A Survey of the Space of Linguistic Theorising with Reference to Major Branches of Linguistics Focusing on Phonology

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Abstract

In an attempt to survey the space of linguistic theorising with reference to the major branches of linguistics and focus on phonology, the researcher examined linguistics as a field of study. Apart from acknowledging the established fact that it (linguistics) is a scientific study of language, the various branches of linguistics – micro and major linguistics are overviewed. The two seemingly confusing concepts – linguistic theory and linguistic theorising are examined. Attention is paid more to the micro linguistic area of the language study while particular focus is on phonology as a micro or one of the core branches of linguistics. It is observed that linguistics as a field of study cannot be investigated properly without some theoretical reflection. Therefore, the various identifiable linguistic theories are applied in the examination of the core linguistic area of study with particular interest on phonology which however was approached by the application of the required theory for proper examination of the phonological representations.

Key words: Linguistics, language, linguistic theories, linguistic theorising and phonology

Introduction

Linguistics, which is generally known to be the scientific study of language, is further explained in Merriam Webster (2017) to be the study of human speech which includes the units, nature, structure and modification of language. Language here is nothing but a system of communication amongst humans. Linguistics has several branches which some linguists subdivided into two – micro and macro linguistics (Bulut & Wu, 2016 & Slide-hare, 2017). While micro linguistics which is the same as the core linguistic area is seen as a 'much more focused area' and defined as "science dealing with the structure of language as an autonomous sign system", macro linguistics is defined as "scientific investigation of language in the broadest sense, i.e., in the context of all related disciplines such as sociology, psychology, and philosophy" (quoted in Bulut & Wu, 2016).

Micro or major or core linguistic area comprises morphology, phonology, syntax and semantics, and aims at looking into the structure and nature of language without much attention to the context of use. Most scholars separate phonetics from phonology and pragmatics from semantics but we are going to treat phonetics and phonology as one, also semantics and pragmatics since phonetics is simply a major part and link to phonology; and both semantics and pragmatics are concerned with meaning of grammatical constructions. Besides, pragmatics just like discourse analysis can be classified as an abstraction from the centre of linguistics – an area that dances around linguistics.

Macro linguistic area encompasses psycholinguistics, sociolinguistics, neurolinguistics, discourse analysis, computational linguistics, applied linguistics and then pragmatics. As

mentioned earlier, discourse analysis and pragmatics are seen as abstractions from core linguistics, others could be seen as hyphenated linguistics – areas of about language. The macro linguistic branches are further explained in slide-share (2017) in the following definitions:

- ❖ Psycholinguistics is the study of language and mind: the mental structures and processes which are involved in the acquisition, comprehension and production of language.
- ❖ Sociolinguistics studies the relationship between language and society; how social factors influence the structure of language.
- ❖ Neurolinguistics is the study of language processing and language representation in the brain. It typically studies the disturbances of language comprehension and production caused by the damage of certain areas of the brain.
- ❖ Discourse analysis or text linguistics is the study of the relationship between language and the context in which language is used. It deals with how sentences in spoken and written languages form larger meaningful units.
- ❖ Computational linguistics is an approach to linguistics which employs mathematical techniques often with the help of a computer.
- ❖ Applied linguistics is primarily concerned with the application of linguistic theories, methods and findings to the elucidation of language problems which have arisen in other areas of experience (pp.11-12).

These fields of study defined above, in one way or the other, relate with linguistics and cannot be completely detached from it, yet they are not the major branches of linguistics. The identified branches of linguistics have been illustrated in a circular diagram too:
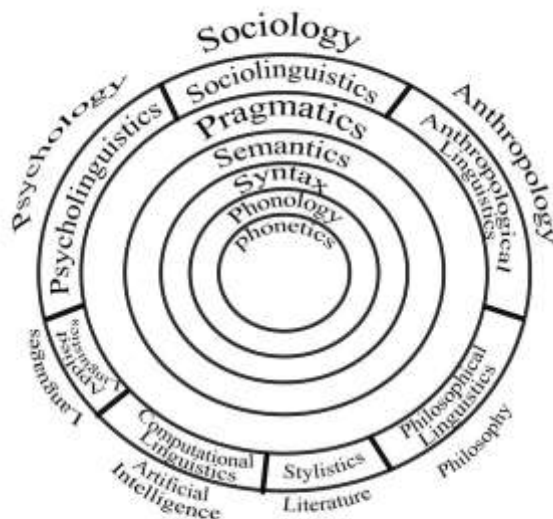
(Adapted from Slide-share, 2017, p. 8).

