

Saṃsāadhanī Praveśikā: Learning Sanskrit using Computational Tools An Introduction

Amba Kulkarni

Department of Sanskrit Studies,
University of Hyderabad,
Hyderabad

Course Code: OE102

Linguistic Theories in India

Language: Means of communication.

Communication is a two way process between a speaker and a listener.

Speaker expresses his/her thoughts through a language string.

Listener deciphers the language string into thoughts.

Linguistic Theories in India

Indian civilisation - the only civilisation that developed the theories of verbal communication

Pāṇini's grammar: Converting thoughts into a language

Theories of verbal cognition (Śābdabodha): Deciphering a language string into thoughts.

Linguistic Theories in India

Goal: To protect the Vedas

Development of Vedāṅga - limbs of Vedas

- ▶ Śikṣā (Phonetics, Phonology)
- ▶ Chandas (Prosody)
- ▶ Vyākaraṇa (Grammar)
- ▶ Nirukta (Etymology)
- ▶ Kalpa (Geometry)
- ▶ Jyotiṣa (Astronomy)

Linguistic Theories in India

The mathematical method is characteristic of much of Western philosophy whereas the grammatical method is characteristic of much of Indian philosophy.

Daniel H H Ingalls, 'Comparison of Indian and Western Philosophy', Journal of Oriental Research, (2),1954.

Why Learn Sanskrit?

- ▶ To understand the Sanskrit texts in original

Language Learning

Learning a language involves learning

- ▶ Script
- ▶ Pronunciation
- ▶ Spellings
- ▶ Vocabulary
- ▶ Morphology - word formation
- ▶ Syntax - sentence formation
- ▶ Segmentation (identifying word and sentence boundaries)
- ▶ Semantics - meaning of words, sentences
- ▶ Understanding the discourse, ...
- ▶
- ▶
- ▶ Cultural Background

Language Learning ..

Measuring a Language Barrier

$D(L1,L2)$ = Time taken to learn L2 given that the person knows L1

Goal: To minimize $D(L1,L2)$, as much as possible

Strategy: Man-Machine combination

Share the load between man and machine

Machine	Rote Memory + Logic
Man	World Knowledge, Common sense Cultural Knowledge, Domain Knowledge,...

However there is a strong coupling between the two loads.

Load reduction in Language Learning

- ▶ Script (100%)
- ▶ Pronunciation (-)
- ▶ Spellings (-)
- ▶ Vocabulary (Online dictionaries)
- ▶ Morphology - word formation (95%)
- ▶ Syntax - sentence formation (60-70%)
- ▶ Semantics - meaning of words, sentences
- ▶ Understanding the discourse, ...
- ▶
- ▶
- ▶ Cultural Background