A Comparative Study on the Structures of Natural Languages and Logical Arguments

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Language is the base in both Linguistics and Logic. The objective of the Logicians is not to study the natural languages but to study logical arguments in natural languages. However, identifying the structure of natural languages can be very much useful to make the correct deduction in logic. Therefore Semantics is important in both Linguistics and Logic. At the beginning Logicians tried to find out the logical patterns of natural languages, but most of the time they have seen the complexity, ambiguity, vagueness, and context based meaning of them. Therefore limited patterns of natural languages are considered in the formation of logically valid inferences in artificial, machine or formal languages. As well it is still a challenge to convert some components of natural languages into machine language .In order to face challenges in creating artificial languages, it is important to analyze the structure of both languages through a comparative study. In this study it is expected to identify sentence patterns and morphological symbols in both languages. Statement logical concepts and predicate logical concepts are taken in this research as logical languages.Stuctural linguistic analysis is done in this regard. The results of this study reveal that logical symbols abbreviate or shrink the meaning of natural languages in its well-formed formulas. In comparison of the Structures of the two languages, logical patterns can be seen morphologically and syntactically. Compositionality of the semantical component is also an important factor in the formation of logically valid arguments. Therefore this study supports to identify similarities and differences of the structure of the natural and machine languages .At the same time, studying semantics of natural languages and basic concepts of logic helps to analyze the language more efficiently and to generate smart machine languages.

Key Words: Linguistics, Logic, Natural Language, Machine Language, Structure