This further emphasises on the relationship that exist between linguistics and these fields and related areas – areas of about language. Having examined the various branches of linguistics briefly, we are going to examine the linguistic theories and how they are applied in the analysis of the core areas of linguistic study.

Linguistic Theories

These are the theoretical frameworks that are applied in the analysis of a language. There are theories that are applicable to the study of the structures of words; some theories are also used in the examination of the systems and structures of speeches; there are also theories that deal with the processes involved in the combination of words to form larger constructions known as sentences, and those that enable us study meaning in all its formal aspects.

Linguistic Theorising

Linguistic theorising could either mean applying the various linguistic theories in the analysis of the various branches of language study or simply the formulation of theories on linguistics. For the interest of this study, we define linguistic theorising as the application of linguistic theories in the examination of the major branches of linguistics.

Scholars have, however, approached linguistic theorising from different angles. For instance, it has been approached from the externalists, emergentists and essentialists' viewpoints where three different foci – the subject matter, the approach being advocated and the explanation are examined in a tabular form:

Externalists	Emergentists	Essentialists
Primary phenomena: actual utterances as produced by language users	Primary phenomena: facts of social cognition, interaction, and communication	Primary phenomena: intuitions of grammaticality and literal meaning
Primary subject matter: language use; structural properties of expressions and languages	Primary subject matter: linguistic communication, cognition, variation, and change	Primary subject matter: universal principles that explain the properties of specific languages
Aim at describing attested expression structure and interrelations, and predicting properties of unattested expressions	Aim at explaining structural properties of languages in terms of general cognitive mechanisms and communicative functions	Aim at articulating universal principles and providing explanations for deep and cross-linguistically constant linguistic properties
Linguistic structure is a system of patterns, inferable from generally accessible, objective features of the use of language	Linguistic structure is a system of constructions that range from fixed idiomatic phrases to highly abstract productive types	Linguistic structure is a system of highly abstract operations and constraints not at all apparent from evidence of language use
Value accurate modelling of linguistic form that accords with empirical and permits prediction concerning unconsidered cases	Value cognitive, cultural, historical, and evolutionary explanations of phenomena found in linguistic communication systems	Value highly abstract, covering-law explanations for properties of language as inferred from linguistic intuitions
See young children's language as a nascent form of language, very different from adult linguistic competence	See young children's language as a series of stages in an ontogenetic process of developing adult communicative competence	See young children's language as very similar to adult linguistic competence though obscured by cognitive, articulatory, and lexical limits

Assume that what is acquired is a grasp of the distributional properties of the constituents of expressions of a language	Assume that what is acquired is a mainly conventional and culturally transmitted system for linguistic communication	Assume that what is acquired is an internalised generative device that characterises an infinite set of expressions

(Adapted from Stanford Encyclopedia, 2015, p.3)

The externalists are of the belief that the goal of linguistic theory is to develop the right models for the analysis of speeches, words, sentences, phrases and similar linguistic matters such as the analysis of written and spoken expressions. This is a popular approach in computational linguistics where according to linguistic science.com (2017), corpora plays a main role of explaining both the speaker's and listener's attitude towards language.

Emergentists and those who believe in this school of thought see linguistics as a product of social factors. In other words, they are of the opinion that human thoughts, communication and other forms of interactions affected the nature of language. Functionalists school of thought is a branch of emergentists and they examine how signs and symbols are interpreted in human mind. There is also the belief that sentence constructions or speeches are correlated (Linguistic science.com, 2017).

Apart from the examination of what gives language its features, the essentialists believe that there is an innate ability in a child that enables the acquisition of a language irrespective of any socio-economic background of the child. This is in line with Chomskyan language acquisition device (LAD).

Having examined the externalist, emergentists and essentialists approach to linguistic theorising, we are going to approach linguistic theorising from another angle. Linguistic theories will be applied in the examination of the core linguistic area with particular interest in phonology and phonological theories.

Morphology
This is a branch of linguistics that deals with the study of the formation of words. It breaks words into morphemes and can also be considered as the grammar of words. Spencer (1994) states that "morphology stands at the interface between the lexicon, phonology and syntax, and many of the most significant questions concern the way that morphological representations interact with representations at other linguistic levels" (p.71). This suggests that while studying the word formation, how the lexicon of a language is produced and represented in speeches and sentence constructions is also studied.

Approaches to the Study of Morphology
Three basic approaches to the study of how words are formed are identified; the morpheme-based morphology, the lexeme based morphology and the word-based morphology, (Wiki, 2017).

