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Lecture

Brain, behaviour and evolution

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Abstract

Pre-Socratic philosophers rejected supernatural explanations for the existence of the physical world and the nature of the soul. Later, Hippocrates argued that from the brain derive our emotions. Aristotle considered the heart as the seat of the soul, attributing the brain the lowly function of cooling the blood. Galen reinstated to the brain the mind and described Aristotle's position as absurd. After the long battle to find the seat of the soul, psychology lost its soul in the 1930s. According to Hebb, the mind is the integration of the activity of the neurons of the brain. Atlases using identical nomenclature enable scientists to navigate between the brain of humans and animals to test hypotheses. In the histological atlases, we make use of genes that are responsible for the segmentation of the brain in development (hox genes). Using evidence from transgenic mice and birds we are proposing a new plan for the organization and function of certain brain regions of mammals. The human brain contains regions shared with the brain of reptiles and likely has the same regions as the brain of the chimpanzee. It places on humans constraints on the intellectual, motivational and emotional sphere. If the brain were "smaller" than what it is it would not have been able to support language and technology that today threaten existence. If the brain were "larger" than what it is, humans might have been able to understand the problem, even solve it. The brain is just not the right "size."