

How behaviour becomes what it is

Domenico Parisi

National Research Council, Italy

Abstract

Behaviour is a property of living organisms and, like all the properties of living entities, it is best understood by reconstructing how it has got to be what it is. The behaviour of organisms is the result of the evolutionary history of the species and, in more complex organisms, of the experience of the particular individual in the particular environment. In addition, in humans behaviour results from learning from others and from cultural transmission and evolution from one generation to the next. Robots are theories of behaviour, expressed not symbolically (with the words of the common language or with mathematical symbols) but as real or simulated physical artefacts. Therefore robotics should necessarily be evolutionary, developmental, and cultural robotics. This poses formidable problems for research, especially if one has to consider the important interactions between evolution, development, and cultural change that exist in human organisms. This research has just begun and I will sketch some of its directions.