

An Approach to Teaching Cohesion to Improve Reading

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This paper contains some samples of materials designed to enable advanced learners to read more effectively for academic purposes. The materials focus learners' attention on the role of various cohesive devices in relating different parts of a text. The aim is to sensitise learners to the ways these devices can help them to make sense of a text. This is achieved through the use of discovery exercises applied to an authentic text. The exercises are accompanied by notes to teachers on procedures and an answer key/commentary.

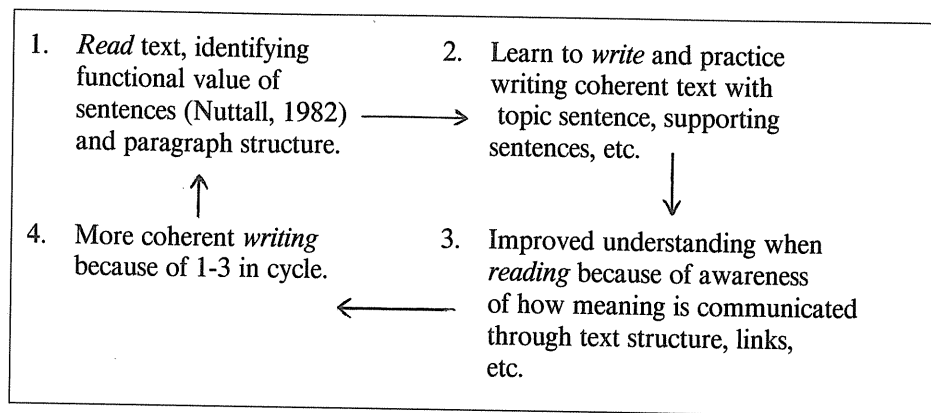
INTRODUCTION

A good reading competence is a necessity for those using English for academic and occupational purposes and many curricula therefore devote large amounts of time to intensive and extensive reading lessons in order to achieve such competence. (Tomlinson, 1990; Dzau, 1990, for example) Yet despite years of practice in reading, many learners find difficulty in making sense of texts they want to read. Several writers have suggested (Cook, 1989; Grellet, 1981; Mackay, 1979; Nuttall, 1982) and some have shown (Connor & Johns, 1990) that one of the reasons for this is failure to interpret the writer's cohesive signals as intended and so to understand correctly the functional value of individual sentences and thus their relationship to each other and the whole. There are a number of possible reasons for this: lack of practice in applying "grammatical" knowledge when reading; lack of practice with texts containing a variety of cohesive features; the tradition of teaching such features as part of the grammatical system and practising them in isolation and at single sentence level in grammar and/or writing lessons; lack of text attack skills generally. The materials in this paper develop the student's ability to interpret cohesive devices better. This is achieved through the use of discovery procedures to draw attention to the role and importance of cohesive devices in an authentic text.

Before moving to the text and materials there are two other observations which are pertinent to the materials design. Some writers believe text attack skills are transferred from L1 and therefore do not need practising in L2 (see Alderson, 1984, for a review of the literature). However I have found it is frequently necessary because some learners do not possess these skills in L1. Others possess them but do not transfer them unprompted to L2, and even if they do have the skills and can transfer them, learners benefit from sharpened awareness and practice in "reading for meaning". The second point is that the materials are designed to be part of a wider reading and writing programme where the writing component is seen as contributing to the development of reading skills and vice versa as in the diagram below:

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Figure 1: The Relationship between Reading and Writing



WHO ARE THE MATERIALS FOR?

The materials in this paper were designed for use with post-graduate students (and staff) in Chinese scientific universities where English is a compulsory subject. The English text presented was chosen by class members and is typical of the scientific/pseudo-scientific texts Chinese academics like/need to read but find difficult. The text thus has face validity as well as interest.

Cohesion in the text is analysed using the descriptive framework developed by Halliday and Hasan (1976). Although cohesive ties occur both intrasententially and intersententially, this paper focuses only on intersentential cohesion, since cohesion within a sentence works in the same way as across sentence boundaries, but is less of a problem to decode.¹

One final point: since the aim is to teach this text, not Halliday and Hasan's system, features of the system which do not occur in this text, such as substitution and ellipsis, are not included in the materials. They would be dealt with as and when they occurred in other reading texts.

ANALYSIS OF COHESION IN TARGET TEXT

In order to decide what to focus on when designing the materials it is first necessary to analyse the cohesive features of the text. The following analysis examines some of the cohesive features, but is not intended to be an exhaustive analysis.²

¹ Halliday and Hasan (1976) refer to cohesion as occurring outside the individual sentence, regarding what occurs within a sentence as syntax.

