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| RESEARCH ARTICLE

Towards English Spoken Sentence Production and Generation Processes from Syntactical and Communicative Perspective

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| ABSTRACT
This study aims to clarify the spoken sentence processes production, and it explains the lexicalization and syntactic planning stages. It also focuses on the spoken production models such as; Fromkin's Five Stage Model, The Bock and Levelt Model, Fromkin's Five Stage Model, Parallel –Processing Models, and The Dell Model. Additionally, it states various communicative problem strategies and many types of errors and mistakes that are relatively common in the normal spoken sentence production, such as spoonerisms and speech errors. The study entails spoken sentence production is perceived through some issues such as linearity, segmentation, speaker normalization, and the basic unit of speech perception.

| KEYWORDS
Spoken production, Fromkin Model, The Bock Model, Parallel–Processing Models Garrett's Model, linearity, speech perception, segmentation.

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1. Introduction

Sentence production refers to humans' ability to organize words into structured phrases and sentences that are well-formed and that convey relational meaning through assembling known words into larger structured phrases or sentences. It involves stringing words together to convey a message one wants to communicate while also adhering to the grammatical rules of a particular language. An important property of sentence generation is productivity in that speakers create novel utterances that can be as unique as their thoughts by selecting from a variety of words and sentence structures. Spoken production requires forming a conceptual representation that can be given in – linguistic form, then retrieving the right words related to that pre-linguistic message and putting them in the right configuration, and finally converting that bundle into a series of muscle movements that will result in the outward expression of the initial communicative intention. (Levelt, 1989). Furthermore, A number of autonomous components are responsible for different aspects of spoken production. These components include; the conceptualizer, a component that is responsible for generating and monitoring messages; the formulator, in charge of giving grammatical and phonological shape to messages and which feeds on the lexicon; the articulator, which specializes in the motor execution of the message; an audition or acoustic-phonetic processor, which transforms the acoustic signal into phonetic representations; and the speech comprehension system, which permits the parsing or processing of both self-generated as well as other-generated messages (Meyer AS, 2000). Spoken English language evolves from the formation of an idea in the speaker's mind before articulating it. The speaker constructs sentences from smaller parts or units that entail phones, phonemes, lexemes, phrases, clauses, and sentences. English sentence production involves creating and expressing meaning through language. According to Levelt (1989), [1]language production contains four successive stages: conceptualization, formulation, articulation, and self-monitoring. The conceptualization process requires deciding a target message that the speaker intends to convey. The decision of the message without linguistic representation as an end point is known as a preverbal message or message level of representation. Formulation involves the speaker must convert his or her message into linguistic forms. This stage involves lexicalization and syntactic planning. Lexicalization entails selecting the appropriate words, whereas syntactic planning enacts putting the words in the right order and adding grammatical elements. Articulation or execution refers to the speaker must plan the motor movement

needed to convey the message. [1]Once the speaker has organized his/ her thoughts into a linguistic plan, this information must be sent from the brain to the muscles in the speech system so that they can then execute the required movements and produce the desired sounds from an articulatory phonetics perspective. Self-regulation is the last stage of speech production that refers to a set of behaviors that are used flexibly to guide, monitor, and direct the success of one's performance. It is co-constructed within social interactions and influenced in various settings by others' attitudes and behaviors (Brown, 1983). Self-regulation includes three reciprocal sub-processes: self-observation or self-monitoring, self-judgment or self-evaluation, and self-reaction or behavioral adjustment (Griffin, 2003).

2. Spoken Sentence Production Processes

In sentence production, as in comprehension, the mapping between thematic and grammatical roles and the construction of syntactic structure must be included in the processing stages.

There are many similarities between sentence comprehension and sentence production. In both activities, we rely heavily on the words in our lexicon to control syntactic structures. Both activities make use of the same patterns for determining grammatical structures. The most important difference is that, during sentence production, we are in full control of the meanings we wish to express. In comprehension, on the other hand, we are not in control and have to follow the ideas of others.

