

A Cognitive Linguistic Study of Sentence Comprehension Memory in Martin Luther King's Jr. "I Have Been to the Mountain Top Speech"

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Abstract: This study has investigated the workings of the mind in relation to sentence comprehension and memory, using, Dr. Martin Luther King's Jr speech, "I Have been to The Mountain Top" as its data base. This is because most times listeners or readers of a text are faced with the challenge of how to resolve or interpret the meanings of the numerous sentences that come their way. Because some of the wordings in sentences could be very cumbersome to unravel, while others are clearer in meaning and intent. The objective of the study therefore, was to reveal the relationship between Cognitive linguistics, Sentence comprehension and memory in any given text or speech. Consequently, the study highlighted the various facets of the topic; which include sentence parsing, figurative language, inferences and prepositions, and how they all add up to help the listener or audience to interpret or resolve meanings in their memory or mind. This study therefore, revealed some of the styles and techniques that could help a sentence reader of a text or a listener of a speech; in this case, Martin Luther King's Jr I HAVE BEEN TO THE MOUNTAIN TOP SPEECH, to interpret the meaning of sentences in a text like we have done in this study, the reader or the listener of a speech must bear in mind the need to adhere to the techniques highlighted in this study in order to have a good grasp of a speech or a text.

Keywords: Cognitive, Linguistic, Sentence-Comprehension, Memory, Speech

1. Introduction

This paper explores the relationship between Linguistics and cognitive science. In doing so, this paper will tie the concepts and principles of linguistics and cognitive science to the speech of Martin Luther King's Jr "I have been to the Mountain Top". If there is anything that is unique about the United States of America Public Landscape, is the gift of oratory. The American society has produced leaders that are gifted in public speaking. And one speech that has remained sublime and ever green in the minds of its readers is one of the speeches of the then Civil Right leader, Dr. Martin Luther

King's Jr, "I have been to the Mountain Top" [1].

Cognitive Science is a very wide field of discipline that draws from Psycholinguistics, Linguistics, Computer science, Neurolinguistics and Philosophy. Some of the aspects that cognitive science has investigated include imagery, memory, and language. On the other hand, linguistics is the field of science that studies the origin, structure and the use of language. In the words of Carroll:

Cognitive science is an interdisciplinary venture that draws upon the insight of psychologists, linguists, computer scientist, neuroscientists and philosophers to study the mind and mental processes..... Linguistics is the branch of science that studies the origin, structure and

use of language [2].

The above statement captures the fact that cognitive science is a wide range of study that examines the workings of the mind in the study of speech perception and language acquisition. In the words of Lyons:

... The use of the word 'mind', it is of course an everyday word of English.... it is a word which has long been employed to refer to the subject matter of a particular branch of philosophy, on the one hand, and of psychology, on the other. It is seen on everyday English, is narrower - being close to that of 'intellect', 'reason', 'understanding' and 'judgment'... [3].

The narrative above justifies the fact that cognitive science is a study that investigates how the mind and brain handle the perception of speech in relation to the acquisition of language. This fact is further strengthened by Katz, "psychologically, research has shown that knowledge is acquired, organized and stored in human memory in systematic ways which make it easily accessible. The way in which we can and do use and understand language directly reflect that organization" [4]. These facts and evidences have led to many scholarly controversies on how best to handle the processes of language and its underlining intricacies.

However, the study of Cognitive Linguistic became more popular as a Linguistic branch of study when Chomsky came up with generative rule [5] which was now pushed over to psychologists as a template carried out by speakers when producing speech patterns. This argument was further enhanced when he said that a child must have a built-in knowledge of the principles of universal grammar which limits his choice of possible sets of grammatical rules. In the words of Greene:

This is not only a hypothesis about how a child learns language. It also implies that during the learning process the grammatical rule of his language are being internalized by the child; and that it is this linguistic competence that underlies the adult's language performance [6].

According to Chomsky in his article published in (1970) a person who has learned a language has acquired a system of rules that relate sound and meaning in a certain specific way. He has, in other words, acquired a certain competence that he puts to use in producing and understanding Speech" [7]. Chomsky went further to assert that, since the process to learn to speak one's language is underlined in human intelligence, the principles required in language learning must be characterized in the way the human mind works. In his work, *Language and Mind* (1968), Chomsky is of the view that:

At the level of universal grammar, (the linguist) is trying to establish certain general properties of human intelligence. Linguistics, so characterized, is simply the sub-field of psychology that deals with their aspects of mind [5].

The discussion has been centered on the length and breadth of Cognitive Linguistics and its attendant branches and the role it plays in the language pattern of a speaker. This is because the processes of language such as perception, memory and thinking are the handiwork of Cognitive

Linguistic. This fact is summed up in the words of Trask and Mayblin "cognitive linguists are interested in understanding the structure and functioning of language in terms of human perception and cognition [8].

2. Sentence Comprehension and Memory

Daily, hearers of sentences battle on how to respond to many sentences, and they do so without paying attention to the structures of these sentences. Sometimes the wordings of these sentences could be very difficult, large and heavy to unravel what has been said. In other times, the sentence could be very simple and clearer to unravel what has been said. For example, when a friend asks over lunch: how are you? The listener or friend may perfectly well understand the question without knowing exactly what the friend means by it. Most times, we forget the precise words a person uses to relay a message. This explains why some sentences last longer in our memories over time. Discussants respond to sentences in various ways. In this study, this paper attempts to identify and understand many facets speakers and listeners may use to Comprehend Sentences. According to Carroll:

"Comprehending a sentence involves attention to syntactic, semantic and pragmatic factors." He went further to say that, when one considers a simple declarative assertive sentence like "the actor thanked the audience [2]." At the syntactic level, we identify the actor as a noun phrase (NP). At the semantic level, we identify the Semantic or thematic roles played by various words in the sentence. Actor is the agent and audience the recipient of the action. At the pragmatic level, we probably have some Knowledge about the real-world circumstances in which this sentence would make sense. It might, for instance, describe the end of a play after an actor has taken a bow.

