

A look at the nature of human language

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This paper will endeavor to look at both the internal and external manifestations of human language and by doing so come to an agreement as to what we mean by human language and how it differs from other so-called languages. It will address whether there are clear distinguishing features and, if so, how they can be properly explained. In recent decades linguists have been seeking answers to various conundrums such as how, for example, children are able to produce complex grammatical structures from such a paucity of input. In other words, even from a degraded medium and numerous errors from their immediate sources, how it is that children are able to create an infinite number of grammatically correct constructions from a brain that is clearly of finite capacity. In addition, is it possible that we can even treat human language as one monolithic group as opposed to a collection of vastly disparate languages? Superficially, human language has a social and communicative function that would seem to relate it to, for example, animal communication. Is it conceivable that the communicative functions displayed in the animal world are on an equitable basis as that exercised by the human species? Perhaps we are overlooking a number of factors that would clearly define human language as something rather separate. Human language has far more complexity in terms of its phonemic and morphemic construction as well as the way in that we are able to express identity and creativity with this very sophisticated tool. Therefore, this paper will approach the concept of

human language in several distinct ways. First, it will address the idea that all human languages consist of finite elements that can be arranged in an infinite variety of ways; this lends human language its unique attribute of creativity. The creative force of human language is one clear way in which we have thus far been able to distinguish human language and other, less developed languages. Second, this paper will discuss the abstract concept of phonemes and the phonological rules by which they are governed. This will lead onto morphemic principles, or in other words, a discussion on morphemes, or the fundamental, substantive building blocks of language. Thirdly, the theory of a human grammar that links all human languages and relies on innate elements in the structure of the brain that facilitate childhood language development will be discussed. Fourthly, the unique nature of human language to give expression to identity and creativity on an individual and community level will be covered. This will be approached with particular relevance to dialects and idiolects. By taking these distinct, but related approaches, we will endeavor to address the very nature of human language.

The following paragraph will discuss the unique quality of human language that enables us to form infinite combinations from finite elements. This creativity of human language without a doubt sets it apart from animal communication as well as non-natural languages. Every day we create novel sentences with seemingly no effort at all by simply combining “sounds to form words, words to form phrases and phrases to form sentences” (Fromkin, Rodman and Hyams, 2007 p. 8) This unique ability lies in the theory that language is composed of a finite set of sounds that can be arranged into an infinite variety of sentences. Chomsky defined this as the creative aspect of language, whereby we were all born with an innate ability to create, potentially, a limitless number of new

sentences “ascribed by Chomsky to recursion, meaning that some rules of language can have other versions of themselves embedded within them” (Cook and Newson, 2007, p. 18). Pinker was also to write that someone possessing a recursive grammar “can express or understand an infinite number of distinct thoughts” (Pinker, 2000, p. 9). At the time of its proposal, this concept challenged the current school of thought among linguists that language was largely a behaviorist phenomenon more akin to animal communication, whereby human language was a “set of learned responses to stimuli” (Fromkin et al, 2007, p. 8). Following on from this, the study of human language began to deal more at the structural level of the mind rather than with the external manifestations of language. In fact, Chomsky argued that these external manifestations of language, such as communicative and social function, were largely irrelevant in this field and proceeded to pursue research into ‘internalized language’ (I-language) which “treats language as an internal property of the human mind” (Cook and Newson, 2007, p. 13) as opposed to ‘External language’ (E-language) which deals with language in the world around us. Some have called this language competence, as opposed to language performance. To explain in a little more detail, linguistic competence is basically what we know about a language and how it is constructed. It describes language at the mental, abstract level “distinct from the use of language” (Cook & Newson, 2007, p. 15). It governs our knowledge of syntax and enables us to construct grammatical sentences of infinite length while at the same time enabling us to recognize sentences which are clearly ungrammatical. On the other hand, linguistic performance is “how we use this knowledge in actual speech production and comprehension” (Fromkin et al., 2007, p. 11). Cook & Newson (2007) use the analogy of competence being akin to knowing the Highway Code with performance being the actual ability to drive a car safely along a road. The latter requires specific processes and

