May, 2025, one of the lead presenters, Taiwo Soneye warned on the danger of using technology in teaching. In her words, as much as we appreciate technology in the area of teaching, it has its consequences (7);

-It could breed lazy students

-It could defeat novel ideas in research

What this implies, is that as much as one appreciates the use of technology in the area of teaching, with regard to the teaching of poems, if the instrument of WordNet or any other software is not effectively handled, by ensuring that the students are also encouraged during classes to also once in a while, depend on their natural ability to interpret these poems, teachers might be unknowingly breeding lazy students who might find it difficult to challenge their innate abilities in the near future.

### **Conclusion**

What this study has shown, is the fact that technology could aid and simplify the teaching of poems with regard to the use of WordNet. Until recently, no one has ever thought that technology would be part of our everyday living as it has been. The human society has come to appreciate the effectiveness and use of technology in one form or the other. And a lot of developments have been achieved in terms of using a variety of soft wares in teaching and learning as shown in this study. This study has revealed that WordNet could be integrated in the teaching and learning of poems for better and easier understanding of poems for both teachers and students.

### **Notes:**

For the poems “Crossing the Bar” and “The Pulley” and notes on the poems, please refer to Nwachukwu-Agbada, J.O.J, Omobowale, Tunde.,

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