Morpheme-based morphology
Morpheme is the smallest meaningful unit of a language. It is the tinniest layer where meaning starts to be generated. Morpheme-based morphology makes use of a word formation analysis called "item-and-arrangement" approach where words are treated as if they were made of morphemes put together, like beads on a string (Wiki, 2017). This 'item-and-arrangement' pattern can be arrived at either by putting roots and their various endings (inflectional morphemes) together to form a word or roots and affixes to form new words. For

example:
- ❖ Ir + regular + rity = irregularity
- ❖ Un + fortunate + ly = unfortunately
- ❖ Play, plays, playing, played
- ❖ Boy – boys, child – children

In the first example above we have prefix 'ir' plus root 'regular' plus suffix 'rity' which leads to the derivation of the noun 'irregularity' from the adjective 'regular', same is applicable in the second one where the adverb 'unfortunately' is derived from the adjective 'fortunate'. The third example is a case of addition of inflectional endings to realise variant forms of the same word, while the added morphemes in the last example indicate plural formation.

There are presumably three basic principles that operate in morpheme-based morphology:
- ❖ Baudoin's 'single morpheme' hypothesis where roots and affixes are said to have the same status as morphemes.
- ❖ Bloomfield's 'sign base morpheme' hypothesis where morphemes are said to be dualistic signs, since they have both (phonological) form and meaning.
- ❖ Bloomfield's 'lexical morpheme' hypothesis where morphemes, affixes and roots alike are stored in the lexicon.

Lexeme-based morphology
According to Wiki (2017), lexeme-based morphology usually takes what is called an 'item-and-process approach. Instead of analysing a word form as a set of morphemes arranged in sequence, a morphological rule that alters a word-form or stem is applied to produce a new word. For instance:
- ❖ Child + ren = children   (inflectional rule is applied).
- ❖ Dis + appoint + ment = disappointment   (derivational rule is applied).
- ❖ Under + wear = underwear   (compounding rule is applied).
- ❖ Tele – phone = phone   (clipping rule is applied).
- ❖ Television + broadcast = telecast   (blending rule is applied).
- ❖ Senior + Advocate + of Nigeria = SAN   (acronym rule is applied).

Word-based Morphology
A word-and paradigm approach is involved in word-based morphological theory. Instead of generating word-forms from stems or combining morphemes into word-forms, paradigms are considered where there are generalisations that hold between the forms of inflectional paradigms (Wiki, 2017). The categorisations of words are based on the patterns where they fit into. This enables the derivation of new words based on grammatical agreement rules. For instance, such words as; 'Buharian' and 'Ohakemised', though unfamiliar, are acceptable and understood based on the context of use.

Syntax
Syntax is concerned with the combination of words to form phrases, clauses and sentences. It is defined as "the level of linguistic analysis which defines how morphemes and words are combined to form phrases and clauses" (Nwala, 2013, p. 9).

Approaches to the Study of Syntax
Linguists have approached the study of syntax from various angles some of which Nwala refers to as "types of grammar used to describe the function/functional interrelationship of words in sentences" (2015, p. 82). Below are the various approaches identified in the present study:

The Immediate Constituent Grammar ICG)
This is a structure form of grammatical analysis introduced by Leonard Bloomfield which focuses on the slicing of sentences into constituents until the smallest constituent – morpheme of the construction is realised (Nwala, 2015). He further identifies three methods of analysis which he also called segmentation namely, "strokes or vertical lines, tree diagram and label bracketing" (p. 83). Below are sentential illustrations of these methods:
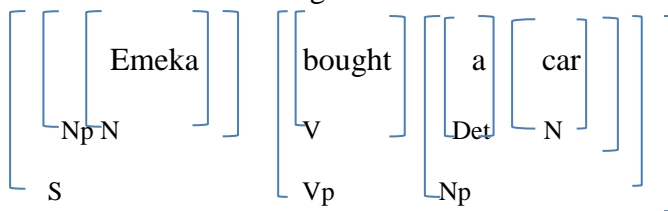
❖ Stroke or vertical lines method of segmentation
  /The/ /hunter/ /killed/ /a/ /lion///
❖ Tree diagram method of segmentation
  The new student is very brilliant
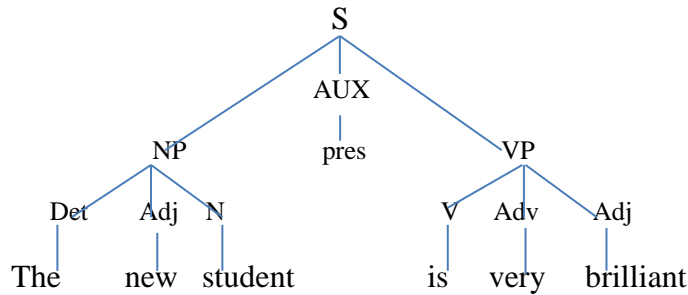
❖ Label bracketing

Criticisms of (ICG)
There are lapses found within this theory which led to the introduction of the concept of expansion. Bloomfield (1933), in Nwala's (2015) view, classified this concept into endocentric and exocentric expansion. This also led to the chomskyan generative grammar.