² The question arises here of whether to use the orthographic sentence as the unit of analysis, or to break complex sentences into their separate propositions. On this occasion, the orthographic sentence is used as the unit of analysis.

TEXT

New Scientist 24 February 1990

SCIENCE

Britain must learn to farm in the greenhouse

John Gribbin

- (S1) CHANGES in climate over the next 50 years will bring both benefits and problems for British agriculture—but the benefits can
- (S2) be reaped only by careful planning. Martin Parry and his colleagues from the University of Birmingham have been investigating the implications of the greenhouse effect for
- (S3) British agriculture. They conclude that new policies must emerge “within the next four or five years rather than four or five decades”.
- (S4) The basis for the Birmingham team’s analysis is the so-called “business as usual”
- (S5) scenario. Here, governments make no effort to curb the emissions of greenhouse gases, and the concentration of carbon dioxide in the atmosphere reaches twice its pre-
- (S6) industrial level by 2030. Such a doubling would cause the Earth to warm by up to
- (S7) 4.5°C. However, because the climate will not react instantly to the change the actual rise in temperature is likely to be 0.5°C by 2005, and 1.5°C by 2025, with the rest to follow.
- (S8) In the southeast of England, climatologists also suggest that there will be less rainfall in summer and more rainfall in winter, with more rainfall in both winter and summer to the north and west of
- (S9) Britain. This analysis takes no account of continuing emissions of greenhouse gases after 2030.

- (S10) The direct effect on plants of increased carbon dioxide may well be to encourage photosynthesis and to make them grow faster and bigger. But Parry and his colleagues warn that many weeds are more likely to benefit from this "carbon dioxide fertilisation" than some crops. However, the core of their study focuses on the way that changes in weather patterns will affect British agriculture.
- (S11)
- (S12)
- (S13) According to one model of Parry and his colleagues, the length of the growing season would increase across most of Britain, with average temperatures above 5°C for at least nine months of the year. But in the southeast, agriculture would become limited by summer droughts. Crops are limited in their range by temperature shift about 300 kilometres further north for each degree that the temperature rises. This raises the prospect in southern England of the fields of maize and sunflowers that are now common France (*Journal of the Royal Agricultural Society of England*, vol 150, p 120).
- (S14)
- (S15)
- (S16)
- (S17) While this happens, summer droughts are likely to shorten the growing season in the region of the Mediterranean, shifting the whole pattern of farming within the European Community. If there is drought in the US, as some climate models predict, this might increase the importance of the community as a producer for the world food market.
- (S18)
- (S19) But there are problems associated with such a shift in climate. For instance, there will be an increased growing season for some weeds. In addition, diseases now found in warm, wet climates will increase greatly and pests will survive through the winter because there will be fewer frosts.
- (S20)
- (S21)

- (S22) The appropriate responses of the British farming industry might include planting earlier in the season—harvesting cereals in June rather than July—and switching to crop varieties that Mediterranean farmers
- (S23) prefer to grow. As well as sunflowers and maize, farmers in southern Britain might be able to grow soya and even navy beans (the kind you find in a familiar can of baked beans).
- (S24) Parry and his colleagues say that planning will be necessary to take advantage of these possibilities. They say,
- (S25) however, that it will be futile to try to predict the changes to the climate in detail. By 2030, they point out, the world's
- (S26) population may also have doubled “and this could well alter the structure of demand and prices for food”.
- (S27) Meanwhile, policies that respond to the perceived threat of global warming—reforestation, carbon taxes, and so on—will themselves have a direct impact on
- (S28) agriculture. As these policies are developed over the next five years, say the researchers, “it will be important to evaluate these opportunities and costs carefully, so that agriculture in Britain can respond in the most appropriate way”.

Grammatical reference

A brief examination of paragraphs 1 and 2 will show how the various types of reference – personal (which includes inanimate), demonstrative and comparative – help to make a text easy to understand by avoiding repetitions. Figure 2 shows the reference ties in paragraphs 1 and 2 diagrammatically.

There are two examples of anaphoric reference, both nominal, contributing to cohesion. In (S3) ‘They’ is a simple linking device. It relates to ‘Martin Parry and his colleagues from the University of Birmingham’ linking two actions performed by the same people. ‘They’ is used anaphorically to refer back to ‘Martin Parry and his colleagues from the University of Birmingham’ to avoid repetition. This example is

interesting in that it does not relate to the last-mentioned plural noun as we usually expect, and that it relates to a noun phrase (Hasan and Halliday prefer the term ‘nominal group’) not a single noun.

