Notes and thoughts

On Universal Grammar, Principles and Parameters

And How they connect to Language Universals

Language universals can be thought of as features and phenomena which is common in a large set of natural languages across the world. There are various schools of thought aiming to systematically study universals in the world's languages. The two most well known ones being the Chomskyan and Greenbergian approaches.

A lot of debate goes on to this day as to which of these two theories provide a better model for understanding languages in general. Greenberg's model is highly data-driven in nature and involves a thorough study of a wide array of languages (he initially proposed his universals based on the study of thirty selected languages). On the other hand, the Chomskyan approach involving Universal Grammar is more of a mentalist model, relying on the idea that a certain set of structural rules for language generation are actually innate to human beings. Although modern medical science research has clearly shown how Broca's and Wernicke's areas of the human brain are instrumental for human language, Greenberg's idea of performance in which one's use of language depends on their immediate environment including the perceiver, shared social settings and common knowledge sends a clear setback to the Universal Grammar paradigm. In the Greenbergian approach, universals will have to arise from the comparative study of languages and proven using patterns in the available data. Chomskyan approach is based primarily on rules and exploits a 'deep-structure' which is shared across languages. On the other hand, Greenbergians primarily focus on surface structures and surface level relations to form universals, and claim that these connections can be effectively modelled using a well defined set of formalisms.

In this setting, we see that the Chomskyan approach will focus on a speaker's competence which essentially is one's way of expressing or communicating one's thoughts. Let's look at two sentence structures:

A: Ram killed Ravana.
B: Ravana was killed by Ram.

A Chomskyan will argue that A and B are effectively the very same sentence. This comes from a mental model which revolves around the fact that one can use a transformation rule that takes you from active to passive voice. Greenbergian scholars however would consider A and B as separate sentences. This follows from a behavioral model in which a speaker would use an active voice in a scenario say S_1 while in a different scenario say S_2, they would switch to passive. These subtleties are mostly overlooked by the Chomskyan approach, in which matter-of-fact semantics assumes the upper hand.

Joseph Greenberg's approach has some obvious downsides. The claim that a speaker must have perceived a certain pattern in order to replicate it can be disproven using the 'poverty of stimulus' argument. A speaker may not have heard a certain pattern but using the rules of combination of words into phrases, phrases into sentences, etc, they may creatively come up with an utterance which they have never heard before. Thus, there indeed seems to exist some sort of set of rules. How 'innate' these rules actually are, is a truly fascinating question.

This leads us to the study of language acquisition. How does a baby acquire their very first language? If language is truly innate as claimed by Chomskyans, it is encoded in a persons' genetic material perhaps, or maybe it comes as a part of the human brain. There are other possibilities too. A Chomskyan theorist would argue that there does exist a set of rules which are common across all languages. These rules however, have certain parameters and on tweaking each particular parameter, one can arrive at a different language. Thus, it is precisely these parameters which a child picks up from their surroundings: by listening to their parents speak, at school, from their nanny, etc. There are various studies as to whether some other claims made by Chomskyans actually hold true or not. These include whether language is hierarchical or not, whether languages have

the property of recursion and whether all languages have the concept of past and future. The last two claims have actually been disproven by a language called Piraha with around four hundred speakers, spoken in the Amazon rainforest.

We looked at universals for a while. Let's conclude by contrasting two typical types of universals, namely, absolute and statistical.

An absolute universal is one which is constant across all human languages of the world and requires no specific preconditions. For example, all languages have at least three vowel sounds.

On the other hand, statistical universals are of the form: if P_1, then P_2 or $P_1 \rightarrow P_2$, where P_i is a proposition. Color terms provide a good example of statistical universals. For example, if a language has more than three color terms, the first three would usually be a dark shade like black, a light shade like white and some shade of red. Any statistical universal can be logically converted to an absolute one by including the preconditions to restrict the application set.

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