The processing stages in sentence production include the message level stage, in which a conceptual representation of the sentence is formed, two stages of linguistic encoding, and an articulatory stage. Thematic role relations between actions and entities are assumed to be represented at the message level. At the first level of linguistic encoding (termed the functional level), the message level information is used to select lexical representations (i.e., semantic-syntactic lexical representations) and to construct grammatical relations among these lexical representations based on the thematic role and other semantic information in the message. The prosodic structure of the sentence is also encoded during this stage. Prosodic factors such as word stress (the emphasis given to words) and intonation (using pitch to signify different meanings) are important methods of varying speech to facilitate communication. The second level of linguistic encoding (called the positional level) creates the syntactic structure for the sentence in terms of word order, function words, and grammatical markers (e.g., plural markers and past tense inflections). The phonological forms for the content words are also retrieved at this stage. Once the phonological representations have been retrieved, plans for articulation can be formed. Theory of Retrieval in Sentence Production, which was published in Volume 93 of the Psychological Review in 1986, Dell analyses the production of language, which is "the least studied, and the least understood" (p. 283) by psycholinguistics. The former research concerning the production of language is not sufficient, in Dell's opinion. Dell's theory tries to make predictions that can be fitted to models. The basis of his model is M. F. Garrett's model of sentence production, which Dell develops further. The principal assumption of his model is that there are three steps on the way from[1] meaning to sound:

1. The syntactic encoding: words must be chosen and arranged according to the grammatical rules.

2. The morphological encoding: words must be specified in terms of their constituent morphemes.

3. Phonological encoding: words must be spelled out in terms of their sound.

Dell focuses on this phonological encoding to underline his spreading activation theory of retrieval. This theory is based on data given by speech errors, often called "Freudian slips ."Gary S. Dell's theory concentrated on his analysis of how speech errors are created and what kinds of errors can occur. The basis of his model is the theory that all four representations (semantic, syntactic, morphological, and phonological) are in a hierarchical structure. [1]The production of spoken sentences involves the generation of a number of levels of representation: a conceptual representation for the message wishing to convey, a grammatical representation that determines an appropriate word order for that message, and phonological and phonetic representations to guide articulation. Spoken sentences are based on putting words in a certain correct order embodying grammatical elements from both syntactic declarative and procedure knowledge, in addition to intuition. In addition to the phonological perspective that includes segmental features and suprasegmental features; The form of how the message is constructed is not conventionally acceptable among linguists, but common sense indicates that message is a non-linear and must at least contain conceptual category information and has a thematic structure with concepts assigned to thematic roles (Allum, 2009). [2]Generation of sentences in spoken language production enacts that the speaker generates longer utterances, such as descriptions of events or expressing emotions.

3. Garrett's Model of Syntactic Planning

According to Garrett's model, speech is produced in a linear manner, and only one thing is processed at any one stage. At any one time in the course of a conversation, there would be more than one process taking place, such as when one is planning what to say next while one is speaking. However, these different speech processes that occur concurrently are independent of one another and do not overlap. There are two major stages of syntactic processing according to this model. One is at the functional level,

while the other is at the positional level. At the [1]Functional level, word order is not yet explicit. Words are semantically chosen and assigned syntactic roles such as subject and object. At the positional level, words are explicitly ordered. Syntactic planning is dissociated from lexical retrieval because function and content words have different roles in language production and are selected at different levels of the process. Content words are chosen at the functional level, whereas the selection of function words is made at the positional level. Garrett's theory predicts distinct and independent error types associated with different levels. Word Errors occur at a functional level; thus, the speaker should be sensitive to thematic and syntactic properties of words (aspects of the lemmas), and he /she should not be sensitive to the information specified at the positional level, e.g., the phonological form of lexemes. Speakers generate language in phrases or constituents of phrases, and their speech is interfered with by pauses at phrases boundaries filled by "Um," "Ah" Pauses within a phrase unfilled (Silence). When speakers repeat or correct themselves, they tend to repeat or correct a whole constituent. Many models are designed to study language production, such as:

3.1 Fromkin's Five Stage Model

Victoria [1]Fromkin was an American linguist who studied speech errors. She proposed a model of speech production with stages that produced semantics, followed by syntax, and finally by phonological representation as follows: The intended meaning is generated; Syntactic structures are formulated; Intonation contour and placement of primary stress are determined; Word selection-Content words inserted into the syntactic frame, function words and affixes added and phonemic representations added and Phonological rules applied(Meyer,2000).

3.2 The Bock and Levelt Model

This[1] model consists of four levels of processing. The first of which is the Message level, where the main idea to be conveyed is generated. The Functional Level is subdivided into two stages.

