

# In Dialogue with Nature

## *Introduction*

Humans have long been curious about nature. Since before the dawn of civilization, we have struggled to come to terms with the vast array of phenomena that the world presents. Some of the behavior of the cosmos seems to be orderly; sunrise and sunset, the seasons, the rotations of the heavens, for example. Some seems chaotic and random; for example, storms and volcanic eruptions. Perhaps, behind these patterns, or orders, are some rules of nature. In attempting to make sense of these observations, mediated by particular circumstance and culture, in various parts of the world, vastly different approaches to the understanding of nature were developed and established as the foundations of the ancient cultures.

The endeavour by the early natural philosophers and their descendants, today's modern scientists, to discover rules of nature has been a dialogue between nature and us. This dialogue is conducted through experience and reasoning. It began in ancient Greece, beginning about 500 BCE, where philosophers began applying the intellectual tools of logic and reason to their observations of natural phenomena in their attempts to explain existence. Their attitude towards nature and their methods of investigation laid down the foundation of our modern, Western, empirical sciences and the technologies they support. Later, more numerous and more systematic observations refined our understanding of nature. Modern scientists generalize natural laws from these observations.

But in the course of this process, our understanding of nature underwent numerous modifications and even some profoundly radical changes. Some of these new modes of thinking have even occasionally challenged the very concept of understanding, forcing humankind to reflect on the meaning of knowledge.

Meanwhile, at roughly the same time in China, the quest to understand nature met with very different solutions. By developing concepts such as *yin* and *yang* and the five elements, Chinese scholars created a set of understandings very different

from those of their Greek counterparts. It wasn't until the early modern historical period that concepts of western science began to infiltrate the Chinese ethos, and yet China, without the supposed benefits of science, was for many centuries the acknowledged super-power of the ancient world. Clearly the ongoing encounter between the cultures of east and west still has much to offer to our understanding of nature.

This course invites students to retrace the train of thought of our predecessors in this quest for knowledge, and with whose writings students will engage in dialogues. By following the footsteps of great minds, students shall develop informed views about nature and human interactions with it.

### *Course Structure*

This course brings students on an intellectual journey. We first reach out to the external world. Our objects of investigation are the physical cosmos and the world of life. These investigations constitute the first two parts of the course: I. Human Exploration of the Physical Universe and II. Human Exploration of the World of Life. We shall learn about some major discoveries of western science: The universe is governed by physical laws. Species are undergoing natural selection and DNA is the code of life.

Then we shall return to examine our own minds and understanding. This is the third part of the course: III. Our Understanding of Human Understanding, a journey of reflection.

First, we shall reflect on our understanding of nature, and on the validity and limitation of scientific knowledge. We shall try to understand the nature of the human mind, which has the faculty of rational thinking. Second, through the comparison between Western science and Chinese philosophy, we shall try to understand why modern science did not emerge in China; and in Chinese philosophy, we shall find perspectives that may help us to reflect on modern science's approach to the relation between humans and nature.

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