



Artificial Intelligence

VICE News | HBO



Mainstream AI Theories

01 Symbolism

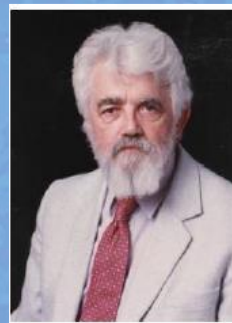
02 Connectionism

03 Actionism





Symbolicism



John McCarthy
(1927-2011)



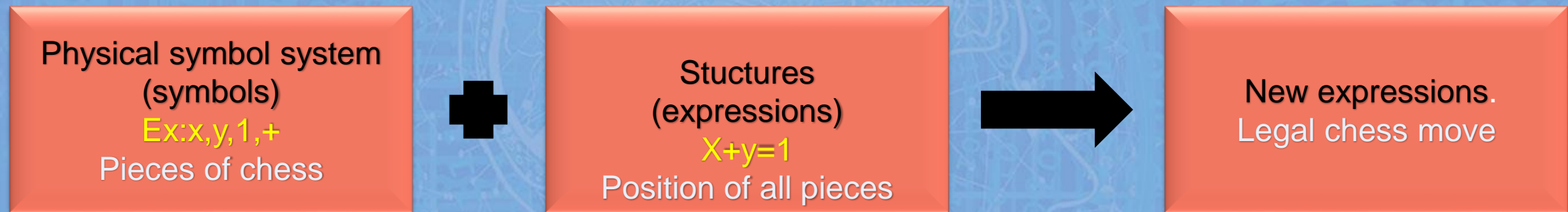
Allen Newell
(1927-1992)



Herbert Simon
(1916-2001)



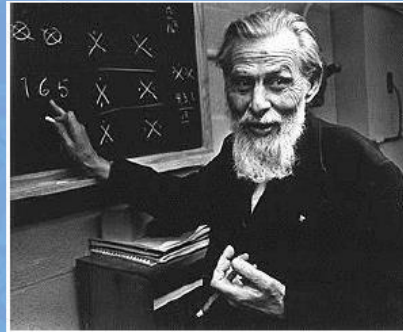
Edward Feigenbaum
(1936-)



- ❖ Human thinking is a kind of symbol manipulation
- ❖ Computers can be used to simulate human behavior and be intelligent.
- ❖ Appropriate for higher-level intelligence such as playing chess, but less appropriate for commonplace intelligence such as vision.



Connectionism



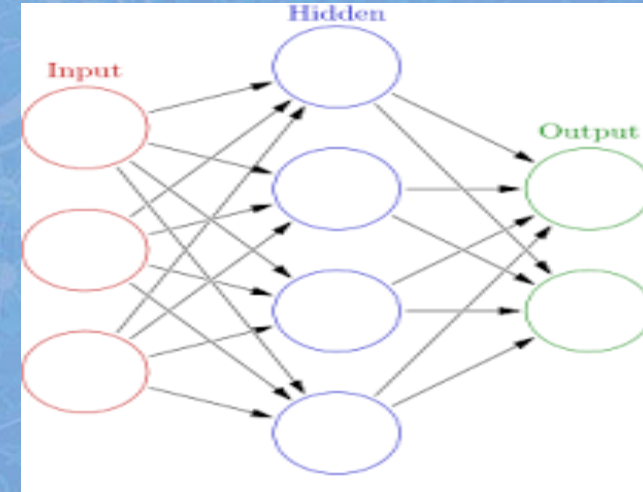
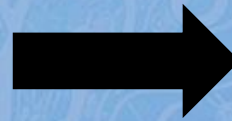
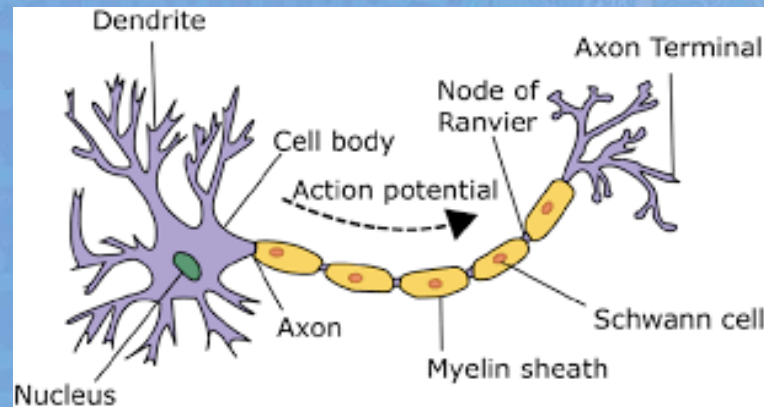
Warren S. McCulloch
(1898-1969)