Generative Grammar
The Chomskyan generative grammar is a kind of descriptive grammar that describes the rules that account for the formation and not necessarily producing the sentences. Language is seen as a code system while the human brain the faculty of language. (Nwala, 2015). He explains that GG insists on explicitness and clarity yet it has its short comings which informed the modifications such as;

❖ Finite state grammar
❖ Phrase structural grammar
❖ Transformational generative grammar
❖ Government and binding grammar
❖ Minimalist program (adapted from p. 85)

The finite State grammar
This theoretical framework involves the use of abstract devices in the generation of sentence and moves from left to right in the registration of symbols. It has rule that is represented like

this; s_o x s_f or s_1 s_2 x (o means initial while f means final) (Nwala, 2015). It inadequacies (prescriptive but not informative) led to the introduction of yet another approach.

Phrase Structural Grammar
This is a rewritten rule that aimed at formalising the ICG. It recognises the various categories and hierarchies involved in lexical items and phrases in sentences. The rules are generative and they also describe the processes involved in the formation of sentences. According to Nwala (2015), PSG has a standard rule for generating sentences and content-sensitive format which is stated and charted thus;

S NP VP (where S = subject, NP = noun phrase and VP = verb phrase)

$X \longrightarrow Y/-Z$ or $X \longrightarrow Y/Z-W$ (pp. 86-87).

In this rule X can either be rewritten as Y followed by Z in an environment or as Y followed by W after Z when Z is already following X.

Transformational Generative Grammar
The Chomskyan TGG is introduced based on the inadequacies of PSG such as its failure to analyse minor sentences and explain the underlying relationship between two sentences that are structurally different but the same in form. Ambiguous sentences are not analysed under PSG, (Nwala, 2015). T-rules are introduced in the analysis of the pitfalls of PSG. They are four basic rules and are listed below;

The movement or permutation rule

The deletion rule

The insertion rule or adjunction rule, and

The substitution or copying rule

While searching for a better solution to the complications in the analysis of a language, TGG witnessed a lot of revisions such as;

The standard theory (ST) era

The extended standard theory (EST) era

The revised extended standard theory (REST) era

The government and binding theory (GB) era

The minimalist programme era, (Nwala, 2015, p. 88).

All these eras have made contributions towards enhancing the study of language in one way or the other but we are not giving detailed account of their inputs in linguistic study in the present study.

Derivational Theory of Complexity
This is a Chomskyan 1965 postulation that accounts for the generation and comprehension of sentences by deriving them through transformations and this is a follow up of the 1960 emergence of generative grammar (Bulut & Wu, 2016). The motive here is to elucidate the complexity of the 'deep and surface structures' of sentences. For instance;

❖ Uche is eager to please

❖ Uche is easy to please

Both sentences look alike at the surface level. They have the same subject – verb – complement structure but their meaning vary. In other words, both are similar in their surface structure based on derivational theory of complexity but their deep structures vary. For instance;

❖ It is easy for someone to be pleased by Uche

❖ It is easy for someone to please Uche

The deep structural meaning of the first two sentences is derived by transformation from active to passive sentences according to the above theory.

The Government and Binding Approach

This is a Chomskyan 1981 modification of the operations of the generative grammar and transformational system which introduced, among other things, "a new understanding of movement of elements within a sentence from their original position to their canonical loci" (Bulut & Wu, 2016, p. 91). Rules are exchanged with principles in GB theory. Several changes took place here such as deep structure being changed to simply D-structure; surface structure to S-structure too, and so on (Nwala, 2015). There are several subsets of GB identified in Nwala (2015) such as; X' – theory, case theory, theta theory, control theory, government theory, binding theory and bounding theory (p. 88). This is all in an effort to make the analysis of the grammar of a language more explicit and sufficient. However, since linguists continue to say that the questions that need answers in linguistics have not been satisfactorily answered by any theory, they continue to propound theories in search of one that could give the desired answers.

