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学生用书

高等学校教材（英语专业用）

交际英语教程
核心课程（四）

李筱菊　主编

COMMUNICATIVE ENGLISH FOR CHINESE LEARNERS

CORE COURSE 4
(UNITS 6—10)
(REVISED EDITION)

CECL

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外教社

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UNIT 6

SOCIAL PROBLEMS

I POPULATION

1 The great population debate

1.1 What Malthus says — reading

1. Warm-up

   You must have heard about Malthus. Who was he? What does he say about population? In pairs or small groups, try to explain as far as you can to each other what Malthus says about population. See whether in your group you can arrive at a statement of Malthus's theory that everybody agrees on.

2. Reading

   Read the first paragraph of the extract from a book. See whether your statement of Malthus's theory has been right. In your small group try to improve on your original statement.

> Thomas Malthus, an English economist, saw the dramatic increase in Europe's population as a sign of coming doom. In his classic of 1798, *An Essay on the Principle of Population*, he argued that while population grows geometrically, that is, from 2 to 4 to 8 to 16 and so forth, the food supply increases only arithmetically, that is, from 1 to 2 to 3 to 4 and so on. This means, he said, that if births go unchecked, the population of a country, or even of the world, will outstrip its food supply.

3. Language work

   What is the English for the following terms?

   人口学

   人口学家

   几何级数

   算术级数

   按几何级数递增

   按算术级数递增

1.2 What the Neo-Malthusians and the Anti-Malthusians say — reading & speaking

Malthus put forth his theory more than 200 years ago. What has happened to the world population and what new arguments have emerged since his time?

In fact ever since Malthus's time demographers and economists all over the world have been engaged in a great debate over population. The two opposing sides in the debate are the Neo-Malthusians and the Anti-Malthusians.

1. Reading

   Work in pairs. Student A finds out and notes down what the Neo-Malthusians say by reading paragraphs 1 and 2 of the following extract. Student B finds out and notes down what the Anti-Malthusians say by reading paragraphs 3 and 4 of the extract.

2. Information exchange

   A tells B what the Neo-Malthusians arguments are. B tells A what the Anti-Malthusians' arguments are. Each student takes notes of the opposing side's arguments.

3. Counter an argument

   Which side of the debate are you on? Choose one argument belonging to either the Neo-Malthusians or the Anti-Malthusians and think how you would refute it. Note down your counter-argument and deliver it in class.

—.—.—.—.—.—.—.—

1) Was Malthus right? This question has become a matter of heated debate among demographers. Some, whom we shall call the "Neo-Malthusians", insist that Malthus was correct. We are still in the initial stages of the process Malthus identified, they say, and today's situation is at least as grim, if not grimmer, than Malthus ever imagined. Indeed, the world's population has shot out of control and is following an alarming *exponential growth curve*. This means that as growth doubles during approximately equal intervals of time, it suddenly accelerates.

2) Today, of course, we are not even close to the miracle that would lead to adults replacing only themselves. Rather, the momentum of population increase continues to threaten the earth's limited resources. These vast numbers of new arrivals also increase the pressure of harmful pollution and other forms of environmental destruction, matters we shall discuss in the following chapter. Another compelling reason for immediately curtailing population growth is that it poses a threat to world peace. When the governments of the developing nations find themselves unable to feed their people,

hunger will be matched by civil strife (Mumford 1981). Governments will topple, and the precarious balance of international power will be upset.

3) The Anti-Malthusians, of course, draw entirely different conclusions about the world's growing population (Bauer 1981). They say that in the long run, more people means a higher standard of living (Simon 1977; 1982). Their reasons? First, a growing population means that more geniuses will come into the world. They will make vital contributions to the welfare of all. Among the evidence that more is good when it comes to population, Simon notes (1981 b), is that, comparing countries with the same level of income, those with more people have more scientists and a larger output of scientific knowledge. Second, larger populations create larger markets. This promotes bigger, more efficient manufacturing plants. This, in turn, lowers the manufacturing cost per unit, making more goods available more cheaply. Third, a larger population makes profitable many social investments that would otherwise be unprofitable, especially railroads, highways, irrigation systems, and ports. Together, these factors spur productivity and increase a country's capacity to deliver that productivity to its people.