Figure 2: Reference Ties in Paragraphs 1 and 2 of Example Text

S1	Changes in climate over the next 50 years will bring both <i>benefits</i> and problems for British agriculture—but <u>the benefits</u> can be reaped only by careful planning. <i>Martin</i> ←	the benefits	benefits
S2	Parry and his colleagues from the University of Birmingham have been investigating the implications of the greenhouse effect for British agriculture. <u>They</u> conclude that new policies must emerge “within the next four or five years rather than four or five decades”.	They	Martin Parry and colleagues from the University of Birmingham
S4	The basis for the Birmingham team’s analysis is the so-called “business as usual”		
S5	<i>scenario</i> ← <u>Here</u> , governments make no effort to curb the emissions of greenhouse gases, and <u>the concentration of carbon dioxide in the atmosphere reaches twice</u> its pre-industrial level by 2030. <u>Such a doubling</u> would cause the Earth to warm up to 4.5°C. However, because the climate will not react instantly to <u>the change</u> , the actual rise in temperature is likely to be 0.5°C by 2005, and 1.5°C by 2025, with the rest to follow.	scenario.	Here
S6		Such a doubling	the concentration of carbon dioxide in the atmosphere reaches twice its pre-industrial level
S7			the change

Continuing our analysis in (S5) we find an example of demonstrative anaphoric reference, a sort of ‘verbal pointing’ (Halliday and Hasan, 1976) with ‘here’ referring to ‘scenario’ in (S4). Repetition is avoided and a link between the two sentences established. Similarly the comparative reference item ‘such’ in the phrase ‘such a doubling’ (S6) links back to (S5). It is a good example of how the use of a reference item simplifies a text for a native speaker. The sentence would be difficult to follow if the whole of the subject were repeated again (14 words).

There are many, many more instances of all three kinds of reference in the text; examples of demonstrative reference are treated further in Awareness Exercises, Unit 1. The importance of reference in reading is that, although to a skilled reader

processing such chains of cohesive ties maintaining a theme is virtually automatic, if we consider a foreign language learner it is easy to see that a number of problems arise: it is necessary to recognise not only the reference words but what they signal. Some words, “it”, for example, are plurifunctional (pronominal reference, ‘introductory’ it, etc.); memory is also a factor as often the antecedents of pronouns, for example, need to be kept in mind as the passage is read. (Paragraph 4 contains a good example of this.) Furthermore, as more than one aspect of cohesion is usually at work in a single sentence/stretch of text, the reader has to be very alert to cope!

Lexical cohesion

In addition to the syntactic markers of cohesion, lexical relationships such as synonymy, hyponymy, etc., can also be cohesive. Halliday and Hasan (1976) divide lexical cohesion into two types: reiteration and collocation.

Reiteration

If we look at Text 1, paragraphs 6 and 7, we see an example of repetition of the word ‘climate’. The writer could have used the word ‘temperature’ to talk about the change as he did in paragraph 5, but instead he repeats the ‘climate’ of paragraph 6. The cohesive effect of this is strengthened by the repetition of ‘shift’, this time as noun rather than verb, and the fact that it in turn is accompanied by the comparative reference item ‘such’ heightens the cohesion still further.

(P5) According to one model of Parry and his colleagues, the length of the growing season would increase across most of Britain, with average temperatures above 5°C for at least nine months of the year. But in the southeast, agriculture would become limited by summer droughts. Crops that are limited in their range by temperature shift about 300 kilometres further north for each degree that the temperature rises. This raises the prospect in southern England of the fields of maize and sunflowers that are now common in France (*Journal of the Royal Agricultural Society of England*, vol 150, p 120).

(P6) While this happens, summer droughts are likely to shorten the growing season in the region of the Mediterranean, shifting the whole pattern of farming within the European Community. If there is drought

in the US, as some climate models predict, this might increase the importance of the community as a producer for the world food market.

(P7) But there are problems associated with such a shift in climate. For instance, there will be in increased growing season for some weeds. In addition, diseases now found in warm, wet climates will increase greatly and pests will survive through the winter because there will be fewer frosts.

Repetition as a cohesive device can be boring if it is used too frequently. The writer probably felt this would be the case if ‘Martin Parry and his colleagues from the University of Birmingham’ were repeated co-referentially too often. He therefore uses a number of synonyms for the phrase. Thus in paragraph 1, S2 we have ‘Martin Parry and his colleagues from the University of Birmingham’, in S3 the reference item ‘they’ and in paragraph 2, S4 ‘the Birmingham team’ with the anaphoric use of ‘the’ noted above. The effect of this is to maintain cohesion and add variety. In paragraph 4, S11 ‘Martin Parry and his colleagues from the University of Birmingham’ becomes ‘Parry and his colleagues’ – for the same reasons outlined above. This synonym is repeated several times (see paragraphs 5 and 9) until the writer feels that this too is becoming repetitious. The solution is to introduce another mechanism for repetition – that of hyponymy – thus in paragraph 9, we have ‘the researchers’, a superordinate, used anaphorically as a kind of synonym rather than any of the more specific synonyms ‘Martin Parry and his colleagues from the University of Birmingham’, ‘Parry and his 5 colleagues’, ‘the Birmingham team’. It is worth noting here that it is our assumption that these phrases must refer to the same people for the text to be *coherent* which allows us to recognise the *cohesion* (Carrell, 1982).