The Minimalist Program

The minimalist program is the most recent model of generative grammar. It is a relatively 'new trend' in which is aimed at simplifying the rigorous linguistic machinery that was accumulated over the years (Bulut & Wu, 2016). This theory attempts to enhance the previous models through the reduction of the number of linguistic representations by the application of the principle of economy and computational simplicity. The idea of economic principle is represented in the new principles such as; shortest movement, greed, procrastination, last resort and least effort which on the other hand simplify sentence constructions and analysis.

Semantics and Pragmatics

Both are concerned with the concept of meaning but while semantics is seen as a branch of linguistics that deals with the study of meaning in all aspects of it, pragmatics can be defined as the study of what an utterance mean in a situated context. We shall discuss this by applying the theories of meaning.

Theories of Meaning

In an attempt to make the concept of meaning more explicit, many theories have been propounded by linguistic scholars. According to Omego and Ken-Maduako (2015), in trying to explain the meaning of meaning, so many scholars have unconsciously ended up making the concept more complex and unrealistic. Yet we are going to approach these branches of linguistics based on the theories of meaning

The Referential Theory of Meaning

This theory presents meaning as an entity that one can represent physically. The referential theory of meaning was propounded by Ogden and Richard around 19th century (Omego & Ken-Maduako, 2015). They further explain that this theory sees meaning as that which a particular word has or brings with it. That is, that which a word refers to. Example of this is in such words as 'man', 'car', computer etc. These entities refer to things we can identify in real life.

However, it is noteworthy that there is no direct link between a referent and the entity it refers to in real life situation except in imagination or thought. This explanation can further be represented in what Omego and Ken-Maduako refer to as semantic triangle exemplified below:

Thought

Semantic
Triangle

Referent / _ _ _ _ _ _ _ _ _ _ _ _ \ Entity   (Adapted From p. 102).
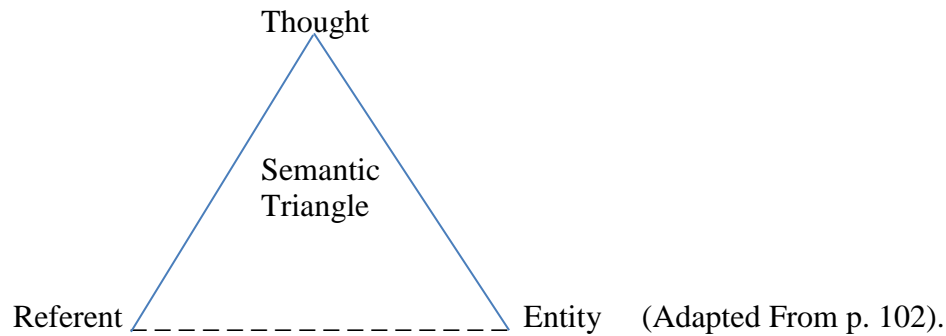
The above diagram (triangle) is an indication of the relationship between the three components of meaning. The link between the word (referent) and the object (entity) it refers to exists only in the imagination (thought). This explains the broken lines between referent and entity and complete lines that connect thought to referent and entity respectively.

Criticisms
- ❖ If a word is represented by an entity in real life, how do we represent the whole sentence with different entities?
- ❖ How do we represent abstractions such as; anger, joy and some parts of speech like prepositions, verbs, adverbs etc?
- ❖ There are also words that have more than one meaning, how are they going to be represented?

The raised questions seem not to find answers within the domain of the referential theory of meaning hence other theories are propounded in continuous search for satisfactory answers.

The Mentalist Theory
Gluckberg and Danks modified the referential theory in the mentalist theory by reflecting that meaning is the mental image evoked at the mention of a word. They are of the opinion that the meaning of a lexical item or an expression is dependent on the feelings or mental picture such utterance evokes in the mind of the speaker or hearer (Omego & Ken-Maduako).

Criticisms
- ❖ Having a mental image of what the eyes have not seen before or has not felt seems impossible.
- ❖ The ability to create a mental image of an entire sentence seems unrealistic.
- ❖ There is a problem with the creation of mental picture of synonymous words.

These pitfalls of the mentalist theory led to further theorising that brought about yet another theory of meaning which Omego & Ken-Maduako (2015) identify as the use/contextual theory.

The Use/Contextual Theory
Wittgenstein propounded the use/contextual theory in opposition to the earlier theories. He is of the opinion that no word can mean anything tangible in isolation. In other words, the meaning of an utterance is derived from its context of use. This means that one can derive the idea behind what a speaker's intention is in an utterance such as 'poor' only when it is placed in a context with other words.