Fromkin's (1971) Theory
-Utterance Generator model
-Top-down generator with 6 stages
– Generation of the meaning to be conveyed
– Mapping the meaning onto a syntactic structure
– Generation of the intonation contours of utterance
– Selection of words (content)
– Selection of words (function, affixes)
– Generation of the motor commands for speech

The first, the Lexical Selection stage, is where the conceptual representation is turned into a lexical representation, as words are selected to express the intended meaning of the desired message. The lexical representation is often termed the Lemma, which refers to the syntactical, but not phonological properties of the word. The Function Assignment stage is where the syntactical role of each word is assigned. At the third level of the model, the Positional level, the order and inflection of each morphological slot are determined. Finally, at the Phonological encoding level, sound units and intonation contours are assembled to form lexemes, the embodiment of a word's morphological and phonological properties, which are then sent to the articulatory or output system.

3.3 Parallel–Processing Models

In these non-modular models, information can flow in any direction, and thus the conceptualization level can receive feedback from the sentence and the articulatory level and vice versa. In these models, input to any level can therefore be convergent information from several different levels, and in this way, the levels of these models are considered to have interacting activity. Within a phrase, words that are retrieved initially constrain subsequent lexical selection.

3.4 The Dell Model

Dell's model of spreading activation of lexical access is also commonly referred to as the Connectionist Model of speech production. Dell's model claims, unlike the serial models of speech production, that speech is produced by a number of connected

[1] *1-When speakers plan sentences; they retrieve words as described earlier. However, sentences are not simply sets of words but have syntactic structure; speakers must apply syntactic knowledge to generate sentences. The core operation in speech production is the preparation of words from a semantic base. Sentence production entails a sequence of processing stages, beginning with the speaker's focusing on a target concept and ending with the initiation of articulation. The initial stages of preparation are concerned with lexical selection, which is zooming in on the appropriate lexical item in the mental lexicon. The following stages concern retrieving a word's morphemic phonological codes, syllabifying the word, and accessing the corresponding articulatory gestures.*

nodes representing distinct units of [2]Speech (i.e., phonemes, morphemes, syllables, concepts, etc.) that interact with one another in any direction, from the concept level (Semantic level) to the word level (Lexical selection level) and finally to the sound level (Phonological level) of representation.

4. Speech Production Models

When one speaks, he /she needs to control a huge number of muscles, including the respiratory, laryngeal, and articulatory systems. In addition, many structures in these systems can move in different ways, at different speeds, and in different combinations. The speech motor system must somehow regulate all the muscular contractions of all the speech subsystems. [1]Speech production needs to take into account the fact that sounds vary with the context in which they are produced and are influenced by speaking rate, stress, clarity of articulation, and other factors. Coarticulation is an integral aspect of speech production that results in enormous variability in the production of a target sound. A given speech sound often can be produced in several different ways, and this variability in production is a central factor in speech motor regulation (Smith,2004).

4.1 Target Models

Target models describe speech production as a process in which a speaker attempts to attain a sequence of targets corresponding to the speech sounds he\she is attempting to produce (Indefrey,2011). Some theorists have suggested that these targets are spatial. Spatial target models posit :

There is no model or set of models that can definitively characterize the production of speech as being entirely holistic (processing a whole phrase at a time) or componential (processing components of a phrase separately). Despite their differences, however, all models seem to have some common features. Firstly, the main question behind all models concerns how linguistic components are retrieved and assembled during continuous speech. Secondly, the models all agree that linguistic information is represented by distinctive units and on a hierarchy of levels and that the order in which these units are retrieved is sequential as they build upon one another. Thirdly, it seems that all models agree that you would need to access semantics and syntax prior to the phonology of an utterance, as the former dictates the latter, and thus, all models share in common the following stages and substages in this order:

1) Conceptualization: deciding upon the message to be conveyed

2) Sentence formation: ***a.*** *Lexicalization: selecting the appropriate words to convey the message*

b. *Syntactic structuring: selecting the appropriate order and grammatical rules that govern the selected words*

3) Articulation: executing the motor movements necessary to properly produce the sound structure of the phrase and its constituent words that there is an internalized map of the vocal tract in the brain that allows the speaker to move his or her articulators to specific regions within the vocal tract. The speaker can achieve the targets no matter from what position the articulators begin the movement. The fact that articulators must reach a particular position from different starting points is important because it means that the movements of the articulator for a specific sound cannot be invariant but must change depending on the starting point.

4.2 Dynamic Systems Models

In this kind of theory, the degrees of freedom problem is addressed by positing that groups of muscles link up together to perform a particular task. These linkages between muscles are not fixed: A muscle might be grouped with a particular set of muscles in what is called synergy or a coordinative structure to achieve one particular goal and with a different set of muscles in different coordinative structures, which refer to flexible groupings of muscles that may change depending on the particular speech output goal.

