

# Model of consciousness

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## Abstract

The generation of consciousness needs its biological basis, neurons. The number of neurons plays a crucial role. Nematodes only have hundreds of neurons, while humans have about 80 billion neurons. In addition, neurons generate consciousness in some way. The core of this way is two things: excitement and inhibition. We call it biological binary.

## Keyword

Neuron, binary, neural network, consciousness

### 1. Biological basis of consciousness:

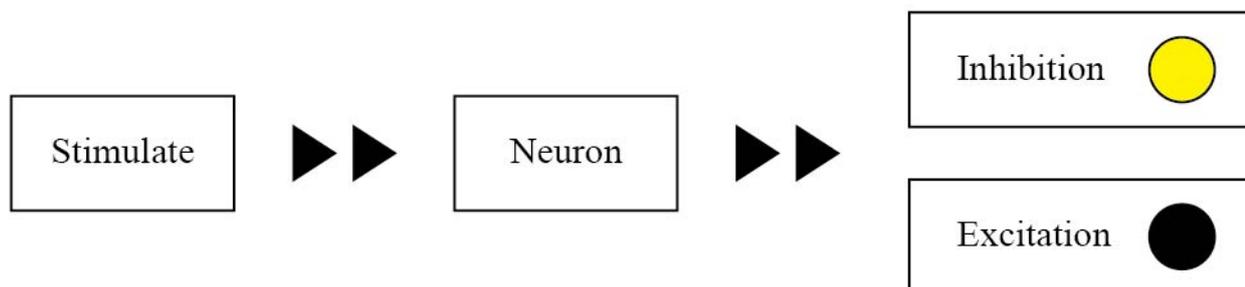
The biological basis of consciousness is neurons, and the number of neurons is crucial. Biology evolves from simple to complex, and the number of neurons is also increasing. The simplest organisms have no neurons, nematodes have hundreds of neurons, while humans have about 80 billion neurons. Humans have a high level of consciousness and can think in complex ways. Other mammals also have a large number of neurons, which are similar to those of humans. For example, whales, dolphins, elephants. These animals also have some degree of consciousness. We believe that consciousness is positively correlated with the number of neurons.

### 2. Formation of consciousness:

(1) Starting point ----- biological binary

Stimulation of neurons can produce two kinds of reactions, excitation and inhibition. The source of stimulation can be other neurons or external stimulation. Excitement and inhibition can be retained and can exist for a long time. We usually call it "memory". Thus, excitation and inhibition form a biological binary system. Biological binary is the origin and core of consciousness. Figure 1

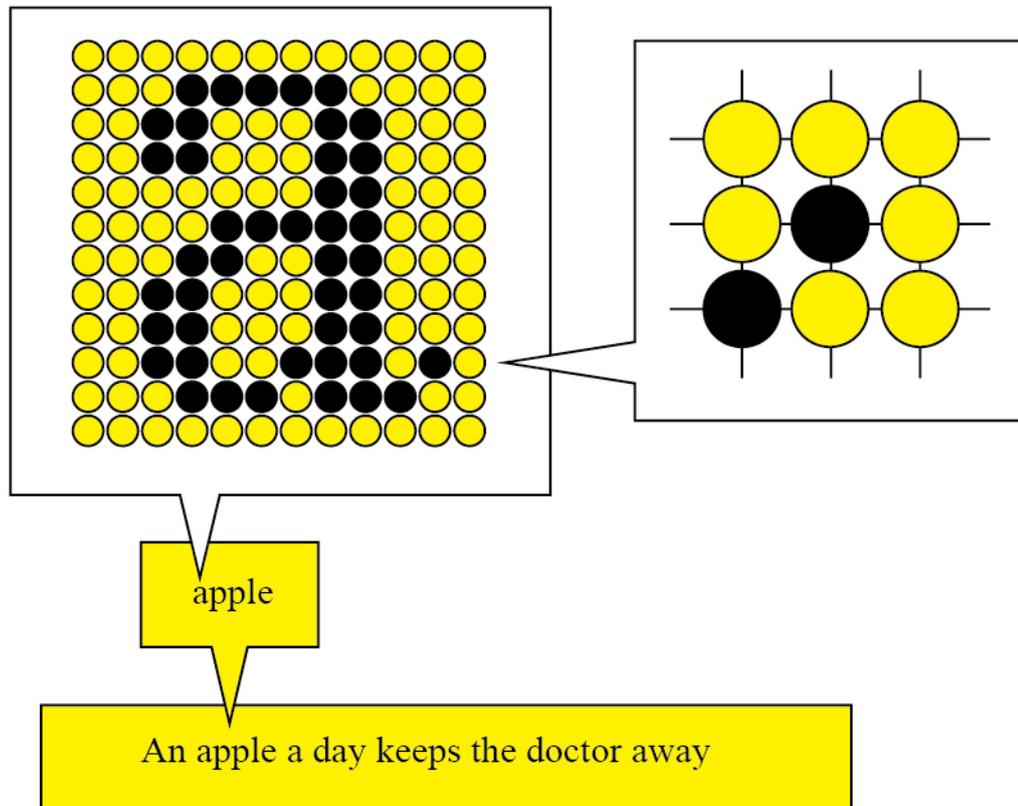
Fig. 1 Excitation and inhibition



(2) Hierarchy of neural network

Neurons are interconnected to form neural networks. The more neurons connected to the network, the richer the information expressed by the neural network. It is well known that the nervous system is stratified. When the neural network is connected to a higher level network, it will express a new overall information. These new information cannot be expressed at the original level. Figure 2

Fig. 2 Hierarchy of neural network



### Discussion

We use a language as an example. Language makes it easier for us to communicate with others and also improves the efficiency of thinking. Without language, communication will be very difficult, and consciousness will stay at a very low level.

### Acknowledgement

Eric Kandel's research on memory storage.