Apart from these theories of meaning, there are other approaches to meaning that are more recent hence we have modern approaches to meaning. These are going to be examined briefly

too.

Modern Theories of Meaning
Componential Analysis
This theory indicates that the meaning of a word is fully derived through the combination of all the semantic features or components of that word. The study of a word is carried out according to this theory by breaking up its meaning into semantic features. For example, the words such as boy, girl, man and woman are said to have the following semantic features, [HUMAN], [MALE] and [ADULT]. These are further analysed thus:

- ❖ Man   [+HUMAN] [+MALE] [+ADULT]
- ❖ Woman   [+HUMAN] [-MALE] [+ADULT]
- ❖ Boy   [+HUMAN] [+MALE] [-ADULT]
- ❖ Girl   [+HUMAN] [-MALE] [-ADULT] (Adapted from Omego & Ken-Maduako, 2015, p. 104).

The semantic variance in the above analysis is revealed to be; between man and woman, and between boy and girl is [+ & -MALE]; between man and girl, and between woman and boy is [+ & -MALE] and [+ & -ADULT] while between man and boy, and between woman and girl is [+ & -ADULT] respectively. This theory enables the revelation of the various semantic relationships between words. It tends to treat semantic features according to binary opposites such as human and not human, male and female, adult and not adult, and so on. This is represented with plus (+) and minus (-) signs. However, there are still some identifiable pitfalls. For instance, several lexical items cannot be analysed through the binary method and the assumption that semantic components are universal is still questionable.

Collocational Theory
This theory, according to Umera-Okeke (2011), was propounded by J. R. Firth. He is of the opinion that words should be identified by the company they keep. The idea behind this theory is that certain words naturally co-occur with other words. For instance, illegitimate collocate with child while illegal collocate with business.

Conceptual theory
This theory of meaning states that language exist as a system because of signs attached to it and these signs interrelate and have meanings too (Umera-Okeke, 2011). The signs that make up the system we refer to as language are words that signify a thing. For example, a word such as 'table' has a meaning different from that of desk or locker. They (table, desk and locker) seem to be interrelated in meaning yet different from each other. Each mean differently when situated in a context. They could form a set or group of words called synonyms yet they are different concepts. Therefore each concept has meaning different from that which they are associated with as a set. This is where semantics and pragmatics fall back to syntax for meaning to be fully derived. In other words the mental picture or concept of a word is made manifest through the combination of this word and other words to indicate meaning.

Phonology and Phonological Theories
Phonetics is a major part of phonology. While phonetics concentrates on the scientific study of speech sounds, phonology explores the entire sound system of a language. It (phonology) is defined as the study of how speech sounds function in a language. It can be seen as the functional phonetics of a particular language (Slide-share, 2017).

Phonology as a linguistic phenomenon cannot be investigated without a 'theoretical

reflections' (Clark et al, 2007, p.4). Therefore, we shall examine some theoretical approaches to phonology to enable us identify the particular theory that best examines the various phonological representations.

Theories on Phonology

Most of the current phonological theories are the several attempts made by linguists towards the understanding of the way language is being organised in the brain. In (2013), Jessica came up with a classification of these theories into two major parts; linear and non-linear phonological theories. Under linear theories are; generative phonology, behavioural theory, natural phonology theory and structural theory. Non-linear theories, on the other hand, are; autosegmental phonology, metrical phonology, feature geometry and optimal theory (pp.2-3). The aim of this classification seems to be for proper description of phonological systems according to patterns and levels.

There are further explanations that the goal of linear phonological theories on one hand, are; "to describe phonological patterns that occur in natural languages; create rules that account for these systems; identify universal principles that apply to various phonological systems…" (Jessica, 2013, p.3). On the other hand, non-linear phonological theories account for the influence of stress and tone features in levels of representation independent of segmental or linear representation (p.4).

Whether grouped into linear and non-linear theories or discussed separately, it is agreeable that these phonological theories are theories of development that enable us to understand how speech sounds are articulated, recorded and transmitted from the encoder to the decoder. We shall have an overview of the identifiable phonological theories and apply one of them to phonological study as an area of specialty in this study.

Autosegmental Theory

This theoretical approach to phonological analysis is initiated by Goldsmith in 1976, according to Clark et al, (2007). It centres on 'tone', 'intonation' and geometry of phonetic representations' (p.413). It goes beyond these linguistic issues to what they emphasized as 'the absolute slicing hypothesis' which means that 'speech can be phonologically represented as successive discrete segments' (p.413). This suggests that tonal features can be placed and analysed on separate tiers.