4.3 Connectionist Models

Computer models have been developed that simulate the neural processing of the human brain. These models are also known as spreading activation models and parallel-distributed processing models (PDP). PDP models are based on a way of processing signals that is nonhierarchical. In other words, rather than finishing one step in the process before moving on to the next step,

[2] *1-The scope of lexical planning, which means how far ahead speakers plan lexically before they start producing an utterance, is an important issue for research into speech production but remains highly controversial. The present research investigated this issue using the semantic blocking effect, which refers to the widely observed effect that participants take longer to say aloud the names of items in pictures when the pictures in a block of trials in an experiment depict items that belong to the same semantic category than different categories. As this effect is often interpreted as a reflection of the difficulty in the lexical selection, the current study took the semantic blocking effect and its associated pattern of event-related brain potentials (ERPs) as a proxy to test whether lexical planning during sentence production extends beyond the first noun when a subject noun-phrase includes two nouns, such as "The chair and the boat are both red" and "The chair above the boat is red ." The results showed a semantic blocking effect both in onset latencies and in ERPs during the utterance of the first noun of these complex noun-phrases but not for the second noun. The indication, therefore, is that the lexical planning scope does not encompass this second noun-phrase.*

steps are processed more or less in parallel. This kind of processing is somewhat akin to the way that the brain processes information. Indeed, the performance of steps in parallel, or at least with much temporal overlap, is typical of speech production.

5. Sentence Production and Message Formulation

Sentences are not born fully formed, but they are the product of a complex process. According to the standard view (Smith, 2004), sentence production spans over four independent stages of sentence preparation: message, lemma, assembly, and articulation. Producing a sentence begins with the creation of a message – a conceptual representation of the event to be described linguistically. Then, the speaker translates the extracted message into an emerging sentence. This translation comprises stages of grammatical encoding of a sentence. Supposedly, grammatical encoding spans across two sub-stages: lemma retrieval, during which concepts receive their lexical names accompanied by their grammatical properties, and grammatical assembly, at which the retrieved names assume positioning in the upcoming sentence. Finally, the speaker overtly produces the sentence at the stage of articulation. The production system in this and similar models are believed to be sequential and modular. It is sequential because processing at each preceding level has to be completed before processing at the next level can commence, and it is modular because processing at each level is believed to be encapsulated: for example, the speaker does not access lemmas at the message level or extract referential information at the assembly level. Access to the relevant information at each stage of sentence production is associated with the accessibility statuses of the corresponding units. For example, at the message level, referents may receive a higher accessibility status due to their more conspicuous perceptual or conceptual properties (Hartley, 2001). This may bias the speaker to process them earlier than the other referents when transferring the message details to the lemma level affecting the lexical accessibility of the words associated with the referent and grammatical properties associated with these words. If such preferential processing continues all the way to overt articulation, it is likely that the most accessible referent will be articulated before other referents take part in the event and that it will be assigned as the most prominent grammatical constituent, for example, [3]the Subject; This view helps understand how changes in accessibility at different production stages motivate syntactic choices made by the speaker. In experimental settings, processing accessibility is often manipulated with the help of a priming paradigm (Griffin,2003).

The first component in Levelt's (Fromkin, 1998) production system is the conceptualizer. This component is responsible for generating the communicative intention and for encoding it into some kind of coherent conceptual plan. In addition, the conceptualizer monitors what is about to be said as well as what has been said and how. In order to generate a message, declarative knowledge is accessed. Declarative knowledge includes encyclopedic knowledge (about the person's general experience of the world), knowledge about the situation (e.g., the interlocutor/s and the communicative context, among others), as well as information about the discourse record, that is, what has already been said. Levelt distinguishes two stages in message planning: macro planning and micro-planning. It consists of retrieving information to express the sub-goals into which the overall communicative goal has been elaborated. In other words, it involves generating speech act intentions, like narrating an event or expressing an opinion. The speaker's planning of a speech act, his selection of information to be expressed, and his linearization of that information are called macro-planning. Micro-planning divides that information into smaller conceptual chunks, which are given the correct propositional shape and informational perspective. For instance, the narration of a small event may be realized by a statement that can be presented in different ways.