What we have in the case of ‘Martin Parry and his colleagues from the University of Birmingham’ is an example of what Halliday and Hasan (1976) call a ‘cline’ of cohesive elements, that is, a number of more or less specific ways of referring to the same item. These are shown in the diagram below.

Figure 3: Types of Reiteration Occurring in the Sample Text

Related Lexical Items	Type of Reiteration
‘Parry and his colleagues’	1 – the same item repeated
‘the Birmingham team’	2 – a synonym for the same item repeated
‘Martin Parry and his colleagues from the University of Birmingham’	3 – another synonym for the same item repeated
‘climatologists’	4 – a superordinate for this type of scientist
‘the researchers’	5 – a more general noun – can be in any discipline
‘they’	6 – a personal reference item

5 is not a truly general noun in the sense that 'people' or 'men' would be, standing for the class animate, human (male).

6 is the most general of all; it can refer to people or things. Note that the relationships between the items in the diagram are similar to those described in the section on reference. Halliday and Hasan (1976: 279) recognise this:

“the boundary between lexical cohesion of the type we are calling REITERATION, and grammatical cohesion of the REFERENCE type, is by no means clear cut.”

And indeed some authors (Mackay, 1979, for instance) deal with reiteration as part of syntactic relations.

There are other examples of synonyms and hyponyms in the text and these are dealt with in the awareness exercises (Unit 2).

Collocation

Halliday and Hasan (1976) include collocation in their description of the system of cohesion:

“... any two lexical items having similar patterns of collocation, that is tending to appear in similar contexts – will generate a cohesive force if they occur in adjacent sentences.”

However Urquhart (1983) persuasively outlines several objections to the validity of lexical collocation as a cohesive factor across sentence boundaries, and indeed in a later publication Hasan herself admitted that lexical cohesion was problematical (Hasan, 1984: 195).

What we can say is that although collocation cannot be a part of the language *system* it may have psychological reality at a particular time and so help us to anticipate connections and meaning. The examples which follow demonstrate this.

When we read 'greenhouse' in the context of our text on impending climate change and its effects, because of our past experience of similar texts, we expect 'greenhouse' to collocate intrasententially with 'effect' and similarly 'global' with 'warming', 'carbon' with 'dioxide', etc. There are no exactly parallel inter-sentential examples but there are some similar ones: e.g. in paragraph 1, S1 'changes in climate' and S2 'greenhouse effect'. The effect of such lexical items is cohesive in this particular text.

We could continue to discuss the text by examining the use of conjunction, but since the materials which follow deal with reference and lexical cohesion we will leave the analysis at this point. The next section of this paper shows how the linguistic

analysis carried out above can be translated into practical language awareness exercises for use with learners. The features of reference and lexical cohesion discussed in the analysis will be focussed on in the materials.

INTRODUCTION TO THE MATERIALS

The activities in these units are based on the text used in the analysis above. The learners have already worked through some conventional reading exercises on the global meaning of the text, deducing the meaning of unknown words and identifying main points, and so have a general understanding of the text before beginning these exercises.

The activities focus on one aspect of reference and on lexical cohesion, rather than on all the kinds of cohesive device. The rationale for choosing two aspects only is:

- i that the text determines what kind of exercises are appropriate for it
- ii that there is a need for a balance between sufficient exercises for learners to get the full meaning of the text and so many exercises that learners get fed up with the text!

–The **TEACHER'S NOTES** for each unit follow a set format beginning with linguistic **AIMS**.

– The **SPECIAL NOTES** focus on points of technique which the teacher needs to consider before the sessions.

– The **TEACHER'S NOTES** are detailed and directive in order to support and guide teachers with little experience of this kind of work. Experienced teachers will have their own tried and tested ways of doing things and should not feel bound to follow the suggestions offered here.

– No timings for the exercises have been given as this depends on the particular learners. Note also that units are not of equal length and exercises within a unit sometimes depend on each other so the exercises should be worked through in sequence.

–The provision of the answer **KEY**/commentary means that the exercises can be used both as class and self-access material. In any event, the aim of the materials is cognitive i.e. to activate what the learners already know about the language and to use it in an attempt to discover more through problem-solving.

–In the following materials the students **WORKSHEETS** are on the left-hand page with the corresponding **TEACHERS NOTES** and **KEY** on the facing right-hand page.