Usually, it is not easy to identify which of these factors are at play in comprehension and possibly to identify what part each factor plays. Do we use our syntactic, semantic, and pragmatic knowledge simultaneously when we comprehend a sentence? Or do certain factors take priority at various stages of comprehension processes? What types of Cognitive processes are involved where a sentence unlike the simple declarative one above, is complex enough to be a burden for working memory? [2] these are some of the issues this paper will be investigating.

3. Statement of the Problem

When people hear sentences every time, day, minute sometimes they are not sure of the structure and basis for the sentences until they involve their thinking faculty on why the sentence and possibly the purpose of the sentence. This is because many factors are involved in resolving the purpose and the meaning of a given utterance or sentence. According to Anderson and Freebody, one way, in which, a person or an individual can resolve the intended meaning of a sentence is through "Vocabulary Knowledge." Studies have shown that there is a strong relationship between measures of

Vocabulary Knowledge and Sentence Comprehensions. Some have argued, therefore, that the relationship between vocabulary and comprehension is due to the fact that knowledge of Vocabulary is actually a measure of background knowledge and should not be thought of as a separate influential factor in sentence comprehension [9]. Another factor that also influences an individual's understanding of a sentence is a person's "Metacognitive Knowledge." This process involves the appropriate use of cognitive processes and strategies. This metacognitive process is thought of as knowledge of self, knowledge of the task, and self-monitoring [10-12], or of knowing "that" (declarative knowledge), Knowing "how" (procedural Knowledge) and Knowing "When and why" (Conditional Knowledge) [13]. Metacognitive is developed through both experience and instruction according to Meyers and Paris [14]. Declarative Knowledge would include one's knowledge about the task of listening, knowing that listening is a process and that the listener background is useful. On the other hand, procedural knowledge would include how to run through the steps in summarizing the speaker's intention and goal, and routine of him to search ahead the speaker's text for clues about meanings of the words used in a given sentence or passage. Conditional knowledge, is knowing when and why, a particularly statement is relevant, since it is context based. This is because the listener must reflect conditional knowledge when they are able to select an appropriate strategy in deciphering the goal of a speaker. Consequently, an effective use of conditional knowledge is knowing oneself as a listener. For example, ("I know I never can remember all the categories of the animals the speaker is mentioning. I had planned to do something to help one remember this"). So having a range of strategies, either by listening in memory or I could use the strategy of recalling memory. Similarly, another factor that could influence a person's or an individual's meta comprehension is what Palinscar and Brown refer to as 'reciprocal teaching' [15] this is based on the premise that the social setting of an instructional situation (sentence) dramatically affects the development of cognitive strategies. That is, the environment of a given text, could easily affect the interpretations or the meaning an individual or a person can deduce from a given sentence or text. Consequently, this study investigates how the Sanitation Workers of April 3rd 1968 in Memphis were able to interpret Dr. Martin Luther King's Jr "I Have Been to the Mountains Top" Speech, using their cognitive knowledge, sentence skills and context in interpreting the text of the speech.

4. Theoretical Frame Work

This study is anchored on Chomsky's (1965) Competence and Performance Theory [16]. Competence has to do with a speaker's tacit knowledge of the structure of a given language, while performance is what a speaker does with the knowledge of the language. According to Chomsky, language capacity is innately built in man, given the right linguistic environment which enhances or stimulates the acquisition of

a particular language, be it Igbo, Hausa, English or Russia. He went further to state that competence is instinctively inclined to a child that is born within a given linguistic domain, while performance is the instrument that is now at the disposal of the adult. Competence is taken as referring to language in the sense of what institute ability to speak a language. Performance, on the other hand, refers to the actual utterances made by language users, the point being that there may not always be exact correspondence between a speaker's utterance and the linguistic rules of the language [6]. One interpretation, which one may call the weaker, or neutral definition of competence, is that a grammar should provide the best possible description of linguistic usage. In Chomsky's term, this would entail a set of rules capable of generating all possible sentences in a language, together with structural descriptions that accord with native Speakers' intuitions about grammatical relationship. The implication of psychology is that any psychological model of the language user's behavior would have to match up to this description of language usage. In other words, by describing what language behavior involves, linguistic analysis would act as an empirical test for evaluating the output of psychological models. On the other hand, such an analysis of linguistic competence would have nothing to say about the actual rules or operations by which a language user achieves this output.

Chomsky goes on to make the claim that, since the ability to learn to speak a natural language is basic to human intelligence, the rules underlying language learning must be characteristics of the way the human mind works. In *Language and Mind* He writes: "At the level of universal grammar (the linguist) is trying to establish certain general properties of human intelligence. Linguistics, so characterized, is simply the sub-field of psychology that deals with these aspects of mind [5]." If one accepts this stronger definition that linguistic competence is internalized in the mind of the speaker, what are the implications for the relation between psychology and linguistics? The first point to be made is that the stronger the claims made by linguistics about mental processes the more susceptible their theories become to psychological testing, this is because both psychologists and linguists can claim to be making deductions about linguistic operations by looking at relations holding between Linguistic input and output. Thus, Chomsky comes to certain conclusions about the kind of grammar a child must be predisposed to look for on the basis of comparing the primary linguistic input and output to which he is exposed and the final output of adult language. Thus, Chomsky writes in *Aspects of the theory of Syntax*:

When we speak of a grammar as generating a sentence with a certain structural description to the sentence, when we say that a sentence has a certain derivation with respect to a particular generative grammar, we say nothing about how the speaker or hearer might proceed, in some practical or efficient way, to construct such a derivation [16].