In the next component in the production system, the formulator, the propositionally organized preverbal plan, activates the items in the lexicon that best correspond to the different chunks of the intended message that will, in turn, be responsible for transforming it into a linguistic structure. In Levelt's model, as well as in several other models, grammatical and phonological encoding are lexically driven. For grammatical encoding to take place, both lexical access procedures and syntactic procedures are applied. In the lexicon, each lexical item is specified for semantic and syntactic information (lemmas) and morphological and phonological information (lexemes). Clark (1998) states: Human-controlled processing tends to be serial in nature and is therefore slow. Conceptualizing a message requires a number of steps, such as constructing an internal representation, selecting the information to be communicated, breaking it into smaller chunks, organizing them in a linear fashion, shares processing resources with monitoring (Allum, 2009). Conversely, grammatical and phonological encoding are assumed to be automatic, which means that they do not require attention because they are single-step processes. According to Kempen (1987), the grammatical and phonological encoding of a message, including lexical articulation, are usually automatic, and it can be concluded that parallel processing, incremental production, and automaticity allow for the speedy production of language in real-time.

[3] *Levelt (1989) stated that original models went straight from semantics toward form; most models now include the intermediate lemma stage; Lemma contains semantic& syntactical information– some languages (French, Spanish) also specify gender. Serial order has been adapted to more parallel processing: Conceptual Level, Lemma Selection, Retrieving morphemic, phonological codes, prosodification/syllabification, and phonetic encoding*

6. Speech Perception

As with [1]speech production, many issues in speech perception give direction to the theories attempting to explain how we analyze and perceive the spoken word. Some of these issues are linearity, segmentation, speaker normalization, and the basic unit of speech perception.

6.1 Linearity and Segmentation

The linearity principle asserts that a specific sound in a word corresponds to a specific phoneme. The sounds that make up the word are distinct from each other and occur in a particular sequence. The segmentation principle is based on perception. It is based on the notion that the speech signal can be divided into discrete units that correspond to specific phonemes(Bates, 2013). These two principles suggest that speech perception is based on a linear correspondence between the acoustic speech signal and the linguistic phonemic units. An abundance of research, however, has established that this is not the case. In sum, theories of speech perception emphasize different levels of processing of the speech signal.

[4]Decoding a spoken message involves the analysis of various-sized components of the signal, including acoustic, phonetic, phonological, lexical, suprasegmental, syntactic, and semantic components. Theories of speech perception can be categorized as active versus passive, bottom-up versus top-down, and autonomous versus interactive. Most theories of perception focus on acoustic-phonetic or phonemic aspects, including motor theory, acoustic invariance theory, direct realism, fuzzy logical models, and connectionist theories; recent theories also attempt to explain word recognition, including cohort theory and an interactive theory of speech perception (Zhao, 2013).

7. Communicative problems

Communicative problems which the speakers link to the variety of taxonomies of communication strategies existing in the problem-solving mechanism, and it includes the concept of communication strategy. Aristei (2011) proposes a framework that suggests a problem-solving mechanism for each type of problem. The main categories of problems have to do with:

i) resource deficits (e.g., because of an incomplete lexicon or insufficient

morphological, or phonological specification);

ii) processing time pressure;

iii) perceived trouble in own output;

iv) perceived problems with the interlocutor's output1.

Schnur and Costa (2006) suggest that speakers s can have difficulty retrieving lexical items from their incomplete L2 lexicon as well as grammatically and phonologically encoding their messages because the items in the lexicon are not sufficiently specified; When a lexical item cannot be retrieved, three main options. Spoken language is conveyed via well-coordinated speech movements, which act as coherent units of control referred to as gestures. These gestures and their underlying movements show several distinctive properties in terms of lawful relations among the parameters of duration, relative timing, range of motion, target accuracy, and speed. Unlike movements in locomotion or oculomotor function, speech movements, when combined into gestures, are not mere physical instantiations of organs moving in space and time but also have intrinsic symbolic functions. Language-particular systems, or phonological grammars, are involved in the patterning of these gestures. Grammar constraints regulate the permissible symbolic combinations as evidenced via eliciting judgments on whether any given sequence is well-formed in any particular language. Furthermore, speech gestures are parts of words, and thus, one window into understanding the nature of the speech production1system is to observe speech movements as parts of words or larger chunks of speech such as phrases or sentences. The intention to produce a lexical item involves activating sequences of gestures that are part of the lexical item. The regulation in a time of the units in such sequences raises major questions for speech motor control theories (but also for theories of cognition and sequential action in general). Major challenges are met in the inter-dependence among different time scales related to gestural planning, movement execution, and coordination within and across domains of individual lexical items. How

[4] *One view of speech perception is that acoustic signals are transformed into representations for pattern matching to determine the linguistic structure. This process can be taken as a statistical pattern-matching problem, assuming relatively stable linguistic categories are characterized by neural representations related to auditory properties of speech that can be compared to speech input. This kind of pattern matching can be termed a passive process which implies rigidity of processing with few demands on cognitive processing. An alternative view is that speech recognition, even in the early stages, is an active process in which speech analysis is attentively guided*

these different time scales interact and how their interaction affects the observed movement properties is, for the most part, still unknown.