Walter H. Pitts
(1923-1969)



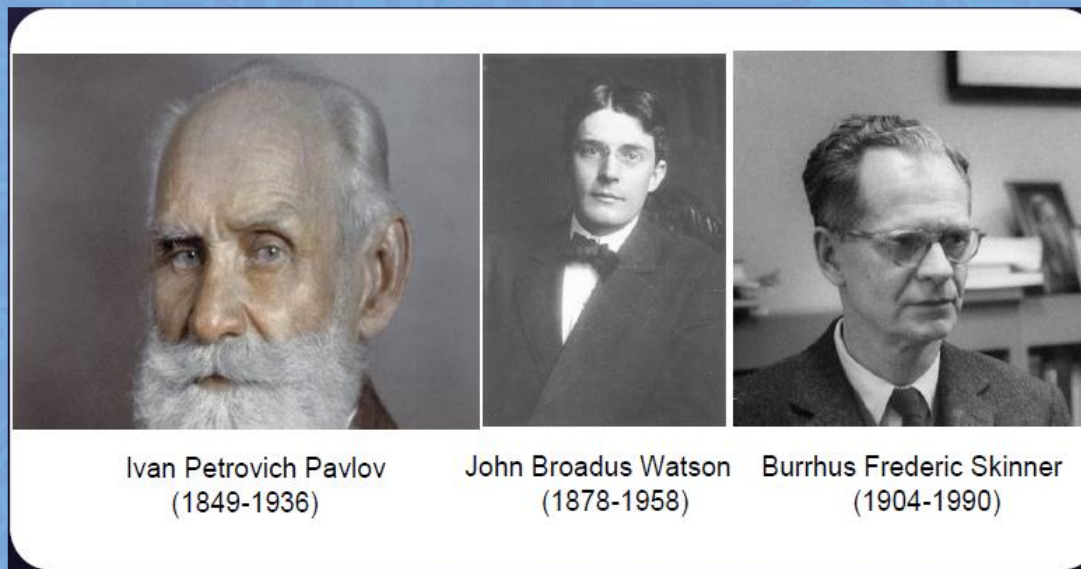
Marvin Minsky
(1927-2016)