In the same very paragraph, he describes the aims of generative grammar as being to characterize in the most neutral possible terms the Knowledge of the language that

provides the basis for actual use of language by a 'speaker-hearer'." He then goes on to say: 'No doubt, a reasonable model of language use will incorporate, as a basic component, the generative grammar that expresses the speaker - hearer's Knowledge of the language.' Bloch sums the above fact:

...the whole or a part of what people must know in a particular... order to operate efficiently, it follows first that people must have acquired the knowledge, either through the development of innate potentials, or from external sources, or from a combination of both, and secondly that this acquired knowledge is being continually stored in a manner that makes it relatively easily accessible when necessary [17].

5. Literature Review

5.1. Psycholinguistics

The subject of psycholinguistics is founded on the belief that the property of language is an attribute of the brain. Psycholinguists are of the opinion that the workings of the human language are built on the capacity of the brain. The capacity that helps it to resonate its ability for humans to use language for the expressions of thought because humans are innately endowed with the ability to form concepts and secondly, the brain assist humans in the process of language acquisition such that there is an innate language-acquisition faculty. This is what makes everyone of us who we are. This is what holds all our memories, all our thoughts, and all our dreams [18]. Chomsky is of the view that the brain helps the user of language to manipulate sets of rules capable of generating possible sentences that have grammatical relationships. The cusp of the issue is that any psychological thrust of the language user's behavior would have to match up to the users' description of language usage. In other words, by describing what language behavior involves linguistic analysis would act as an empirical test for evaluating the output of psychological model [6].

Borsley wholesomely captures the relationship between psychology and language:

One point to note about Chomsky's conception of a language is that it makes syntactic theory a branch of psychology, and especially of cognitive psychology, the psychology of systems of Knowledge and belief. Chomsky in fact argues not just that a language is a body of rules and principles in the mind of the speaker, but also that universal grammar is a body of principles and parameters which is an innate component of the mind. Thus, for Chomsky, what syntactic theory is ultimately about is the human mind. But even if one isn't prepared to go all the way with Chomsky, it is reasonable to assume that syntactic theory can offer some insight into the workings of the human mind [19].

5.2. Neurolinguistics

Psycholinguists over the years have come to accept the

acquisition of language in humans as a biological process. This is because, to them the process of language acquisition is viewed from a biological perspective. Moreover, this is so because the dividing line between humans and other species is man's ability to use the gift of language. It is this biological functioning of the brain that helps the acquisition of language. This biological functioning is what has become of great importance to Neurolinguistics. Neurolinguistics is basically the study of "neural mechanisms in the human brain that control the comprehension, production and acquisitions of language" [20] Furthermore, neurolinguistics is the study of how language is represented in the brain: that is, how and where our brains store knowledge of the language (or languages) that we speak, understand, read and write, what happens in our brains as we acquire that knowledge, and what happens as we use it in our everyday lives. Neurolinguistics try to answer questions like these: what about our brains, how does it make human language possible - why is our communication system so elaborate and so different from that of other animals. Does language use the same kind of neural computation as other cognitive systems such as Music or Mathematics? Where in the brain is a word that you have learned? How does a word 'come to mind' when you need it (and why does it sometimes come to you?) If a person knows two languages, how does he switch between them and how does he keep them from interfering with each other? If a person learn two different languages from birth, how is the brain different from the brain of someone who speaks only one language, and why? Is the left side of the brain really the language side? If one loses the ability to speak or to read because of a stroke or other brain injury, how well can he learn to speak again? As you can see, neurolinguistics is deeply entwined with psycholinguistics, which is the study of the language processing steps that are required for speaking and understanding words and sentences, learning first and later languages and also of language, and reading.

Our discussion so far, establishes the referential relationship between the brains, language, comprehension, learning and interpretation of meaning. Carson et al give a comprehensive capacity of the brain:

Inside each human brain are approximately 86 billion neurons interconnected by more than 100 trillion synapses (estimated since no one has counted them all yet), which science has only barely begun to understand. Your brain started developing almost immediately after conception. During the first month of your mother's pregnancy, your body were creating neurons at the rate of about 400 million per day. Your brain generates electricity constantly, enough every waking minute to Keep a low- wattage light bulb fully lit. so when you say, "that's a bright idea", your statement could be literally as well as figuratively true [18].

Carson et al give an unquantifiable capacity of the brain, highlighting its strength as seen in its neurons, developmental process and its metaphorical ingenuity (your Statement could be literally as well as Figurative).

5.3. Linguistics Metaphoric Concepts

Metaphor affords the user of language to look at language from different perspectives and angles. The study of metaphor and cognitive linguistics have become a new field of research among linguists since the later part of the last century. This is because; metaphor helps the user of language to organize his thoughts and knowledge which gives form to the unknown. There are linguists like Burling who argues that seeing language as primarily a means of communication is an error. Language according to him is best seen as a means of organizing mental representations. In his view, our familiar ability to communicate with language is merely a spin-off- though admittedly a very valuable spin-off -of our linguistic cognition [21].