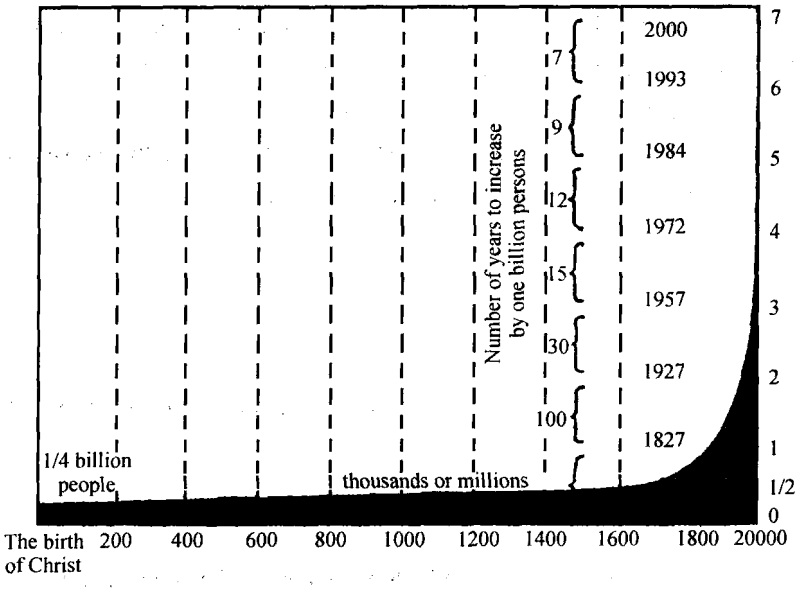


FIGURE 1 The world's population, as seen in 1973, following an exponential growth curve. (Modified from Phylis Tilson Piotrow, World Population Crisis: The United States' Response, New York: Praeger, 1973, p.4; originally from the US Department of State.)

4) The Anti-Malthusians also point out that in spite of the tremendous increase in the world's population, its per capita food production has increased. We should not lose sight of this significant fact, for it means that world food production has actually outpaced the increase in population (Schultz 1981). If the population increase is dramatic, this food increase is more dramatic still. Moreover, this increase in per capita food occurred while the "breadbasket of the world" decreased its farm acreage.

—.—.—.—.—.—.—.—

4. Language work

1) What is the English for the following term?

指数增长曲线

In pairs, make sure you understand what it means. Which line in the graph illustrates this concept? What is the characteristic of this line?

2) What do the names and dates in parentheses in the text refer to?

At the end of the book from which this extract is taken there is a bibliography. Given below are the relevant references from the bibliography.

a. Match the writers in the bibliography with the references made to them in the text.

b. For what saying or view is each writer referred to in the text? Note down under each writer in the bibliography what the saying or view is.

c. Mark the name of each writer to show which side of the debate he is on. (AM for Anti-Malthusians and NM for Neo-Malthusians.)

—.—.—.—.—.—.—.—

Bibliography:

(1) Bauer, Peter T. *Equality, The Third World and Economic Delusion.* Harvard University Press, Cambridge, Massachusetts. 1981.

Note:

(2) Mumford, Steven. Population Growth and Global Security *The Humanist*, No 41. January 1981. pp 6 – 25.

Note:

(3) Schultz, Theodore W. *Investing in People — The Economics of Population Quality.* University of California Press, Berkeley. 1981.

Note:

(4) Simon, Julian L. *The Economics of Population Growth.* Princeton University Press, New Jersey. 1977

Note:

—— *The Ultimate Resource.* Princeton University Press, New Jersey. 1981.

Note:

1.3 Forecast for population growth — information exchange

The graph in the text shows a forecast for population growth made in 1973. Now work in pairs and explore what has actually happened and also how future predictions have changed since then. Your teacher will direct you to your worksheets for this activity.