AWARENESS EXERCISES, TEACHER'S NOTES AND KEY/COMMENTARY

UNIT 1 TEACHER'S NOTES

AIMS To make learners aware of the importance of focusing on the use of 'this' to refer to clauses, sentences and paragraph meaning in developing text attack skills for reading.

MATERIALS/AIDS

- copies of the text
- worksheets
- overhead projector transparency (OHT) pens
- OHT of the texts – enlarged if possible.

SPECIAL NOTES

- the first examples are deliberately easy to give learners confidence in tackling a difficult topic.
- decide whether you will let the class discuss their answers in groupwork in L1. They may find discussing such a complex topic in L2 a handicap to thinking. If they are allowed to use L1 make it clear for what purposes L1 can be used and why.
- the first part of the class uses individual work because it is difficult to work in pairs on long, complex texts.
- although with very big groups it may be difficult/impossible for those at the back to read the text on the OHT it is still worth using it as well as printed texts because learners can see the general area of the text where the answer is located and this helps reinforce oral discussion of the answers.

TEXTUAL COHESION: UNIT 1 WORKSHEET

1. Read the caption and look at the picture.
 - i What is the function of the word in the box?
 - ii What does it refer to?
 - iii How do you know?



*Will farmland in Britain look like **this** in 2025? Only if steps are taken to head off droughts, weeds and a host of new crop diseases*

2. Read the sentences below.
 - i What do the words in boxes refer to?
How do you know?
 - ii What do you need to make the reference clear?

a. **This theme** is treated again in today's text.

b. Many grammar books deal with reference.

This is the only one that I can understand.

UNIT 1

TEACHER'S NOTES

- KEY 1.**
- i It links to something
refers
 - ii The picture
 - iii We can see it. The use of 'this' to refer to something present (in reality) or mentioned (in a piece of written text) is sometimes called 'a form of verbal pointing' (Halliday and Hasan, 1976).
- KEY 2.**
- i We don't know. There is no context, no situation.
 - ii A context of some kind.
 - a. We need at least one more sentence. Lots of sentences are possible:–
 - e.g. *Last week we read a text on reference.*
 - or *Recently we saw a video about global warming.*
 - or *Johnson is very interested in the role of women in development.*(Many others are possible.)
 - b.

We need some kind of picture so we can see which book amongst several the speaker is referring to.

UNIT 1 WORKSHEET

3. Read the texts below.

i Which words to the items in boxes refer to?
Put a circle round them.

a. Last week we read a text on global warming.

This theme is treated again in today's text.

b. The exercise below deals with textual reference.

This is a neglected topic in many books.

ii So therefore in these examples 'this' in each case refers to

- a) a noun/noun phrase (e.g. a tall man)
- b) a sentence
- c) a paragraph
- d) a clause

4.

i Read the paragraph below and underline all the words that this refers to.
How many are there?

- While this happens, summer droughts are likely to shorten the growing season in the region of the Mediterranean, shifting the whole pattern of farming within the European Community. If there is drought in the
- a US, as some climate models predict, this might increase the importance of the community as a producer for the world food market.

ii Now read the two paragraphs below. Which words do the items in boxes refer to in each case? Put a circle round the word(s).

According to one model of Parry and his colleagues, the length of the growing season would increase across most of Britain, with average temperatures above 5°C for at least nine months of the year. But in the southeast, agriculture would become limited by summer droughts. Crops that are limited in their range by temperature shift about 300 kilometres further north for each degree that the temperature rises. This raises the prospect in southern England of the fields of maize

and sunflowers that are now common in France (*Journal of the Royal Agricultural Society of England*, vol 150, p120).

- c While this happens summer droughts are likely to shorten the growing season in the region of the Mediterranean, shifting the whole pattern of farming within the European Community. If there is drought in the US, as some climate models predict, this might increase the importance of the community as a producer for the world food market.

UNIT 1 TEACHER’S NOTES

- 3. As for 2.
- 4. As for 2 but learners could compare answers in threes as this exercise is more demanding.

Ask any learners who disagree with the answers on the OHT to add their answer(s) to the OHT. Let the class debate the answers and find and explain the correct answers.

KEY

- 3. i a. Last week we read a text on global warming.

This theme is treated again in today’s text.

- b. The exercise below deals with textual reference.

This is a neglected topic in many books.

NOTE

In example 1a above a general term is used to refer to a more specific one in the previous sentence. This is a common way of adding new information about a referent whilst at the same time keeping it in initial sentence position, the common position for ‘given’ information (rather than new information). The writer could have done the same thing in 1b, but chose not to. (i.e. This topic is neglected in many books.)

- 3. ii a. A noun/noun phrase.