This is because metaphor has become a concept of linguistic ideology that views language as one's communicative knowledge that helps in organizing concepts into categories. Most times users of language store and recall concepts of ideas, objects and events of the same type together. So much so, because many of these categories are organized in a number of ways. For instance, the Hausa language refers to *orange* as "Lemu" but today, this word "Lemu" is used to refer to bottled or canned soft drinks. This is why categories are graded: that is "they contain a variety of instances of the same object or event, but some instances are more typical (or "higher-grade") examples of the category than others. For instance, given the category "bird" for most Americans or Europeans, "a robin" is a more typical example of the category (is "more birdish") than an "ostrich", and a bird with wings that flies is a better example than a wingless or flightless bird [22, 23]. What this implies, is that both the speaker and hearer of a text is bound to draw meanings from a given utterance based on the categories (words) they have stored in their brains or memory. This is so, because, our knowledge is organized metaphorically, since metaphor is concerned with describing one thing in forms of another. This is why Trask and Mayblin are of the view that there are differences of metaphor.

Well in English, it appears, we orient ourselves in terms of human beings. And our backs are behind us. So, something which is "at our back" is behind us. But not all languages work in the same way that is, they don't use the same metaphors. The speakers of some languages think metaphorically, not in terms of people, but in terms of four-footed animals, such as buffalo. So, a different choice of metaphor produces different senses for the same words. And cognitive linguists are arguing that almost nothing can be expressed to any human language without the selection of a metaphor through which to express it [8].

In summary, the above statement highlights the fact that our thoughts, experiences and actions are shaped in metaphorical symbols. Symbols that are resemblance to our world view.

6. The Analysis of the Speech

I have been to the Mountain Top

6.1. Parsing

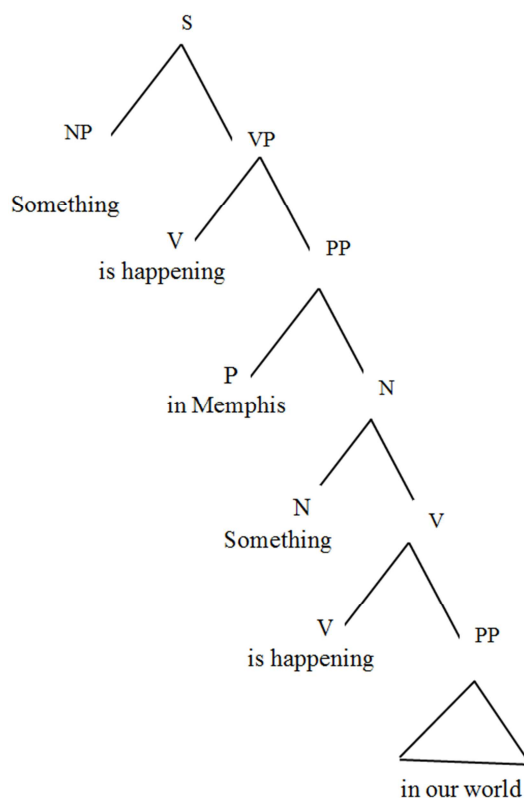
The first technique that this study will be applying in analyzing the speech, is using the parsing technique. This is the first step in the process of understanding a sentence, it is to assign elements of its surface structure to linguistic categories. This procedure is known as parsing. This is the internal representation of the linguistic relationships within a sentence; this is usually in the form of a tree structure or phrase marker. If we take the first sentence in the second paragraph;

"Something is happening in Memphis; something is happening in our world."

This Sentence is a compound sentence that is held together by a semicolon, this semicolon could easily be replaced by the coordinative conjunction,

'and'

"Something is happening in Memphis and something is happening in our world." Let us now parse this sentence using the tree structure:



Linguists use parsing as a form of problem solving or decision making in the sense that, making decisions (although not necessarily in a conscious manner) about where to place incoming words into the phrase marker the speaker or listener are building. For instance, this sentence highlights the fact that this speech was delivered in "Memphis." And so, the listeners or the Civil Right supporters could have easily placed their decisions because this speech was in support of the striking Sanitation Workers in Memphis who wanted a better pay and recognition to their plight. This is why, Just and Carpenter suggest that hearers or speakers make decision

immediately as they encounter a word in a sentence, which they call the "immediacy principle" [24]. This principle or technique is of the view that, when we first see or hear a word we access its meaning from permanent memory, identify its likely referent, and fit it into the syntactic structure of the sentence. So going back to the above sentence:

Something is happening in Memphis;

(And)

Something is happening in our world.

The referent in this case is "Memphis"

What is happening in Memphis?

The audience could interpret the following meanings:

Poor pay

Poor working conditions

Poor living conditions etc.

And 'Memphis' and 'in our world' is in contrast because Martin Luther King's Jr, is using 'our world' as a symbol of the entire system that is condemnable with regard to the way the Sanitation Workers in Memphis were treated.

The primary reason for using the immediate processing, is that the number of decisions involved in understanding even a single sentence can be quite large and can over load an individual cognitive resources.

i. The first sentence is the sixth paragraph. reads thus:

ii. I would even go by the way that the man for whom I am named had his habitat.

This sentence is syntactically ambiguous. It could mean that the person Martin Luther King's Jr, is named after has its home. Or even the place Martin Luther King's Jr stays. But actually, what he means, is simply the place of birth of the Martin Luther, (1483-1546) The German Priest, Monk and theologian who became the central figure of the religious and Cultural Movement, known as the Protestant Reformation [25]. This ambiguity is encountered when we hear the word 'for'. But let us assume the audience or readers of the speech keep in mind the meanings of 'habitat' - 'place of habitation'

'Place', 'province', 'street', 'house', 'home', 'address' etc.

From the meanings we have deduced from 'habitat' above, it shows that the word 'habitat' has more than one interpretation. Suppose the listeners or audience take a wait-and-see approach, and wait for further information before deciding which interpretation to use. One major disadvantage of this approach, is that the listeners could retain one or more interpretations of each of the many choices pointed above which would overwhelm their working memory [26]. One other Parsing Technique is the late Closure Strategy, this implies that, wherever possible listeners or audience in a gathering prefer to attach new items to the current constituent [27, 28, 29]. The primary motivation for this technique is that it reduces the burden in working memory during parsing [27]. Let us examine this sentence in paragraph 21 of the speech:

"I call upon you to be with us when we go out on Monday."

