

人类文明与文化读本
Read into Human Civilization and Culture

UNIVERSE, ENVIRONMENT AND LIFE

顾陈
日乃
国芳
主
编

宇宙、环境 与生命

Book 1
Volume 1

外语教学与研究出版社
FOREIGN LANGUAGE TEACHING AND RESEARCH PRESS

12-26

Read into Human Civilization and Culture

人类文明与文化读本

Universe, Environment and Life 宇宙、环境与生命

12-26

Book 1

Volume 1

主编：陈乃芳 顾曰国

编者：Mary J. Wille



外语教学与研究出版社

FOREIGN LANGUAGE TEACHING AND RESEARCH PRESS

(京)新登字 155 号

图书在版编目(CIP)数据

宇宙、环境与生命/陈乃芳,顾曰国主编. —北京:外语教学与研究出版社,2001.4
(人类文明与文化读本)
ISBN 7-5600-2343-6

I. 宇… II. ①陈… ②顾… III. 英语-语言读物 IV. H319.4

中国版本图书馆CIP数据核字(2001)第 053998 号

宇宙、环境与生命

Book 1 Volume 1

主编:陈乃芳 顾曰国

* * *

责任编辑:盖兆泉

出版发行:外语教学与研究出版社

社 址:北京市西三环北路 19 号 (100089)

网 址: <http://www.fltrp.com.cn>

印 刷:北京外国语大学印刷厂

开 本:787×1092 1/16

印 张:20.5

版 次:2001 年 9 月第 1 版 2001 年 9 月第 1 次印刷

书 号:ISBN 7-5600-2343-6/H·1243

定 价:22.90 元

* * *

如有印刷、装订质量问题出版社负责调换

制售盗版必究 举报查实奖励

版权保护办公室举报电话:(010)68917519

General Introduction to *Read into Human Civilization and Culture*

More than two thousand years ago, the Chinese ancient philosopher, Plato's contemporary, Lao Zi philosophizes thus:

道生一,一生二,二生三,三生万物 (Lao Zi, ch. 42)

In other words, it can be said that at the very beginning of everything, the universe was one! Then it followed its own way (i.e. its 道) by breaking itself into two, then two into three, and three multiplies itself, giving birth to everything as is found today. In the parlance of the modern theory of the universe, at the very beginning, according to the present-day leading physicist, Stephen Hawking, there existed a pea-like ball. Then occurred the Big Bang. With it came time and space. Then the Cambrian Big Bang fills our Mother Earth with beaming lives and everything else!

What does this quick tour to philosophy and cosmology mean to us, learners and teachers of English? "I can't see any relevance," a challenging voice may say. It is a legitimate challenge and deserves a detailed answer, hence this preface.

There is only one Mother Earth. Plants, animals, oceans, lands, rivers, mountains, and of course us human beings, are all co-inhabitants. We live together and have to survive together. However, it takes thousands of years for us, the so-called super beings in the animal kingdom, to comprehend this simple truism. We have not been friendly to our co-inhabitants. Rain forests are being deforested, rivers polluted, rare species of animals eaten or deprived of their traditional habitats, ozone layers holed, to name but a few. To make things worse, the human world has been divided and locked up in brutal wars. It starts to dawn on us now that disasters are largely man-made, and that they know no country boundaries. A local nuclear explosion means a devastating short-term or long-term hazard to everything on the globe. It is high time now for us to learn to understand our co-inhabitants, and to develop a harmonious rapport with them so as to achieve a collective survival. It is from this broad perspective that the *Read into Human Civilization and Culture* series are designed and compiled.

The objectives the series hope to obtain are:

- to enhance learners' understanding of human global environment;
- to enhance their understanding of organisms, plants and animals;
- to help them look at human society and culture in a critical and historical perspective;
- to enhance their appreciation of human artistic creativity and imagination;
- to enhance their analytic examination of human rationality and reasoning.

With these objectives, the series consist of four books, each of which is made up of two volumes. The second volumes mirror the first volumes both in structure and theme.