Discuss the following after the information exchange:

1. Why are the curves on the graph which estimate world population size between 2020 and 2050 not exponential curves?
2. Does this additional data support or oppose Malthus?

2 Population and sustainability — reading

More recent debate about population trends continues to be concerned both with the sustainability and the quality of life of the population. Key aspects to consider are a) living space, b) standard of living, c) food supply and d) water supply. The following reading will provide you with more evidence on which to base your views on Malthus.

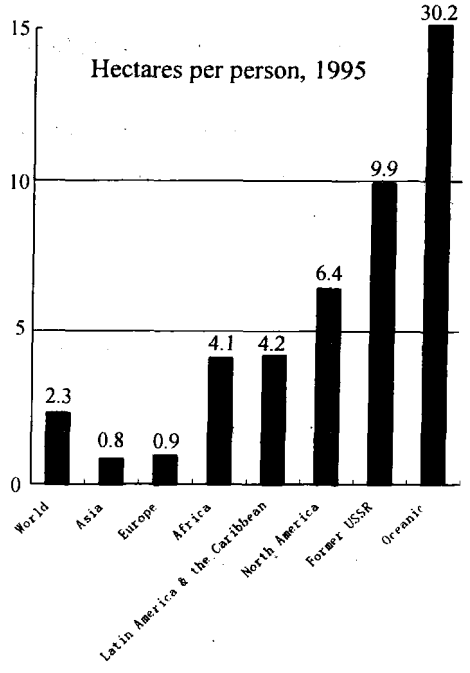
2.1 Overpopulation: Myth or reality?

1. Scan the article to find out the following information. (1 minute)
   1) "Overpopulation" concerns not only the number of people living in an area, but also _____ _____.

2) Population density: Singapore _____ people per _____
UK _____ people per _____
China _____ people per _____
Canada _____ people per _____
the world _____ people per _____

(1 hectare = 100 square kilometer)

Enough Space for a Comfortable Life?†



A hectare is roughly the area of a football pitch.

Many people argue that the world is overpopulated. Or if it's not now, it soon will be. However, being "overpopulated" is not the same as being "crowded". As a scientific term, "overpopulation" relates the number of people living in an area to the ability of that area to support them (e.g. to provide them with enough food and fuel). But the idea of overcrowding is often a matter of personal preference. Some people like to live in cities where there are many people living close together. Others prefer the more solitary peace and quiet of the countryside. Even when we have gathered the facts as accurately as possible, we still think about those facts in different ways according to our own ideas and preferences.

† Adapted from Alistair McNaught, *The World Is Overpopulated: Myth or Reality?* Pangea Education, 2000.

So with more than 6 billion humans on the Earth, will we soon run out of space for people? First, we should get things in proportion. If the world was populated at the same density as Singapore, it could house 550 billion people! The people of Singapore seem to manage — couldn't the rest of us? The UK, with about 250 people per square kilometer, still has lots of green countryside and yet it is actually more densely populated than China, which has less than 140 people per square kilometre. Across the land surface of the Earth as a whole, there are slightly more than 2 hectares of land per person. Large areas of the world have very few people at all. For example, Canada has only one person for each 34 hectares (3 people per square kilometre). About 26% of Canada's land surface is still wilderness with little development and few people.

However, these apparently comforting figures do not cover all the facts. Some people suggest that by 2025 there will be only one hectare of land per person to obtain all the food, water, shelter and other resources such as fuel that we need. Even if people do not mind living in more crowded conditions, the land will just not be capable of providing for their needs. Furthermore, the overcrowding will destroy the environment that supports life. Humans have spread to just about every corner of the world. In 73 countries there is no wilderness left; in other words, there are no areas where human activities have not made a major impact on nature. Although some people might argue that life in Singapore is bearable with 44 people for every hectare of land, this has meant the almost total destruction of its natural tropical rainforest. Roads, shopping malls, office blocks, factories and apartment blocks have replaced it. Elsewhere there may appear to be surplus land to move into, but in fact this often means that virgin tropical forests are being burned down by subsistence farmers to create farmland as they exhaust the more fertile soils. This can't go on forever!