8. Speech Errors and Mistakes

Speech Errors in the Theory proposed by Dell shows all possible connections between the different nodes that can create speech errors. To underline his theory of sentence production, Dell uses the sentence, "Some swimmers sink. When a word is selected, all nodes that represent the word are activated. Slips occur when nodes within the same level are competing for activation. For this sentence, he offers some possible errors, among which is the sentence: "Some swimmers sink," phoneme anticipation, which he explains in detail in a model that we used in our presentation. The model shows three levels of nodes. The upper level is the syntactical level, the middle level is the morphological level, and the bottom is the phonological level. Slips occur when a wrong node (error node) has a higher activation level than the "right" node (target node). This is usually done by context effects.

1. Contextual errors: The main reason for these errors is that upcoming items receive activation from nodes in the higher-level representation.

The sentence “Some swimmers sink” belongs to the error type phoneme perseveration. The sentence “Sim swummers sink” belongs to the error type phoneme exchange, and the sentence "Some swinkers sink” to the error type cluster anticipation.

2. Non-contextual errors: They occur when a node outside the intended utterance has a higher activation level, e. g. "Some swimmer drown" is a so-called substitution error and belongs to this type of error.

8.1 Factors That Make Errors

1. There are output biases where meaningful words and expressions are created (p. 292). To this group belong lexical biases (actual words or morphemes are created) and semantic biases (wrong words are semantically related to other words in the environment).

2. Another factor is similarity: Interacting items in error tend to be similar, and the immediate environment of the interacting items tends to be identical.

3. Speaking rate is also an important factor. At fast speaking rates, there is not enough time for the recall of the correct words.

4. Furthermore, distance is another factor in the production of errors. Misordered sounds and morphemes are likely to move to nearby positions.

Dell mentions three output biases.

1. Lexical bias or syllable bias:

This is a bias for errors to create existing syllables over phonologically legal but non-occurring syllables, e.g.,// as in spatula.

2. Frequency biases:

Initial /t/ is more frequent and has more connections from its node to syllable nodes than initial /f/. This has consequences for its activation level.

3. Contingent frequency:

Just as the frequency bias concerns a single unit here, Dell refers to combinations of units that are frequent. As an example, he mentions that /kæ/ occurs more often than /kU/.

Many types of errors and mistakes are relatively common in normal speech production. Errors and mistakes are categorized by specified mechanisms such as:

8.2 Spoonerisms

[1]Errors in occur regularly and spontaneously in our speech. A case that is commonly known to most is that of Reverend Spooner. He has given his name to a particular type of error called spoonerisms that involves the exchange of initial consonants between words.

[5]The following are examples of spoonerisms e.g.

[5] *1-Naturalistic and extemporaneous production, including dis-fluency, gesture, discourse structure, and prosody, is related work in neuropsychology. Meanwhile, sentence production is just beginning to be investigated using techniques of cognitive neuroscience. Speech errors come in many different forms.*

(You have **h**issed all my **m**ystery lectures.)Instead of (You have **m**issed all my **h**istory lectures.)

8.3 Speech Errors

Speech errors can be categorized according to the linguistic units involved in the error (i.e., at the phonological feature, phoneme, syllable, morpheme, word, phrase, or sentence levels) and the error mechanism involved (i.e., blend, substitution, addition, or deletion of units). There are 8 main types of speech errors that occur at the different speech unit levels:

1. Phonemic segments
2. Phonetic features
3. Syllable
4. Stress
5. Morpheme
6. Word
7. Grammatical rules
8. Phrase

Victoria Fromkin was an American linguist who studied speech errors extensively. Based on a critical analysis of her own research on speech errors, she proposed a model of speech production with stages that produced semantics, followed by syntax, and finally by phonological representation as follows:

