

Elephants Don't Play Chess review

Rodney A Brooks

This paper is a comparison between Symbolic System Hypothesis and The Physical Grounding Hypothesis.

SL. No.	Symbolic System Hypothesis	The Physical Grounding System
1	Perception and motor interfaces are considered as sets of symbols. The central intelligence system operates on this symbolic representations.	Using a set of sensors and actuators which are physically grounded on a system the intelligence system operates on the data received involving in the environment.
2	Typed input and output is required.	Use of sensors remove the requirement of typed input output.
3	Psychophysical interaction is not possible therefore lacks in performing related operations.	Able to interact with physical attributes thus achieving psychophysical operations.
4	Symbolic systems contain a large number of beliefs which forms a reasonable path when called upon. This pathway creates mimic of human intelligence.	Physical Grounding systems are assembly of several behavior layers, each of the layer is responsible for certain change in each AFSTM.
5	Each Process/response is designed separately and the system combines them to generate certain behaviors.	Each behavior of the machine is declared separately. Therefore inhibiting a preoccupied input/output is fairly plausible.
6	Symbolic Systems assumes an objective as its simplest formation and addition of enhancements to the objectives makes the system more complex and cumbersome.	Output are updated on achieving different inhibiting Input signals. Updating is implemented by adding new connections to AFSTM. Thus changing the whole behavior of the system to certain input is comparatively simple.
7	Lack of appropriate symbols hampers the process of increasing functionality	A series of layer can be added to increase the functionality of the overall system

Augmented Finite State Machine (AFSM):

A AFMS is a conventional finite state machine, combined with a set of registers and timers. Registers are used to store input/output values while timers are used to switch between states. Input connections can impact a change in registers, thus the values of registers can be modified according to the sensory inputs from the environment. Combination of an incoming sensory data and timer's response a state change in AFSM takes place and an output is generated through the actuator which performs a certain change in behavior of the whole system.