The Chomsky Hierarchy

Spencer Hirsch, Thomas Johnson, Tyler Gutowski, Remington Greko

January 25, 2023

Noam Chomsky is a reowned linguist whose ideas were recognized and applied by computer scientists to lay foundations of our discipline. I admire him for his support of justice.

- Read about Noam Chomsky on Wikipedia and summarize his salient contributions to our computing discipline.

- Outline the Chomsky Hierarchy giving what we now call

    - Regular Languages
    - Context-Free Languages
    - Context-Sensitive Languages
    - Unrestricted Languages

- Read about Grammars Wikipedia. Report on what you find interesting.

1 Chomsky

(???)

2 Chomsky Hierarchy

TYLER & ???

2.1 Regular Languages

(**TYLER**)

2.2 Context-Free Languages

(**TYLER**)

2.3 Context-Sensitive Languages

(???)

2.4 Unrestricted Languages

(???)

3   Grammars

Grammar can be used to describe behavior of groups of speakers, grammar can be used to demonstrate the language of not only an entire group of individuals but also subsets within that group. It's interesting how grammar changes depending on what sample of people you are looking at. Geography has an influence on the way that individuals speak.

With regards to history, it is interesting that the "earliest known grammar handbook is the *Art of Grammar*" was written by an ancient Greek scholar in 90 BC. Throughout history grammar has been based off of the grammar of other languages, each society basing it's grammar off of an older language, demonstrating that grammar that is used today have evolved from ancient languages. Grammar has also been a topic of study throughout many time periods including the Middle Ages.

Grammar evolves with time and usage most notabily through the observation and documentation. Sentences that have slight variations in language can have rather large differences based on context. It is interesting to think that grammar has defined rules however, the evolution of language changes the definition of such rules. Demonstrating that grammar rules are dicated by those who break grammar rules.

There is a difference in grammar in an academic setting and in the real world, vernacular dialects and standard language respectively.