Book 1 (i.e. the present one)

Universe, Environment and Life

Book 2

Man, Civilization and Culture

Part 1 Human evolution

Part 2 World civilization

Part 3 Knowledge as power

Part 4 Scientists in profile

Part 5 Man's insatiable desire

Part 6 Issues and challenges

Book 3

Man's Imagination and Recreation

Part 1 Arts — a historical survey

Part 2 Religion and arts

Part 3 Music and culture

Part 4 Sculpture and city culture

Part 5 Sports and culture

Part 6 Modernity and modern arts

Book 4

Man's Self-Understanding and Beyond

Part 1 Man as a philosopher

Part 2 Man as a social animal

Part 3 Man as a believer

Part 4 Man as a tool-using animal

Part 5 Man as a political animal

Part 6 Man in an information age

It is the hallmark of an intellectual maturity for Chinese learners of English to achieve a good

level of understanding in these areas. It is believed that a high level of English proficiency is no longer a sheer matter of language issue. It demands intellectual maturity and sophistication.

Each book is self-contained and can be used separately. However, they are preferably used together. Learners are advised to begin with Book 1 and carry on all the way to Book 4. Although all the books can be used for self-study, they are also designed for classroom use. Each book consists of 6 parts; each part is made up of 3 units all centering around one common topic but from different perspectives. Each unit in turn is composed of a Text A and a Text B, sometimes a Text C as well. The Text As, which present the most essential reading, are put into Volume 1 of each book and are recommended to be used in classroom. All the Text Bs and Text Cs go to volume 2 of each book and are expected to be read after class. Since volume 2 mirrors volume 1 in structure and theme, the reading outside class will reinforce and consolidate what is taught in class.

Enjoy your reading. Good luck!

Introduction to Book 1 —

Universe, Environment and Life

It is a summer night. I sit beside Granny, at the river side. I look up to the sky, and cannot help counting stars. I get lost before long. They are simply too many for me to count.

"Granny, how many stars are there in the sky?" I ask.

"Oh my boy, as many as you can imagine."

"How big is the sky?"

"As big as you can imagine."

All of a sudden, a star shoots across the sky leaving a long big tail behind. I grab Granny's hand in fear.

Granny gives a deep sigh, murmuring to herself: "A soul's gone to Heaven."

This narrative perhaps strikes an echo in everyone's childhood. The curiosity about the universe and the perennial desire to comprehend it are human curiosity and desire. Philosophers, scientists and ordinary people alike, all want to know how big the universe is, and how many stars there are in the sky.

Granny's sigh betrays her ideology, namely that human life and existence are determined and controlled by the mysterious force of the universe, or God. It may be labelled as superstition or religious belief. However, present-day science tells us that Granny's sigh should not be dismissed so easily. There is a lot to be learned from it. Humans have been too arrogant in the animal kingdom, and too hostile to environment. Now they come to realize, perhaps not too late, that they have to pay a heavy price for what they have done to other animals and to forests, rivers, natural energies, to name but a few. It is high time that we should seek to understand the universe, the Earth, the Continents, rivers, mountains, lakes, oceans, and of course life — all forms of life, life in the air, under the sea and on the land. This is what Book 1 is about.

As you may know now, Book 1 has two volumes. Volume 1 is intended to be used in class, and Volume 2 is advised for post-class reading. All the texts included in both volumes are kept original except that subtitles may be found added to help you comprehend the contents. Substantial notes are carefully made about the culturally loaded items.

There are introductions to the six parts, and introductions/summaries to all the texts. They are designed in such a way that they activate what learners have already known and create an expectation of what they hope to know through reading. So it is strongly recommended that learners and teachers read the introductions and summaries first before plunging into the texts.

A final note. Since the texts are organized thematically in terms of knowledge network, learners are led to a wide range of topics and issues. This is, we believe, one of the merits of the book. However, the price for it is the scope of vocabulary that goes beyond the normal range of the first year English major students. The problem is not that serious as we first thought. The unknown words you are going to encounter in this series go to your reading vocabulary, not your listening or speaking or writing vocabulary. As your reading vocabulary, all you are expected to know about the unknown words is recognizing their meanings in the context. This is actually no demanding task at all. Your reading experience, we bet, will bear this point out!

