

## ***Paninian framework and its application to Anusaraka***

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**Abstract.** The *Paninian*\* framework proposes *karakas* as semantico-syntactic relations that play a crucial role in mediating between surface form and meaning. The framework accounts for theta-role assignment, active passive, and control in a uniform manner. It has been successfully used in building an extremely fast prototype machine-translation system between two Indian languages. The constraint parser and the generator are designed with information theoretic considerations. Paninian framework is particularly suited to free word order languages. As most human languages are relatively word-order free, the Paninian framework should be explored as a serious contender for such languages. Based on the Paninian theory, the concept of language accessor or *anusaraka* has emerged, which has the potential to overcome the language barrier in India.

**Keywords.** *Paninian* grammar; *karakas*; *anusaraka*; machine translation; language accessor.

### **1. Introduction**

How is it that natural language is used by speakers to convey information to the hearers? How is it that on hearing an utterance, the hearers are able to get intended information? These are the questions that have intrigued *Paninians*. The goal of the Paninian approach is to construct a theory of human natural language communication that answers these questions. Grammar, a part of such a theory of communication, is a system of rules that establishes a relation between what the speaker decides to say and his utterance, and similarly, what the hearer hears and the meaning he extracts<sup>1</sup>.

The main problem that the Paninian approach addresses is how to extract *karakas* relations (which are syntactico-semantic relations) from a sentence. As it is inspired

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\*In this paper non-English words occur many times and hence are italicized only at first mention.

<sup>1</sup>There is a difference between the goals of the Paninian approach on one hand and generative enterprise on the other. The latter is interested in identifying the innate universal grammar in the mind of every human child by which it so effortlessly and without explicit tutoring acquires language that it is exposed to.