skills that may or may not be directly linked to the underlying grammatical competence. This can be evidenced by speech errors that people make due perhaps to “performance factors such as fatigue, lack of attention, excitement, nervousness” (Richards & Schmidt, 2002, p. 392). Chomsky pursued this line believing it was here that the essential structural properties of human language could be researched. Hence, the model that Chomsky proposes neatly addresses the question of how it is that human language is so given to the flexibility and creativity that animal communication and non-natural languages seem to lack. Opponents of this approach to language would argue that Chomsky has largely ignored E-language and the communicative and social functions of human language at the expense of dwelling on these structures. Certainly Chomsky has had to concede the validity of E-language too with his introduction of the concept of pragmatic competence, but his focus primarily relies on the underlying structures of language which he feels are there to help us organize our thoughts. For the purposes of arguing the thesis of this paper, it is not necessary to take an all or nothing approach to Chomsky’s views. Indeed, Chomsky’s approach provides one way in which we can define human language, in that it provides us with a neat model of how we can explain its remarkable versatility. Animals do use sound and movement for communicative and social purposes, but their communication strategies would appear to lack the creative aspect, predicated on underlying structures, that human language possesses.

Looking at human language at an abstract level, one has to clarify the concept of phonemes, or the mental representation of language that ultimately emanates on a physical basis. What are the rules by which these phonemes are governed? Phonological rules are rules that explain how the underlying phonological representation of lexical items is conver-

ted into a surface or phonetic representation. In other words, they “provide the phonetic information necessary for the pronunciation of utterances” (Fromkin et al., 2007, p. 284). Phonemes are the basic abstract units of sound which exist at the mental level. Each phoneme represents at least one sound, but even if it has more than one sound the replacement of one with the other would not significantly hinder understanding of the word for the listener; it would simply sound as if the speaker had an ‘accent’. Such sounds are known as allophones. For example, in the English language, no vowel phonemes are considered to be nasalized. However, nasalization of oral vowels does happen where a vowel occurs before a nasalized consonant within a single syllable. Whether a nasal or oral vowel is pronounced however, would not impede understanding and thus the two vowels are considered allophones. In other languages, such as French, there occur both oral and nasal vowel phonemes where use of either changes the meaning of the word uttered. It is clear that the conversion of this phonemic representation into a phonetic representation, far from being random, is actually rule governed and similarities are evident in all languages. One of these phonological rules, as discussed above is to change feature values such as nasality. This allophonic rule is known as assimilation and it is significant in that it helps with ‘ease of articulation’, in other words, makes it easier to say. By the application of this rule, phonemic oral vowels are converted into phonetic nasal vowels in order to help us overcome some of the physiological difficulties of pronouncing an oral vowel before a nasal consonant. As Richards and Schmidt (2002) point out: assimilation can be either regressive or progressive depending on whether a speech sound becomes more like the sound that precedes or follows it. The nasalization rule is notated as:

$V \rightarrow [+ \text{nasal}] / - [+ \text{nasal}] (C) (C) \$$ (Fromkin et al., 2007, p. 274)

Here, a vowel becomes nasalized in the environment before a nasal segment, and possibly followed by one or two consonants within the syllable. Thus, nasalization is an example of a feature-changing rule where a feature has been added (in this case, nasalization). Looking at an example in a language other than English, one can see that nasal assimilation also occurs in the Japanese language. According to Tsujimura (2006), in Japanese the phoneme /n/ changes into the bilabial [m] when it comes at the end of a syllable and is immediately followed by a bilabial consonant. Hence, /sanpun/ (three minutes) would become [sɒmpun] phonetically. Furthermore, the phoneme /n/ would be preserved as [n] phonetically before an alveolar consonant /n/, /t/, /s/ and /d/, for example in /sansatsu/ (three books), and finally, the /n/ would be converted into the velar nasal when it is followed by a velar consonant /k/ and /g/, for example in /sanko/, or three objects. Again, it is clear that such assimilation enables greater ease when speaking as the /n/ adopts a place of articulation similar to the following consonant. Another phonological rule governs the insertion of segments. This morphemic rule can be illustrated by the formation of regular plurals in the English language. In particular, where a noun ends in a sibilant such as [s] or [z], it is necessary to insert the schwa before the morpheme [z] when creating the plural form, such as in the plurals buses and garages. In addition, regular past tense in English takes on a similar pattern when the verb ends in an alveolar stop /t/ or /d/. In this case, the schwa is once again added followed by [d]. The phonological rule of insertion presents an interesting case as to why there are phonological rules at all. Languages may “constrain possible sequences of sounds” (Fromkin et al., 2007, p. 293). In English we can see this in that there would be no phonetic difference between the singular and plural of bus without the insertion of the schwa and thus it would be impossible for speakers to make distinctions between

