

Transducers and Grammars as Theories of Language

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In this presentation we will talk about the difference between the class of grammars (the class of context free grammars - CFG) and transducers (the class of finite state transducers - FST). We'll explain what a language is and how it is subdivided. We will describe formal ways used to compare these mechanisms, such as their characterizing capacity. We will demonstrate some arguments that FST yields a simpler picture of natural language on "internal" as well as "external" grounds than CFG. We will show that some phenomena that can be described by a CFG in an unpleasant way can be handled by an FST in a more intuitive way by using Chomsky's trace theory. Lastly, we will look into the relation between the FST and the constituent structure. The traditional bracketing system is replaced by another bracketing system in order to prove that it is capable of expressing the same as the traditional notation.