1) The intended meaning is generated

2) Syntactic structures are formulated

3) Intonation contour and placement of primary stress are determined

4) Word selection :a. Content words inserted into syntactic frame b. Function words and affixes added

5) Phonemic representations added and [1-]Phonological rules applied

In the first stage of this model, the message to be conveyed is generated, and then the syntactic structure is created, including all the associated semantic features. If the structure were not established prior to word selection, this model would not account for the fact that word switches only occur within and not across clauses [4]. This order of processing, which implies that the syntactic structure is available early on, also accounts for the fact that word exchanges only occur between words of the same grammatical function (i.e., verbs will switch with verbs but never with nouns). In the third stage of this model, the placement of the primary stress within the syntactic framework is determined, but not which syllable it belongs to. At the fourth stage of this model, words are selected, starting with content words. Since the intonation contour of a phrase is maintained despite word exchange errors, as seen in the following example, intonation contours must be selected before the words that fit in it.[6]

9. Methodology and Materials

The method of this study is basically qualitative, focusing on investigating and interpreting the quality of spoken sentence processes production and the lexicalization and syntactic planning stages. Based on the nature of the topic and data required for investigation, the method of the present study is categorized as a descriptive study since it aims at investigating the spoken sentence processes production. The researchers use performance analysis.

Some involve simple slurring of a sound or retracing of a group of words. Others provide more dramatic evidence of the nature of the language planning process. Some of the most entertaining speech errors are spoonerisms, which owe their name to an English clergyman by the name of William Spooner. Instead of 'dear old queen,' Spooner produced 'queer old dean.' Instead of 'ye noble sons of toil,' he produced 'ye noble tons of soil.' Instead of 'I saw you light a fire in the back quad, in fact, you wasted the whole term,' he said, 'I saw you fight a liar in the back quad; in fact, you tasted the whole worm.' These errors typically involve the transpositions of letters between words. Crucially, the resulting sound forms are themselves real words, such as 'liar,' 'queer,' and 'worm.' The tendency of these errors to produce real words is known as the 'lexical bias' in speech errors and indicates the extent to which the lexicon itself acts as a filter or checker on the articulatory process.

[6] *1-Dell presents the word "kitten" and explains how it can become "ditten" or "mitten ." If the speech rate is slow, the activation is given time to spread, and existing words occur, e.g., "mitten". If the speech rate is at a higher level, which means that there is less time and, as there is no morpheme node for "ditten", the activation of non-existing words is more likely, e.g., "ditten". Repeated-phoneme effect and speaking rate: The repeated phoneme effect is stronger at slower speaking rates.*

The data were collected from Saudi students at King Khalid University studying English as an intensive course. The researchers mainly collected by using Discourse Completion Test/Task (DCT). An open-ended DCT was submitted to the subjects to elicit their spoken performance focusing on lexicalization and syntactic planning stages. The DCT consisted of twenty suggested situations covering the five speech acts; request, apology, invitation, compliment, and dialogue on global warming, in which the subjects were prompted to respond to each situation orally with reference to sentence patterns and structural sentence types, and prosodic features configuration. The data were categorized according to their appropriateness and then analyzed by using Statistical Package for Social Sciences (SPSS). The population consisted of freshmen studying English as an intensive course at KKU for two semesters. The whole available population was selected randomly as a sample of the study, and the sample of the research included all individuals in the population.

10. Results, Analysis and Discussion

The study was intended to answer the following questions and then test the realization of the hypothesis below it:

Question: To what extent are students studying English as an intensive course at KKU able to construct spoken sentence properly?

Hypothesis: Students studying English as an intensive course at KKU are syntactically incompetent to produce meaningful spoken sentences in real interactive communication.

To answer the question above, the subjects' responses were analyzed according to their spoken sentence processes production and the lexicalization and syntactic planning stages.

To examine the spoken sentence processes production and the lexicalization and syntactic planning stages, two types of relationships between students' performance as a speaker and the syntactic organization of sentence structure to convey the message obviously.

Table 1 shows to what extent English students produce well-formed spoken sentences. Generally, 78% of situations are responded to inappropriately. In contrast, only three situations out of fourteen are responded to more appropriately than being inappropriate.