Perspectives on this debate are partly affected by where people live. On a national scale, some countries will be in more trouble than others for two reasons. Firstly, some countries are already more crowded than others. Secondly, some countries have less access to natural resources than others. For individuals and communities, it is usually the poor who suffer first while the rich can continue to pay for what they want.

2. How do the first two paragraphs of the article attempt to refute the assumption that the world is "overpopulated"? Select from the text to illustrate each of the following ways:

   1) (By clarifying definition) .....

   2) (By distinguishing fact from opinion) .....

   3) (By example) .....

3. How do the last two paragraphs of the article attempt to refute the idea that there is plenty of space for more people?

1) Individual needs .....

2) Global situation .....

3) Example of environmental problem 1: .....

4) Example of environmental problem 2: .....

5) National differences 1: . .....

6) National differences 2: .....

4. Give examples of language structures which are used on each side of the argument to refute the assumptions, ideas or facts presented by the other.

5. How could the graph in the article be used to support each side of the argument?

2.2 Population density and wealth

The statistics in the table below shows the estimated population density of some countries and areas and their respective GNP per capita. Although the two groups of figures do not come from the same year, they are still quite revealing about the relationship between population density and wealth. Study the statistics and do the tasks that follow.

Population Density & Wealth

	Population Density estimate 1995 (people per square kilometer)	GNP per capita 1993 (US.$)
Bangladesh	930	220
Canada	3	20,670
mainland China	132	490
Fiji	43	2,140
Ghana	77	430
Hong Kong	6,121	17,860
Israel	275	13,760
Mali	8	300
UK	245	17,970

1. Write a sentence that uses these figures to refute the view that high population density is always associated with poverty.
2. Write a sentence that uses these figures to refute the view that high population density is always associated with wealth.
3. What is your overall conclusion about the relationship between wealth and population density from these figures?
4. How can you explain this relationship?

2.3 Grain and population in China

This article is a refutation of the view that China will have problems feeding her population. Read the article and demonstrate the four ways in which the writer achieves this.

1. List the ways in which China's grain supply can be helped to keep in step with population growth.
2. How might China's changing diet affect the demand for grain?
3. List the ways in which demand for grain can be slowed down.
4. How does the graph question Malthus' basic assumption?

Grain and Population in China

BY HUANG GANG
China Daily staff

Despite being underdeveloped compared with the world's more advanced agricultural countries today, China's traditional agriculture has always been able to feed its rapid population explosion in the past.

Now, with its population projected to reach 1.6 billion by 2030 and arable land acreage still shrinking, discussions have once again been sparked about the strain between land and people and the growing population.

In 1303, China's population exceeded 60 million, and by 1840, it hit 420 million. Ever since then, the country's population has been ranked the largest in the world.

In a separate development, the per capita arable land for Chinese people shrank from 1.19 hectares in AD 755 during the Tang Dynasty (618 – 907), to 0.21 hectares in 1900.

China now has 130.7 million hectares of cultivated land altogether, roughly 0.1 hectare per person on average, Tian Fengshan, minister of Land and Resources announced in June.

Grain demand, supply

Despite difficulties and problems with the country's grain supply and demand, China can basically achieve self-sufficiency, although it has to expand imports, experts said.

The authorities estimate that by 2010 the population will approach 1.4 billion and the total demand for grain will be 550 million tons, based on 390 kilograms per person.

By 2030 the population will peak at 1.6

billion and the total demand for grain will be approximately 640 million tons, based on 400 kilograms per person.

Xie Yang, a researcher with the State Council Development Research Centre, said China is well able to increase its grain production capacity by improving agricultural production and ecological conditions, meanwhile making more efficient use of land resources.

There is huge potential for increasing the per unit area yield on the existing cultivated land, Xie said.

At present, two-thirds of China's cultivated land are medium- or low-yielding, with an average of more than 4 tons per hectare, far below that in advanced countries.