The adverb "Monday" can be attached to the main clause (I call upon you) or the subsequent subordinate clause (when

we go out). That is:

I call upon you on Monday

When we go out on Monday

One major advantage of this technique is that it reduces the burden on working memory. That is, the listeners can easily interpret the message of The Speaker (Dr. Martin Luther King's Jr.). He wants all striking Sanitation Workers to be out during the protest for better working conditions on Monday.

Another technique the study would be applying in the Parsing Strategy is the Garden Path Strategy. This strategy implies that listeners or readers of a speech could interpret a sentence in a particular way, only to find out near the end, that the audience or reader of the sentence, has misinterpreted the sentence. The impression is that of being led down a garden path, until discovering at the end that the listener or reader of a text, took the wrong way, and has to retrace his steps. Let us now examine this sentence in paragraph 8:

I would even come up to the early thirties, and see a man grappling with the problems of bankruptcy of the nation.

The word "bankruptcy" in the clause could cause a misinterpretation in the memory of the listeners or readers of the speech, that is, memory log-jam:

Is it that, at this point in time the American Nation was bankrupt, insolvent, insufficient, or even at a loss? The word "bankruptcy" could result into different interpretations in the memory of the listener or reader. But actually, what Martin Luther King's Jr. was trying to pass across to the listeners or audience was the inequality that exists in the American society at this time, with regard to the Sanitation Workers in Memphis. He was only painting a picture of the moral decadence of inequality that existed in the American society at this period. Actually, the word bankruptcy is metaphoric. Metaphors are used in speeches to refer to situations in which lexical items are used in certain verbal contexts to include its basic (core) meaning (denotation) as well as the mental associations (connotation) with which it is valued [30]. This statement strengthens the fact that "Garden Path Sentences" create subjective impressions because listeners are forced to backtrack their earlier interpretation, in order to get the correct thought or message of a speaker or writer.

The last of the Parsing Technique this study will be examining is the 'Minimal Attachment Strategy.' This technique implies that listeners or readers of a text prefer attaching new items into phrase markers. Being constructed using the fewest syntactic nodes consistent with the rules of the language [26, 27], For instance, if we take the quoted sentence in the speech:

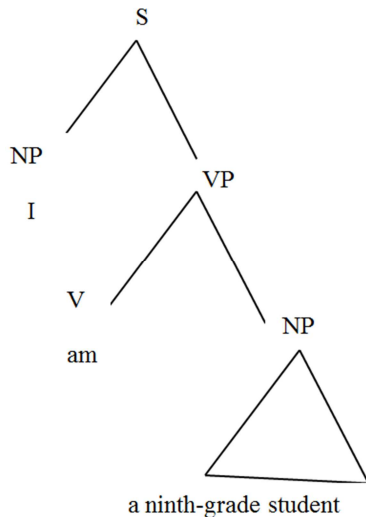
I am a ninth-grade student....

I am a ninth-grade student at the White Plains High School.

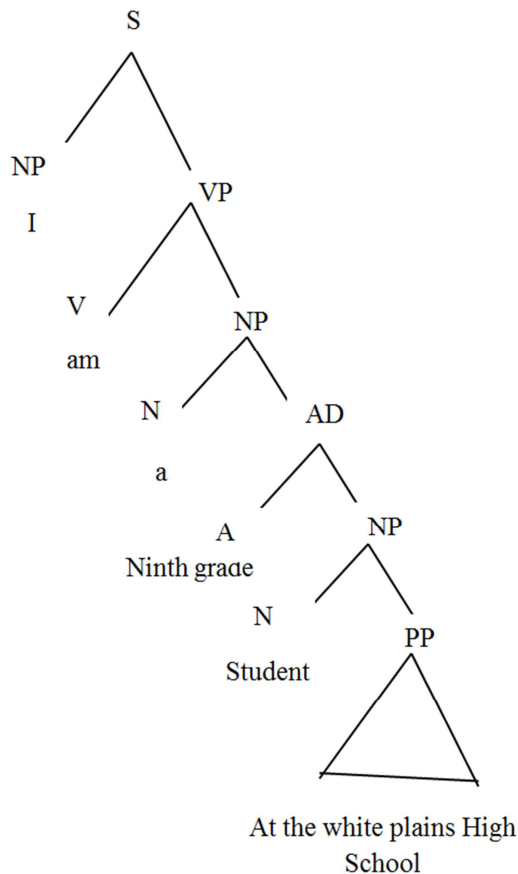
The second part of the sentence is consistent with minimal attachment in the second part of the sentence; at the White Plains High school is attached to the first part of:

I am a ninth-grade student

The second part of the sentence is a complement construction that requires building a new constituent. This can be captured in a tree structure;



This tree can be expanded;



According to Carroll Parsing strategies are consistent with modular approach to language comprehension, in which comprehension as a whole is the result of many different modules, with each devoted to a particular aspect of comprehension accordingly, parsing is performed by a syntactic module that is not influenced by higher order contextual variables, such as the meaning of the sentence or by general world knowledge. He went further to state that contextual factors influence comprehension at a later state. Similarly, he stated that syntax and semantic interact during comprehension process, because listeners use other factors

like discourse and Nonlinguistic contextual information to arrive at conclusions or derived meaning [2].

