

Comparative Psychology

Comparative psychology is a term applied nowadays only to the study of animals, and not to comparisons made between or within human cultures. There are several issues involved in the psychological study of animals, some of them resolvable by evidence, and others more questions of the purposes and strategies of the enterprise itself. It is partly a strategic question whether to try to list the peculiarities of individual species, or to search for general principles which apply to large groups of species. Cutting across this distinction is the question of whether to be satisfied with descriptions or whether to look more deeply for explanations of known or as-yet-unknown facts.

Descartes dissected animals, and had a positive influence in arguing from his knowledge of the sensory nerves that the brain is the organ of all sensation and feeling. However, he also started a mechanistic trend in the explanation of animal behaviour, by inventing the concept of the sensory-motor reflex, and he unfortunately effectively split off discussion of human psychology, seen as the experience of a uniquely human soul, from animal psychology, seen as collections of reflexes. A return to Aristotle's idea of a natural scale of life, which had persisted up until Descartes, and in which there are clear continuities between human and animal psychology, was promoted by, among others, Darwin, his collaborator Romanes, and Herbert Spencer.

In the twentieth century, several branches of comparative psychology have been influenced by the Darwinian theory of evolution. Behaviourists such as Watson and Skinner and learning theorists such as Pavlov and Thorndike reflect Darwinian theory in so far as results obtained in experiments with animals are held to have relevance for human psychology. On the other hand, these theorists and their followers ignore evolution to the extent that they neglect species differences. The inheritance of characteristics, whether physical or mental, was an axiom of Darwin's theory, and therefore it is acceptably Darwinian to propose that each animal species comes equipped with a different set of capacities, or a different set of 'species-specific behaviours'. This last term was introduced by ethologists including the 1973 Nobel Laureates, Tinbergen and Lorenz, who approached animal behaviour as biologists rather than psychologists, and catalogued such items as 'fixed action patterns' of courtship behaviour in birds, which take particular stereotyped forms in a given species. Another zoologist, E. O. Wilson, in 1975 coined the term 'Sociobiology', intended to cover complex social behaviour (even, controversially, in the human species) in relation to biological variables.

The nature-versus-nurture debate continues. It is plain that animal behaviour is not so determined by

education, culture and history as is that of the human species, and that inherited and instinctual influences must play a correspondingly greater role in animal psychology. But it is a matter of factual evidence, from both field observations and laboratory experiment, that local traditions and individual accomplishments have considerably more importance in the life of birds and mammals than the inherited-clockwork-reflexes view would suggest.

Much factual data about many animal species is continually being collected, but agreed theories do not necessarily flow from the increased volume of facts. One theoretical trend in biology, which serves as a very remote level of explanation in psychology, is statistical treatment of various genetical possibilities - as applied to social behaviour this had been popularized as the 'selfish gene' theory. It has had some success in accounting for such things as the breeding strategies adopted by particular animal species - including, for example, the inbreeding avoidance which has been discovered in many wild populations. Within more strictly psychological theories, there has been a trend in the second half of the twentieth century to move away from the extreme scepticism and behaviourism of the first half. Elaborate and painstaking laboratory testing has added weight to theories which presume that psychological capacities under the headings of perception, expectancy, emotion and memory are present in at least the higher vertebrates, the mammals and birds. Specialized experimentation with monkeys and chimpanzees has confirmed that intellectual abilities of some description are present in these species, although attempts to train chimpanzees in the social and syntactical complexities of human language have had successes so limited that they would be better called failures.

Animals are widely used for investigating physiological mechanisms rather than psychological theories: for instance, for investigating the details of the eye and brain which allow for vision, or for studying the brain biochemistry which accounts for the emotional effects of tranquillizing or addictive drugs. For this and other reasons an important comparison in comparative psychology is between the human species and the rest. It was Aristotle's view that perception, memory, passion, appetite and desire, as well as pleasure and pain, belong to almost all living creatures. Modern studies would place greater restrictions on the generality of these psychological components, but for a full understanding of human youth and age, sleep and dreams, and human passion and perception, biological comparisons remain essential.

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Further Reading

McFarland, D. (ed.) (1980), *The Oxford Companion to Animal Behaviour*, Oxford.

Walker, S. F. (1983), *Animal Thought*, London.

See also: *ethology; evolution; instinct; sociobiology*.

In *The Social Science Encyclopedia*, eds A. Kuper and J. Kuper, London, Routledge and Kegan Paul, 140-1.