Table of Contents

General Introduction to <i>Read into Human Civilization and Culture</i>	1
Introduction to Book 1 — <i>Universe, Environment and Life</i>	4

Part 1 The Big Bang and Afterwards

Unit 1 The Big Bang and the Universe

Text A The Mother Earth's Place in the Universe	8
---	---

Text B Challenging the Big Bang: the Beginning of Everything	12
--	----

Unit 2 Early Forms of Life

Text A Evolution and Life	20
---------------------------------	----

Text B Living Things	24
----------------------------	----

Unit 3 The Infinite Variety and Evolution

Text A The Infinite Variety	32
-----------------------------------	----

Text B The Cambrian Explosion — the Big Bang of Life	36
--	----

Part 2 Physical Environment

Unit 4 Lakes and the Landscape

Text A Lakes and the Landscape	64
--------------------------------------	----

Text B How Lakes Begin, Evolve and Change	68
---	----

Text C Great Lakes of the World	72
---------------------------------------	----

Unit 5 The Fascination of Islands

Text A1 How Islands Are Formed	75
--------------------------------------	----

Text A2 Skomer: a Case Study of Island Life (to be continued)	78
---	----

Text B Skomer: a Case Study of Island Life (continued)	82
--	----

Universe, Environment and Life

Unit 6 The Mysterious Amazon River

- Text A European Discovery of the Amazon River Basin 88
Text B The Amazon Rain Forest and Its Tribes People
Text C Manaus: Coastal City and Jungle Capital

Part 3 The Continents

Unit 7 The Formation of the Continents, and Africa

- Text A Formation of the Continents 106
Text B Africa — “the Dark Continent”

Unit 8 Asia and Americas

- Text A Asia 120
Text B Americas

Unit 9 Europe and Oceania

- Text A Europe 138
Text B Oceania

Part 4 Towards an Understanding of Animals

Unit 10 Animal Communication

- Text A Von Frisch's Study of the Signaling Systems of Bees 158
Text B Birds' Communicative Behaviour
Text C Signaling and Evolution: the Development of Ethology

Unit 11 Relations between Animals and Man

- Text A1 The Mental Life of Animals 172
Text A2 A Day in the Life of a Chimpanzee Community 177
Text B1 Qualities Needed for Successful Research into Animal Behaviour
Text B2 Coolness in a Disastrous Encounter

Unit 12 What Can We Learn from Nature

- Text A Observing the Social Life of African Wild Dogs 182
Text B Medicines from the Amazon Rain Forest

Part 5 Life on Land, Sea and Air

Unit 13 Sea Life

Text A The Living Sea	194
Text B The Life of the Shore	

Unit 14 Land Life

Text A From Water to Land: the Development of the Amphibians (1)	214
Text B1 From Water to Land: the Development of the Amphibians (2)	
Text B2 Otter Makes an Urban Come-back	

Unit 15 Air Life

Text A The Evolution of Birds	230
Text B Life in the Air	
Text C Continuing the Species	

Part 6 Man and the Environment

Unit 16 Mystifying Nature

Text A1 Religion and Supernatural	248
Text A2 Witchcraft (to be continued)	253
Text B Witchcraft (continued)	

Unit 17 Confronting Nature

Text A Adaptation to Colour Blindness	260
Text B Climbing Everest	
Text C A Passionate Interest in the Natural World	

Unit 18 Understanding Nature

Text A Discovering Order and Pattern	272
Text B A Threat to the Ozone Layer (to be continued)	
Text C A Threat to the Ozone Layer (continued)	

Key to Questions	281
------------------------	-----

Glossary	289
----------------	-----

Part 1

The Big Bang and Afterwards

● Unit 1 The Big Bang and the Universe

● Unit 2 Early Forms of Life

● Unit 3 The Infinite Variety and Evolution

Introduction

1. What do you already know?

This part is about the beginning of everything. How did the universe come into existence? How did the earliest forms of life appear on the earth? How did more advanced life forms evolve from those early forms?

Let us start by considering the myths different cultures have produced to account for the origin of the universe. How many myths can you think of? Can you write them down in the space provided below?

In Chinese:

According to the Bible:

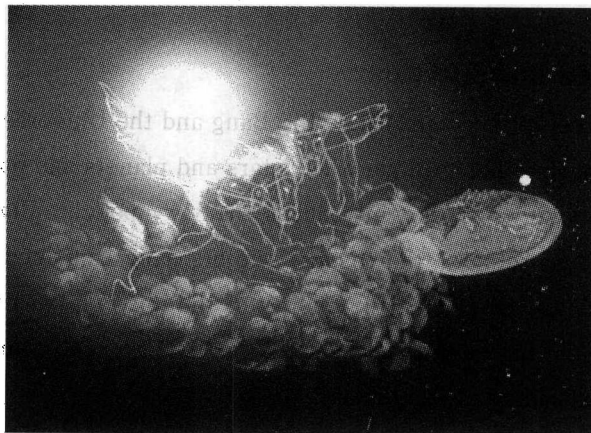
Other cultures:

