Panorama
An advanced course of English
for study and examinations

Ray Williams
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Introduction

Study Reading

Annual report on Spaceship Earth

Passengers of Earth:

We are on a spaceship – Spaceship Earth. It is time for you to hear the annual report on the state of our ship. As you know, we are hurtling\(^1\) through space at about 107,000 km/hr on a fixed course. Although we can never return to home base to take on new supplies, the ship has a marvellous and intricate life-support system. The system uses solar energy to recycle\(^2\) the chemicals needed to provide a reasonable number of us with adequate water, air and food.

Let me briefly summarise the state of our passengers and our life-support system. There are about 4 billion of us on board, with more than 150 nations occupying various sections of the craft\(^3\). About 25\% of you have inherited the good to luxurious quarters in the tourist and first-class sections, and you have used approximately 80\% of all resources\(^4\) available this past year. In fact, most of the North Americans have the more lavish quarters. Even though they represent only about 5\% of our total population, they have consumed\(^5\) about 35\% of this year’s resources.

I am sad to say that things have not really improved this year for the 75\% of our passengers travelling in the hold\(^6\). Over one third\(^7\) of you are suffering from hunger, malnutrition\(^9\), or both, and three quarters\(^8\) of you do not have adequate water or shelter. These numbers\(^10\) will certainly rise as your soaring\(^10\) population growth wipes out any gains in food supply and economic development.

Discussion questions

A The text compares the Earth to a spaceship. In what ways is this a valid (sensible) comparison, and in what ways is it not?

B Why can we . . . never return to home base to take on new supplies’?

C The text refers to the Earth’s life-support system. Which of these is a system:

- the heart
- education
- a knife
- a supermarket
- a bottle of ink
- all the railway stations and tracks in a country

D Why does the text address the reader in this personal way – ‘Passengers of Earth . . . we . . . you’, etc.?
Introduction

Study reading techniques

Study reading means reading in order to extract important information from a text, recording that information (probably in note-form), and using it for study or professional purposes. Each Study Reading section in this book contains two types of question. Discussion questions – A, B, C... – are to check your general understanding and to provoke discussion. Study Reading questions – 1,2,3... – practice a variety of study reading techniques. This unit introduces those techniques.

Contextual guessing of unfamiliar words

A technique for working out the meaning of an unfamiliar word is to examine the context in which the word appears, i.e. the words and sentences before and after the unfamiliar word. For example,

1. **hurting**: What is the context of *hurting*? The *Earth* is hurting. It is hurting at about 107 000 km/hr (i.e. very, very fast). From the context, then, *hurting* suggests ‘moving extremely fast’. Similarly,

2. **resources**: The context tells us that resources are *used* in some way, and that the *North Americans* use a disproportionate share of the Earth’s resources. What do the North Americans use a disproportionate share of? Answer – energy, food, paper, etc. These are examples of resources.

Consider the contexts of the following words, in order to make an intelligent guess as to their meanings:

5. **consumed**  
6. **the hold**  
10. **soaring**

Word analysis

Some words contain ‘word parts’, which contribute to the meaning of the word as a whole. Therefore, another technique for working out the meaning of an unfamiliar word is to see whether the word contains one or more ‘word parts’. Consider the word *inaudible*:

Word analysis therefore shows us that *inaudible* means ‘cannot be heard’. To decide on the meanings of word parts, it is often useful to think of other words containing the same part, with which you are more familiar. Use the technique of word analysis to work out the meanings of:

2. **recycle** (Think of revise, bicycle.)

8. **mainnutrition** (Think of a malignant growth such as cancer, or the malfunction of a machine. Think also of nutritious food.)

Linking back devices

A linking back device is a way of relating to something that has previously been mentioned in the text in full. An example in paragraph 2, line 15 is *they*, which links back to *most of the North Americans*. An efficient reader will not only recognise that a word or phrase *is* a linking back device, but also identify what it links back to. What do the following link back to?

3. **the craft** (which craft?)

7. **Over one third... three quarters** (of how many?)