the two. Turning to Japanese, we can see that in some cases the insertion rule is used in the creation of past tense verbs. The verb 'to write' for example is /kak/ and the phonemic notation for the past tense would be /kak + ta/ where the /ta/ is, in this case, the correct ending for the informal past tense of the verb. However, insertion occurs where /i/ is inserted and the /k/ is deleted. Hence, the phonetic past tense of this verb is [kaita] , or 'wrote'. Similarly, the phonetically notated [maita] and [hiita] are the past tenses of the verb roots /mak/ and /hik/, to sprinkle and to pull respectively. On a more physical level, the fundamental building blocks of language are known as morphemes. Morphemes are the smallest units of meaning in a language. They are discrete elements that are able to be combined to form words, which in turn are combined to form phrases and sentences. According to Richards and Schmidt, "a morpheme cannot be divided without altering or destroying its meaning" (Richards & Schmidt, 2002, p. 341). Every language is composed of words consisting of at least one morpheme and each of these languages has rules that govern how these morphemes can be combined to make meaningful words. There are several different types of morphemes and from now we will discuss them. Firstly, there are those morphemes that are able to stand alone as meaningful words, such as boy and man, and even polysyllabic words such as elephant and hallucinate. These are known as free morphemes. These free morphemes can then be subdivided into lexical or functional morphemes. Lexical morphemes are those that comprise nouns, verbs, adjectives and adverbs. Hence, *boy* would be a noun, *never* would be an adverb and *dance* could be either a verb or a noun. Such content words are continuously being added to as new words enter the lexicon. On the other hand, functional morphemes such as *but*, *of*, *in* and *because* are used to knit together lexical terms grammatically and have little or no meaning in themselves. The second major class of morphemes

is *bound* morphemes that are not able to stand alone. In other words, by themselves they are devoid of meaning. Furthermore, these bound morphemes can be subdivided into derivational morphemes and inflectional morphemes. Derivational morphemes are those that add meaning to a word, perhaps by converting an adjective to a noun (happy to happiness) or an adjective to an adverb (happy to happily). In English such prefixes such re-, post- and pre- and suffixes such as —ish, and -ness. Some languages even have infixes such —um in Bontoc, a language in the Philippines, which comes after the first consonant and converts the adjective into the verb. There are even circumfixes, or discontinuous morphemes, which as the name suggests, surround the word. Inflectional morphemes comprise those bound morphemes which have a grammatical function. These morphemes indicate such qualities as tense, gender, case and number. For example, in the Japanese language, the suffix —katta can be added to regular adjectives to form the past tense. Hence, the adjective *oishii* (tasty) becomes *oishikatta* (it was tasty) with the addition of this inflectional morpheme. In English there are a total of eight bound inflectional morphemes including —s, -ing, -ed, and —'s.

The previous paragraphs have dealt with the creativity of human language as well as its manifestations at the abstract and concrete levels. These concepts are rootless without an explanation as to how they may be generated within the physicality of the human brain. This paper therefore argues that another aspect peculiar to and therefore definitive of human language is the proposed presence of a Universal Grammar (from now on written UG). The development of UG theory came from “a consensus that certain properties of language are too abstract, subtle and complex to be learned without postulating innate and specifically linguistic constraints” (White, 1998, p1). This paragraph will deal with the theory

behind UG, give examples of UG at work, and address how it helps language acquisition in childhood. First, the theory behind UG is that all human languages are, in essence, interrelated and stem from the same faculty in the brain. To wit, all human beings share the same genetically controlled structures in the brain concerned with language development. Thus, it is a blueprint for all human language. Those who dispute such a claim point to the huge variation between human languages as evidence otherwise. However, to linguists, the ‘minor’ differences between languages are irrelevant when compared to their remarkable similarities. The theory that UG exists has gathered momentum over the years as evidence has continued to mount. An example of a similarity is the principle of ‘movement’, in particular, the Locality Principle whereby it can be observed in a number of languages that movement of words in a sentence has to be over a short distance, such as when creating the question form. Hence, as Cook and Newson observed, where two auxiliary verbs are present in an English sentence, it will be the one that moves the shortest distance that will come in front of the subject. Such principles as the Locality Principle “are universal and so applicable in all human languages” (Cook and Newson, 2007, p.39). Another example is the “existence of anaphoric relations between an item like him or himself and its antecedent — the item it refers back to” (Smith, 2004, p.41-42). UG helps explain how children pick up such complex grammatical structures with such relative speed and efficiency when the input to which they have been exposed has been so inadequate. In fact, this has been called the argument for the poverty of stimulus “where we end up knowing more than we have learned,” (Smith, 2004, p. 38). The major linguistic structures have already preprogrammed principles and all the child’s brain need do is make certain adjustments to parameterize these principles according to the language of his or her particular community. Accordingly, “UG