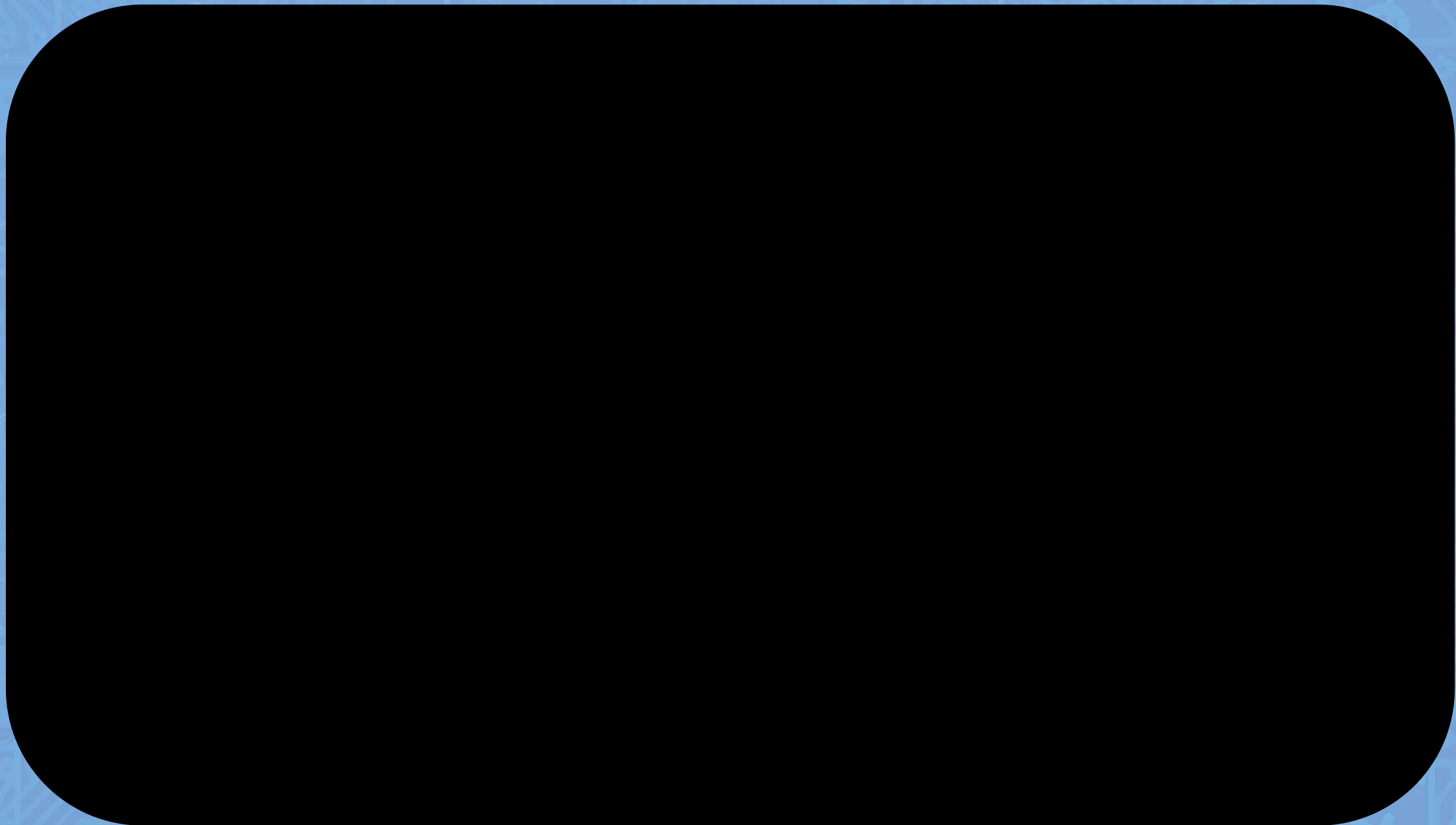
- ❖ Derived from bionics(**Biology+Electronics**)
- ❖ Imitate the structure and function of the human brain with electronic devices.
- ❖ Neuron is the basic thinking unit.

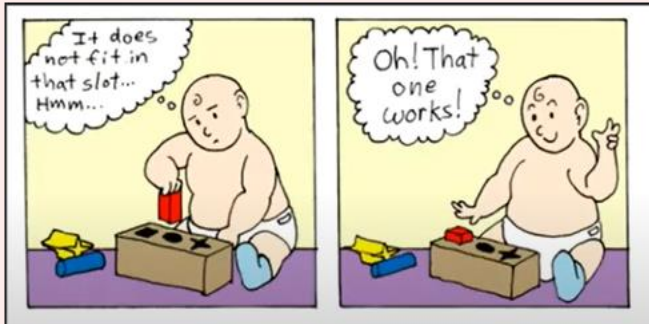


Actionism



- ❖ Derived from cybernetics (the science of communications and automatic control systems in both machines and living things)
- ❖ Simulating the intelligent behaviors and roles of people in the control process, such as the study of cybernetic systems in self-optimization, self-adaptation, self-satisfaction, self-organization.



Supervised learning	Unsupervised learning	Reinforcement learning
<p>Input data is labeled and output data are given</p>	<ul style="list-style-type: none"> • When the problem requires a massive amount of unlabeled data. • Analyzing data without human intervention. • The machine learns through observation & find structures in data 	<ul style="list-style-type: none"> • when a machine or an agent interacts with its environment, performs actions, and learns by a trial-and-error method. • The algorithm receives feedback from the data analysis, guiding the user to the best outcome.
<ul style="list-style-type: none"> • Photos with information about what is on them 	<ul style="list-style-type: none"> • You have parameters like colour, type, size of something and you want a program to predict that whether it is a fruit, plant, animal 	

MONTY PYTHON'S FLYING CIRCUS



	Python 2	Python 3
Print function	Print " hello"	print ("hello")
Strings stored as	Ascii by default	Unicode by default
For iteration	Xrange()	Range()
Exception	" "	{ }
Division	5/2=2 (round calculation)	5/2=2.5
Inequality operator	<>	!=

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