9. **These numbers** (which numbers?)
However, the overpopulation of the hold in relation to available food is only part of the problem. There is a second type of overpopulation that is even more serious, because it threatens our entire life-support system. This type is occurring in the tourist and first-class sections. These sections are overpopulated in relation to the level of resource consumption and the resultant pollution of our environment. For example, the average North American has about 25 to 50 times as much impact on our life-support system as each passenger travelling in the hold, because the North American consumes 25 to 50 times as much of our resources, and causes 25 to 50 times as much pollution. In this sense, then, the North American section is the most overpopulated one on the ship.

In addition to these matters, I am concerned at the lack of co-operation and the continued fighting among some groups, which can destroy many, if not all, of us. Only about 10% of you are American and Russian, but your powerful weapons and your unceasing threats to build even more destructive ones must concern each of us.

Passengers of Earth: we are now entering the early stages of our first major spaceship crisis—an interlocking crisis of over-population, pollution, resource depletion, and the danger of mass destruction by inter-group warfare. Our most thoughtful experts agree that the situation on this ship is serious, but certainly not hopeless. On the contrary, they feel that it is well within man's ability to learn how to control our population growth, pollution, and resource consumption, and to learn how to live together in co-operation and peace. But we have only about 30 to 50 years to deal with these matters, and we must begin now.

In each unit of this book we shall investigate a particular environmental problem facing Spaceship Earth. You are invited to think seriously about these important issues, to relate them to life in your own country, and to consider what you personally can do about these problems.

Discussion questions

E In the sense of impact on our life-support system, how much more overpopulated is the USA (approx. 215 million) than China (approx. 970 million)?

F '... the continued fighting among some groups... can destroy many, if not all, of us.' What does this mean? In what way can this fighting destroy all of us?

G Why does the text suggest that we have only 30 to 50 years to deal with our spaceship crisis? What do you think might happen if we have not dealt with it by then?

Signpost words
A text is not a series of unconnected clauses and sentences one after the other, like cars on a road. Instead, clauses and sentences cohere (stick together), like railway carriages. And one group of words that help them cohere are called signpost words. Consider: The world's oil resources will probably be exhausted by the middle of the 21st century, but... We do not yet know the exact words that are to come, but the signpost word but tells us what type of information to expect. The function of a signpost word, then, is to tell the reader what type of information comes next.
The following are some of the more common signpost words used in formal writing. The symbols beside them suggest how they connect information before and after. Suggest a suitable sentence to follow each signpost word.

- **however** warns the reader that the line of reasoning is about to change course, e.g. *Many people believe that nuclear power will solve our energy problems. However,*. . .

- **in fact** introduces specific information to support the wider, more general information just given, e.g. *There is always the possibility of a major accident with nuclear power. In fact,*. . .

- **on the contrary** reinforces and expands the information just given. (The information in the sentence before *on the contrary* is always negative; the information after *on the contrary* is positive.) e.g. *We have not yet exhausted the amount of land that can support human life. On the contrary,.*. . .

- **moreover** develops the ideas, facts or reasons already given, by presenting additional ones, e.g. *Scientists and engineers are already draining forest swampland. Moreover,.*. . .

- **as a result** introduces the result of the information or argument given in the preceding sentence(s), e.g. *Improved varieties of rice and grain are being developed. As a result,.*. . .

- **e.g.** for example gives an example of something just mentioned, e.g. *Many countries have pollution problems. For example,.*. . .

- **in brief** summarises the preceding reasoning, e.g. *The Earth is suffering from overpopulation, resource depletion, pollution, and the danger of intergroup warfare. In brief,.*. . .

- **meanwhile** introduces a reference to an event that takes place during the time that the preceding event takes place, e.g. *In the last ten years, oil consumption has more than doubled. Meanwhile,.*. . .

- **therefore** introduces the reason why the preceding statement, data, etc. was presented, e.g. *The sea provides us with food. Therefore,.*. . .

- **of course** reminds the reader of something he already knows or assumes, in case he has forgotten or does not fully understand, e.g. *Scientists are developing varieties of ‘artificial’ food. Of course,.*. . .