Table 1: Appropriateness of Spoken Sentences Production

No.	Situation	Appropriate		Neutral		Inappropriate		Direction
		F	P %	F	P %	F	P %	
1	Requesting with well-formed, meaningful sentences	40	21.4	20	10.7	127	67.9	Inappropriate
2	Requesting a close friend to borrow his/her notes book well-formed, meaningful sentences.	89	47.6	2	1.1	96	51.3	Inappropriate
3	Inviting a close friend to a party at home well-formed meaningful sentences.	76	40.6	2	1.1	108	57.8	Inappropriate
4	Inviting a foreign student met for the first time for wedding, well-formed meaningful sentences.	29	15.5	4	2.1	154	82.4	Inappropriate
5	Inviting a brother who studies English at another university to Attend seminar well-formed meaningful sentences.	81	43.3	1	.5	105	56.1	Inappropriate
6	Declining an invitation from a close friend because of being Busy with an important task with well-formed sentences.	119	63.6	8	4.3	60	32.1	Appropriate
7	Apologizing for losing a classmate's charger with well-formed sentences.	93	49.7	12	6.4	82	43.9	Appropriate
8	Apologizing for stepping painfully on a foreign student's foot well-formed meaningful sentences	55	29.4	23	12.3	109	58.3	Inappropriate
9	Expressing admiration for classmate's beautiful car with well-formed, meaningful sentence structure.	109	58.3	3	1.6	74	39.6	Inappropriate
10	Presenting a topic on global warming with weld-formed meaningful sentences.	69	36.9	15	8.0	103	55.1	Inappropriate

Table 1 shows that the percentage of inappropriateness is relatively higher than that of appropriateness. The ratio of inappropriateness ranges from 82.4 to 32.2%, whereas the ratio of appropriateness ranges from 63.6 down to 2.7%. Below is the presentation of the most noticeable inappropriate responses and their interpretation: for instance, according to situation No. 9 (Expressing admiration for a classmate's beautiful car), the responses to the situation came out more direct with reference to sentence structure. e.g.,

1. Wow! I am like your car so much.

2. I am admire your care.
3. I am love your car.
4. Wow! Your car beautiful.

Situation2 (Inviting a foreign student met for the first time for wedding)
- Invitation that I you must come to the wedding.

5. I am welcome you to the wedding, brother.
6. Host I you my brother wedding.

It is clear that these responses are absolutely inappropriate to be used for expressing admiration of classmate's beautiful car with well-formed, meaningful sentence structure because of sentence structure deformation.
Requesting an unfamiliar addressee even if s/he has the same social status.

Conversely, in the responses to the situation No. 7 (Apologizing for losing a classmate's charger), it is seemed to be more appropriate to be used for apologizing for losing a classmate's charger, e.g.

- *Sorry, I lost the charger.*
- *I am sorry, I did not find the charger.*
- *Sorry, your charger is not here.*

10.1 Findings
The study has arrived at the following findings:

The hypothesis proposed is that Students studying English as an intensive course at KKU are syntactically incompetent to produce meaningful spoken sentences in real interactive communication; accordingly, their performance with reference to the context and sentence structure has been proved to be inappropriate compared the conventional English spoken sentence production. The results show that Saudi students studying English as an intensive English course have problems constructing well-structured sentences, and they have a problem with copula verbs and lexical verbs usage. There is also an apparent influence of Arabic and Saudi culture in their responses to some situations.

11. Conclusion
In sentence production, as in comprehension, the mapping between thematic and grammatical roles and the construction of syntactic structure must be included in the processing stages. The processing stages in sentence production include the message level stage, in which a conceptual representation of the sentence is formed, two stages of linguistic encoding, and an articulatory stage. Thematic role relations between actions and entities are assumed to be represented at the message level. Many factors may implicate speech productions that are not incorporated into most models, such as emotion and physical condition. No model or set of models can propose that the production of speech is entirely holistic or componential. Despite their differences, all models seem to have several common features: models concerns how linguistic components are retrieved and assembled during continuous speech. The models agree that linguistic information is represented by distinctive units and on a hierarchy of levels, and it seems that all models agree that one would need to access semantics and syntax prior to the phonology of an utterance, as the former dictates the latter. Language production contains four successive stages: conceptualization, formulation, articulation, and self-monitoring. All models share in common the following stages: conceptualization: deciding upon the message to be conveyed; Sentence formation; Lexicalization: selecting the appropriate words to convey the message; Syntactic structuring: selecting the appropriate order and grammatical rules that govern the selected words. Articulation: executing the motor movements necessary to properly produce the sound structure of the phrase and its constituent words. Furthermore, students should be taught how to construct well-formed and meaningful sentences through mastering sentence patterns and differentiation of the usage of copula and lexical verbs in sentence construction.

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