KEY

- 4. i a. ‘If there is a drought in the US’
- ii b. ‘Cropsrises’
- c. ‘.the lengthBritain’

According to one model of Parry and his colleagues, the length of the growing season would increase across most of Britain, with average temperatures above 5°C for at least nine months of the year. But in the southeast, agriculture would become limited by summer droughts. Crops that are limited in their range by temperature shift about 300 kilometres further north for each degree that the temperature rises. This raises the prospect in southern England of the fields of maize

and sunflowers that are now common in France (*Journal of the Royal Agricultural Society of England*, vol 150, p120).

- c While this happens summer droughts are likely to shorten the growing season in the region of the Mediterranean, shifting the whole pattern of farming within the European Community. If there is drought in the US, as some climate models predict, this might increase the importance of the community as a producer for the world food market.

UNIT 1 WORKSHEET

iii Match each this (a, b, c) with the category of item it refers to:

- | | |
|---------|-------------|
| a. this | noun phrase |
| b. this | paragraph |
| | clause |
| c. this | sentence |

iv If the writer had not used 'this' in the examples you have analysed, what would he have had to do?

5. Read the first part of the text again.
What does 'this analysis' in paragraph 3 refer to?
Put a circle round the word(s) if you can.

Changes in climate over the next 50 years will bring both benefits and problems for British agriculture—but the benefits can be reaped only by careful planning. Martin Parry and his colleagues from the University of Birmingham have been investigating the implications of the greenhouse effect for British agriculture. They conclude that new policies must emerge “within the next four or five years rather than four or five decades”.

The basis for the Birmingham team's analysis is the so-called “business as usual” scenario. Here, governments make no effort to curb the emissions of greenhouse gases, and the concentration of carbon dioxide in

the atmosphere reaches twice its pre-industrial level by 2030. Such a doubling would cause the Earth to warm by up to 4.5°C. However, because the climate will not react instantly to the change, the actual rise in temperature is likely to be 0.5°C by 2005, and 1.5°C by 2025, with the rest to follow.

In the southeast of England climatologists also suggests that there will be less rainfall in summer and more rainfall in winter, with more rainfall in both winter and summer to the north and west of Britain. This analysis takes no account of continuing emissions of greenhouse gases after 2030.

Was this exercise easy or difficult?

Why?

UNIT 1 TEACHER'S NOTES

5. Repeat 4

KEY

4. iii a. this – clause
 b. this – sentence
 c. this – paragraph
- iv Repeat a long piece of text – a clause, sentence or paragraph. Note that here it is not possible to use a noun phrase rather than ‘this’ alone: even the most general term seems not to fit (try substituting ‘this fact’). The only possible noun phrases seem to be paraphrases often almost as long as the originals, eg.
- b. ‘This relationship between temperature and distribution of crops
 ’
- c. ‘While all these changes are happening in Britain . . .’

In the end the effect of using ‘this’ here is to allow long strings of information to be added to or qualified without repeating them.

KEY

5. The whole of the preceding text i.e. the analysis by the Birmingham team of the effects of global warming on climate and, therefore on British agriculture.

It is difficult because the beginning of the item referred to is a long way away (3 paragraphs) and because the reader needs to pick out the main point of the paragraphs as it is an implicit ‘summary’ that is referred to.

UNIT 1 WORKSHEET

6. Read the paragraphs below.

a The direct effect on plants of increased carbon dioxide may well be to encourage photosynthesis and to make them grow faster and bigger. But Parry and his colleagues warn that many weeds are more likely to benefit from this "carbon dioxide fertilisation" than some crops. However, the core of their study focuses on the way that changes in weather patterns will affect British agriculture.

b While this happens, summer droughts are likely to shorten the growing season in the region of the Mediterranean, shifting the whole pattern of farming within the European Community. If there is drought in the US, as some climate models predict, this might increase the importance of the community as a producer for the world food market.

But there are problems associated with such a shift in climate. For instance, there will be an increased growing season for some weeds. In addition, diseases now found in warm, wet climates will increase greatly and pests will survive through the winter because there will be fewer frosts.

The appropriate responses of the British

c farming industry might include planting earlier in the season—harvesting cereals in June rather than July—and switching to crop varieties that Mediterranean farmers prefer to grow. As well as sunflowers and maize, farmers in southern Britain might be able to grow soya and even navy beans (the kind you find in a familiar can of baked beans).

Parry and his colleagues say that planning will be necessary to take advantage of these possibilities. They say, however, that it will be futile to try to predict the changes to the climate in detail. By 2030, they point out, the world's population may also have doubled "and this could well alter the structure of demand and prices for food".

d Meanwhile, policies that respond to the perceived threat of global warming—reforestation, carbon taxes, and so on—will themselves have a direct impact on agriculture. As these policies are developed over the next five years, say the researchers, "it will be important to evaluate these opportunities and costs carefully, so that agriculture in Britain can respond in the most appropriate way".