- **in other words** restates the information just given, but in a different and simpler form, so as to help the reader understand, e.g. *For all practical purposes, the Earth is a closed system. In other words,.*. . .

- **in conclusion** tells the reader that he has reached the end of the line of reasoning, e.g. *In conclusion, signpost words,.*. . .

(Which five of the above symbols are in standard use?)

The following signpost words are each very similar in meaning to one of those above. Copy the list, and indicate their function by drawing the appropriate symbol against each one.

<table>
<thead>
<tr>
<th>naturally</th>
<th>to sum up</th>
<th>in the meantime</th>
<th>thus</th>
</tr>
</thead>
<tbody>
<tr>
<td>nevertheless</td>
<td>hence</td>
<td>to summarise</td>
<td>. . ., then,. . .</td>
</tr>
<tr>
<td>in addition</td>
<td>for instance</td>
<td>obviously</td>
<td>consequently</td>
</tr>
<tr>
<td>so</td>
<td>furthermore</td>
<td>additionally</td>
<td>accordingly</td>
</tr>
<tr>
<td>that is (to say)</td>
<td>in short</td>
<td>yet</td>
<td>nonetheless</td>
</tr>
</tbody>
</table>
The text on p. 4 includes the following three signpost words. Summarise the information before and after, and draw the appropriate symbol to show the relationship between the two types of information in each case.

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**Sentence skeletons**

For full comprehension of a sentence, you must be able to identify the basic skeleton of that sentence. In other words, you must at least be able to identify the subject and principal verb. This is easy in simple sentences such as:

*The ocean provides food.*

But books and articles often contain long sentences beginning with subjects that consist of several words. Such *extended subjects* contain other nouns in addition to the principal noun, and also verbs, e.g.

*The pollution of our environment by industrial waste, pesticides, solid wastes and oil spills, all of which have serious and lasting effects, is worrying many scientists.*

In this sentence, the words underlined form the extended subject, and the word double-underlined (*pollution*) is the principal noun within the extended subject. The principal verb is *is worrying.*

If you have difficulty understanding a long sentence, the reason is probably because it contains an extended subject. You should therefore:

**FIRST,** search for the principal verb — it will usually appear late in the sentence.

**SECOND,** ask yourself 'what verbs . . .?' e.g. 'What is worrying many scientists?' Answer — *pollution.* The answer to this question is the principal noun, which usually occurs early in extended subjects.

Two sentences in the text contain extended subjects:

*11* What is only part of the problem? (Answer in one word, i.e. give the principal noun of the extended subject.)

*14* What must concern each of us? (Answer in two words, i.e. give the two principal nouns of the extended subject.)

**Text structure**

Every text has a *structure.* The purpose of this structure is to enable the reader to understand the text's *meaning* so that he can move smoothly from one point to the next. Copy and complete the following flowchart, to show the structure of the last paragraph:

1. The spaceship crisis
2. Serious, but not hopeless
3. 30 to 50 years to deal with it
4. Caused by
   - Over-population
   - Pollution
   - Resource depletion
5. By learning how to
6. Live together in co-operation and peace
Making Notes from a Talk

You will hear a short talk about ‘J’ curves and their consequences. As you listen to the talk, study the graphs below, and copy and complete the tables.

Exponential growth resulting from doubling a page of a book

<table>
<thead>
<tr>
<th>NUMBERS OF DOUBLINGS</th>
<th>THICKNESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0.1 mm</td>
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<tr>
<td>1</td>
<td>0.2 mm</td>
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<tr>
<td>2</td>
<td>0.4 mm</td>
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</tr>
<tr>
<td>35</td>
<td>(i.e. )</td>
</tr>
<tr>
<td>42</td>
<td>(i.e. )</td>
</tr>
<tr>
<td>50</td>
<td></td>
</tr>
</tbody>
</table>

a ‘J’ curve

Human population increase

- Net birth-rate: per minute = __________ per day
- Net death-rate: per minute = __________ per day

∴ Net population increase = __________ per day

= __________ per week

= __________ p.a.

The world’s population growth