NATURAL SELECTION AND BEHAVIOUR

The understanding of how the innate furnishings of the human mind could have been built or why they function as they do came in 1859 when the English naturalist Charles Darwin (1809-1882) published *The Origin of Species*.

Darwin's fundamental idea was that living things evolve gradually, over generations, by a process of natural selection. Those individuals whose inherited characteristics are well adapted to their environment are more likely to survive and reproduce than the other individuals. At each generation, random changes in the hereditary material produce variations in offspring, and those variations that improve the chance of survival and reproduction are passed from generation to generation in increasing numbers.

Because of natural selection, species of plants and animals change gradually over time in ways that allow them to meet the changing demands of their environments. Because of evolution, the innate characteristics of any given species of plants or animal can be examined for the functions they serve in allowing individuals to survive and reproduce. To understand, for example, why finches have stout beaks and warblers have slender beaks, one must know what foods the birds eat and how they use their beaks to obtain those foods. The same principle that applies to anatomy applies to

behaviour. Through natural selection, living things have acquired instinctive tendencies to behave in ways that promote their survival and reproduction. A key word here is 'function.' While physiologists were examining the neural mechanisms of behaviour, and empiricist philosophers were analysing lawful relationships between behaviour and the environment, Darwin was studying the functions of behaviour– the ways in which an organism's behaviour helps it survive and reproduce.

In the *Origin of Species*, Darwin discussed only plants and non-human animals, but in later writings he made it clear that he viewed humans as no exception. We humans also evolved through natural selection, and our anatomy and behaviour can be analysed in the same ways as can those of other living things.

In a book entitled *The Expression of the Emotions in Man and Animals*, Darwin (1872/1965) illustrated how evolutionary thinking can contribute to a scientific understanding of human behaviour. He argued that the basic forms of human emotional expressions (such as laughing and crying) are inherited, as are those of other animals, and may have evolved because the ability to communicate one's emotions or intentions to others of one's kind improves one's chances of survival. Darwin's work provided psychology with a scientific way of thinking about all the inborn universal tendencies that

constitute human nature. The innate mechanisms underlying human emotions, drives, perceptual abilities, learning abilities, and capacities for reason came about gradually because they promoted the survival and reproduction of our ancestors. One approach to understanding such characteristics is to analyse their evolutionary functions–their ways of promoting survival and reproduction.

If Kant had been privy to Darwin's insight, he would have said that the innate furnishings of the mind, which make it possible for children to learn language, to learn about the physical world, to experience human drives and emotions, and more generally, to behave as human beings and not as blank sheets of paper, came about through the process of natural selection, which generally built all these capacities into the brain's machinery. Darwin, perhaps more than anyone else, helped convince the intellectual world that we humans, despite our pretentions, are part of the natural world and can be understood through the methods of science. In this way he helped make the world ripe for psychology.