Now complete the information in the chart for the words in boxes. b. has been done for you as an example. (See 4. ii for words you might want to use in column 3, 'Textual Section'.)

MARKER	REFERENT	TEXTUAL SECTION
a. 'this carbon dioxide fertilisation'		
b. 'this'	'If there is drought in the US'	clause
c. 'these possibilities'		
d. 'these policies'		

UNIT 1 TEACHER’S NOTES

6. As for 4. Have the table ready in indelible ink on an OHT.

KEY

6

MARKER	REFERENT	TEXTUAL SECTION
a. 'this carbon dioxide fertilisation'	'The direct . . . and bigger.'	sentence
b. 'this'	'If there is drought in the US'	clause
c. 'these possibilities'	'planting earlier in the season') 'switching to . . . grow') or 'As well as . . . beans)	2 clauses or 1 sentence
d. 'these policies'	'policies warming'	noun phrase containing a clause

UNIT 2 INTRODUCTION

Research has shown lexis to be the most common reason for comprehension problems. (Alderson, 1984; Cassell, 1982). Helping learners pick up on lexical cohesion is one way we can help.

UNIT 2 TEACHER'S NOTES

- AIMS**
- linguistic: To make learners aware of the need to focus on relationships of synonymy and hyponymy as aids to understanding texts.
 - other: to make learners aware of the power of visual representations in clarifying meaning and making things memorable.
- MATERIALS/AIDS:** Worksheets. Watch with a second/minute hand.
- SPECIAL NOTES:** To prevent cheating exercise 4 could be given on an OHT/a poster/on small cards/on BB which can be covered up.

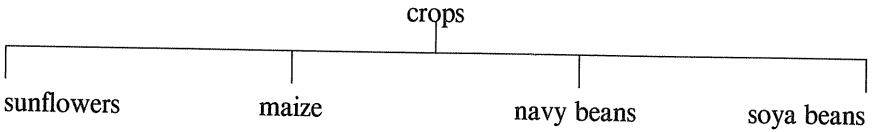
TEXTUAL COHESION: UNIT 2 WORKSHEET

1. Read this paragraph.

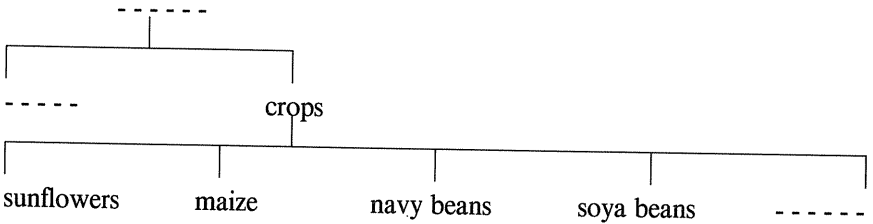
What do the underlined words have in common?

The appropriate responses of the British farming industry might include planting earlier in the season—harvesting cereals in June rather than July—and switching to crop varieties that Mediterranean farmers prefer to grow. As well as sunflowers and maize, farmers in southern Britain might be able to grow soya and even navy beans (the kind you find in a familiar can of baked beans).

2. What progression does the diagram illustrate?



3. Read the text again and try to fill in the missing parts of the diagram.



4. Look at paragraphs 4 and 8 again. In what order do these terms occur in the text?:

- a. specific » general
- b. general » specific

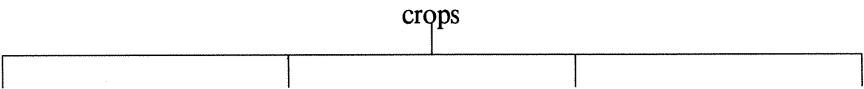
Paragraph 4
Paragraph 8

UNIT 2 TEACHER’S NOTES

PROCEDURE

1. Ps work individually. Feedback Ps » T » BB.

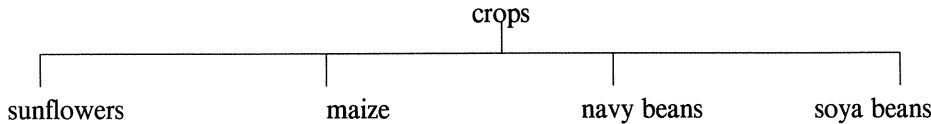
Draw the framework of the diagram on BB and elicit how to fill it.