Criticisms

Apart from the fact that Goldsmith himself is of the opinion that this approach to phonological analysis was 'originally suited to fit the intricacies of African tone languages', Lass (1984, p.269) doubts whether autosegmental phonology, despite its formal sophistication', is 'much more than a notational variant of prosodic analysis' (quoted in Clark et al, 2007, pp. 414-15).

Metrical Phonology

Metrical phonology is a theory of stress pattern originated by Liberman in 1985 (Clark et al, 2007). It analyses the stress pattern or linguistic prominence in language. Its major concern is the organisation of segments into groups that form syllables, syllables into metrical feet, feets into phonological words and words into larger units that we refer to as language.
The prominence we are talking about here is defined based on the relationship between units in a word formation. There is a classification of stress into either primary, secondary and tertiary levels, or stronger and weaker bases. The stronger or weaker stress is determined by

the level of breath force employed in the stress placement. The primary or stronger stress requires more muscular breath force than the weaker, secondary and tertiary stress. Metrical phonology can, therefore, be seen as the arrangement of stress and unstressed syllables and it is usually more prominent in poetry.

Optimality Theory

Optimality theory, commonly referred to as OT, is a linguistic model that came into existence initially through a talk presented by Prince and Smolensky in (1991) which was later published as an article by Prince and McCarthy in (1993), yet most recently published under the names Prince and Smolensky in 2004 (Clark et al, 2007 & Wikipedia, 2017). It tends to counter all restrictions on inputs to the grammar of every language. This is called 'richness of the base' as accounted in Wikipedia, (2017).

'Input' indicated above leads to generation of 'candidate sets' which is represented with GEN. CON represents constraint, which is said to be universal. Then, there are two basic types of constraints in this theory; 'faithfulness and 'markedness'. While faithfulness constraints refer to a situation where inputs match outputs, markedness constraints suggest inputs not matching output. That is, outputs not being well formed in line with the requirements on the 'structural well-formedness of the output' (Wikipedia, 2017, p.2).

There are two basic formulas that are applied to the description of optimality theory; the 'classic or flyspeck tableaux' and the comparative tableaux'. These are extensively described in Prince, (2002), as explained in Wikipedia, (2017, p.4). However, it is pertinent to mention here that the notion of CON, GEN, and so on points towards the realization of new words through the process of affixation.

Behavioural Theory

This is a developmental theory that is based on conditioning and learning which was prevalent between 1950 and 1970. It considers speech acquisition just like the acquisition of the rest of the other skills, as not having anything to do with an innate ability in a child at birth. In other words, a child's developmental stages as regards to speech are shaped by such principles as 'classical conditioning that occur primarily during caretaker – child interactions' (Quizlet, n.d, p.6).

There are criticisms of this theory, just as it is in every other theory. Apart from being inadequate in accounting fully for language, behavioural theory is said to be based on imitation alone which makes it difficult for children to acquire all the necessary utterances early in life since they cannot possibly hear all they need (Quizlet, n.d).

Structural Theory

Structural theory is a phonological approach that is based on the work of Ferdinand de Saussure. It assumes that a child is born with an innate ability that enables the development of a language. This is the idea behind structuralism. The linguists that developed this theory, 'Jakobson, Chomsky and Halle', believe that phonological development follows 'innate universal and hierarchical order of acquisition of distinctive features (Quizlet, n.d, pp.8-11).

There are criticisms of the structural theory. For instance, the critics are of the opinion that; "the therapy process can only provide opportunity for the child to activate his innate knowledge", and again "clinician must be aware of the order of acquisition because the learning sequence may reflect a dependent relationship between earlier developing sounds",

(Quizlet, n.d, pp.12-13).

Generative Phonological Theory

Generative phonology, as a new approach to phonological description, emerged alongside Chomsky and Halle's *The Sound Pattern of English* in (1968) as expressed by Clark et al, (2007). In the words of Kenstowicz and Kisseberth (2004), it is 'a component of generative grammar that assigns the correct phonetic representations to utterances in such a way as to reflect a native speaker's internalized grammar' (p.1).

The generative theory is encompassing, it is rule oriented and the rules appear to be simple. They seem to be appropriate in approaching the complexity of the description of the phonetic and phonological levels of representation. It is a theory that analyses what goes on in every speech situation by capturing both surface and underlying representations, that is, the phonemic and phonetic transcriptions or representation. In support of this view, Kenstonwicz opines that generative phonology determines the underlying set of rules that govern the pronunciation of words in a particular language (1994). In other words, an individual is exposed to certain rules about what sounds to be combined and in the way(s) they should be combined in speech production.