includes variant principles ...as well as parameters which allow for variation from language to language” (White, 2003, p. 2). Thus, looking at human language at the level of the mind is an effective way in which we can define and describe human language as a unique and complex phenomenon. How is it that native speakers are able to effortlessly comprehend utterances that are spoken to us when the sounds within that utterance are seamlessly strung together into one unbroken chain? How is it that the listener is able to divide the utterance into meaningful chunks such as phonemes, morphemes and words? This is referred to as the ‘segmentation problem’. Fundamentally, psycholinguists believe that in addition to bottom-up processing, we also use top-down processing when we comprehend language. As the latter suggests, we work from the semantic and syntactical level down to the lexical information we receive from the speaker. The listener uses innate knowledge of phrase structure to predict what comes next in a sentence. For example, a determiner may well be followed by a noun due to the listener’s knowledge of noun phrase structure. By using such higher-level information we can predict the lower level information such as the phonetic input. This has also been called “expectation-driven analysis” (Fromkin et al., 2007, p. 563). Furthermore, top-down processing can take advantage of background knowledge such as “previous knowledge..., situational or contextual knowledge, or ... knowledge stored in long-term memory” (Richards, 1990, p. 51). Bottom-up processing works in the opposite direction where the information in the input is put together to form larger units such as words, phrases and sentences. The human mind can apparently understand language at a rate of ten to fifteen phonemes per second for casual speech, and therefore it is possible to pretty much instantaneously recognize phonological word units and then match them with the corresponding phonological strings in the mental lexicon. This is known as lexical access or word recognition.

Of course, words can be ambiguous in their meanings and quite how we can then retrieve the appropriate meaning of the word we have just heard has been the subject of much experimentation. One explanation is that lexical decisions can be influenced by related words that have come before that ‘prime’ the listener. This suggests that a word such as ‘doctor’ may activate or awaken semantically related words such as ‘nurse’ temporarily. Furthermore, experiments also demonstrate that an ambiguous word will prime a listener for words related to alternative meanings of the word even when these alternative meanings are clearly out of context. This would seem to suggest that we do not wholly comprehend language by top-down processing, but that there would appear to be a certain amount of bottom-up processing occurring as well. As far as syntactic processing is concerned, it seems that by parsing incoming sentences, or working out “the syntactic and semantic relationships among the words and phrases in a sentence” (Fromkin et al., 2007, p. 372), the parser constructs a mental phrase structure ‘tree’ that enables him or her to make syntactic sense of the utterance. Of course, ambiguities do occur and rather than pursuing every possible ‘tree’ it seems that the human mind gambles on one particular interpretation of the ambiguity and goes along with it until and unless it hits a wall and has to backtrack. These sentences have been called ‘garden path sentences’ and this method of processing such sentences is known as ‘minimal attachment’. Furthermore, as Pinker points out, “people like to pack new words into the current dangling phrase, instead of closing off the phrase and hopping up to add the words to a dangling phrase one branch up” (Pinker, 1994, p. 215). This is known as the “late closure” theory and is exemplified by Pinker in the sentence: Flip said that Squeaky will do the work yesterday. On first reading this, we would probably try to add *yesterday* to the VP *do the work*, rather than combine it with *Flip said*. Finally, the role of memory

is also a limiting factor in the role of parsing a sentence. Pinker (1994) argues that it is not the amount of memory as such, but the kind of memory. In particular, recursive phrases such as using the same relative pronoun or repeating phrases such as *if...then* inside another *if...then* sentence tend to confuse the listener and limit comprehension. In conclusion, oral comprehension would seem to be a complex procedure utilizing a number of different factors and processes.