The facts of this statement is that, the audience at Memphis, when Martin Luther King's Jr. was giving this speech, apart from using their syntactic and semantic knowledge, would have also factored other variables like their knowledge of the situation (Sanitation workers plight) and even the racial discrimination that was prevalent during this period, to be able to get the accurate message of the speech. Presumably, the above sentence that has been syntactically parsed: (I am a ninth-grade Student at the White Plains High School) would have other correlations apart from syntax and semantics in the memory of the listener to determine the meaning of the sentence. All these correlations could place the following in the minds of the listeners:

So, there are White Americans who are supporting this struggle with us. (This thought is supported by the fact that the sentence or statement was that of young white girl). Other interpretations could mean:

So, we are not alone in this struggle.

So, there may be those who are not in Memphis, at the time of the demonstrations but who may be supporting them wherever they may be at this time in the United States.

This explains why Stewart refers to formalized relationships as that which gives rise to highly predictable and normalized language which is found in formal gatherings [31], like the Memphis Sanitation Workers protest of April 3rd, 1968. In examining this fact, Pride is also of the view that the factor of "cultural relativity is also to be reckoned with" [32]. This is even so in the study of sentence memory because the cultural context of the listeners or audience is very vital in their comprehension of a text or sentence. In this case, the experience, background and environment of the Sanitation Workers in Memphis were very vital in their comprehension of the speech, "I have been to the Mountain Top"

The high point of this study so far, has focused on parsing, as the process of assuming elements of the surface of a sentence to linguistic categories, which is usually the first step in understanding a text or sentence. This is because processing limitations, allow listeners or readers of a text or sentence to analyze sentence structure as soon as they hear the first words. The Parsing style is one of the modular approaches which suggests that the words of a sentence activate syntactic processing strategies that are used to organize the words into a phrase marker, which was revealed in the various tree structures above. This strategy indicates that listeners prefer to attach incoming words to the most recent constituent as opposed to attaching them to earlier constituents or developing new ones. On the other hand, the interactive approach emphasizes that listeners use all available information including lexical, discourse and contextual factors.

6.2. Comprehending Figurative Language in the Speech

The parsing technique this study has just considered, has its output as syntactic structure of the various sentences in the

text. This provides basis for determining the literal meaning of the speech. However, one must realize that many of the sentences' speakers use in an everyday basis are not meant to be taken literally. There are many such examples in the speech:

.....See a man grappling with the problems of the bankruptcy of the nation.

If the listeners of this text take this sentence literally, they will miss the point, rather, all that Luther King's Jr was passing across to the listeners, was that the American Nation has failed in her responsibility as a Nation, to create an equal and an egalitarian society for the American people; regardless of race or color.

Another statement that could be taken literally in the text is:

"The nation is sick"

What Martin Luther King Jr was trying to tell people here, is the fact that the American society has failed her citizens by not upholding the tenets of the American constitution which says "all men are equal." Because a nation cannot be sick, since it is not a human being or an animal. This statement is a metaphoric analogy to show the extent of a 'failed state.'

Figurative languages are statements that mean one thing literally but are taken to mean another thing entirely. It is an everyday statement that speakers use unconsciously. This is why Carroll refers to figurative language as "ubiquitous aspect of language" [2]. In the words of Cacciari and Glucksberg figurative language is no longer perceived as merely an ornament added to everyday, straight forward literal language, but is instead viewed as a powerful communicative and conceptual tool [33]." Figurative languages are the ready-made linguistic tools of a speaker because of their elasticity variance, that is, binoculars in nature, since it is mostly anchored on context.

6.3. Types of Figurative Language

There are many types of figurative language, and there are many of such in the speech "I Have been to the Mountain Top". But for the purpose of this study, we will attempt to list the common types that have been used in this speech with a combination of some indirect speech acts that is also common in the speech.

6.3.1. Allusion

I would take my mental flight by Egypt and I would watch God's children in their magnificent trek from the dark dungeons of Egypt through the Red Sea, through the wilderness.

I would move on by Greece and take my mind to Mount Olympus. And I would See Plato, Aristotle, and Socrates....

I would even come up to the day of the Renaissance....

I won't come up even to 1863, and watch a Vacillating President by the name of Abraham Lincoln....

6.3.2. Metaphor

.....and see a man grappling with the problems of bankruptcy of a nation

The nation is sick

...that only when it is dark enough can you see the stars.

...scratching where they didn't itch, and laughing when they we're not tickled.

The masses of people are rising up.

6.3.3. Repetition

I wouldn't stop there.

But I wouldn't stop there.

But I wouldn't stop there.

But I wouldn't stop there.

6.3.4. Contrast or Antithesis

Men, for years now, have been talking about war and peace

It is no longer a choice between violence and nonviolence in this world....

6.3.5. Indirect Speech Act

We aren't going to let any mace stop us. We're masters in our nonviolent movement in disarming police forces; they don't know what to do. I've seen them so often. I remember in Birmingham Alabama, when we were in that majestic struggle there, we would move out of the 16th Street Baptist Church day after day; by the hundreds, we would move out. And Bull Connor would tell them to send the dogs forth. And they did come; but we just went before the dogs singing, "Ain't gonna let nobody turn me around."

Bull Connor next would say, "Turn the fire horses on." And as I said to you the other night, Bull Connor didn't know history. He knew a kind of physics that somehow didn't relate to the trans physics that we knew about. And that was the fact that there was a certain kind of fire that no water could put out. And we went before the fire hoses; we had no water. If we were Baptist or some other denominations, we had been immersed. If we were Methodist, or some others, we had been sprinkled, but we knew water. That couldn't stop us.

And we just went before the dogs and we would look at them; and we'd go on before the water horses and we would look at it, and we go on singing "Over my head I see freedom in the air...."

