Journal of Alzheimerôs Disease & Parkinsonism

Armato, J Alzheimers Dis Parkinsonism 2021, 11: S8

Editorial Open Access

Role of Action Potentials in Behavioral Neuroscience

Ubaldo Armato*

Department of Life and Reproduction Sciences, University of Verona Medical School, Verona, Italy

***Corresponding author**: Ubaldo Armato, Department of Life and Reproduction Sciences, University of Verona Medical School, Verona, Italy; E-mail: ubaldo.armato@univr.it

Received: November 09, 2021; **Accepted**: November 23, 2021; **Published**: November 30, 2021

Citation: Armato U (2021) Role of Action Potentials in Behavioral Neuroscience. J Alzheimers Dis Parkinsonism S8: e007.

Editorial Note

The composition of the cell is key to understanding how it functions. Due to the cell membrane and the proteins embedded within this membrane, there is an imbalance between the concentrations of ions on the outside. The insider of the neuron is more negative (~70mV) compared to the outside. This is known as resting membrane potential. An action potential is the means by which information is passed along the length of a neuron. The action potential is a change in the electrical charge at a particular point along the axon. The change occurs as a result of positive ions flowing into the cell, making the inside of the cell temporarily more positive. Then ions flow back out of the cell, returning it to a normal resting state. The change at one point along the axon triggers a change at the next point and so forth, allowing the action potential to propagate along the axon.

As the action potential reaches the end of the neuron, it triggers the release of chemical molecules called neurotransmitters. These neurotransmitters cross the gap between neurons (synaptic cleft) in a process called synaptic transmission. The neurotransmitters then attach onto receptors on a second neuron, which changes the electrical dynamic in the dendrites. This change may then trigger the initiation of a second action potential in the second neuron. Information is therefore passed from one neuron to another. From the development of the microscope to the ability to look inside the human brain, neuroscientists have always used the latest technology to make new and exciting discoveries. However, all technologies and methods come with their advantages and disadvantages. These have been discussed in this chapter and should be weighed up carefully before experimentation. It is also of critical importance to apply the appropriate method for each experiment; using technology just for the sake of it is counterprotective. As technology develops further in the future, even greater insights into the workings of the brain await us.

Behavioral abnormalities may take the form of perceptual or motor deficits, or they may be displayed in personality or thought disorders such as schizophrenia. Here the unity can disappear; the constant workings, the reliability, the precision give way. The nervous system can often be controlled by drugs or on the other hand, it can be engineered into strange and often unfortunate states through drug abuse. Much recent research has investigated such changes in an attempt to determine whether the changes are involved in the neural mechanisms that underlie retention of a response, Before turning to the findings, if a neural correlate must be present after training and remain as long as retention of the response can be demonstrated. However, the search for such correlates must not be restricted by the assumption that all learning results in long-term or permanent changes in the nervous system. Research on behavioral plasticity aims to provide an understanding of the basic neural processes underlying these changes in response produced by experience. Experience have focused upon invertebrates, or upon parts of vertebrate or invertebrate nervous systems which display plasticity. Such models are used because of their simplicity. Some drugs have lasting consequences on the activity of the nervous system that far outlive the functional lifetime of the drug.