Along with language at the internal level (I-language), any definition of human language cannot overlook the importance of E-language, or the manifestation of human language, in the external world. While language is indeed an efficient vehicle for communication, whether it is by voice or gesture, it also serves several other useful functions: notably those of expressing identity and creativity. This paragraph will deal with the areas of idiolect and dialect. An idiolect is an individual's unique way of expressing themselves through language; it includes the speaker's chosen grouping of words, idioms and phrases that they may utter. Basically, everyone has their own idiolect and it is an effective way for expressing not only one's identity, but also one's creativity in using language. In addition, an individual's ability to adjust the register of their idiolect is an important method of abiding by social norms and avoiding conflict. Dialect is a tool for expressing identity too. Dialects are defined as "mutually intelligible forms of a language that differ in systematic ways" (Fromkin et al., 2007, p409). They can come about for a number of reasons, particularly those relevant to region or social class. A regional dialect arises due to geographical isolation, where a language will change subtly over the course of several generations. If these changes do not spread elsewhere, and if enough of these changes accumulate over time, a regional dialect will arise. Regional dialects can be powerful agents of an individual's identifi-

cation with their native area, or even nation. Australian English is an example of a regional dialect whose identity and distinctiveness has been somewhat attributed to the “rich and creative slang vocabulary” (Fromkin, Rodman, Hyams, Collins, & Amberger, 2005) which it embraces. Social dialect, on the other hand, does not require geographical isolation; it relies on divisions in society along the lines of ethnicity, socioeconomic status, even gender. Examples of social dialects include African American English and genderlect (Fromkin et al., 2007, p430-431). Fromkin et al. found that the latter is particularly prominent in languages such as Japanese where women are seen to use more polite forms of language and even words reserved for just them (Fromkin et al., 2007, p431). Social dialects can act as a unifying force, particularly if a community has suffered discrimination. Fromkin et al. found that African American English in the United States is very distinctive and includes systematic differences with Standard American English such as multiple negatives, loss of interdental fricatives and glottal stop substitution (Fromkin et al., 2007, p424-425). Such dialects allow creativity: Pinker, in referring to AAE, notes that “the subculture of street youths in particular is famous in the annals of anthropology for the value placed on linguistic virtuosity” (Pinker, 1994, p16). Hence, dialect can be an effective tool for both creativity and identity through representing membership of a certain community. Creativity in language can also be evidenced by the phenomenon of code-switching, whereby, as Fromkin et al investigated, bilinguals, such as Latinos in the US, or Quebecois in Canada, insert words or phrases from one language into the other (Fromkin et al, 2007, p428). Far from being disorganized or chaotic this code-switching is actually “governed by grammatical principles” (Fromkin et al, 2007, p428). Thus, in this paragraph we have seen that the external manifestation of language is not only a means of communication, but also a vehicle for expressing both identity

and creativity — two very significant attributes of human language.

This paper has endeavored to define and describe the phenomenon of human language by taking a number of distinct approaches. First, it has espoused the view that the creativity of language is brought about by finite elements which can be arranged in an infinite number of ways by recursion. Although this may seem to define language at the expense of its communicative and social function, it is a useful way of describing how human language possesses its richness of expression. Following on from this, the paper looked at language at a more abstract level: in particular the phonological rules that explain how the underlying phonological representation of lexical items is converted into a surface or phonetic representation. This continued with a look at morphemes, the basic building blocks of human language. In addition, the paper introduced the theory of Universal Grammar which seeks to define the very essence of human language — a core of rules that each language adheres to as well as principles that are parameterized depending on the speech community in which the individual is raised. Thus, UG is able to describe the multitude of human languages as fundamentally interrelated and based on invariant principles. Theories regarding the oral comprehension of human language were also discussed within this paragraph. Lastly, this paper touched on the more external manifestations of idiolect and dialect as powerful tools for expressing creativity and identity. This can be at the individual level where, for example, a person can alter the register of their speech to suit a particular context, or at a community level (either regional or social) where dialect can reinforce identity with a particular group as well as enable creativity with the language itself. Either way, human language has the facility of enabling us to enact so much more than just communication. To sum up, this paper has looked at the nature of

human language by introducing concepts that clearly define it and set it apart from other forms of language.

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