BIOLOGICAL PSYCHOLOGY: NEURONAL AND SYNAPTIC TRANSMISSION

THE NERVOUS SYSTEM IS CAPABLE OF **TRANSMITTING INFORMATION** IN SOPHISTICATED WAYS.

WHY?

THE TASK OF FINDING OUT WHAT IS HAPPING IN OUR ENVIRONMENT AND OUR BODIES THEN COMING UP WITH SUITABLE RESPONSES AND CARRYING THEM OUT IS INCREDIBLY COMPLEX AND REQUIRES THE **TRANSFER**, **STORAGE** AND **INTEGRATION** OF HUGE AMOUNTS OF INFORMATION.

HOW?

THE NERVOUS SYSTEM (CNS, PNS AND SNS) IS A NETWORK OF AROUND **85,000,000,000 CELLS** CONNECTED UP AND SIGNALLING TO EACH OTHER IN ENORMOUSLY COMPLICATED COMBINATIONS.

TWO SORTS OF SIGNAL

NEURONAL TRANSMISSION OCCURS INSIDE A NEURON, TRANSMITTING FROM ONE END TO THE OTHER. IT IS AN **ELECTRICAL** SIGNAL.

THE NEURAL MEMBRANE IS **POLARISED**. THERE IS A NEGATIVE CHARGE INSIDE AND A POSITIVE CHARGE OUTSIDE.

WHEN THE NEURON IS **STIMULATED** AT ITS SYNAPSES THE NEURAL MEMBRANE REVERSES ITS POLARITY.

THIS STIMULATES THE NEURAL MEMBRANE FURTHER DOWN, CAUSING THE AREA OF REVERSED POLARITY (THE **ACTION POTENTIAL**) TO TRAVEL DOWN THE NEURON FROM ITS DENDRITES TO THE END OF ITS AXONS.

WHEN THE ACTION POTENTIAL REACHES THE AXON TERMINAL, A CHEMICAL CALLED A **NEUROTRANSMITTER** IS RELEASED. IT DIFFUSES INTO THE SYNAPTIC GAP.

SOME OF THE NEUROTRANSMITTER BINDS ONTO THE **RECEPTORS** OF THE NEURON ON THE OTHER SIDE OF THE SYNAPSE, STIMULATING THEM.

SYNAPTIC TRANSMISSION OCCURS BETWEEN NEURONS. IT IS A **CHEMICAL** SIGNAL.

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