These phonological rules control how the underlying representations become transformed into the actual pronunciation of words which is the surface level representations. The underlying forms of words refer to phonemic representation. In other words, phonemic transcription or representation is all about the Chomskyan idea of competence, the innate human ability or the internalized form which aids articulation and interpretation in a given language. The surface representation, on the other hand, suggests the phonetic transcription or representation which means using symbols to represent speech sounds. It could also be seen as performance.

Sutherland (2006) throws further light on the issue of levels of representation by agreeing with Locke (1983), that phonological representation includes a word's acoustic structure consisting of phonemic and phonetic level details. He is of the opinion that young children's phonological representations may contain only the general acoustic information with notable phonetic characteristics which help to differentiate one word from other words.

Phonological rules are meant to explain the phonological processes. The internalised forms (underlying representations) are converted into symbols that represent speech sounds (surface representations) and this is achieved by the application of phonological rules. These rules explain why there is categorisation of phonemes into segments such as;
   ❖ Consonant and vowel sounds
   ❖ Voiced and voiceless consonants
   ❖ Monophthongs (pure vowels) and diphthongs

There are 24 consonant sounds and 20 vowel sounds of English. The consonant sounds are classified into voiced and voiceless sounds where we have 9 voiceless and 15 voiced consonants. Pure vowels are 12, while the diphthongs are 8 in number. These are explicable based on the laid rules that are embedded in the generative theory.

Phonological rules also explain the reason behind the realisation of the following;
   ❖ Complementary and contrastive distribution
   ❖ Free variation
   ❖ Change feature value

Complementary and contrastive distributions are concerned with pairing to compare and contrast, that is, minimal pairs where we have;

- ❖ Wrist and list /rist/ and /list/
- ❖ Den and then /den/ and /ðen/
- ❖ Seal and zeal /si:l/ and zi:l/

In the pairs above, the consonants that begin the words differ while other sounds are the same in each pair. Free variation on the other hand is a situation where we are faced with different sounds being realised from the same word without a change in meaning and without being considered as incorrect. One is left to choose the preferred variety to be used at a given point in time. Take for instance;

British	American
Either /aiðə(r)/	either /i:ðə(r)/
Schedule /ʃedju:l/	schedule /skedju:l/

In change feature value the plural marker 's', for instance, changes from /s/ to /z/ when it occurs after the voiced consonant;

Voiced	voiceless
Boys /bɔ:z/	keys /ki:s/
Knees /ni:z/	peas /pi:s/

In addition, Chomsky and Halle 1968 are of the opinion that tensing (long) vowel is realised when a vowel occurs before two consonants while lax (short) vowel is realised when a vowel precedes one consonant sound (cited in Clark et al, 2007). It is also phonological rule that operates here and it is known as tensing and laxing rule which is determined by environment.

Phonology and phonetics are inter-related. While phonetics look into individual sound segments, phonology concentrate on the systematic patterning of speech sounds. It is the mental organisation of physical sounds and the patterns formed by the way the sounds are combined in a language and the restrictions on sound combinations too. For example, lip versus bip. Its main thrust is how the different sounds that have been phonetically identified and described are systematically combined into units such as syllables and words. On this same note, Bamisaye (1999) further explains that phonology provides insight into what sounds that can co-occur and the various positions in which they can occur in the formation of words.

Conclusion

Having examined the linguistic theories and how they are linked with the study of linguistics with particular focus on phonology, it has been established that the various branches of linguistics – both micro and macro areas cannot be properly investigated without theoretical reflections. The theories provide grounds for the analysis of human speech.

It is agreed, for instance, that generative phonological theory which is an offshoot of Chomsky's transformational generative grammar is an ideal approach to the study of phonology based on its simplified rules that make the complexity of describing the levels of representation less difficult. It has been established that the changes that occur in certain words are determined by the environment where they are produced. This is, however, based on the identified rules that explain these facts.

This survey of the various branches of linguistics has confirmed that there are several theories on every branch of the language study one may decide to delve into, therefore, every survey into any area of language study should be anchored on either theories or a particular theory that best explains that area of study. This will not only enable a thorough analysis but also

authenticates the study. So far, it is suggested that such a study as survey of linguistic theories with particular focus on phonology, and similar studies should be carried out based on other linguistic theories.

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