This study will now attempt to analyze some of the extracts above beginning with the Indirect Speech Act. To have a better understanding of this Act, is to examine this from the theory of Austin (1962) titled "*How to do things with Words*" [34]. According to him, the act of saying something is referred to as the *locutionary act*. The *illocutionary* force of an utterance is the action that is performed by saying the sentence. If for example a person says "congratulation", the *illocutionary* force is "congratulation", the act of saying the sentence performs the act. It therefore means that an utterance with an *illocutionary* force is commonly referred to as a speech act. It must be stated here though, that the effect of the utterance on the listener is *perlocutionary effect*.

One type of speech act that has interested most linguistic scholars over time, is the indirect speech act, in this type, the

intended meaning does not correspond to the literal meaning of the sentence. If for example a person uses an indirect or polite form of request.

Can you shut the door?

One interesting thing about the above speech act is that there is no direct relationship between the form of the sentence and its intended meaning, listeners apparently have little confusion comprehending the above speech act. One major point to note about indirect speech act or request is that such requests can be made in several ways. One is to question the ability of the person who is asked to perform the act, like the above request, another is to refer to the listener's willingness to perform the action, like the sentence below:

Will you shut the door?

Another way is to indicate the reason that such an action needs to be done, for example;

It's getting cold here.

Whether the person addressed has the ability or willingness to perform the desired action and the reason that the action is necessary are referred to as "*felicity conditions*." When a speech act meets the most of these conditions, it is genuinely regarded as sincere or valid. When these conditions are not present, the speech act is typically viewed as odd or socially inappropriate.

A careful examination under the heading of Indirect Speech Act shows that the extracts are all indirect speech acts and many of these examples abound in the speech. Secondly, apart from the fact that they are Indirect speech Acts, they are also a blend of *flashbacks* and *foreshadowing*. Martin Luther King's Jr, uses this mix, to create an awareness of necessity of time in the memory of his audience so as to ensure that the struggle for a better living condition for the Sanitation Workers is achieved. According to Genette a narrative theorist, he explains this temporal disparity using the terms. *analepsis* and *prolepsis*, *Analepsis* tells (or shows) what has happened in the past with respect to the present, while *prolepsis* presents what will happen in the future with respect to "now" in the story. The former is like *rewinding* the story, and the latter is like *fast forwarding* the story [35].

From the examples of the Indirect Speech Act given above, many of the examples abound; in the first text, one comes across this; Birmingham, Alabama in the second text, these are also evident; fire horses, dogs, water horses, in the third text, there are also the following: dogs, water horses etc. Through this technique Martin Luther King's Jr. points to the memory of his listeners the various challenges and difficulties protesters had to pass through to achieve their desired results in the past. He uses the Indirect Speech Act expertly, by painting a mild picture of the horrific experiences of the past which the struggle or protest in Memphis might experience. Dr. Martin Luther King's Jr. rather prefers to paint a mild horrific picture of past experiences, than to come directly to tell his audience, that we are going to be attacked by dogs, fire horses, water horses, authorities, and the police. By using this style, he creates an expansive euphemism and a sententious syntactical balance in the minds and memory of his listeners,

that effectively gave the speech a *perlocutionary affect*. Because we were told that, after the protest, that Negotiators finally reached a deal on 16th April, 1968, allowing the City Council to recognize the Union and guaranteeing a better wage.

i. Metaphor

For several decades now, philosophers and scholars have come to argue that apart from the rhetorical and literary functions of metaphor, metaphor must be seen to have implicit words and sentences interpretations. In 1978, Donald Davidson argue that metaphorical meaning is distinct from literal meaning. In their words, metaphor "mean what the words, in their most literal interpretations, mean, and nothing more" [36]. Lakoff and Johnson advanced the conceptual metaphor theory of figurative language [37]. The argument was that metaphors were not mere creature of conduit pipes, but instrument of instant messaging. That is, they have powerful creative characteristics that can infuse linguistic interpretations both in the mind or memory of both the speaker and listener. If one now uses the principle of Conceptual Metaphor to interpret some of the examples of metaphor listed above; *see a man grappling with the Problems of the bankruptcy of a nation*, this metaphorical statement could mean; the state of America at this time, is a failed state, a depressed state, a state that was far off, in terms of her responsibility to some sections of her society. The next metaphor; *the nation is sick* could also be linguistically interpreted by both the speaker and listeners to mean, a failed state, a state that has poorly handled the principles, of fairness and equality to all sectors of the American society, at this period in time. In the next metaphorical statement; *that only when it is dark enough can you see the Stars*, linguistically, this could be interpreted by both the speaker, the listeners and readers to mean that the situations may look bleak and hopeless at that time, but yet, there was hope and light at the end of the tunnel. In the last example of metaphor listed above, *the masses of the people are rising up*. Both the speaker, listeners and readers, could easily interpret this to mean, the majority of the American Society is becoming aware of their rights.

Martin Luther King's Jr. also employs a lot of allusion in the speech. He uses this technique to show his knowledge and understanding of the situation and therefore he employs this style to deepen the reawakening of the Sanitation Workers to stand for their rights and fight for a just cause. In one of the allusions extracts above; I will come up even to 1863, and watch a vacillating President by name Abraham Lincoln... This extract refers to when President Abraham Lincoln signed the Emancipations Proclamations on January 1, 1863 [38]. The proclamations declared "that all persons held as slaves" within the rebellious states "are, and henceforward shall be free." This clearly shows that Dr. Martin Luther King's Jr, has a deep knowledge of the American Society at this period in time. He therefore, uses this style to appeal to the memory of his listeners to stand for their rights, since there is a legal status that enforces their rights as American citizens.

