

**COMPUTER MODELLING OF THE
THERAVADIC BUDDHIST THEORY OF
THOUGHT PROCESSES**

- A Model of Human Behaviour -

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ABSTRACT

The concept of a **Thought Process** as explained in the Theravada Buddhist theory of mind is developed as a model which can be used to simulate human behaviour by means of mathematical concepts.

Even though there are several texts in the Buddhist philosophy associated with the function of mind, our particular consideration of thought processes is explained in the Abhidhamma context of Sri Lankan Theravada Buddhist tradition.

According to the Buddhist philosophical definition of a thought process, the structure of a thought process can be recognized as a process or sequence of events which are conditioned by each other. A profound investigation of conditioned phenomena in the world has been explained in Buddhism under the *Twenty four Causal Relations* found in *patthana*. Two of those relations have been considered for this particular study. In addition to that, as we realise from Buddhist theory of mind, the structure of a thought process shows some significant moments (states) within the process which are important in the sense of simulating and controlling the process.

According to the Buddhist philosophy the concepts of *Bhavanga state*, determining state (*vothapana*), and impulsion states (*javana*)

are the most important states in a thought process. In this regard *bhavanga* is the state at which we can stimulate the process and the determining states is the state where the determination regarding the stimulation is formed. Furthermore *javana* are the states which proceed (operate) according to the instruction given by the determining state of the particular thought process. It is also important to mention that each thought process begins with the ability of being stimulated and ends with the same ability. Further, it is also of interest to mention that the *bhavanga* effect on thought processes is an invariant throughout a particular period of time regarding a given person. Due to these reasons, the concept of *bhavanga* plays a significant role in this research.

Hence, in this research, according to the consideration of structure of the thought process, I have studied the determining state in details as it determines the complete response of the process regarding the simulation. As such representation of thought processes by means of mathematical concepts is discussed in this research. Under this particular study we define some interesting key concepts such as : *determining state, state transition, limiting state, limiting transition number, limiting row vector and input probability function.*

The model of human behaviour developed in this study utilizing the mathematical representation of thought processes yields an important result which can be considered as a new technique of prediction using a limited number of existing inputs. This is illustrated as indicated in chapter seven by the application of technique to the process of students' performance in one of the courses conducted by the Open University of Sri Lanka.

Identification of the possibility of implementing thought processes on a machine is a suggestion for future development of this model which also leads to the study of group behaviour of human beings by means of the consideration of behaviour of individuals of a system.

In case of analysing the serial and parallel composition of thought processes the relativistic nature of the concept of time between two thought processes is also suggested as an interesting future work in this regard.