Technology applied

The grain output per hectare could be increased by more than 1,500 kilograms through the upgrading of medium- and low-yield land, beefing up water-control projects, enlarging irrigated areas and spreading the use of advanced agro-technology, he said.

Mei Fangquan, an expert with the Chinese Academy of Agricultural Sciences, said grain demand should be analyzed using a framework of people's overall food consumption pattern.

The directly consumed per capita grain ration dropped from 253 kilograms in 1985 to 234 kilograms in 1995.

The figure is expected to fall to 213 kilograms this year.

But people's consumption of animal foods, fruit, edible oil and sugar has been on the rise, noted Mei.

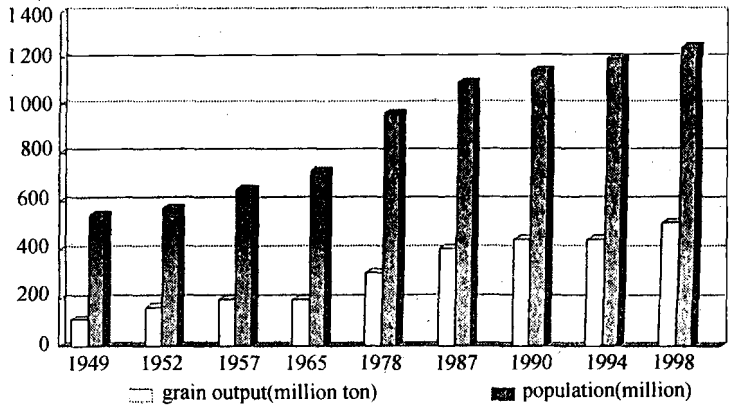
By the year 2030, 50 per cent of the country's grain demands will be used for feed, Mei said.

The rapidly increasing demand for commercial grain used for feed could be slowed down through promoting scientific and technological advances in aquatic farming, enhancing the feed efficiency and increasing the proportion of grain-saving products like herbivorous livestock, poultry and aquatic products, according to the State Council Information Office's publication "Grain Issues in China".

"With the appropriate material, technology and economic control policies, China can basically balance grain and other food supply and demand," Mei was quoted as saying in an article on the Beijing-based Business Daily. "The annual grain import can be capped between 20 million and 30 million tons."

From *China Daily* 4 September 2000

Comparison of grain and population growth



2.4 Hydrological poverty

1. Pre-reading

The key word for the first article in this section is "hydrological poverty". Can you guess what is meant by this term? What do you think this article will be about?

There are many reasons why water is becoming a "scarce resource" as population grows. Look at the statements below and discuss with your partner whether you think these can be reasons why there is a huge water deficit in the world.

1) Technological development is responsible for the huge increase in water consumption.
2) Most of the water consumed is used for the daily lives of an ever-increasing population.
3) Irrigation is consuming the largest amount of water worldwide.
4) Industry uses more water and less economically than agriculture.

2. Read the article and look back at the reasons above to see which are true according to the writer.

3. Read the article again and find out what the underlined pronouns refer to:
   1) "...this would feed 480 million people" (paragraph 2)
   2) "...one largely confined to the last half century." (paragraph 3)
   3) "... to pull water out of aquifers faster than it is replaced by precipitation." (paragraph 3)
   4) "... including both that diverted from rivers and that pumped from underground," (paragraph 4)

POPULATION GROWTH SENTENCING MILLIONS TO HYDROLOGICAL POVERTY†

Even with today's 6 billion people, the world has a huge water deficit. Using data on overpumping for China, India, Saudi Arabia, North Africa, and the United States, Sandra Postel, author of *Pillar of Sand: Can the Irrigation Miracle Last?,* calculates the annual depletion of aquifers (underground water reserves) at 160 billion tons. Using the rule of thumb that it takes 1,000 tons of water to produce 1 ton of grain, this 160-billion-ton water deficit is equal to 160 million tons of grain or one half the US grain harvest.

At average world grain consumption of just over 300 kilograms or one third of a ton per person per

† The two articles in this section are adapted from articles by Lester R Brown and Brian Halweil in *World Watch* 1998.