He also uses the technique of repetition in the speech;
 I wouldn't stop there
 But I wouldn't stop there
 But I wouldn't stop there

As an orator, Dr. Martin Luther King's Jr. uses this technique in the speech to emphasize his message, and makes the speech easier to follow for his audience, but most importantly, he uses the technique to help the memory of the audience to remember and recognize the importance of his message, since it is mostly used to create a cohesive effect that links one issue with the other. In this speech, there are a lot of such instances, where he uses, "I wouldn't stop there" at the end of each paragraph to link the past idea with a new idea at the beginning of a new paragraph.

Dr. Martin Luther King's Jr. also uses another Figurative Language tool called antithesis. Antithesis is used by most orators or speakers to underpin the clear difference between opposing ideas by arranging them side-by-side in a structure. For example;

Men for years now, having been talking about war and peace

It is no longer of choice between violence and non-violence in this world....

When Antithesis or contrast is used in a text like Dr. Martin Luther King's Jr. did, it helps the audience or listeners to define and comprehend complex ideas, because it is used to create a parallel balance; it is like the Lady justice or the scale of balance because it helps the memory of the audience or listeners to decide which of the divide they belong.

7. Inferences and Sentences Memory

Inferences and sentences memory have always played vital roles in sentences processing. This is because greater elaboration of processing leads to better retention, and this has received great amount of support in psychological studies of words, sentences and discourse. Elaboration is a process thought belief by which incoming information is related to information already stored in permanent memory, thereby enriching the memory representation of the new material. Elaborative processes help listeners to draw inferences. Bransford, Barclay and Franks argue that listeners routinely draw inferences in the course of comprehending new events and that these inferences become incorporated into their memory representations of the event [39]. Let us now examine some sentences from the text.

Something is happening in Memphis; something is happening in our world.

An implied meaning can be drawn from the above sentence by the listener or audience. This is because the message implicit interpretations could mean thus:

There is a great revolutionary change in Memphis that is affecting the world of the United States of America. And this is because, the Sanitation Workers of Memphis are beginning to assert the power of their rights.

Let us now examine another statement:

...the way is always the same, "We want to be free"

Implicitly, this sentence could be interpreted in the memory of the Sanitation Workers to mean:

We want to be treated equally like other American citizens.

We want fair treatment like other Americans, since the American constitution says that all men are equal before God and the state.

This explains why Carroll says that "implied messages are extremely attractive because they can create the same impression as explicit messages...." [2].

8. Prepositions and Sentence Memory

Psycholinguistic over the years have proposed that listeners or audience find it much more difficult to comprehend linguistically based representation like (deep structures in transformational grammar) in sentence memory.

This is because the exact linguistic form is hardly retained, while nonlinguistic information like the world view, and the listeners general world knowledge are easily retained. Consequently, some linguists like Anderson and Kintsch, argue that proposals assume that a sentence can be represented as a preposition consisting of two or more concepts and some form of relation between them [40, 41]. For example, if you take a sentence from the text or speech that encapsulates the entire speech, we could have several prepositions but yet the message of the sentence does not change.

... the cry is always the same: "We want to be free"

This statement can give us several prepositions;

"We want to be free is our cry"

Our cry is that, we want freedom

Freedom is our cry.

Freedom is the basis of our cry.

If one uses the prepositional model, to draw up the inferences of these sentences, there will be no difference in the meaning of the sentences in the memory of the listeners, readers or audience. This is because the core message of the preposition is Freedom. That is, Dr. Martin Luther King's Jr. was urging the Sanitation Workers in Memphis to stand up and fight for their freedom. This interpretation is based on the fact that when listeners first encounter a sentence, they extract its meaning and construct a preposition that represents this meaning. At the same time, the surface form of the sentence is being retained in working memory. Because the meaning is usually of greater interest, more processing resources are devoted to the meaning (which persists for a period of time) than to the surface form (which fades over a briefer interval). If the surface structure is pragmatically significant, more attention is given to it, with consequently better retention. This might lead to the drawing of additional prepositions (inferences), which are stored along with the prepositions of the presented sentences. On memory tests, the memory representation(s) of a sentence are consulted. Unless the sentence was pragmatically striking or the retention interval was very short, only the prepositional representation along with any

inferences that were drawn will still be stored. As a consequence, listeners' memory for meaning is excellent, but they are susceptible to remembering inferential materials falsely. One important advantage of prepositional models is that they can be extended naturally to discourse (like this study has done) because the meaning representation of two one-preposition sentences is equivalent to that of one two-preposition sentence (like the one analyzed above). In a natural discourse, we generally recall the meaning that a sentence contributes to the overall discourse meaning.

9. Conclusion

This study has highlighted the relationship between Cognitive linguistics, Sentence comprehension and memory. In carrying out this investigation we used the speech of Dr. Martin Luther King's Jr. speech; *I have been to the Mountains Top*, as the primary data for the study's analyses. The study found out that the immediate processing of sentences is not an easy task because of the various comprehensive mechanisms that are involved in arriving at the right interpretations of sentences. And a closer examination of our data; "I Have been to the Mountain Top" speech shows that listeners or readers of the speech, must factor a lot of techniques to be able to get the correct interpretations of the sentences so as to comprehend the intended message of the Speaker, Dr. Martin Luther King's Jr. Some of these mechanisms range from Parsing, Figurative Languages, Speech Act, Inferences, and Prepositions. We could therefore argue that with the applications of these sentence comprehension and memory mechanisms that were applied to the speech, the intended message of Dr. Martin Luther King's Jr. through the speech was interpreted accurately to a very large extent.

Notes

For the techniques, mechanisms, used in the analysis of this study, please refer to David, W. Carroll's Sentence Comprehension and Memory in Psychology of Language 4th (Ed). Thomson Wadsworth, 2004. PP 125-151.

Conflicts of Interest

The authors of this article declare no conflict of interest in the publication of this article.

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