In Chinese mythology, the creator of the universe is a giant called Pan Gu (盘古). He woke from a long sleep and found himself surrounded by absolute mess and darkness. So with his magic hammer, he separated heaven and earth. Later, afraid that the newly formed heaven might collapse, Pan Gu stood up and supported it with his hands. He remained in that posture for many many centuries till in the end his body turned into a huge mountain, his blood turned into rivers and streams, his hair turned into trees and grass, his breath turned into wind and his laughter turned into thunder. Thus the universe came into being.

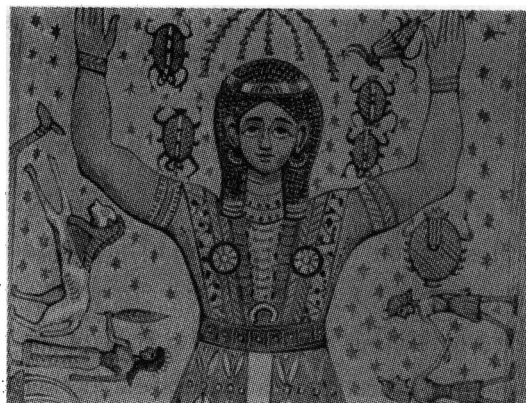
According to the Bible, the world is created by God over a period of six days.

In the beginning God created the heaven and the earth. And the earth was without form, and void; and darkness was upon the face of the deep. And the Spirit of God moved upon the face of the waters. And God said, "Let there be light," and there was light. And God saw the light, that it was good; and God divided the light from the darkness. And God called the light Day, and the darkness he called Night. And the evening and the morning were the first day.

According to ancient Greek myths, the god Helios drove a chariot that carried the Sun across the sky. Later Greeks thought that the Earth was a large sphere at the center of the universe. They thought that the Moon, the Sun, and the planets all circled Earth, and that outside the orbits of these bodies were the sky and the stars. The ancient Egyptians, on the other hand, viewed the sky as the domain of Nut, the sky goddess.



The Greek God helios drove a chariot



The Egyptian Sky Goddess Nut

Now we know some mythical stories about the creation of the cosmos. Let us ask ourselves this question: How much do we know about the scientific theories of the origin of the universe, of life, and of human beings? Now pause for a while and write down whatever you can think of in the space provided below.

I congratulate you if you can come up with terms like the Big Bang theory and the natural selection theory. But do you really know what the Big Bang theory is about and what the natural selection theory is about? Perhaps not much. Well, don't worry. In this part you will find the answers. What's more, you'll also be informed of what the Big Bang theory fails to account for and of what the many controversies the natural selection theory has aroused, and so on and so forth. In a word, you can rest assured that a fascinating reading is waiting for you.

2. What do the three units tell us?

This part consists of three units. Unit 1 "The Big Bang and the Universe" is about the origin of the universe, the coming into being of galaxies, stars and planets and our mother earth's place in the universe. In so doing, the unit introduces the very popular Big Bang theory and the challenges it is facing. According to the theory, the big bang happened about 15 to 20 billion years ago. At that time, all the matter and energy of the universe was squeezed into one tiny spot. Then there came the big bang, and as a result, the universe came into existence, kept expanding and is still expanding at the present time.

Unit 2 "Early Forms of Life" narrows our focus down to the life forms on the earth: How did life appear, and where did the huge variety of plant and animal forms come from? What is it that distinguishes living things and non-living matter? What are the fundamental differences between animals and plants?

Unit 3 introduces the natural selection theory put forward by Charles Darwin. The main claim of this theory is that natural selection drives the evolutionary process and only the fittest survives. The Chinese translation "物竞天择, 适者生存" catches the idea nicely. The unit also introduces a newly put forward hypothesis which tries to account for the Cambrian Explosion, the short period around 570 million years ago that witnessed an explosion of all sorts of living forms after thousands of millions of years of slow evolution. According to the hypothesis, what triggered this sudden development of various and complex life forms might be the perception of

light and colour.

Have you got a clear idea of what you are going to read in the forthcoming three units? Yes?!

Good. Off you go!