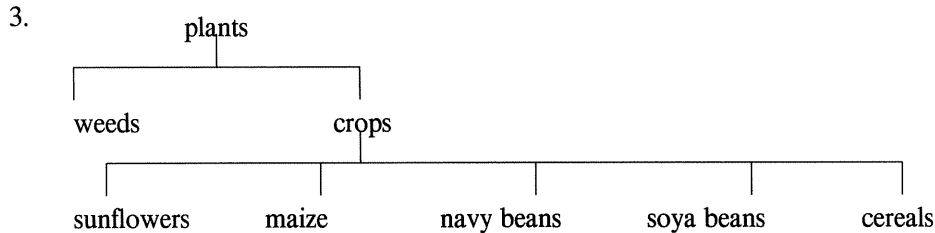
KEY

1. They are all kinds/types/examples/varieties of crops

We can represent this in a diagram:



2. From a general term (crop) to specific ones (maize, etc).



4. Paragraph 4 6
Paragraph 8 6

Note: The general terms are known as *superordinates* and the more specific ones as *hyponyms*.

UNIT 2 WORKSHEET

5. i Look at the words underlined in each pair of sentences below.

a. Mary has blond hair.

Mary has fair hair.

b. She watched him drive away in the Mercedes.

The red car was his only love.

Do the words underlined in each pair mean the same thing?

What do we call words which mean the same?

Do the words in a. usually mean the same?

What about the words in b.?

Now look at the words underlined in the text below. Do they mean the same thing?

- ii Skim through the text. How many synonyms for “Martin Parry and his colleagues from the University of Birmingham” (lines 5-6) can you find?
- iii Are the synonyms in (ii) type a. or b. in (i) above?
- iv Why is it important to realise that these are synonyms?

UNIT 2 TEACHER'S NOTES

5. As for previous exercises in this unit. T elicits answers onto the BB.
(It doesn't matter if learners get 'synonyms' from 2 ii).
-

KEY 5. i Yes/Synonyms/Yes/No. They are synonyms only in this text/Yes.

ii 3 – the Birmingham team (lines 13-14)

Parry and his colleagues (line 42)

the researchers (line 107)

Note:– 'they' (line 94) – in fact a referent

'climatologists' (line 31) – not definite ie. the climatologists, so they are a new subject not a synonym.

iii b. It's iii (and the answer is b. Not iii b.) They are textual synonyms ie. they are only synonyms in this text, they are not usually synonyms in the way 'British agriculture' and 'the British farming industry' usually are.

iv To understand that all these expressions refer to the same thing/person rather than different ones, ie. to understand the relatedness of parts of the text and so make sense of the text.

UNIT 2 WORKSHEET

6. Do **not** look back at the text to answer these questions.
- i Write down the first 10 words you think of when you read the work 'greenhouse'.
 - ii If you are told you are going to read a text about changes in world climate in the next few years what words would you expect to find in the text? Write them down.
 - iii If you read an article about the effects of temperature change on agriculture what words would you expect to find? Write them down.
 - iv Now look at the text. Do many of your words occur in it? How many of the words in list iii were in the text?
 - v a. If so, what is the effect of this?
b. If not, what is the effect?
Does it make the text easier/more difficult to understand? Why?
 - vi Look back at your answer to i above. What made you think of each of the words you wrote?
 - vii Look back at your list of words in iii. Did you include any synonyms or hyponyms?

UNIT 2 TEACHER'S NOTES

6. Learners work alone first to complete the worksheet. They could work in pairs comparing and discussing their answers. Since the answers will probably vary a great deal it is not necessary to check the answers to i-iv in detail – a few examples for each could be elicited. The answers to v and vi need to be clearly established with the class.

KEY 6. i There are many possibilities. Some common ones are:

glasshouse/plant/green fingers/grow/greenhouse effect/ global warming/ carbon dioxide, etc.

- ii Again there are many possibilities and there can be no 'right' or 'wrong' answer to this question. Words included might be:

temperature/heat/rainfall/effects/microclimate/rise/fall/sea level/global warming/greenhouse effect, etc.

- iii See comments above.

crop/yield/per hectare/variation/effect/increase/decrease, etc.

- iv There are no answers. (Check for yourself)

- v a It should be easier to understand the text because the content has been predicted to some extent.

- b It may be difficult to understand the text because the reader has little idea of what content to expect.

- vi A knowledge of the kind of words which often appear together on a certain topic. (eg. 'global' and 'warming', 'greenhouse' and 'effect')
We call such words 'collocates'.

- vii (Check for yourself).

CONCLUSION

After working through these exercises (and others like them), learners will have a sharpened awareness of the need to keep checking, as they read a text, that they have interpreted its cohesive devices in a way that makes sense in the context of the text as a whole.

However, that is not the end of the story. Through doing the exercises learners have been developing a understanding of how cohesion works so that, for example, they can begin to identify sets of hyponyms amongst the words in lists they have generated themselves. And so it is here that the link back to writing, described in figure 1, is accomplished.

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